INTRODUCTION

Compiled by: **Ronald M. Cyr** M.D., F.A.C.O.G.
University of Michigan

Prepared for participants in Clinical Seminar CTP37 “Key Moments in the History of Obstetrics and Gynecology” at A.C.O.G. Annual Clinical Meeting, Los Angeles May 7, 2002.

- These articles are over 60 years old and, to the best of my knowledge, are no longer protected by copyright. Please inform me if you know otherwise.

READINGS IN OBSTETRICS
U.S.A. – 1900 to 1936

TABLE of CONTENTS

INTRODUCTION 7
1900 - Recent Progress in Obstetrics – Higgins - Boston 8
MATERNAL IMPRESSIONS. 8
ANTISTREPTOCOCCIC SERUM IN PUERPERAL INFECTION[2] 8
FAT AND FECUNDITY 9
THE CAUSES WHICH RENDER DIFFICULT THE LABOR OF CIVILIZED WOMEN 9
SYMPHYSEOTOMY, FOLLOWED BY EASY FORCEPS TWO YEARS LATER 10
IS A SLOUGHING PROCESS AT THE CHILD'S NAVEL CONSISTENT WITH ASEPIS IN CHILDBED? 10
1901 – Obstetric Operations – Reynolds – New York 13
FORCEPS AND VERSION FOR CONTRACTED PELVIS 13
INDUCTION OF PREMATURE LABOR FOR CONTRACTED PELVIS. 14
CRANIOTOMY. 14
THE CLASSIC CESAREAN SECTION. 14
PORRO'S OPERATION 14
SYMPHYSIOTOMY 14
PRIMIPARÆ 16
MULTIPARÆ 17
1912 – Medical Education – Williams - Baltimore 20
THE PRESENT STATUS OF OBSTETRICS 21
SUGGESTED REMEDIES 31
SUMMARY AND CONCLUSIONS 31
1912 – Cesarean Section – Peterson – Ann Arbor, MI 33
1913 – Status of Cesarean – Davis - Philadelphia 42
1914 – Individualization in Obstetrics – Newell -Boston 48
1915 – Committee on Midwives – New York 54
1915 – Midwife Problem in New York State – Van Doren Young 56
1915 – Control of Midwives – Williams – Albany, NY 64
1915 – Twilight Sleep Review – DeNormandie - Boston 73
1915 – Twilight Sleep – Druskin and Ratnoff – New York 83
SCOPOLAMIN AND HYOSCIN 83
MORPHIN, PANTOPON, NARCOPHIN* 84
CONCLUSIONS 91
1915 – Twilight Sleep – Rongy – New York 93
TOTAL AVERAGE DOSAGE 96
NUMBER OF INJECTIONS 96
DURATION OF LABOR 97
RESTLESSNESS 97
HEMORRHAGE 97
PERINEAL LACERATIONS 97
OPERATIVE PROCEDURES 97
ANESTHETICS 97
CONTRAINDICATIONS 98
CONVALESCENCE 98

CONCLUSIONS 98
1915 – Pregnancy Care – Editorial - Boston 101
1916 – Obstetrics, Gynecology and Abdominal Surgery – Cullen - Baltimore 103
THE OBSTRTRICS, GYNECOLOGY AND ABDOMINAL SURGERY 103
OF TWENTY-FIVE YEARS AGO 103
THE OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY OF TODAY 104
THE ALIGNMENT OF OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY 106
THE TRAINING OF THE ABDOMINAL SURGEON 109
CONCLUSION 109
1916 – Uterine Effect of Twilight Sleep – Editorial JAMA 111
1916 – Analgesia and Anesthesia in Obstetric – Skeel - Cleveland 113
PRINCIPAL THEORETICAL CONSIDERATIONS 113
NORMAL CASES 114
ABNORMAL CASES 115
CONCLUSION 116
1916 - Yearbook of Obstetrics 117
The Art of Obstetrics 117
Obstetric Surgery a Modern Science. 117
Meddlesome Midwifery in Renaissance 119
A Year’s Work at the Rotunda Hospital 120
Supervision of the Midwife 122
Is the Midwife a Necessity? 123
Progress Toward Ideal Obstetrics. 123
1916 – Status of the Child in Obstetrics – Wall -Washington 125
“PERNICIOUS" VOM ITING OF PREGNANCY 125
VIABILITY 126
SYPHILIS 126
PRENATAL CARE OF BREASTS 127
MOTHER'S DIET 127
BIRTH INJURIES AND PALSIES 127
FORCEPS, VERSION AND CESAREAN SECTION 128
TWILIGHT SLEEP 129
POSTNATAL CARE OF INFANT 130
FEEDING 131
1917 -YearBook 133
Several Every-Day Obstetric Problems. 133
The Nurse Midwife. 136
The Midwife Problem in England 136
Why the Midwife? 136
Prenatal Care. 137
1918- YearBook 139
Supervision of Expectant Mothers in New York 139
Need For Intensive Study of Mortality From Childbearing 140
Extending the Care of Pregnancy 141
1919- YearBook 143
Will Scopolamine-Morphine Improve the Birth-Rate? 143
1919 – Presidential Address – AGS - Martin 145
GYNECOLOGY AS A SPECIALTY 145
1919 – Elective Cesarean Section – Davis - Philadelphia 150

DISCUSSION 153
1920 - Prophylactic Forceps Operation - DeLee - Chicago 158
DISCUSSION 167
1920- YearBook 172
Midwife Practice-An Anachronism 172
1920 – Analgesia and Anesthesia in Labor – Davis – Philadelphia 174
DISCUSSION 178
1920 – Obstetric Practice Massachusetts 183
1920 – Postpartum Care – Kosmak – New York 184
APPENDIX 188
1920 – Progress in Obstetrics – Ehrenfest – St. Louis 190
1920 – Obstetric Mortality in Massachusetts 199
1920 – Maternal/Infant Welfare Centers - Boston 200
1920 - Maternity Aid - Boston 202
1921 - Unsolved problems in gynecology and obstetrics – Blair Bell - England 206
MORPHOLOGICAL PROBLEMS 208
PHYSIOLOGICAL PROBLEMS 209
DISCUSSION 211
1921 – Drudgery of Obstetrics – Anspach - Philadelphia 214
1921 – Fads and Fancies of Obstetrics – Holmes - Chicago 227
CONCLUSIONS 235
REFERENCES 236
1921 – Cesarean Review – Williams - Baltimore 237
1921 - SHEPPARD-TOWNER Bill 239
1921 - Maternity Benefits - Boston 240
1921 - Maternity Bills Before The Legislature - Massachusetts 243
THE SPENCER BILL 243
THE COMMISSION BILL 243
1921 – Maternity Legislation - Massachusetts 245
1921 – Maternity Aid - Massachusetts 251
1921 – Analysis of the Potter Version – Speidel – Louisville KY 254
DISCUSSION 257
1921 – Method of Delivery – Tate – Cincinnati 261
SUMMARY OF METHOD 263
Remarks: 263
DISCUSSION 264
1922 - Amended SHEPPARD-TOWNER Bill 267
1922 - THE SHEPPARD-TOWNER ACT 269
1922 - Figures on Cesarean Section – Birney – Springfield, Mass. 270
DISCUSSION OF DR. BIRNEY'S PAPER ON CAESAREAN SECTION 272
1922 – VBAC – Williams - Boston 275
CONCLUSIONS 277
REFERENCES 277
1922 - Report on Obstetrics – DeNormandie - Boston 279
ABDOMINAL PREGNANCY FOLLOWING HYSTERECTOMY 279
OBSTETRICAL PARALYSIS OF THE PERONEAL NERVE 279
UTERO-PLACENTAL APOPLEXY IN ACCIDENTAL HEMORRHAGE 280
TREATMENT OF PREGNANCY COMPLICATED BY VALVULAR HEART DISEASE 281
THE TWO-FLAP LOW INCISION CAESAREAN SECTION 281

ACTION OF THE ECBOLICS IN THE FIRST STAGE OF LABOR 282
PITUITARY EXTRACT AT THE BEGINNING OF THE THIRD STAGE OF LABOR 282
LOW CERVICAL CESAREAN SECTION 283
THE END-RESULTS OF ABDOMINAL CAESAREAN SECTION 283
HEART IN PREGNANCY 283
INTRAVENOUS INJECTIONS OF GLUCOSE IN TOXEMIA OF PREGNANCY 284
STUDY OF THE SCAR IN REPEATED CESAREAN SECTIONS 285
TUBERCULOSIS IN A STILLBORN FETUS 285
CHEMICAL OBSERVATIONS ON THE TOXAEMIAS OF PREGNANCY 285
PREGNANCY AND HEART DISEASE 286
REFERENCES 287
1922 - The Place of Version in Obstetrics – Potter Book Review 288
1922 – Prolonged Labor – Beck – Brooklyn NY 289
INCIDENCE OF PROLONGED LABORS 289
ETIOLOGY 290
CONDUCT OF LABOR 290
END RESULTS 291
1922 – Cesarean Section – Holmes and Burdick - Chicago 293
THE OPERATION 296
STATISTICAL DEDUCTIONS 297
INDICATIONS 297
MORTALITY 297
INFANT MORTALITY 298
MORBIDITY 300
TEMPERATURE BEFORE OPERATION 302
CONCURRENT OPERATIONS 305
DELAYED CONVALESCENCE 306
CONCLUSIONS 306
REFERENCES 307
DISCUSSION 307
1922 – Obstetrics Reflexions – Little -Montreal 311
VOMITING 312
PYELITIS 313
LABOR 313
TREATMENT OF THE CORD 317
1922 – Conservative Obstetrics – Danforth – Evanston, Illinois 318
1922 - Birth Statistics - USA 324
1923 – Trend of Modern Obstetrics – Anspach – Philadelphia 325
Conclusions 330
References 331
Discussion 331
1923 – Maternal Welfare Committee 335
1923 – VBAC – Greenhill - Chicago 338
CASE REPORTS 338
COMMENT 339
1925 – Teaching Obstetrics and Gynecology – Peterson – Ann Arbor MI 341
CONDITIONS AGAINST WHICH TEACHERS WERE CONTENDING TWENTY-FIVE OR MORE YEARS AGO 341
PROGRESS DURING THE LAST TWENTY-FIVE YFARS 343

DIFFICULTIES IN TEACHING AND SUGGESTIONS FOR FURTHER CHANGES..... 344
1925 – Teaching of Obstetrics – Davis - Philadelphia 347
1925 – Relief Measures during Labor – Schoeneck – Syracuse, NY 353
MORBIDITY 354
MATERNAL MORTALITY 355
SUMMARY 355
Discussion 356
CONCLUSIONS 358
1925 – Prenatal Care – Polak –Brooklyn NY 359
1925 – Modern Application of Version – McDowell – Buffalo, NY 363
1925 – Low Cervical Cesarean – Quigley – Rochester, NY 367
Conclusions. 372
BIBLIOGRAPHY 372
1925 – Maternal Mortality Analysis – Eichel – New York 374
CONCLUSIONS 381
1926 – American Gynecological Society – Kosmak – New York 383
1926 – Address – Am. Gyn. Soc. – Davis - Philadelphia 388
1926 – Presidential Address – Am. Gyn. Soc. – Newell - Boston 394
1927 – Response – Am. Gyn. Soc. – Chipman – Montreal 400
1927 – Stillbirths Analysis – Lyon – New York 402
DISCUSSION 407
1927 - YearBook 410
The Prevention of Maternal and Infant Mortality 410
Results of Supervised Midwife Practice in Certain European Countries 411
1928 - YearBook 414
The Midwife Problem 414
Maternal Mortality in the United States 414
A Frontier Nursing Service 416
1930 - YearBook 419
The Trend of Modern Obstetrics 419
1932 – Version and Extraction – Baer, Reis, Lutz - Chicago 421
SUMMARY 426
CONCLUSIONS 426
DISCUSSION 426
1934 - Year Book 429
Obstetrics Versus Midwifery 429
Maternal Mortality in New York City 430
1934 – Maternal Welfare Committee 432
1934 – Hospital Survey Operative Obstetrics – Holmes - Chicago 436
INTRODUCTION 436
SUMMARY OF OBSTETRIC SERVICES IN UNITED STATES HOSPITALS 438
THE OPERATIVE INCIDENCES AND MORTALITIES 444
CONCLUSIONS 449
DISCUSSION 450
1935 - Year Book 453
Obstetrics as Community Problem 453
Maternal Welfare 454
1935 – Prophylactic Forceps – Aldridge and Watson – New York 455
CONCLUSIONS 465

REFERENCES 465
DISCUSSION 466
1936 - YearBook 471
Trends in American Obstetrics during the First Third of This Century 471
Maternal Mortality and Morbidity 471
Outpatient Obstetrics 472
Some Obstetric Aphorisms 473

1900 - Recent Progress in Obstetrics – Higgins - Boston

BY FRANK A. HIGGINS, M. D., BOSTON.

Published in “Boston Medical and Surgical Journal, Vol CXLII (1900) pages 138-140

MATERNAL IMPRESSIONS.

Lewis,[1] in a review of the subject of maternal impressions, says that if maternal impressions explain human anomalies, they should also explain such occurrences among the lower animals and even among plants. Monstrosities are perhaps more common among domestic animals and fowls than among men. The strongest blow is dealt to the theory of maternal impressions by the results of experiments in the production of monsters artificially. Innumerable experiments have been performed upon the eggs of bird, fish, insect and echinoderm which have resulted in the production of almost all the typical varieties of monsters, especially of single monsters. Different varieties can even be produced at the will of the experimenters by different ways of managing the eggs. Monstrosities can be artificially produced in the embryos of birds exactly like those which, occurring in human fetuses, are ascribed to mental shock or nervous impression of the mother. It has often been observed that fish eggs hatched in running water produce a far greater number of double embryos than do those hatched in still pools. The shaking caused by railroad or wagon journeys to the hatchery also results in a greater profusion of double monsters. In human fetuses, even at full term, there are sometimes found remains of amniotic bands and adhesions which, obviously, by interfering with development of different parts at an early period of gestation, were the causes of various malformations. In short, all malformations and monstrosities can be explained by purely physical and mechanical causes, entirely remote from psychic influence, so that there is never any reason to invoke the mysterious or the supernatural to explain natural phenomena.

ANTISTREPTOCOCCIC SERUM IN PUERPERAL INFECTION[2]

In 1898 the American Gynecological Society appointed a committee to report on the value of anti-streptococcic serum in the treatment of puerperal infection. The committee reported at the 1899 meeting and their conclusions are quoted, and are interesting in that they help to strengthen what already was generally believed to be good judgment:

(1) A study of the literature shows that 352 cases of puerperal infection have been treated by many observers, with a mortality of 20.74 per cent; where streptococci were positively demonstrated, the mortality was 33 per cent.

(2) Marmorek's claim that his antistreptococcic serum will cure streptococcic puerperal infection does not appear to be substantiated by the results thus far reported.

(3) Experimental work has cast grave doubts upon the efficiency of antistreptococcic serum in clinical work, by showing that a serum which is obtained from a given streptococcus may protect an animal from that organism, but may be absolutely inefficient against another streptococcus, and that the number of serums which may be prepared is limited only by the number of varieties of streptococci which may exist.

(4) Thus far the only definite result of Marmorek’s work is the development of a method by which we can increase the virulence of certain streptococci to an almost inconceivable extent, so that one hundred billionth of a cubic centimeter of a culture will kill a rabbit.

(3) The personal experience of your committee has shown that the mortality of streptococcus endometritis, if not interfered with, is something less than five per cent and that such cases tend to recover if nature's work is not undone by too energetic local treatment.

(6) We unhesitatingly condemn curettage and total hysterectomy in streptococcus infections after full term delivery, and attribute a large part of the excessive mortality in the literature to the former operation.

(7) In puerperal infections a portion of the uterine lochia should be removed by Döderlein's tube for bacteriological examination and an intra-uterine douche of four to five liters of sterile salt solution given just afterwards. If the infection be due to streptococci, the uterus should not be touched again, and the patient be given very large doses of strychnia and alcohol if necessary. If the infection be due to other organisms, repeated douchings and even curettage may be advisable.

(8) The experience of one of the members of the committee with antistreptococcus serum has shown that it has no deleterious effect upon the patient, and, therefore, may be tried if desired. But we find nothing in the clinical or experimental literature or in our own experience to indicate that its employment will materially improve the general results in the treatment of streptococcus puerperal infection.

FAT AND FECUNDITY.

Reed[3] says that the question, a natural one, as to which is the cause and which the effect in a given case of sterility, coexisting with obesity, is best answered by the history of the case, and the antecedent condition may generally be assumed to be the causal one. Thus in the case of a comparatively young woman who takes on fat and whose increase of weight is followed by a corresponding decline of sexuality, there is logical inference that the first condition is the cause of the latter. This assumption is confirmed when a reduction of the obesity is followed by a spontaneous return of the menstrual and reproductive functions. The physiological conditions underlying the normal deposit of fat are those of abundant supply of nutritive material, normal digestive functions, a free circulatory activity, an absence of excessive muscular exercise, a normal metabolism and the unobstructed elimination of metabolic products. When, therefore, in a mature person, in whom the nutritive functions have attained a relative equilibrium, and in whom there occurs a change of type due to the sudden accession of fat, there occurs a re-establishment of the functions of growth, a disturbance in the balance between waste and supply, the latter preponderant. With this recurrence of growth there is also a readjustment of function approximating the prepuberty standard. There is progressive amenorrhea, genital anesthesia and loss of sexual desire, increasing to the clinical picture of a well-established case of sterility. The prognosis depends much upon the intelligent persistent co-operation of the patient. The acquired obesity of this class may be cured practically always while restoration of the genital function is less amenable to treatment. Plethoric cases are more easily cured than anemic, while the most tractable of all are those complicated with neurasthenia. The treatment of sterility due to obesity is both constitutional and local, varying according as the case may be anemic or plethoric, simple or complicated, and must embrace a consideration of diet, exercise, bathing, medication and general personal hygiene, while the local treatment must embrace all resources that are calculated to overcome manifest pathologic states and to re-establish the functional power of the genital organs. There is no special diet which should be employed in every case without more or less radical change, and any attempt to apply any one of the numerous so-called systems in a routine way is fraught with hazard.

THE CAUSES WHICH RENDER DIFFICULT THE LABOR OF CIVILIZED WOMEN.

Reid, [4] in a paper read before the British Medical Association, remarks that it is a well-founded belief that the obstetrical forceps is used much more frequently by men of the present generation than the past, and that the change was due, in part at least, to necessity, owing to the fact that there was a gradually increasing disproportion between the fetal head and the maternal pelvis. His belief

was that the labors of civilized women were so severe that in the absence of skilled aid a very considerable proportion would perish, and even in cases where surgical aid was unnecessary delivery approached in severity a major operation, the effect of which a woman felt for a fortnight or a month. The labors of savage women were known to be safe and easy, and the question arose, how did civilization render labor difficult? Dr. Reid's view was that women with small pelves tended to have daughters with a like peculiarity, and people who at birth had large or small heads tended to transmit that peculiarity. When a savage woman had a small pelvis, or a large-headed child, she generally died in labor. The race was thus purged, generation after generation, of all narrow hips and large heads, while the right proportion between head and pelvis was secured. In the highest civilization many small-hipped women and large-headed children were annually preserved. If these perished, the average difficulty of labor in the next generation would be artificially ameliorated. Here was the reason why the labors of civilized women were becoming increasingly difficult, and he thought that it was not improbable that about the end of the twentieth century forceps operations would be performed much more frequently than at present.

SYMPHYSEOTOMY, FOLLOWED BY EASY FORCEPS TWO YEARS LATER

Balfour[5] reports a case in which the patient at her first labor was delivered by craniotomy, at the second by symphysiotomy, after failure of forceps, and at the third labor, delivery was easily accomplished by forceps. The case is reported as of interest, because showing a permanent improvement in the size of the pelvis after the operation of symphysiotomy . The reporter comments on the case of the operation for symphysiotomy by the subcutaneous method, only a knife and a catheter being used, making it eminently suitable for small, dark and dirty houses where no skilled assistance can be had.

IS A SLOUGHING PROCESS AT THE CHILD'S NAVEL CONSISTENT WITH ASEPIS IN CHILDBED?

Dickinson,[6] under the above title, makes an elaborate review of the subject of umbilical cord ligation and sloughing and a plea for the application, in amputating the cord, of the surgical principles that govern other amputations. He says it is not a little curious that the earliest operation in the world, and the only me done on every individual, should be treated by measures that antedate our annals, namely, ligation and absorbent dressings. He lays down the following principles as being directly opposed to the prevailing practice :

(1) Mass ligature should be avoided. Hemorrhage follows the present method occasionally because shrinkage of the gelatin loosens the seizure. Ligatures belong on bared vessels.

(2) A hernial opening should not be closed by a granulation scar. Primary union is readily substituted.

(3) As in the funis the line of demarcation is known, removal should be practiced at or beyond that point.

(4) That form of operation should he chosen which will do away with sloughing or pus production. Prevention of suppuration, of putrefaction in the stump and of systemic infection has been attempted by means of numerous devices and dressings. Removal alone is prevention. To frankly sever the cord at the skin margin with ligature of & vessels, or suture; one or both brings about safe, clean and prompt healing. Thereby, the navel of the second day looks like the navel of the tenth or fifteenth day under other methods.

The method used by him is to snip the cord with blunt-pointed scissors all around the skin margin. The sheath and gelatin are stripped backward with as much jelly as possible, leaving the vessels standing alone, and a fine silk or catgut ligature is put around. The vessels are cut off short and the

stump tends to roll in. The stump may or may not be sutured. A dry gauze pad suffices for the dressing.

Objections to complete primary amputation: (1) Increased danger of contact infection, owing to operation on parts supplied with lymphatics, as compared with the ordinary ligation of vessels and jelly on parts having no nutrient capillaries or absorbents ; (2) lack of drainage in case of infection ; (3) danger of concealed secondary hemorrhage (hematoma) after the suturing method; (4) inaccessibility of vessel ends in case of bleeding as compared with facile placing of second ligature where stump is long; (5) the risk of striking an umbilical hernia; (6) as this is surgery it is not yet adapted to the general practitioner.

To admit most of these objections is to confess that we, as instructors and surgeons, fail in our attempts to drill the students in hand cleaning and instrument boiling, and avoidance of unclean contacts. The method requires hands no cleaner than for a vaginal examination and far less wound knowledge than for the repair of perineal injuries.

CESAREAN SECTION IN SEPTIC CASES.

It is beginning to seem quite possible that, owing to the increased knowledge of the technique of Cesarean section, the comparative ease with which it is performed, and the low mortality rate, that operators may be led to resort to the operation in unsuitable cases, particularly those with possible septic infection, for which some other method of delivery would formerly have been found. We have considered that a dead child or a septic mother were almost positive contraindications to the Cesarean operation, and it occurring with a pelvic tumor, the abdomen should be opened, the tumor removed and the child delivered by forceps or craniotomy. With this in mind, the case of Docktor[7] is of special interest, with his report of 21 cases collected in literature. The patient was a multipara admitted in labor, expulsion of the child being impossible because of a tumor growing from the sacrum. The necessity of Cesarean section was positive; choice of method only remained. On extracting the child, which was dead, the appendages were found partly decomposed and the uterus contained offensive pus. Fortunately, through efficient help, the uterine contents were kept outside the abdomen. The womb was amputated, a strand of gauze was passed through the cervix for drainage and the upper borders of the stump united. The recovery from sepsis was tedious. She had a characteristic eruption, a pelvic exudate and pleuropneumonia, but recovered sufficient1y to be removed to the medical department of the hospital, where her lung symptoms indicated a permanent tubercular infection.

Docktor's [8]studies of the 21 cases collected lead to these conclusions: The incision of the uterus, the extraction of its contents and suture of the womb was followed by a mortality of 40 per cent, while those patients that recovered had prolonged fever. A still worse result followed amputation of the uterus with extraperitoneal treatment of the stump, the mortality of these being 40 and 50 per cent, and the patients who recovered suffered from pus formation in the stump and various septic complications. Those cases treated by amputation of the uterus, with intrapelvic treatment of the stump, did better than either of the foregoing, their mortality being 14.27, including the complications of sepsis, as in the other methods of treatment. So far as the comparison goes at this point, the best results are obtained by amputation of the uterus, with intraperitoneal treatment of the stump. The removal of the entire septic uterus and its contents, if possible, without contaminating the abdomen, would be the most desirable operation. This was effected in two cases by total extirpation of the pregnant uterus, through the abdomen, and in each case the mother recovered without complications. From these came his conclusion is that in cases of septic infection, affording considerable risk in delivery through the vagina, the womb and contents should, if possible, be removed without being opened in the body of the mother.

THE ANTENATAL AND INTRANATAL FACTORS IN NEONATAL PATHOLOGY; AN ATTEMPT TO EXPLAIN THE PECULIARITIES OF THE MORBID STATES OF THE NEW-BORN

. Dr. J. W. Ballentyne,[9] of Edinburgh, presented a paper on this subject at the meeting of the American Medical Association at Columbus. The article is an able and interesting one, and the following is the summary of his conclusions: From all that has been said above it is clearly evident that if the characters of the diseases of the new-born infant are to he understood, it is essential that account he taken, not only of the facts that the infant's organism has just passed through a period of traumatism and is passing through one of readjustment to meet new requirements, but also that during the nine months of intrauterine life which precede birth, it may have been the sphere of morbid processes which have left their impress on it. It may come into the extrauterine environment already diseased and malformed, or pre-disposed to some pathologic development. Like pregnancy, neonatal life is an epoch which has a physiology in many respects peculiar to itself, and which borders very closely on the pathologic, tending very easily to pass over into it. In a certain sense, the ordinary vomiting of pregnancy is to the uncontrollable form as the ordinary “physiological" jaundice of the newborn is to pernicious icterus neonatorum. Further, just as every woman brings with her into her pregnancy the results of her past pathological history, so the new-born infant brings with him, out of his antenatal life into his neonatal existence, the effects of any morbid processes which may have attacked him *in utero*. In this way the pathology of pregnancy and the maladies of the new-born infant are both invested with peculiarities. The peculiarities, therefore, of neonatal diseases are not inexplicable, but are the direct outcome of the action of the antenatal and intranatal factors on the organism at this period of life.

[1] American Journal of Obstetrics, July, 1899.
[2] Loc. cit., September, 1899.
[3] American Medical Quarterly, June 1899.
[4] British Medical Journal, August 26, 1898, p. 602
[5] British Medical Journal, February 18, 1899
[6] Transactions American Gynecological Society, 1899.
[7] Archiv für Gynäk., 1899.
[8] American Journal of the Medical Sciences, January, 1900, p. 112
[9] Journal American Medical Association, November 18, 1899

THE MAJOR OBSTETRIC OPERATIONS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER

BY EDWARD REYNOLDS, M.D.
Boston Mass.

Published: New York State J. Med. Volume 1 (1901) p. 240-245

The recent advances in the study of the contracted pelvis and the possibility of saving fetal life in such cases, by the extension of the major operations to a wider field, have as yet been confined too exclusively to the practice of professed obstetricians, and too little popularized among the great mass of the profession, perhaps, because it has been thought by many that the technicalities involved in the detection of contraction are too great for the general practitioner's use, and probably because there is still too much credence for the former erroneous idea of the comparative scarcity of contraction in America. This belief must, however, now be given up. The results of all those who have recently investigated the subject have yielded, about the same percentages, namely, about seven per cent (or one in every fourteen cases) of contraction, if we except the Negroes, in whom it rises to nearly 20 per cent. Only about 2 per cent, however, reach the degree of mechanical obstruction which demands operation; but when we consider that in each of these cases the question of whether the woman shall be delivered by one of the ordinary methods or by a cutting operation, must necessarily be raised, even this percentage is surely large enough to make the question one of living importance to every general practitioner.

The operations to be considered in any such case are forceps and version, the, induction of premature labor, craniotomy, the Cesarean section with or without the extirpation of the uterus, and symphysiotomy. The choice between them must always be determined by due regard to their respective maternal and fetal mortality under the conditions of the individual case. The short time allotted to papers makes it impossible for me to discuss in detail the status of all these operations and their application to practice, and, as I have recently published (in Obstetrics, for January, 1900) a detailed paper upon the status of the cutting operations, I propose to limit myself today to a bare statement of the mortalities, unsupported by argument, in order to afford myself room for a full discussion of the application of these results to everyday practice.

It is my belief, however, as an essential preliminary to any intelligent consideration of these mortalities, that we should first and for each operation sub-divide the cases into favorable and unfavorable classes, putting in the favorable class all cases in which at the time of operation the woman is uninfected, not exhausted by long labor, and free from complicating diseases; and per contra, into the unfavorable class all cases in which the woman is already exhausted by neglected labor, infection or other intercurrent diseases.

FORCEPS AND VERSION FOR CONTRACTED PELVIS

It will, I think, be conceded by any obstetrician of wide experience that the use of high forceps and version for contracted pelvis has a small intrinsic maternal mortality, yet I think that we shall find that this maternal mortality is insignificant or non-existent in the hands of skilful men and when the operations are undertaken with the mother in thoroughly good condition, but that it will not be insignificant in the unfavorable class of cases.

It is generally and somewhat loosely held that the fetal mortality of high forceps and version is not unduly large, but I think any one who will analyze a large series of cases with regard .to this point will be surprised to find how large the fetal mortality is. I have myself found that analyses -both of my own experience and of a considerable number of reported series of cases- have uniformly yielded about the same result, i.e., a fetal mortality of not less than 50 per cent in cases in which high forceps or version were performed on account of contracted pelvis. (We must, of course, exclude cases in which these operations are done for less important mechanical obstacles; in which cases the fetal mortality is naturally much smaller.)

INDUCTION OF PREMATURE LABOR FOR CONTRACTED PELVIS.

In these aseptic days the maternal mortality from the induction of labor is and should remain very small; but in this class of inductions the reported fetal mortality is far from small, being again about 50 per cent, a statistical result which is moreover supported by the opinion expressed in the more recent text-books.

CRANIOTOMY.

Since craniotomy to the living child is practically never performed until after the failure of determined attempts at extraction by high forceps and version, its maternal mortality is necessarily a little higher than where these operations succeed. Its fetal mortality is, of course, 100 per cent.

THE CLASSIC CESAREAN SECTION.

Until very recently it has been generally held that the maternal mortality of the Cesarean section was still not less than 25 per cent, and if all the reported cases are viewed together, this opinion is probably a true one; but a division of the cases into the favorable and unfavorable classes defined above yields surprisingly different results. Thus an analysis which I made a year ago of 150 reported cases -15 of my own and the remainder from foreign sources- shows that there were 89 cases in the favorable and 61 in the unfavorable class.

Among the 89 favorable cases there was no maternal mortality, while the mortality of the unfavorable cases reached the prohibitive figure of 33.3 per cent.

The fetal mortality of the Cesarean section is, of course, the smallest mortality known, amounting to nothing in the favorable class of cases. (Estimating an unduly prolonged labor at the arbitrary limit of 24 hours.)

PORRO'S OPERATION.

This extirpation of the pregnant uterus has been almost invariably confined to the unfavorable class of cases. There is perhaps not yet enough material for estimating its maternal mortality when done early in labor and in selected cases. It is probably but slightly greater than that of the uncomplicated section. Its mortality in the unfavorable cases is somewhat lower than that of the Singer section, but reaches about 30 per cent. Its fetal mortality is that of the Caesarean section; that is, it is never fatal to a child which is in good condition at the time the operation is undertaken.

SYMPHYSIOTOMY.

When the reported cases of symphysiotomy are separated into the favorable and unfavorable classes, the operation is found to have a somewhat larger maternal mortality than the section in the first set of cases, those in which women were in good condition, the small mortality which exists being due to an occasional improper selection of cases, i.e., to the performance of symphysiotomy in pelves of too high a degree of contraction to admit of easy extraction after it had been performed. Its fetal mortality is practically confined to the same mistaken cases; but though this is a mortality of mistake, the fact that it has been frequently made by men of world wide reputation makes it necessary to consider it. In contrasting symphysiotomy with the classical Cesarean section in the favorable class of cases it must, moreover, be remembered that even if it attains an equally low maternal mortality its morbidity is much higher than that of the Cesarean section, i.e. serious injuries to the soft parts occur not infrequently, and loss of locomotive ability from permanent mobility of the pelvic bones is not unknown. In the unfavorable class of cases, however, the maternal and fetal mortality of symphysiotomy both compare favorably with those of any other operation, and in my opinion it here finds its chief indication. It is unattended by shock, it does not open the genital canal and can therefore be performed in infected cases; it makes the subsequent extraction by forceps or version easy instead of difficult.

The conclusions to which I have been forced by my study of the subject, which have since been supported by the results of every reported case that has come under my observation, and which have led me to an unbroken success in dealing with all the major cases which I have seen since I finally formulated them (23 cases in four years), are as follows:

1. When the conditions are such that the child can be delivered with anything like reasonable ease by forceps or version, one of these operations is preferable to any cutting operation.

2. When the mechanical relations would render forceps or version unusually difficult, forcible and prolonged, and when the mother is in the favorable class, the equally low maternal mortality and the far lower fetal mortality of the Cesarean section renders it the operation of choice.

3. When the mechanical conditions make the intra-pelvic delivery of an intact child at term impossible or unduly difficult, the great superiority of the Cesarean section over the induction of premature labor in fetal mortality and its extremely low maternal mortality render it again the preferable operation.

4. When the ordinary operations fail and the woman is in the unfavorable class, symphysiotomy is the operation of choice, and may be expected to lead to a favorable result for both mother and child in the great majority of cases provided always that the degree of mechanical difficulty permits of its application.

5. When in the unfavorable class of cases, the degree of relative disproportion between head and pelvis is too great to admit of a safe symphysiotomy, craniotomy to the living child should be unhesitatingly chosen, since the maternal mortality of either form of the section is so enormous, and because I cannot doubt that the life of the potential mother of many children is of more value than that of any one unborn fetus.

If these principles be true, it follows that there are but few if any cases of uncomplicated mechanical obstruction in which a happy outcome for both mother and child is not easily within the power of ideally prompt and intelligent medical care, if applied at the beginning of labor. I believe

this to be a fact, and I think that this happy state of affairs is sufficiently possible of accomplishment to encourage us in every effort toward its attainment.

The method which is commonly laid down as a necessity to this end is the routine measurement of every case at the time it first comes under the practitioner's care. I am far from underestimating the value of routine pelvimetry, and hope to see the day when it will be a part of every obstetric examination, but I believe that there is no use in disguising from ourselves the fact that it is not now, and for the present is not likely to be generally practiced; if only from the fact that the attainment of an accurate conception of the mechanical possibilities of a given pelvis by mensuration is not an easy matter to anyone and that, moreover, the active general practiser of today has not been educated in it and can hardly be expected to perfect himself in this particular. The popularization of pelvimetry must be expected from the graduation of students who have been carefully taught it during their course in the medical schools. Valuable as menstruation is, however, it is fortunately not essential to the attainment of very fair results in mechanically obstructed labor. Every day of increasing experience makes it more certain that the supreme test of the adaptation between head and pelvis is the test of actual labor, and that the all-important thing is the clinical recognition of a mechanical obstruction early in the course of labor.

The variations in the size and hardness of the fetal head are so great that there are, in my opinion but few cases of contracted pelvis in which anyone is justified in performing a major operation without applying to the case the supreme test of an actual labor or the history of past labors, and this clinical test is easily within the reach of the general practitioner if he will conceive the case properly. Let us, then, discuss his duty in the course of his care of pregnancy and labor from the standpoint of the cruder methods, which are possible to everyone.

The importance which attaches to the actual clinical test necessarily places primiparæ and multiparæ in widely different clinical classes, and it is natural to discuss the primiparae first.

PRIMIPARÆ

I would then advise the general practitioner that when a primipara comes under his care, during the course of her pregnancy he should always include the possibility of marked mechanical obstacles as among the contingencies to be considered in his mental estimate of the case. If the woman be especially small, if she has a history of early caries, either of the hip or spine, or if any other symptoms point to a possible dystocia, he should take her to an expert for the estimation of the size of the pelvis, in consultation, early in pregnancy, precisely as he would treat any other certain grave surgical complication in his practice. Even if no such threatening symptoms exist, he should, preferably a few weeks before labor, and at all events at his first visit in labor, notice whether or not the head is unusually high. This, though not ideal, is, I think, the best test which we can expect, at present to have applied to general practice in the case of primiparae; it is, moreover, a fairly good one. If the head is, at the beginning of labor, well crowded down into the brim it will very rarely, if ever, happen that the case is beyond a possible delivery by forceps, and if such a delivery results fatally to the child, the question of choice of operations can be taken up at the next pregnancy. On the other hand, if in a primipara with the rigid abdominal and uterine walls which belong to her condition, the head is, at the beginning of labor, high above the brim, the question of serious relative disproportion between the head and pelvis is always prominent. The point which must now be remembered is that the chance for a successful Caesarean section is limited to the early part of the labor and that the choice must be made then and cannot be deferred to a later time. What the practitioner should do in such a case must depend upon varying factors, such, for instance, as his

methods of practice, his relation to the individual patient and the locality in which his practice is situated. He may choose between an immediate and careful measurement of the pelvis, externally and internally, himself, if he feels competent for it, or an immediate consultation with an expert, not necessarily on the subject of an immediate delivery, but on the question of whether there is a sufficiency of room, and this consultation will seldom be objected to by the family if it is put before them in this way. If a contraction of the pelvis is found, preparations for a section should be made on the chance that its performance may be necessary. If, then, the dilatation of the so progresses with fair rapidity, and without the appearance of any exhaustion of the patient, nothing is done until toward the termination of the first stage If the first stage is tedious and exhausting, the patient is etherized while still in good condition and the os gently dilated manually. The hand is then passed into the pelvis, under anesthesia, of course, and made to palpate and measure it with the greatest care; it is next passed up to palpate the head, both to ascertain its size, and the relation which its greatest diameter bears to the pelvic brim when it is strongly crowded down into the pelvis by a suprapubic hand. If this test is inconclusive, the forceps are applied to the sides of the head with the greatest care, and a few gentle tractions made in order to determine the amount of resistance which is to be expected, and to study the application of the individual head to the individual pelvis by the introduction of the fingers alongside the forceps during the traction. At the same time the fetal heart is carefully watched to judge of the effects of the tractions upon the child. It is manifest that this method of studying the case requires an extended obstetrical experience for a due appreciation of its results, and I believe that in case of doubt, the decision should be given in favor of the lesser operation, in primiparae at all events, since in the present state of our knowledge it is better that we should risk losing one child than perform an unnecessary Cesarean section, but with due care and caution and in sufficiently skilled hands, I believe that this test will yield close-to-certain results, and that the doubtful cases will consequently be rare. I believe that the adoption of this simple rule (that an unusually high or inaccessible position of the head at the beginning of labor should be regarded as ground for a consultation) will lead to greatly improved results.

In the present condition of medical practice we cannot doubt that the children of primiparae will occasionally be lost, who might have been saved by an early resort to a cutting operation, and that symphysiotomy will be done in other cases where the preferable Cesarean section might have been selected had the gravity of the case been recognized earlier, but when the primiparae has become a multipara, the case is much more simple.

MULTIPARÆ

Once the general practitioner realizes what the public is already beginning to realize, that the loss of a child in labor from mechanical obstacle is a loss which might probably have been avoided; once he recognizes what will in my opinion before many years be recognized by the profession far and wide, that the mortality and morbidity of the major operations done at the beginning of labor, is no greater and probably less than that of violent and prolonged forceps extraction; very few children of multiparae will owe their death to any mechanical cause. The rule which will save them is again a simple one. When a woman has once lost a child in labor from mechanical obstacle i.e., from difficult delivery by forceps or version the question of a major operation at term should always be taken up during the next pregnancy of that woman -i.e., a consultation should be held, at latest, a few weeks before delivery. The pelvis will then be measured and the relative size of the pelvis and the individual head will be estimated mated by the hand. If distinct disproportion already exists, the case may conceivably be treated by Cesarean section at the beginning of labor, or at a date set just before it. In a large number of cases, the estimation of relative size will be repeated at term and the woman will be allowed to go through the earlier hours of labor, but with every preparation for the

performance of a Cesarean already made, and with an operator at hand, so that in the event of another failure of the powers of Nature the favorable moment can be seized and another death in labor avoided.

Is not all this a simple and rational application of our recent advances to ordinary general practice? It may be objected that I have insisted too much on the employment of an expert wherever the question of relative disproportion is a prominent one. I would reply that every great advance works harm by the over enthusiasm and rashness of the ill-prepared. That the decision in favor of or against a major operation in a given case is, in my opinion, in most cases a very delicate and difficult one; one which should be submitted to a man with a professed proficiency in the subject. Obstetrics is rapidly reaching a position in which its best exponents are able to exhibit as definite results as are obtained in other branches of modern surgery; and I believe that, before many years, the profession will be compelled by the public to feel its obstetrical responsibilities with the same seriousness which has long been accorded to surgery.

Once the public and the general practiser feet that almost every fetal death from mechanical obstacle must be charged to the want of exceptional skill on the part of the attendant, we shall have far fewer deaths in labor. In every center the men who are ready to consider this question are plentiful and when cases of the sort occur at a distance from the center, they must be settled by the best man accessible.

I wish finally to repeat my firm belief that in all cases of doubt we should be guided by the general proposition, that a manufactory is always of greater value than any simple sample of its products, and that the potential mother of many children is always of more value than a single child; though I believe that in well-handled cases, the interests of mother and child are to-day almost invariably identical.

In illustration of the position which I am supporting I wish to close my paper with a short history of the twelfth case on my list, one which illustrates unusually well that position.

Early in the winter of 1898 and 1899, Dr. O. F. Johnson of Winthrop, Mass., wrote to me that he had a primipara whose small size had led him to apprehend difficulty in labor, a fear which had been encouraged by the slightly small external measurements which he had taken. He informed me of the calculated date of delivery, and asked that I would make a note of it and come to his assistance prepared for any method of delivery, if the early part of labor did not progress satisfactorily. On July 18, 1899, he telephoned me that the patient was in labor, and later in the day telephoned that the progress of labor was not quite satisfactory to him, and asked me to see her. I went at once prepared with assistants and instruments for any form of delivery, including the Cesarean section.

The patient was a primipara, fifteen years married, and a very small woman. She had had moderate labor pain for about eighteen hours, but in excellent condition, with slow pulse, and not exhausted. The membranes were unruptured, the os about the size of a fifty-cent piece. The pelvic measurements were as follows: Spines of the ilium, 21 cm.; iliac crests, 26 cm.: external conjugate, 18 cm.; diagonal conjugate, 9.5 cm. The symphysis was erect, the promontory high, the form of the pelvis justo-minor, and I estimated the true conjugate at not over 8 cm. It was thus decidedly a small pelvis; but on dilating the os which was done with the greatest ease, the patient being under ether, and seizing the child's head with the hand, it was evident that the head was not large, the fontanelles and sutures were wide, the bones were soft, and I was inclined to believe that an intra-pelvic delivery was possible. The occiput was anterior. O.L.A. I easily applied the forceps and easily brought the head into the brim, but two strong tractions failed to advance it further, and on listening to the fetal heart, which had previously been strong and regular, I failed to hear it. The forceps were at once

removed, the head pushed back, and the hand passed into the uterus, in search of the cord, which was found to be beating faintly and intermittently. I felt that even the few tractions which I had made had been too powerful for the soft head, and feared that I had lost the child: but after a few minutes spent in watching the cord with the fingers its pulsations became good and regular, having steadily improved during the interval. The hand was then removed and some minutes spent in watching the fetal heart with the stethoscope. It continued good and strong. The child's condition was evidently reestablished, and, as the mother's pulse was slow and good, and I was confident I had done no harm to the soft tissues with the forceps, I felt warranted in still considering the Cesarean section. I informed the doctor and the husband that I had no question but that I could deliver an intact child by forceps without material danger to the mother, but I was equally sure that the child would be a dead one, and that I thought the Cesarean section could be performed without essentially increasing the risk to the mother. Both of them assenting, my assistants were called up, the necessary preparations rapidly made, and a classical section done. The child had passed meconium into the *liquor amnii* and was somewhat asphyxiated but was resuscitated without great difficulty and has done thoroughly well ever since. The mother's recovery was uneventful. I criticize myself as having in this case gone a little too far in the use of forceps in so small a pelvis, but I believe that if a mistake is made it is better to make it on the side of conservatism, and I hoped to be able to deliver safely with forceps. The case is, with this exception, a fair illustration of what I consider a rational method of deciding between the Cesarean section and the forceps.

MEDICAL EDUCATION AND THE MIDWIFE PROBLEM IN THE UNITED STATES*

J. WHITRIDGE WILLIAMS, M.D.
Professor of Obstetrics, Johns Hopkins University
BALTIMORE

*Read in abstract before the American Association for Study and Prevention of Infant Mortality, Chicago, Nov. 17. 1911.

Published in J.A.M.A. Volume 58 (1912) pages 1-7

When requested by the Chairman of the Committee on Midwifery of the Association for the Study and Prevention of Infant Mortality to prepare a paper on the midwife problem, I felt that important information on the subject might be elicited by interrogating the teachers of obstetrics throughout the country. Accordingly, I prepared a questionnaire, containing some fifty questions, which is appended, and which was sent to the professors in the 120 medical schools giving a full four-year course. Forty-three professors, representing schools in every section of the country, were good enough to reply.

As some of the queries were decidedly personal in character, I promised not to mention the names of those replying, or the schools with which they are connected; but at the same time I stated that I should feel free to use whatever information might be supplied. It is with great pleasure that I take this opportunity to thank those who replied for their courtesy and frankness, and at the same time to express the hope that their cooperation has not been in vain, as I feel that it will bear fruit by arousing general interest, not only in the midwife problem, but also in the much broader question of medical education, by showing that we have as yet failed to train practitioners competent to meet the emergencies of obstetrical practice.

While the responses were not so general as might be desired, they are nevertheless sufficiently numerous to give a fair idea of the conditions existing throughout the country. Thirty-one replies came from the sixty-one schools which are designated as "acceptable" by the Council on Medical Education of the American Medical Association, as compared with eleven from the fifty-nine non-acceptable schools, not including one from Canada. The forty-three schools replying may be classified as follows:

- Eleven of the twenty-three schools demanding two or more years of college work for admission.
- Four of the twelve schools demanding one year of college work.
- Sixteen of the other twenty-six acceptable schools requiring four years of high-school work.
- Eleven of the fifty-nine non-acceptable schools.
- One of the acceptable Canadian schools.

The one favorable general impression which I obtained from the entire series of replies is that the forty-three professors of obstetrics who made them constitute a body of unusually frank and truthful men; as otherwise they would scarcely admit the existence of such a condition of affairs as their replies seem to indicate. For many years I have regarded the general attitude toward obstetrical teaching as a very dark spot in our system of medical education, and the majority of the replies to my questionnaire indicate that my pessimism was more than justified. Briefly stated, they indicate

(a) that many professors are inadequately prepared for their duties and have but little conception of the obligations of a professorship;
(b) that a considerable proportion are not competent to cope with all obstetrical emergencies;
(c) that nearly all complain that their teaching and hospital equipment is inadequate for the proper training of students; and
(d) most serious of all, that a large proportion admit that the average practitioner, through his lack of preparation for the practice of obstetrics, may do his patients as much harm as the much-maligned midwife.

THE PRESENT STATUS OF OBSTETRICS

In the first part of this report I shall attempt to set forth the condition of affairs as revealed by my questionnaire; while in the second part I shall venture to indicate some of the reforms necessary to place obstetrical teaching on a proper basis, and incidentally touch on certain features of the midwife problem, in an attempt to indicate how the public may obtain better obstetrical treatment. With this in mind, I shall take up separately each question of the questionnaire, and after giving the gist of the replies as objectively as possible, I shall make whatever critical remarks I may consider indicated. It is scarcely necessary for me to state that I have endeavored to reproduce faithfully the statements of my collaborators, for which I am in no way responsible; while my own views, and possibly my prejudices, will appear in the latter part of the report.

QUESTIONS I TO IV

These need not be considered, as they were asked only for purposes of orientation.

QUESTIONS V AND VI

Are you engaged in general practice, or do you limit your work to gynecology and obstetrics, or to obstetrics alone?

Seventeen professors replied that they were in general practice in addition to their college duties: twenty-one that they limited their work to obstetrics and gynecology , and five others solely to obstetrics. Accordingly considerably more than one-third of the professors, including four in the so-called high-standard schools, are not specialists in any sense, and owing to the obligations of a large general practice have not sufficient leisure to become thoroughly versed in all of the problems of obstetrics and must necessarily take their professorial duties lightly. Moreover, five professors, including three in high-standard schools, limit their work exclusively to obstetrics; and as several of them admit that they are not competent to perform major operations, it is apparent that they cannot be ideal teachers.

QUESTION VII

Did you serve as a hospital assistant or intern immediately following graduation?

To this question, fifteen professors, including three in high-standard schools, answered in the negative. Seventeen replied that they had served for less than one year, and eleven for a longer period.

At first glance this appears far from satisfactory, but when it is remembered that many of the professors graduated twenty or more years ago, it is not quite so poor, as at that time the facilities for

serving as an intern in a general hospital were much more limited than at present. Consequently, it merely indicates that many of our professors did not receive rigorous hospital training in their youth. but gained their practical experience almost exclusively from private practice.

QUESTION VIII

Why did you take up obstetrics?

The forty-one answers to this question may be divided into four categories. Eight professors deliberately chose obstetrics as their life work and endeavored to obtain as ideal a training for its pursuit as possible. Thirteen stated that they were always interested in the subject, and nine that they were very much interested before taking it up seriously. On the other hand. eleven stated that chance alone led them to teach this branch of medicine. Several accepted the professorship merely because it was offered to them, but had no special training or liking for it, while others succeeded to it after having taught various other branches with more or less success.

QUESTION IX

What was your preparation for teaching?

Prior to assuming their professorial duties, twenty one, or slightly less than one-half of the entire number of professors. served for varying periods in lying-in hospitals. In eleven instances the service varied from one to five months; in five it extended over six months, while in five others it covered one or more years.

Such a confession appears highly depressing. but on further consideration it must be admitted that it is about what might be expected in this country; as twenty-five of the professors graduated twenty or more years ago when very few lying-in hospitals were in existence, and those poorly equipped and offering but slight opportunity for clinical observation. Such conditions, however, are in marked contrast with those obtaining in Germany and France, where the first requirement for a professorial career is a long period of preparation in a well-equipped lying-in hospital with abundant clinical material. At the same time, it must be noted that the preparation of a considerable number of our professors was augmented by service for varying periods in more or less well-organized out-patient departments.

Even more serious than the lack of rigorous hospital training is the appallingly slight experience which many had before being appointed to professorships. The replies indicate that only nine of the entire number had seen 1,000 or more cases of labor, and twenty-two others considerably less, while eleven obtained their practical experience solely from an indefinite number of cases in private practice. Moreover, it is interesting to note that one professor admits that be had never seen a woman delivered before assuming his professorship, while five state that they had seen less than 100 cases, and thirteen others less than 500 cases.

Think of becoming a professor of obstetrics with an experience of less than 100 cases!

After considering the answers to this question, I think that it is difficult to avoid the conclusion that the majority of our professors entered on their duties with a comparatively poor equipment from a practical point of view, while their attainments in the underlying sciences were usually extremely faulty.

QUESTION X

Have you studied abroad?

The replies show that twenty-four of the forty-four professors have visited Europe, of whom fourteen, or one-third of the entire number, worked for three months or more in some well-organized clinic. This is a satisfactory showing, and indicates that many of professors were not satisfied with their home training which they attempted to supplement by further work in well-equipped European clinics.

QUESTION XI

Is a Lying-in hospital connected with your school?

The answers to this question are in general very depressing, and show that six schools have no connection with a lying-in hospital. Of the other thirty-seven nine have hospital accommodations for less than 100 patients per year, fifteen for more than 100 but less than 250, four for 250 but less than 500: and nine for 500 or more patients per year, including two schools with accommodations for over 1,000 patients. These figures indicate that most schools are very poorly equipped in this regard, as only nine have anything like adequate clinical material for the instruction of their students. Moreover, with a few exceptions, even the best of Lying-in hospitals are vastly inferior, as far as number of patients and equipment for teaching are concerned, to the clinics in the smaller German universities.

Twenty of the thirty-seven lying-in hospitals were owned and controlled by the school with which they were connected. Apparently, a most excellent showing: but closer examination shows that the conditions are not ideal, as seven of the college-controlled hospitals have less than 100 deliveries per year, and only five out of the entire number more than 250.

In order to give an idea of the deplorable dearth of clinical material, I have tabulated the figures from ? of the smaller lying-in hospitals with from twenty-five to 125 deliveries per year, including two connected with high-standard schools. Together they have only ? cases for the instruction of 575 students; and when it is remembered that, owing to the long summer holiday and other causes, practically one-half of the cases are lost for purposes of instruction, it is apparent that a student on an average has an opportunity to see only one woman delivered. which is manifestly inadequate. Moreover the conditions are only slightly better, if the combined facilities of all of the twenty hospitals owned by the medical colleges are considered, as together they present a total of 5,655 deliveries per year for ? students, or only four cases per student.

Naturally, such calculations do not accurately represent the actual facts, as they are based on the supposition that only two students see and examine each woman in labor. Moreover, in certain schools the number of cases available is considerably less than the average while in others it is greater. The actual figures show that in twenty-five schools each student sees three cases or less, in nine schools four to five cases, and in eight others five or more cases; while in some of the smaller hospitals this is possible only by having four to six students examine each patient, thereby subjecting her to unjustifiable risk of infection. Accordingly it would appear that in only eight of the medical schools under consideration do the students have an opportunity to witness anything like a satisfactory number of deliveries under appropriate clinical conditions. On the other hand, ambitious students may see a greater number of cases provided they are willing to work in their own schools during the summer months, or can afford to take a course in one of the large institutions, such as the New York Lying-In Hospital, which are not connected with a medical school.

Turning from the actual number of cases available for clinical instruction to the opportunities afforded for training assistants, who should become the professors of the future, it is difficult to speak too strongly. In the thirty-seven 1ying-in hospitals under consideration, it is apparent that this

function is in great part neglected, as is shown by the fact that the period of service is usually too short to permit of training well-rounded men. Thus, in thirteen institutions the assistants serve for periods varying from one to six months; in four for six months or more but for less than one year; in fifteen for one year; and in only five for a longer period, including two in which the service extends over four years. Consequently, it may be said that proper training can probably be afforded only in the five schools in the latter group, as in my experience assistants at the end of the first year are just beginning to be useful and are able to make a correct diagnosis only in the simpler cases, so that even with a comparatively large material, their experience is relatively so slight that they are not prepared to cope with serious emergencies even when they are recognized.

QUESTION XII

Do you maintain an outdoor obstetrical service?

The following answers were received: Five, none; six, small services without data as to number of patients; sixteen, with less than 250 deliveries; six, with between 250 and 500 deliveries; five, with between 500 and 1.000 deliveries; and five, with 1,000 or more deliveries per year.

At first glance these figures appear much more satisfactory than those for Lying-in hospitals, as they show that ten of the schools have a fair out-patient material. At the same time, I have learned from my own experience that the value of such a department for teaching purposes is dependent on so many factors that the mere number of women cared for gives no idea of its adequacy. In order to be efficient for teaching, an outpatient service must be held in rigid discipline, be organized as an integral part of the regular Obstetric service, and conducted through the Lying-In hospital. Moreover, the students should not be sent to the homes of the patients alone, but should always be accompanied by an assistant to demonstrate the case, as well as by a trained nurse to prepare the patient properly and to render her surroundings as sanitary as possible.

In order to give an approximate idea of the total amount of clinical material available, I have calculated the total number of ward and out-patient cases in the various schools, on the supposition that two students see and examine each indoor, and one student each outdoor patient. The following table shows a progressive decrease in the number of cases in each of the four groups, according as the schools require for entrance two years, or one year of college work, or merely a high school education, or less:

- 10 cases to each student, with extremes of 2 and 21 cases
- 7 cases to each student, with extremes of 3 and 10 cases
- 6 cases to each student, with extremes of 1 and 27 cases
- 3 cases to each student, with extremes of 0 and 12 cases

At the same time, it must be admitted that the average for the first group is considerably too high, which is due to the fact that one of the schools in this category has an immense hospital and outdoor service.

QUESTION XIII

What are your relations with the gynecologic service both in the medical school and the hospital?

Answers obtained from forty-two schools show that in twenty-four there is no cooperation, in five cordial cooperation, while in thirteen the two departments are more or less closely united. In the

last category, the chairs of obstetrics and gynecology are united in eight schools; in two the chairs are separate but are held by the same incumbent; while in three the professor has a joint hospital service, but teaches only obstetrics.

From the standpoint of training students and assistants, such a lack of cooperation is greatly to be deplored, more particularly as it prevents the development of broad-minded professors, who are able to cope with all complications arising from the female generative tract. In hospitals in which there is no cooperation between the two departments, the obstetrician is generally looked down on by the gynecologist and is usually afforded markedly inferior facilities for his work. From my own experience, both in this country and abroad, I am convinced that it is essential that the obstetrician be a competent surgical operator; and, as the number of radical operations in obstetrics is comparatively limited, the most natural method of obtaining the requisite facility is by means of gynecologic surgery. I hold that one may be a fair gynecologist with only an elementary knowledge of obstetrics, but that no one can be a competent obstetrician without being at the same time a trained gynecologist. For these reasons, I consider from the standpoint of teaching that the schools in which the two chairs are fused will possess a considerable advantage.

QUESTION XIV

Are you competent to operate on any complications arising from the female generative tract?

To this thirty-five professors answered "Yes" and eight "no": and these figures I imagine are much more favorable than the actual facts. Several professors frankly admit that they are not prepared to perform Cesarean section.

Consider that such a condition of affairs means that the professor is merely man-midwife who is unable to carry a complicated case of labor to its legitimate conclusion! Or, imagine the effect on a patient, who places herself in the hands of a professor of obstetrics in a respectable medical school when she is told that he can conduct the case satisfactorily if it is ended by the unaided efforts of Nature, or merely requires some slight interference, but in case radical interference is demanded be will be obliged to refer her to a gynecologist or surgeon. Think of the impression such an admission must make on the student, who cannot be blamed for believing that obstetrics is a pursuit unworthy of broadly educated men, but is suitable only for midwives or physicians of mediocre intelligence. This is not the place to go into the details of this question, but I have no hesitation in asserting that a professor of obstetrics who is not prepared to perform a Cesarean section or other radical operation is not competent to undertake the care of a case of labor complicated by pelvic contraction, and is not fitted to teach modem obstetrics.

QUESTION XV

Can you care for a case of ruptured uterus, advanced extra-uterine pregnancy or excision of the pelvic veins, as well as your gynecologic confrere?

To this thirty-two respondents answered "yes." and eleven "no." If one-fourth of the professors, including three in the high-class schools, make such an admission, it is safe to assume that a much larger number should be included in the same category. Moreover, when it is recalled that seventeen professors are engaged in general practice, and that five more limit their attention solely to obstetrics, and accordingly have but little opportunity to perfect themselves in operative technic, it is safe to assume that at least one-half of those replying to the questionnaire are unable to cope satisfactorily with these legitimate obstetrical complications.

QUESTION XVI

Do you consider your hospital and teaching equipment satisfactory?

To this fourteen respondents answered "yes," and twenty-nine unhesitatingly "no." In other words, the professors in two-thirds of the schools frankly admit that the conditions are highly unsatisfactory. If this were all it would be a grave admission; but the actual conditions are worse, and there is no justification for many of the affirmative answers.

I think that I am fairly conversant with the existing conditions, and as far as I know there is only one medical school in the country which is properly equipped for teaching obstetrics and gynecology along the lines of a well-conducted German woman's clinic. And I regret to say that it is not at the Johns Hopkins Hospital, whose lying-in department is very inferior, and far below the standard maintained by the other departments of that institution. At present, plans are being perfected in one of the eastern cities for the construction of an almost ideal woman's clinic, but unfortunately, it will be merely affiliated with, and not controlled by the medical school. Three other fair-sized and well-equipped lying-in hospitals are also affiliated with medical schools, but are equipped only for practical clinical work, and not for investigation.

On the other hand, in my opinion the favorable verdict concerning the equipment of the other nine schools is unjustifiable and the fact that it is designated as satisfactory shows to what a slight extent many professors comprehend the obligations of a teaching position. A few examples will, I think, make this contention clear. One so-called satisfactory clinic has only thirty-five cases a year for the instruction of forty students. In three others the period of service for the assistants is, respectively, one and one-half, three and six months. Another Lying-in hospital has no free beds, and the clinical instruction is given entirely in a large out-patient service. In a sixth "satisfactory" school the professor admits his inability to do a Cesarean section; in still another the director knows so little of his department that he is unable to give the number of beds under his control; and finally the last school in this category stands low in the non-acceptable list, and is notorious for its poor equipment and the frequent failure of its students before state boards throughout the country.

QUESTION XVII

What is necessary to make your equipment satisfactory?

Leaving out of consideration the fourteen "satisfactory" schools just mentioned, the answers reveal an extremely depressing condition of affairs. On this occasion it would lead us too far afield to enter into details, but I imagine that the mere enumeration, under the following headings, of the main needs mentioned will suffice to prove that the conditions are far from ideal:

A. Need everything.
B. Need a lying-in ward.
C. Need a lying-in ward controlled by the school.
D. Need accommodations for more patients.
E. Need more intelligent assistants who serve for longer periods.
F. Need more money for current expense or endowment.
G. Need better-prepared students.

On the other hand, no one mentioned the need of broad-minded, scientifically trained teachers, or of properly equipped laboratories for investigative work.

QUESTION XVIII

Have you ever trained a man who, you felt, was competent on leaving you to become professor of obstetrics in a first class medical school?

Twenty-six respondents answered in the negative while one naively replied "that he had never been called on to do so." On the other hand, seventeen professors answered in the affirmative, and several stated that they had trained a number of men of professorial caliber. As so imposing an output was somewhat of a surprise to me, I analyzed the replies with some interest.

If the figures are correct, it is pertinent to inquire what has become of the young professors! I do not know where they are located; and, as there are ? seventeen first-class medical schools in the country, this discrepancy is explicable only on the supposition that died in early youth, or that the respondents overestimated their attainments. Furthermore, it is interesting to inquire where they received their training and who were their teachers. As has already been indicated there are only five lying-in hospitals which keep their assistants for longer than one year: consequently, as it is hardly possible to train a competent professor in a shorter time, it must follow that most of them must have received their training in these schools, which is unlikely.

Again, it may be asked whether all of the seventeen professors giving positive answers are competent to train such men. This also does not appear probable; although I have been a close student of medical literature for the past twenty years, I do not recall having seen an article, good, bad or indifferent from five of them; and it is highly improbable that totally unproductive men would be able to stimulate young men to become excellent professors. Moreover, in some instances it would have been impossible for them to have obtained their knowledge from the obstetrical clinics of their own school, as less than 100 patients are delivered per year in four of the hospitals concerned, while one has only twenty-five patients. Furthermore, one is connected with a most notorious non-acceptable school, and several more, to my knowledge, are poorly equipped in buildings, clinical material and facilities for investigation. On the other hand, it is a pleasure to admit that a small number of the schools are doing good work in this direction and have turned out several men of really first-rate professorial caliber.

The replies in general are very discouraging as they indicate, in the first place, that it is usually impossible for ambitious young men to obtain in the schools from which they graduate anything like sufficient opportunity to equip themselves for a teaching career; and, in the second place, they force us to conclude that many professors take their duties very lightly, and have but little conception of the obligations connected with a properly conducted professorship. If this is the case, is it not absurd to expect such men to inspire students with a proper conception of obstetrics, or to deserve and maintain the respect of members of their own faculty or of the profession in the neighborhood in which they live?

QUESTION XIX

Do you consider that the ordinary graduate from your school is competent to practice obstetrics?

Eleven teachers, or one-quarter of the entire number, promptly answered "no"; while the remainder replied in the affirmative, although in many instances in a somewhat qualified manner. Thus, one replied: "Well, yes in a way; that is, some of them". It appears to me that the affirmative answers, as a rule, are more positive the poorer the school and the smaller its clinical material. That this is not an exaggeration is shown by the fact that affirmative replies came from several of the

schools without Lighting-in hospitals, as well as from two others with only twenty-five cases per year available for the instruction of fifty students.

At the same time, most of the teachers qualify their affirmative answers by stating that their graduates are competent to conduct normal cases, while several others as fairly efficient men-midwives. Moreover most of them admit that their graduates are not competent to conduct operative labors, while several state that they deteriorate rapidly in technic after leaving the medical school.

After eighteen years' experience in teaching what is probably the best body of medical students ever collected in this country ---the student body at Johns Hopkins Medical School for the year 1911-1912 being made up of graduates from one-hundred and twenty-eight colleges and universities in this country and Europe—I could unhesitatingly state that my own students are unfit on graduation to practice obstetrics in its broad sense, and are scarcely prepared to handle normal cases.

QUESTION XX

What proportion of labor cases in your city are attended by midwives?

The replies indicate great variations in different localities. Midwives are almost unknown in Montreal, and I am informed that only twenty-five practice in Boston. On the other hand, in most of our large cities including New York, Chicago, St. Louis and Atlanta, they conduct from 40 to 60 per cent. of all labor cases.

In regard to their licensure, eight teachers pleaded ignorance of conditions, while twenty-five stated that they were licensed and ten that they were not.

Concerning their necessity, there was still a wider divergence of opinion. Twelve professors replied that they did not possess sufficient data to justify an expression of opinion; while of the thirty-one giving positive answers, fifteen stated that they were necessary and sixteen not.

After analysis of the replies to this question, it is apparent that midwives attend many cases in most of our large cities, but that their employment is dependent on local conditions rather than general necessity; as is shown by the replies from Boston and Montreal. In most localities some attempt is made to control them in a feeble way, but nowhere effectively while the teachers of obstetrics throughout the country are about equally divided as to their necessity.

QUESTION XXI

Do you believe that more women die from puerperal infection in the practice of midwives or of general practitioners?

This question, as well as the one immediately following, cannot be answered with accuracy; consequently the replies must be taken as the general impression of the respondents, rather than as precise statements based on exact statistics. In order to draw perfectly correct conclusions, many factors would have to be considered, concerning which accurate information is not at present available.

Consequently, as the replies represent merely the general impression of the various respondents, they are subject to many fallacies and are thereby greatly reduced in value. Nevertheless they are of great interest and are as follows: Eight teachers replied that they did not possess sufficient data on which to base an opinion; while of the thirty-five who answered, fifteen stated physicians, thirteen midwives and five that the death-rate is almost equal.

Accordingly, it appears that somewhat more than one half of the teachers replying consider that general practitioners lose proportionately as many women from puerperal infection as do

midwives. Even if based on somewhat faulty premises, such a conclusion is appalling, and is a railing indictment of the average practitioner and of our methods of instruction in obstetrics, more particularly as one of the main arguments urged against the midwife is the prevalence of infection in her practice.

QUESTION XXII

Do as many women die as the result of ignorance, or of ill-judged and improperly performed operations, in the hands of general practitioners, as from puerperal infection in the hands of midwives?

The same objection applies to this as to the former question, and consequently the answers must be regarded merely as the general impression of the respondents, some of whom are necessarily biased in their opinions. Eight teachers state that they are not prepared to answer the question; while of the thirty-five who do so, twenty-six answer against the general practitioner, six against the midwife and three hold that the two are equally bad. Moreover, many direct attention to the unnecessary death of large numbers of children, as the result of unnecessary or improper operating, and from the failure to recognize the existence of contracted pelvis.

If it appears necessary to reform anything, here is the opportunity. Why bother about the relatively innocuous midwife, when the ignorant doctor causes quite as many absolutely unnecessary deaths? From the nature of things, it is impossible to do away with the physician, but be may be educated in time; while the midwife can eventually be abolished, if necessary. Consequently we should direct our efforts to reforming the existing practitioner, and to changing our methods of training students so as to make the physician of the future reasonably competent.

QUESTION XXIII

How do you consider that the midwife problem can best be solved?

Thirty-four answers to this question gave the following result: Eighteen advocated the regulation and education, and fourteen the abolition of midwives, while one advocated that the question be left *in statu quo*, and another held that the only solution lay in better-trained doctors.

On analyzing the replies several interesting facts were elicited. Thus, a thoroughly competent professor in one of the large western cities, in which more than one-half of all labors are conducted by midwives, states that. although the smaller portion of the obstetrical work in his city is in the hands of physicians, his experience forces him to conclude that the latter nevertheless lose from infection many more women than do the midwives.

Again, one of the respondents from New York City states that owing to the extension of lying-in charities, midwives now attend many less women than formerly, notwithstanding the rapid increase in the population of the city. A similar statement comes from Cincinnati, where, without stringent regulation, the number of women attended by midwives has decreased from 70 per cent in 1880 to 30 per cent in 1909, thus tending to indicate that prolonged residence in this country gradually overcomes the prejudices of our foreign-born population against the employment of physicians.

Those who advocate regulation and education vary greatly in their ideas, some advocating mere general regulation, while others demand extensive education in properly equipped hospitals, as in Germany and Italy, with constant supervision by the board of health, which should have power to revoke licenses whenever necessary.

Equally divergent arguments are advanced by those favoring the abolition of midwives. One, group regards as hopeless any attempt to train them efficiently, while another holds that they may be entirely done away with by educating the laity, by extending lying-in charities, and by supplying better doctors and cheaper nurses: while my own views will be expressed in the second part of the paper.

QUESTION XXIV

Can you suggest any practicable method of improving the general standard of practical obstetrics outside of hospitals?

The mere fact that all but two of those answering my questionnaire make definite suggestions in this regard offers further proof of the deplorable condition of obstetrical education and practice, and indicates the urgent need for reform.
It would lead too far to consider all of the suggestions in detail, and I shall content myself by enumerating the main ones, which are so arranged as to indicate the order of frequency in which they were made:

1. Better teaching and more abundant lying-in hospital accommodations.
2. Instruction of the profession and laity that obstetrics is surgery, and that its major operations are as serious as laparotomies.
3. Education of the laity concerning existing conditions and insistence that the proper place for major obstetrics is a well-conducted hospital.
4. Regulation of obstetric practice by the state boards of health, which should grant a provisional license to practitioners, revocable on demonstration of incompetency or neglect.
5. Better education of practitioners. A number of respondents do not believe that the present generation can be materially improved.
6. Teaching both doctors and the laity that the ordinary practitioner should attend only normal cases, and should refer the abnormal ones to specially trained men connected with well-equipped hospitals.
7. Better pay for practitioners doing general obstetric work, as it is held that it is useless to expect expert care for compensation which is generally regarded as adequate.
8. The collection and general dissemination of accurate statistics concerning the mortality of childbirth, as well as the injuries and illness which result from improper care.
9. Elevation of the importance of obstetrics in the eyes of practitioners, medical students and the laity.
10. Marked extension of obstetric charities and well organized Lying-in hospitals.
11. Greater development of visiting nurses for those of moderate means, and the education of trained helpers to carry out their directions.
12. Differentiation of students into classes, one of which should be educated as men-midwives, and the other as broadly trained obstetricians.

I am convinced that no fair-minded person who is interested in the welfare of the women and children of our country, or in the problems of medical education, can read the foregoing analysis without feelings of profound depression, or without admitting that we are facing a condition urgently in need of reform.

The replies clearly demonstrate that most of the medical schools included in this report are inadequately equipped for their work, and are each year turning loose on the community hundreds of young men whom they have failed to prepare properly for the practice of obstetrics, and whose lack of training is responsible for unnecessary deaths of many women and infants, not to speak of a much

larger number, more or less permanently injured by improper treatment, or lack of treatment. Moreover, the spontaneous admission by most of the respondents that poor training of medical men is responsible for many unnecessary deaths in childbirth forces us to acknowledge that improvement in the status of the midwife alone will not materially aid in solving the problem.

A priori, the replies seem to indicate that women in labor are as safe in the hands of admittedly ignorant midwives as in those of poorly-educated medical men! Such a conclusion. However, is contrary to reason, as it would postulate the restriction of obstetrical practice to the former and the abolition of medical practitioners, which would be a manifest absurdity.

The fault lies primarily in poor medical schools, in the low ideals maintained by inadequately trained professors, and in the ignorance of the long-suffering general public.

SUGGESTED REMEDIES

What is the remedy for these conditions? I shall enumerate some of them, but their mere number indicates how serious the problem is, and how impossible it will be to consider them all adequately at the present time.

Some of the necessary reforms are:

A. Better and properly equipped medical schools.
B. Higher requirements for the admission of students.
C. Scientifically trained professors of obstetrics with high ideals.
D. General elevation of the standards of obstetrics.
E. Education of medical practitioners.
F. Insistence by state examining boards on better training before admitting applicants to practice.
G. Education of the general public.
H. Development of lying-in charities.
I. Cheaper nurses.
J. Possibly the training of midwives.

SUMMARY AND CONCLUSIONS

A questionnaire containing some fifty questions concerning obstetric education and the midwife problem was sent to the professors of obstetrics throughout the country. Forty-three replies were received, representing one-half of the acceptable and one-fifth of the non-acceptable medical schools, which indicate a most deplorable condition of affairs, briefly as follows:

A. Generally speaking the medical schools are inadequately equipped for teaching obstetrics properly only one having an ideal clinic.
B. Many of the professors are poorly prepared for their duties and have little conception of the obligations of a professorship. Some admit that they are not competent to perform the major obstetric operations, and consequently can be expected to do little more than train men-midwives.
C. Many of them admit that their students are not prepared to practice obstetrics on graduation, nor do learn to do so later.
D. One-half of the answers state that ordinary practitioners lose proportionately as many women from puerperal infection as do midwives, and over three-quarters more deaths occur each year from operations poorly performed by practitioners than from infection in the hands of midwives.
E. Reform is urgently needed, and can be accomplished more speedily by radical improvement in medical education than by attempting the almost impossible task of improving midwives.

In my opinion the following reforms are most important:

A. Reduction in the number of medical schools, with adequate facilities for those surviving, and higher requirements for admission of students.
B. Insistence in university medical schools that the head of the department be a real professor, whose prime object is the care of hospital patients, the proper training of assistants and students, and the advancement of knowledge, rather than to be a prosperous practitioner.
C. Recognition by medical faculties and hospitals that obstetrics is one of the fundamental branches of medicine, and that the obstetrician should not be merely a man-midwife, but a scientifically trained man with a broad grasp of' the subject.
D. Education of the general Practitioner to realize that he is competent only to conduct normal cases of
E. Labor, and that major obstetrics is major surgery, and should be undertaken only by specially trained men in control of abundant hospital facilities.
F. The requirement by state examining boards that every applicant for license to practice shall submit a statement certifying that be has seen delivered and has personally examined, under appropriate clinical conditions, at least ten women.
G. Education of the laity that poorly trained doctors are dangerous, that most of the ills of women result from poor obstetrics, and that poor women in fairly well conducted free hospitals usually receive better care than well-to-do women in their own homes; that the remedy lies in their hands and that competent obstetricians will be forthcoming as soon as they are demanded.
H. Extension of obstetric charities--free hospitals and out-patient services for the poor, and proper semi-charity hospital accommodations for those in moderate circumstances.
I. Greater development of visiting obstetric nurses and of helpers trained to work under them.
J. Gradual abolition of midwives in large cities and their replacement by obstetric charities. If midwives are to be educated, it should be done in a broad sense, and not in a makeshift way. Even then disappointment will probably follow.

1128 Cathedral Street.

1912 – Cesarean Section – Peterson – Ann Arbor, MI

THE PRESENT STATUS OF ABDOMINAL CESAREAN SECTION
WHEN, AND HOW SHOULD THE OPERATION BE PERFORMED

By REUBEN PETERSON, M. D., ANN ARBOR, MICHIGAN
Professor of Obstetrics and Gynecology, University of Michigan

Reprint from: SURGERY, GYNECOLOGY AND OBSTETRICS; July, 1912 Pages 32-39

Read before the Allegheny County Medical Society, Pittsburgh, Pennsylvania, November 2 1, 1911.

Perhaps no abdominal operation has profited more by the great advances in technique following the discovery of the principles of antisepsis and asepsis than has the operation of Cesarean section. From an operation almost always fatal and performed only as, a last resort, its mortality has been gradually lowered until at the present time in favorable cases it is not more than two or three per cent, a mortality which one expects with non-septic gynecologic cases. With the operation thus shorn of its terrors, it is no wonder that it is being more and more resorted to, where, for one reason or another, the passage of the child through the birth canal is attended by difficulties. But this very case of performance with its accompanying good results, like almost every abdominal operation, has led to the abuse of the operation, not merely in the number of unnecessary operations performed but in the kind of cases subjected to Cesarean section. Some of us can remember the titles of papers appearing in the medical journals twenty odd years ago during the evolutionary period of pelvic and abdominal surgery. They stated, the number of laparotomies performed, as if the mere figures carried with them some superiority on the part of the reporter. We know now that many of our abdominal operations of those days, performed in perfect honesty and in good faith, were entirely unnecessary. After the excitement had passed away- and the good had been separated from the bad through a more careful study of pelvic and abdominal pathology and the end results of the operations, the surgeon began to strike his true pace. He studied his patient more carefully, brought to his aid every means of diagnosis with the idea of avoiding unnecessary operations which his experience had proved to be not only useless but attended by a certain mortality. It seems to me as- if the operation of abdominal Caesarean section were passing through a similar period of evolution. That in a certain kind of cases the uterus can be opened through an incision in the abdominal wall with great case and with hardly any mortality, has been accepted as a demonstrated fact. Now the question is being asked, how many times was the abdominal operation unnecessary or avoidable? Under what conditions would it be best to adopt some other mode of procedure? In what class of cases is abdominal Cesarean section distinctly contra-indicated? These and similar questions are being discussed by the more earnest and thoughtful of the present-day obstetricians. And out of this discussion will finally come the knowledge of the true place of the operation in obstetric surgery. It is with a view of eliciting a full discussion of this most important operation that I have ventured to select it as the title of this evening's paper.

It is evident that in the time at my disposal it will be impossible to discuss all phases of abdominal Caesarean section, so I have selected the following subdivisions of the subject which I shall in turn submit in outline for your consideration.

1. In the contracted pelvis is Cesarean section, or induction of labor, most advantageous for mother and child?

2. Under what conditions, is craniotomy on the living child indicated in preference to Cesarean section?

3. In what cases of contracted pelvis is pubiotomy preferable to Caesarean section?

4. Under what septic conditions is Cesarean section indicated and when under similar conditions is the operation unjustifiable?

5. The types of the operation to be selected in different cases. Is the latest modification, extraperitoneal section, destined to be permanent or will the mortality and morbidity of the operation lead to its abandonment?

The technique:

1. IN CONTRACTED PELVIS IS CESAREAN SECTION OR INDUCTION OF LABOR MOST ADVANTAGEOUS FOR MOTHER AND CHILD?

The advantages of the induction of labor lie in the absence of maternal mortality if the most approved methods of inducing labor are employed. On the other hand, there is a considerable fetal mortality connected with the procedure which probably no improvements in diagnosis or technique will ever materially lessen. The living fetus should always be a part of the obstetric problem, and a considerable part at that. Its interests should be guarded in every way possible, provided the life of the mother is not too greatly jeopardized thereby. Whatever may be the theoretical considerations of the question of the relative value of the maternal and fetal lives, in actual practice it resolves itself into giving preference to the mother's safety. And this is right, for with the mother saved and the fetus dead, there is a great probability of future more fortunate conceptions. Whereas, with the mother dead and the fetus surviving it is extremely problematical whether the latter will survive and reach maturity. Hence every way the question may be looked at, the mother should be given the preference when it becomes a choice between the two lives. The obstetrician's function is to so improve his art that the maternal and fetal mortalities will be equally lowered by certain procedures. For instance, if, as in the induction of labor, the maternal mortality is practically nil, while the fetal mortality is high, the obstetrical aim should be either to reduce the fetal mortality or resort to another expedient which will not be too dangerous for the mother but will be better for the child.

It is obvious that it is unnecessary to consider the relative advantages of induction of labor and Cesarean section in cases of major pelvic deformity, that is, where the conjugate vera is below 7 or 7.5 cm. Here the size of the fetal head is so large in comparison with the diameter of the pelvis at the time when labor must be induced, the thirty-sixth week, as to make spontaneous delivery after the induction of labor impossible. Even where the conjugate vera is approximately 7.5 cm. spontaneous delivery after the induction of labor is rarely possible and artificial delivery of the premature child carries with it a high fetal mortality while the maternal mortality can not be ignored.

In minor degrees of pelvic deformity where the conjugate vera is more than 9.5 cm. there is no need of considering either Cesarean section or induction of labor, since such patients, whether primiparae or multiparae, should be allowed to go to term with the expectation that spontaneous

delivery will take place or that in a small minority of the cases delivery will have to be aided by the forceps. There is only one exception to be made in this class of cases, namely, where there is a succession of labors each one more difficult than the last, due to progressive increase in the size of the children. Here the size of the fetal head, added to the knowledge of what has gone before, may result in the classification of the particular case among those of medium pelvic contraction, the only variety of pelvic deformity where one has to choose between Cesarean section and induction of labor.

In cases of medium pelvic contraction the conjugate vera measures any where from 7.5 to 9.5 cm. It is above the limit where Cesarean section is imperatively called for; it is below the limit where the patient can be allowed to go to full term with every expectation that spontaneous delivery will result.

On paper what has just been stated looks plausible enough and very likely will be agreed to. But there is another aspect to the question. In the first place, we cannot always be sure as to the exact measurement of the conjugate vera. We can only approximate its length, for mistakes are very likely to occur even with the most careful measurements. Furthermore, leaving out of consideration the impossibility of' estimating in advance the propulsive strength of the uterine pains, it is far from an easy task to estimate the size of the fetal head at a given period of pregnancy. While Miller's method and Kerr's modification of the same will throw some light upon the problem, errors of estimation are only too likely to occur. So true is this that even in the cases of pelvic contraction under consideration, the medium variety, one would hesitate to advise either Cesarean section or induction of labor in primiparae who have not been subjected to the test of labor. This very hesitation shows the uncertainty of the problem, for if either operation were performed upon pelvic measurements alone, undoubtedly many primiparae would be unnecessarily subjected to operation, who otherwise would have been delivered spontaneously.

In order to stand the best chance for life, because it is smaller and better able to pass through the pelvic passages, the fetus should not be delivered until the thirty-sixth week of pregnancy. Before this time, while smaller, it is too premature; after this period there is apt to be a disproportion between the fetal head and the pelvis. Yet the estimation of the duration of pregnancy is always open to considerable error, else the prediction of the expected date of confinement would be a far easier procedure than it is. Again, it is not always an easy matter to rear the premature infant, a fact which accounts to a certain extent for the high fetal mortality accompanying induced labor.

As between Cesarean section and induction of labor, the wishes of the parents should be given due consideration in the choice between the two operations. In a case of medium pelvic deformity with a conjugate vera of 7.5 to 9.5 cm., with previous, labors resulting in a dead baby at term, the parents have a right to demand that a Caesarean section be performed at term in the interests of the child. On the other hand, they have the equal right to demand that the mother be given the best chance and the fetus a fair chance through the induction of labor at or about the thirty-sixth week.

Personally, while I would not go so far as Bar, Tweedie, Williams, Pinard and other obstetricians in placing the induction of premature labor among the unjustifiable operations, I do believe that in the interest of the child the procedure will be more and more abandoned in favor of elective Cesarean section and pubiotomy.

2. UNDER WHAT CONDITIONS IS CRANIOTOMY ON THE LIVING CHILD INDICATED IN PREFERENCE TO CESAREAN SECTION?

It is always dangerous in any department of our profession to be too dogmatic, For instance, unthinking adherence to the aphorism that craniotomy on the living child is never justifiable will lead to the sacrifice of many valuable maternal lives. On the other hand, if the purpose of the above dogmatic statement is simply to call attention to the rights of the fetus no particular harm will be done. From what has been said in the previous section, the necessity of safeguarding the rights of the fetus is apparent. How ever if it becomes a question between the maternal and fetal lives, the mother must be given the preference.

The conditions under which craniotomy on the living child is to be preferred to Cesarean section may be enumerated as follows:

1. When the mother is septic.

2. When the fetus is feeble and not likely to live under any conditions.

3. When the fetus is a monster or so badly deformed as to render its future existence problematical or undesirable.

4. When from the necessities of the case either craniotomy or Cesarean section must be performed by unskilled hands.

5. When the mother is septic.

It is not an uncommon experience for the specialist to be asked to perform a Cesarean section on a woman exhausted by a long labor, and, undoubtedly septic from many vaginal examinations and futile attempts at forceps delivery. Cesarean section under such conditions, where the woman is septic, carries with it an extremely high mortality, probably from 25 to 35 per cent. Leaving out of consideration the strength of the fetus for many under such conditions are feeble and doomed to die any way, craniotomy is the operation of choice whether the child be living or dead. Emptied from below, the birth canal can be antiseptically treated with minimum risks to the septic patient. Emptied from above with certain contamination of the peritoneum, the mortality must always be high despite every attempt to improve the operative technique with a view of preventing sepsis.

The means to be employed to determine what cases are so septic as to call for craniotomy on the living child in preference to Cesarean section will be considered under another division of, our subject.

2. When the fetus is feeble and not likely to live under any conditions.

It is obviously an ill-advised procedure to expose the mother to great risks for the sake of a fetus which is so feeble as to render its future existence improbable. Not infrequently the advisability of Cesarean section is gravely debated when the life of the fetus has been greatly imperiled by repeated attempts at forceps extraction. Unsuccessful endeavors to drag the floating head through the contracted inlet almost invariably jeopardize the life of the fetus Impacted head is a contra-indication for Cesarean section, whether the fetus be alive or dead, except when the conjugate vera is less than five centimeters, making it an impossibility to extract the craniotomized child from below. In this

case in spite of impaction and possible sepsis the suprapubic operation, preferably hysterectomy should be made.

3 When the fetus is a monster or so badly deformed as to make its future existence problematical or undesirable.

Very few would argue against the advisability of performing craniotomy upon a monster or a badly deformed fetus rather than to expose the mother to the risks of a Cesarean section. The great difficulty is in making a diagnosis of the condition. Not long ago I performed an elective Cesarean section upon a woman with a contracted pelvis, and had the rather unpleasant experience of delivering through the incised uterus a hydrocephalic child with a marked spina bifida. The child died a week or two later from an increase of the hydrocephalus. As far as I know, there was absolutely no way of suspecting such a condition existed in utero. On the other hand, where labor has proceeded, the cervix is dilated and the condition of deformity or monster diagnosticated, craniotomy would be the operation of choice if the size of the fetus has to be diminished in order for delivery to take place through the natural passages.

4- When from the necessities of the case either craniotomy or Cesarean section must be performed by unskilled hands.

The maternal mortality will be high where either operation is performed by unskilled hands. However, the mortality will be infinitely higher if Cesarean section be attempted. A certain number of babies might be saved but only at the expense of a considerable proportion of the mothers. The. reason for this is apparent. Work from below is never so dangerous to the mother because the peritoneal cavity is uninvaded. Tears of the uterus and vagina would undoubtedly occur during craniotomy but they are usually taken care of when the woman's vitality is good. That this is true is proved by the comparatively low maternal mortality of forceps operations where the instruments are applied with no adequate idea of the principles underlying such application and the fetus pulled from the birth canal by brute force. It has been proved time and time again that women will stand much when the operation is subpubic; very little, when it is suprapubic. Hence, craniotomy on the dead or living child is to be preferred when a skilled consultant cannot be obtained and the woman must be delivered if her life is to be saved.

3. IN WHAT CASES OF CONTRACTED PELVIS IS PUBIOTOMY PREFERABLE TO CESAREAN SECTION?

Pubiotomy does not come into competition with Caesarean section in cases of major pelvic deformity where the conjugate Vera is 7 or 7.5 cm. or less. Pubiotomy performed under such conditions calls for so much separation of the cut edges of the pubic bone as to seriously endanger the integrity of the sacroiliac joints. Here Cesarean section is the operation of election, and, performed before or at the beginning of labor, should not give a mortality above two per cent.
It is in cases of medium pelvic deformity with conjugate vera from 7.5 to 9.5 cm. that Caesarean section and pubiotomy come into competition with each other. In such cases we are not in a position at the present time to say that such and such a primipara will be unable to give birth to her child. This can only be determined by a test of labor. It is surprising what the uterine contractions will accomplish in some of the cases where spontaneous labor has been judged to be almost impossible. Hence in the class of cases under consideration it is not justifiable to perform elective Cesarean section. If a three or four hours' second stage shows that spontaneous delivery is not going to take place, and easy, traction with the forceps fails to accomplish anything, it is best to perform

pubiotomy in place of Caesarean section, since the results of the former are better at this stage of labor than are those of Caesarean section. A little aid is all that is needed to accomplish delivery, and that is afforded by the added pelvic space given by the pubiotomy. Repeated vaginal examinations or attempts at forceps delivery, in other words, where the patient is decidedly septic, are sufficient to contra-indicate either operation; for both pubiotomy and Cesarean section are attended by a high mortality when performed upon septic patients. Here craniotomy upon the dead or living child is plainly indicated.

In multiparae where we have both the pelvic measurements and the history of previous confinements to go by, one must decide between Caesarean section and pubiotomy if the patient is seen before the advent of labor. Where this labor has been very difficult in cases of medium deformity with resulting dead fetus, probably the choice will be an elective Caesarean section. In other cases it will be thought best to give a test of labor, with a pubiotomy at its completion if that be found necessary.

Personally, when in doubt I am in favor of the Cesarean section just prior to, or at the beginning of, labor; for the operation performed at such a time under suitable surroundings with proper equipment and able assistants will give a better mortality for both mother and child.

4. UNDER WHAT SEPTIC CONDITIONS IS CESAREAN SECTION INDICATED AND WHEN UNDER SIMILAR CONDITIONS IS THE OPERATION UNJUSTIFIABLE?

It has long been recognized that the results of Cesarean section vary greatly according to the time at which the operation is performed in reference to labor. Reynolds analyzed 289 Cesarean section cases and found the mortality was 1.2, 3.8 or 12 per cent respectively, according as the operation was performed during the last days of pregnancy early or late in labor. This can mean but one thing. The results vary according to the absence or presence, of sepsis in the patients. Similar observations have been made by others, but perhaps the most striking array of figures on this point has recently been published by Routh of London. He collected 1,282 cases of Cesarean section performed by over one hundred obstetricians and gynecologists of the United Kingdom.

He found that where attempts had been made to deliver by forceps or where repeated examinations had been made, the mortality was 34.3 per cent. When the patient was in labor and the membranes ruptured but no attempt had been made to deliver, the mortality was 10.8 per cent. When the patient was in labor with the membranes unruptured the mortality was 2.2 per cent, and, finally, when the patient was not in labor the mortality was 3.6 per cent. Combining cases not in labor with those at the beginning of labor with membranes intact, there was a mortality of 2.9 per cent, whereas in the cases where the membranes were ruptured or here frequent examinations or attempts at delivery had been made the mortality was 17.3 per cent.

These figures show that frequent examinations and attempts at delivery mean almost, sure infection of the patient, while rupture of the membranes prior to the Cesarean section means a probability of infection. In other words, two classes of cases must be distinguished. All of us have made these divisions of our cases but not with such scientific accuracy as Routh has done with his larger series of cases. If a patient be brought to the hospital with, swollen and lacerated vulva, a rapid pulse and possibly a temperature, with a history of repeated examinations and attempts at delivery with high forceps, we do not hesitate to perforate whether the child is living or dead. But we have failed to recognize the danger of rupture, while severe sepsis occurred twenty times as often. Thus it would seem as if clinically it could be shown that premature rupture of the membranes predisposes toward sepsis.

This series of clinical investigations will be followed up by a series of microscopic and bacteriologic examinations of the amniotic fluid Caesarean section in less pronounced cases where

we supposed the operation perfectly justifiable. I consider that Routh has made a distinct contribution to obstetric science in thus emphasizing the danger of Cesarean section in what he characterizes as " suspect" cases. The difficulty lies in determining just which cases are infected, or if infected which ones are probably too badly infected or infected with too virulent organisms to warrant a Cesarean section. Where the membranes are ruptured Routh thinks a very good idea of the presence or absence of infection can be obtained through the microscopic examination of the amniotic fluid by means of films. Roughly through this means it can be almost immediately told whether the fluid is sterile or infected, and upon the result of such findings will depend the kind of treatment to be adopted.

I have been very much interested in this suggestion, because for some time I have been convinced that premature rupture of the membranes, that is, rupture occurring before the advent of labor or early in the first stage of labor, is a distinct menace to the patient because of the danger of infection. With this in mind, I asked my assistant, Dr. George Kamperman, to investigate the records of a series of cases in the maternity ward with reference to the frequency of sepsis in premature rupture of the membranes. In a series of three hundred cases he found that mild sepsis occurred eight times as frequently after premature as after normal following premature rupture of the membranes, so that the results of these observations may be compared with the clinical findings.

While without doubt it is desirable to determine by every scientific means possible, cases suitable for Cesarean section and those where it is contra-indicated, we must be very careful about placing too great dependence upon ultra-refined methods of diagnosis. Microscopic and bacteriologic diagnostic means are excellent and indispensable, but they are not the entire equation, by any means. I think every surgeon nowadays reserves the right to operate in certain cases or refrain from so doing where his judgment is based upon his clinical knowledge and experience. And by so doing he is not unmindful of the great debt he owes bacteriologic and pathologic examinations in his everyday work.

If Humpstone had been guided solely by bacteriologic findings he probably would not have been able to report twenty-five Cesarean sections without maternal or fetal mortality, where there were only six elective Cesarean sections, the remaining patients having been in labor at the time of the section anywhere from two to fifty hours. This probably is an unusual experience, but it clearly shows that good results can be obtained in a series of cases where from their nature some of the patients must have been somewhat infected at the time of operation.

Routh seems to think favorably of Maxwell's suggestion in doubtful cases of infection where the membranes are ruptured before performing Cesarean section, of irrigating the amniotic cavity and incidentally the fetus with normal saline solution. Personally, such a method does not appear to me. It would seem impossible to materially improve conditions by such a method in an infected sac, considering the irregularities of the cavity to be irrigated. It would even seem as if the chances of carrying the bacteria upward would be greater than the probabilities of washing them away from above downward.

After all, the main facts for the obstetric surgeon to keep in mind are that Cesarean section is a comparatively safe operation in clean cases. A case is considered clean before the advent of or just at the beginning of labor, provided nothing has been introduced into the genital tract from below. That the longer the patient has been in labor, and especially the longer the interval since rupture of the membranes, the more probability is there of sepsis and the greater the danger from Cesarean section. That many vaginal examinations, especially without proper precautions, and many attempts at delivery from below almost invariably mean serious sepsis and contra-indicate Caesarean section, at least the classical variety.

5. THE TYPES OF OPERATION TO BE SELECTED IN DIFFERENT CASES. IS THE LATEST MODIFICATION, EXTRAPERITONEAL CESAREAN SECTION, DESTINED TO BE

PERMANENT, OR WILL THE MORTALITY AND MORBIDITY OF THE OPERATION LEAD TO ITS ABANDONMENT? TECHNIQUE.

In a general way, it may be stated that in clean cases classical Cesarean section, the Sänger operation and its modifications should be employed. In septic cases where it is thought wise to do a Cesarean section, the choice of operation will lie between, supravaginal hysterectomy (Porro operation), panhysterectomy and the various forms of the extra-peritoneal procedure. As has been pointed out, the classical operation is dangerous in the presence of sepsis. It is dangerous in two ways; first, it carries with it the great danger of peritoneal soiling following incision of the uterus; second, it leaves behind a septic uterus which not only is very likely to give rise to puerperal infection, common to such a uterus where uterine incision has not been made, but there is the added danger of possible infection of the uterine incision with subsequent escape of septic material into the general peritoneal cavity and ensuing peritonitis.

The ablation of the uterus after the delivery of the fetus removes a septic organ and the principal source of subsequent infection, and the results of the Porro operation have been much better in septic cases than those following the classical operation. Still, the removal of an organ is in one sense a confession of defeat. There is a natural aversion to the removal of the uterus and the sudden ushering in of the menopause with all its accompanying distressing symptoms. To avoid this removal, the Germans have revived an operation proposed by Jorg in 1806 whereby the uterus can be entered beneath its peritoneal covering, or as near an approach to this as possible. It may be observed in passing that this operation is nothing new in this country, since Thomas, Skene and others performed it here during the seventies under the name of gastro-elytrotomy as a substitute for the classical Cesarean section with its, at that time, extremely high mortality.

There are a number of ways of performing this extra-peritoneal operation, methods associated with the names of Frank, Sellheim, Doederlein and Latzko. But whether the attempt be made to open the lower uterine segment through an incision parallel to Poupart's ligament, or transperitoneally with a temporary stitching of the visceral to the parietal peritoneum, the real object is to incise the lower part of the uterus beneath the peritoneum so as to avoid peritoneal infection. Necessarily, the operation comes into competition with supravaginal or panhysterectomy after removal of the fetus, since all are used in septic cases. It is yet to be determined which is the better procedure. Personally, I have my doubts, as have most American operators, about the advisability of a procedure such as extra-peritoneal Caesarean section, which from the nature and location of the incision must expose large areas of cellular tissue to infection. In non-puerperal work, it is what we seek to avoid, for experience has shown that where such large areas become infected, if the patient escapes with her life, dangerous sequelae, such as thrombophlebitis, are apt to follow. Better primary results and less morbidity have followed removal of the septic uterus and appendages, thus giving an opportunity to institute thorough dependent drainage.

But while extra-peritoneal Cesarean section does not appeal to me, from a surgical standpoint, I am willing to be convinced, and shall follow the results of the procedure in the hands of others with much interest.

Sellheim's modification of cervical Cesarean section in septic cases by the formation of a utero-abdominal fistula at the lower part of the abdominal wound seems to be a more surgical procedure, since it shuts off the peritoneum and provides for drainage.

In certain cases where the sepsis is not very pronounced, Kerr's plan may prove of advantage. After carefully protecting the peritoneum from contamination he incises the uterus and. extracts the child. Then the placenta and membranes are separated from the uterus and pushed down through the cervix, from which they are removed by an assistant.

All the above-mentioned methods must necessarily be attended by a high mortality and great morbidity. In septic cases we must select the method which will give the best results for the mother,

as the results for the child are about the same, no matter which operation is elected. It may be that each of the above methods will be abandoned, at least in the badly septic cases, in favor of craniotomy, a much more rational operation, as far as the mother is concerned.

In conclusion, a few words on the technique of the classical Cesarean section. The simplest technique is the most desirable. I prefer a six-inch incision, three inches above, three inches below and to the left of the umbilicus. Except where one has reason to think the amniotic cavity is infected, I prefer to incise the uterus before delivering it outside the abdominal cavity. No gauze packs are used but the uterus is pressed against the abdominal incision by the assistant. A longitudinal incision in the uterine wall is made with the knife, no scissors being used. The placenta, if it be situated anteriorly, is cut through or pushed aside. The child is grasped by the feet and delivered, the assistant following this movement by the delivery of the uterus through the abdominal incision. The removal of the placenta is followed by the careful removal of the membranes which sometimes are adherent to the wall. Only when there is excessive oozing does the assistant bother to grasp the broad ligaments. In the great majority of cases the uterus itself is the best hemostat. The myometrium is brought together with continuous No. 2 twenty-day catgut. Two sutures are employed, sometimes three. The peritoneal surface is brought together with a continuous silk Lembert suture. The abdominal wound is closed in the usual manner by tier and retention sutures. No gauze is used in the cervix for drainage either in primiparæ or multiparæ, no matter whether the operation is performed during pregnancy or after the advent of labor.

The after-treatment is the same as for any other laparotomy, or, for that matter, after the first few days, any other puerperal patient.

THE PRESENT STATUS OF CESAREAN SECTION. *

By EDWARD P. DAVIS, M.D., PHILADELPHIA, PA.

*Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

Published in NYSMJ Volume 13 (1913) p. 358-361

The rapid development of obstetric surgery has carried Cesarean section through its first phase of technical achievement, and has placed at the disposal of operators a number of successful methods. In common with other developments in surgery these methods are designed to overcome the inherent dangers of the operation. With other operations in obstetrics and gynecology, in some cases the operator has the choice of the abdominal or vaginal route.

Vaginal Cesarean section is obviously unsuitable for cases where disproportion between mother and child, from pelvic contraction or fetal overgrowth, is present. It is especially well adapted to overcome the resistance of the cervix in the most rapid and accurate manner possible, and its greatest success is obtained in cases where the fetus is premature or ill-developed.

The advantages of this method of operating are the avoidance of opening the peritoneum, the lessened tendency to shock, and the fact that an experienced operator with few assistants can perform the operation in a private house.

The disadvantages of the operation are the fact that the exact size of the fetal head cannot be previously ascertained, and that during delivery laceration may occur, opening the peritoneal cavity and producing severe bleeding. Incision in these cases is carried through a portion of the genital tract, which in blood vessels and lymphatics invites the development of septic infection.

Vaginal Cesarean section is chiefly used at present in the treatment of eclampsia where rapid delivery is selected, and less often in the treatment of accidental separation of the normally implanted placenta. In good hands its maternal mortality compares favorably with other operations, while the nature of the cases in which it is employed results in a high fetal mortality.

In delivery by abdominal section the maternal dangers from the operation are primarily septic infection and hemorrhage; secondarily, the bursting of the uterine or abdominal incision, the formation of adhesions between the uterus, peritoneum and other viscera, the risks of anesthesia, and the occasional development of thrombosis and embolism. The operation itself has a low mortality and morbidity rate from shock.

Abundant clinical experience and laboratory research confirmed by experiment show that the primary danger from infection arises from the escape of the contents of the uterus into the peritoneum. In cases where the membranes have long been ruptured the amniotic liquid is usually infected, and this may infect the peritoneum at operation. Infection may also arise from faulty aseptic technique, which in well-appointed hospitals is largely obviated. Hemorrhage arises when the uterine muscle is so relaxed or diseased that it fails to adequately contract, when the uterus is imperfectly or improperly sutured, and when the uterine stitches become loosened or give way.

To avoid the danger of infecting the peritoneum from the uterine contents, various methods have been devised. We have heard with great interest and pleasure the account by Dr. Asa B. Davis of his method of incising the uterus in the abdomen while the edges of the abdominal wound are kept in close approximation with the external surface of the uterus. The high incision in the abdomen facilitates this endeavor and lessens the risk of hemorrhage.

The purpose of this operation is to make it essentially extraperitoneal, so far as communication with the peritoneal cavity is concerned. An additional advantage is claimed for this method, that it disturbs the abdominal viscera as little as possible and lessens the tendency to hemorrhage and shock.

In recent years the profession of Germany has revived the effort to open the uterus outside the peritoneum by extraperitoneal section. Among others, the laparoelytrotomy of Thomas has been revived by Döderlein to a considerable extent. Numerous modifications of Frank's original method have appeared, among which is that of Sellheim, whereby the uterine, visceral and parietal peritoneum are sutured, delivery being effected through a peritoneal fistula. This has been tried by Kelly, and with modifications by Hirst.

The purely extraperitoneal section has failed in the hands of German operators, for the peritoneum is frequently opened, and must inevitably be, because the operator cannot foretell the size of the presenting part and cannot accurately gauge the extent of his incision to avoid lacerating the peritoneum. The fact that those who have attempted this method of operating have been obliged to open the peritoneum and produce a peritoneal fistula to make the operation safe, indicates the failure of the original method. Operation through a peritoneal fistula is of too recent origin to permit an exact appreciation of its value.

The majority of operators do not attempt extraperitoneal section, but are careful to practice extraperitoneal and extra-abdominal emptying of the uterus. This accomplishes with a large measure of success the indications to prevent the contamination of the peritoneum by the uterine contents. By this method the abdomen is opened near the umbilicus and the incision prolonged in either direction sufficiently to permit the turning out of the uterus. While an assistant raises the womb the operator carefully protects the omentum and intestine by large, soft, gauze pads wrung out of hot sterile salt solution. The abdomen is completely closed from the entrance of uterine contents. If the foot of the table be raised moderately, and the uterus be turned slightly to one side, the contents of the uterus can be extracted without soiling the peritoneum in any appreciable degree. Whether the uterus is to be retained, amputated, or extirpated, the risk of contamination from its contents is reduced to a minimum. If the uterus is to be retained, it is accurately closed by silk suture through the muscle, supplemented by a continuous peritoneal suture, the anterior surface of the uterus thoroughly cleansed by salt solution, and the uterus replaced in the abdominal cavity and covered by mesentery. The suture of the peritoneum, followed by that of the muscle, closes the abdomen.

The danger from hemorrhage in all forms of abdominal delivery is obviated by the use of freshly boiled silk to ligate the muscle and vessels, supplemented by the covering of all vessels by peritoneum.

The danger of rupture of the uterine and abdominal incision, following section, is obviated by the employment of silk to close the uterine muscle, and by a firm and competent retentive dressing on the abdomen. For the latter, broad strips of adhesive plaster, overlapping at the edges, have proven satisfactory; in one of my cases complicated by bronchitis, the stitches were removed on the tenth day from the abdominal wound, which was healed. The resident physician who dressed the case did not follow his orders, and substituted an insufficient tape dressing for the broad adhesive strips usually employed. In a fit of violent coughing the patient burst the abdominal wound, forcing the intestines out beneath the dressing. These were immediately replaced and the wound brought together, followed by an uninterrupted convalescence.

No practical method exists by which adhesions between the lines of suture in the uterus and peritoneum and the surrounding viscera can be absolutely prevented. In no case, in my experience, has such an adhesion been serious in its results nor especially detrimental to the patient.
When one considers that many deliveries by abdominal section are emergencies performed upon patients without previous preparation, the dangers from anesthesia and shock are remarkably little.

The technique of delivery only has become a familiar matter to modern obstetricians, but important problems still await solution in other branches of this important subject. Perhaps chief among-these is the question, "What shall be done in cases where we suspect that the uterus at the time of operation is already infected?"

There is abundant evidence to show that the birth canal in apparently healthy individuals contains bacteria capable of becoming pathogenic in prolonged labor. Attempted delivery by forceps, repeated vaginal examinations demanding the use of dilating bags, the replacement of the cord, frequent vaginal douching, and manipulation of any sort during prolonged labor, must inevitably change innocent to pathogenic bacteria and result in infection.

How can the obstetrician called to perform delivery by abdominal section deal with this condition successfully?

The rule should be strictly made and followed that all cases subjected before operation to attempts at delivery or to frequent manipulation, must be considered as suspected cases. Where we know the training and habits of the practitioner who has had the patient in charge, the knowledge that he is intelligent and faithful in antiseptic precautions may take the case from the category of infected cases and place it among those of suspected cases; but where patients have been maltreated by practitioners, the case must be considered as practically infected. Another element of importance is the mechanical injury done to the uterus before section. In my experience, the blade of the obstetric forceps has been thrust through the uterus into the abdominal cavity in two cases by practitioners who attempted to apply the forceps. The uterus has been completely or partially ruptured in others. The bases of the broad ligaments and the tissues surrounding them have been repeatedly found infiltrated, and to some extent lacerated. In such cases, where attempts at delivery have been made without adequate antiseptic precautions, the case must be considered as infected. In suspected cases the obstetrician must endeavor to save the uterus if possible. The age of the woman, and the question as to whether she has a living child, must be taken into account. In a multipara 40 years of age or older, it may be entirely proper to remove the uterus for the safety of the mother. In a young woman in her first confinement, or with but one child, in a suspected case the effort to retain the uterus is imperative. From my experience if the uterus be thoroughly irrigated with hot salt solution and packed with 10 per cent iodoform gauze, such suspected cases result satisfactorily. The vagina must be thoroughly sponged out with bichloride solution and packed with bichloride gauze. By this method good results have been obtained.

When infection is undoubtedly present we have had excellent results with the Porro operation. The ovarian arteries and the arteries of the round ligaments are separately tied, a narrow clamp made for the purpose tightened across the lower uterine segment, the uterus amputated above the clamp, the remaining portion of the uterine lining above the clamp is disinfected with carbolic acid and alcohol, and the peritoneum is closed around the stump. The cut edges of the stump are powdered with iodoform and tannic acid. While convalescence is necessarily slow, the results have been in our hands excellent.

Another problem demanding attention in Cesarean section is the question of sterilizing the patient. In clean cases where husband and wife request this, we prefer hysterectomy, retaining one or both ovaries, covering the stump with peritoneum, and dropping it into the abdominal cavity. If the condition of the patient permits, the appendix may also be removed. The abdomen is closed without drainage; another method of sterilization which has proved efficient consists in excising the Fallopian tubes at the uterine cornu, removing entirely the uterine extremities of the tubes by a V-shaped incision, and adding to this removal an inch of the tube itself. The cut edges remaining are closed by continuous catgut.

It has been abundantly demonstrated that ligation of the tubes, or resection of a portion of the tube in its continuity, are inefficient.

The tendency of modern obstetric surgery is to make delivery by abdominal incision, if possible, elective. The patient must be spared the ordeal of labor, and a suitable and advantageous time selected. Experience shows that but little dilatation of the cervix is required to drain the lochial discharge, and in my experience, should the cervix be narrow, a finger may be passed through from above when the uterus is opened, and a strand of gauze from, the uterine cavity left for drainage forty-eight hours. Many think the use of gauze drainage in such cases is unnecessary. In cases where some physical condition of the patient makes labor dangerous, as in thyroid toxemia, heart lesions, great nervous depression, elective labor becomes to the patient great boon, and lessens considerably her risks.

A most important advantage in delivery by abdominal section accompanied by eventration of the uterus, lies in the fact that the operator can adequately determine the exact condition of the pelvic viscera. He may find a uterus whose substance is so altered by pathological changes that its retention is inadvisable. Multiple fibromata of the uterus are often not detected until section is performed. The existence of a pelvic tumor, or of salpingitis, may first be revealed at section. An appendix adherent to the broad ligament may also be first diagnosticated when seen.

Another advantage of elective abdominal section is strikingly seen in cases where labor does not develop normally, but where it is practically impossible to find the cause for the abnormality. Thus, in two cases in my experience, in primiparæ older than the average, the pelvis was ample, the general vigor of the patient normal the mental and nervous condition normal, and yet the termination of the usual period of pregnancy brought no labor. Finally, inefficient and fugitive pains developed, which produced great anxiety and depression, with failing strength. Elective section was practised in each instance, when the uterus was found the site of small multiple fibroids, so embedded in the muscular tissue that they could not be recognized by physical examination before operation. Fortunately, the anterior uterine wall afforded sufficient healthy tissue to permit the suture and retention of the uterus, as both patients earnestly desired more than one child. In each case uninterrupted recovery followed the operation.

When we remember that the induction of labor in a uterus with pathological muscle is a difficult and dangerous procedure, we can see the advantage of treating these cases by surgical means. The method of operating chosen for abdominal delivery may sometimes be utilized to cure a permanent lesion of the generative tract. I have recently had occasion to perform the Porro operation upon a multipara who had suffered for years from prolapse and retroversion, for which she declined operation. She had been accustomed to retain the uterus in position by stuffing cotton into the vagina. Her last pregnancy was declared by her husband and herself to be the last, and they accepted delivery by abdominal section at term without labor, by the Porro operation, because the stump thus left in the lower end of the abdominal incision would effectually prevent prolapse of the pelvic tissues. This it has done completely and the patient is in good health.

The decision to retain one or both ovaries in delivery by abdominal section must depend upon the age of the patient and the condition of the ovaries and tubes. It is rarely necessary to sacrifice both ovaries, and if choice is to be made the left should be preserved, while the right ovary and tube and appendix should be removed. Experience shows that inflammation and adhesions of these organs are not uncommon.

We are especially interested in the application of delivery by abdominal section to placenta previa and accidental separation of the normally implanted placenta. Placenta previa, to my mind, is an ectopic pregnancy, quite as dangerous as tubal or other intra-abdominal pregnancy, and to be treated by surgical means only. As experience increases in this direction, we find that results are more satisfactory than by any other method of treatment. Such cases are as much hospital cases as tubal and other extrauterine gestations, and in hospital treatment by section, give excellent results. Personally, I have had 13 abdominal deliveries for placenta previa and placental separation, with the

recovery of all the mothers. All of these were suffering from the results of hemorrhage, and 3 of them were apparently dying and greatly exsanguinated.

The usual operation has been the classic section with gauze packing, saline transfusion into a vein being given at the same time, and other methods of stimulation freely employed. It is interesting to observe how completely hemorrhage ceases so soon as the uterus is empty, and how thoroughly gauze packing prevents, the postpartum hemorrhage which often follows the removal of the placenta through the vagina in cases of placenta previa.

For the general practitioner confronted in a private house with a cast of placenta previa which cannot be brought to hospital, the Braxton-Hicks version, using the fetus as a plug and disregarding fetal life, remains the safest and most efficient treatment.

In our cases of delivery by section those children that were in good condition at the time of operation have survived. The fetal mortality, however, must always be high in these cases.

The question may arise, "Where does the general practitioner come in, in discussing the question of delivery by abdominal section?" We may reply to this, that he comes, into this question exactly as he comes into the question of the treatment of appendicitis, ovarian tumor, uterine fibroid, and ectopic pregnancy. He should be able to make a diagnosis of the most common abnormalities in obstetrics, and of the great and vital dangers to child-bearing women.

In the interests of his patients, and for his own reputation and future practice, he should secure for complicated obstetric cases the same careful surgical attention given to appendicitis, ovarian tumor, uterine fibroids, and ectopic gestation.

May I be permitted to give briefly the results of my experience in abdominal delivery in figures?

Up to the present time I have operated upon 103 women in good general condition, and apparently uninfected, by various forms of abdominal delivery.

Case No. 33 of this series died, and autopsy showed a general peritoneal infection with the bacillus proteus vulgaris. We have never ascertained how this germ gained access to the peritoneum, for we immediately made bacteriological tests of our suture material, sterilized dressings and apparatus in general, but without a clue.

The remaining series of 70 cases in good condition have recovered without maternal death. No infant at term, in good condition, in this series, has been lost, the fetal mortality rate from the operation being practically nil. The mortality rate of the 103 cases, namely one patient, is .97 of 1per cent.

Thirty patients infected by various forms of disease, including puerperal infection, bronchopneumonia, and virulent toxemia, have been treated by abdominal delivery with 10 deaths, or a mortality Of 33.3 per cent. The fetal mortality in this series was considerable, as most of the children were dead or dying when the patients were brought to hospital.

It is interesting to note that the patients among this series who recovered, were a series of 20 cases of puerperal infection treated by the Porro operation.

Abdominal delivery was also performed upon two patients, one dead, the other dying; these being post-mortem sections. The total number of cases was 135, maternal mortality of entire series 8 per cent.

As regards the various forms of operation chosen for these patients, there were 79 classic Caesarean sections, 34 hysterectomies with intrapelvic treatment of the stump, 20 Porro operations, and 2 post-mortem deliveries by incision; 13 cases of placenta previa and placental separation with hemorrhage of greater or less severity; some of them exsanguinated, were treated by abdominal delivery, with no maternal death.

So far as mortality and morbidity were concerned, the different methods employed gave equally good results.

These operations were undertaken for indications now recognized by the majority of obstetricians, contracted pelvis, disproportion between mother and child, eclampsia, threatened uterine rupture, labor complicated by pelvic tumor and physiological incompetence for labor.

THE NEED OF INDIVIDUALIZATION IN OBSTETRICS.*

By FRANKLIN S. NEWELL, M.D.,
BOSTON, MASS.

*Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

Published NYSMJ Volume 14 (1914) p. 76-80

One of the grave reproaches under which the medical profession rests to-day is that, although marked progress is being made in most branches of medicine and surgery, little or no advance is being made in the art of obstetrics, except by a small group of men. The great majority of the medical profession seem to believe that since childbearing is a natural function a physician needs no special training to fit him to practice obstetrics, since nature can be trusted to safeguard the parturient woman, except in the event of rare and unpreventable complications. It is not at all uncommon to hear a man, well equipped in some other branch of medicine, scoff at the idea that any special preparation is necessary for the proper practice of obstetrics, and yet we not uncommonly hear soon afterwards that this same practitioner has had hard luck in one or more obstetric cases, and has lost either mother or baby or both.

This so-called hard luck is definite evidence that his knowledge and skill were inadequate to the demands made on them in the particular instance, and in the majority of such cases, a more thorough knowledge of the obstetric art, combined with a more careful study of the needs of his patient.would have led to a favorable outcome. This indifference to the needs of the patient is undoubtedly due to the fact that child bearing is a natural physiological function in normal women, and the infallibility of nature's method has been so deeply impressed on the minds of the majority of the profession that they cannot see the possibility of any advantage accruing to the patient from any departure of nature's method. Furthermore, they do not realize that a considerable proportion of the women in every civilized community have ceased to be normal, and that the bad results are due to a lack of appreciation of the conditions present and are not unavoidable accidents.

We must admit, however, that certain bad results are unavoidable. Pulmonary embolus, may occur in spite of all that we can do to prevent it. Antepartum death of the child may occur from intrauterine pressure on the cord or from premature separation of the placenta, complications which cannot be foreseen, but that is no reason for not trying to foresee and prevent every possible complication, and thus giving our patients the benefit of every means at our command to insure a good result.

A great improvement in obstetrics would be made if the profession as a whole could be made to realize that every parturient woman should be considered as a doubtful risk, in whom any complication may arise, and studied as such, instead of being considered as a normal patient in whom no abnormalities need be looked for. No two cases are exactly alike, and, therefore, the care which a patient receives should be adapted to her needs and not to those of some other patient or group of patients, if the best results are to be obtained. The needs of the individual patient can only be ascertained by a careful study of her physical and nervous condition, and the environment in which she has been brought up and in which her future life must be passed, and on the results of such a study must the care given each patient be based, and nothing can be less intelligent or more likely to favor bad results than, the adoption of a routine in the caring for obstetric cases.

In hospital practice where a large number of patients are cared for it is almost inevitable that the individual should receive comparatively little attention and that patients should be treated in groups, but that is one of the misfortunes of hospital work. In private practice, however, there is no excuse for not carefully studying each individual patient and, selecting the treatment best suited to her needs. This, however, requires that the obstetrician take his work seriously, and shall have fitted himself to give his patient the care which she demands. The majority of the men who are doing obstetrics at the present time are not really interested in the work, and trust to luck that no complication will arise in a given case, rather than try to foresee and prevent such complications. No conscientious surgeon would consider himself qualified to perform a complicated operation without an adequate preliminary training, but the average medical practitioner feels himself qualified to take obstetric responsibilities which involve the life and health of two patients, and is willing to attempt serious operations which are far more difficult and require greater technical knowledge and skill than the average surgical operation without any attempt to fit himself for the problems he must meet. The reason for this indifference to the well-being of the patient is undoubtedly the recognized fact that the great majority of women will come through labor alive and with a living child, if left to the unaided efforts of nature, and, therefore, the average practitioner does not feel it necessary to fit himself to meet the occasional emergency which involves the life of either patient, and he almost never considers his responsibility in the future health of his patient, provided only she and her child come through labor alive.

Faulty teaching in our medical schools is largely responsible for this attitude because the students are instructed that such an overwhelming majority of patients will come through alive if left to the unaided efforts of nature that it seems a waste of time for the man who does not mean to be a specialist to fit himself to deal with the occasional complicated problem, since he can usually get some one else to assume the burden for him when he finds that he is unable to cope with it, although by the time he has reached this conclusion irreparable damage may have been done. Another fault in our teaching, it seems to me, lies in the fact that most of our teaching is based on hospital patients, who are largely of the peasant class and more or less uncivilized, so that the average physician enters practice largely ignorant of the fact that the civilized woman, who is often nervously overdeveloped, may require entirely different treatment in the presence of the same physical conditions as her less civilized sister, unless she is to show serious effects from the strain she must undergo.

The object of the obstetrician who assumes the responsibility for any case must be three-fold:

The preservation of the maternal life is, of course, the first object to be considered in the care of a case, and there can be no doubt that the loss of a patient during parturition usually means that the needs of the individual patient were not appreciated, and that the complication which caused her death was not recognized at a sufficiently early date for her to receive the care she needed. Pulmonary embolism, of course, may occur at any time following labor, and unless it is secondary to a septic phlebitis is an unpreventable accident. It is unpreventable, indeed, if it follows a septic process, but the sepsis is almost always due to some fault in technique on the part of the attendant, which should have been avoided. The other obstetrical complications which commonly lead to maternal death, such as hemorrhage before or after delivery, toxemia, and infection can usually be avoided or at least treated successfully, if the patient is under sufficiently close observation and the attendant is competent. Danger to the patient arising from cardiac complications or other chronic diseases should be recognized early in pregnancy, and in serious cases the ending of the pregnancy may be necessary to save the patient's life, but it is never safe to assume that, because another patient with apparently a similar organic lesion has come through her pregnancy successfully, the given patient will do equally well, until every possible means at our command has been exhausted in the attempt to palliate the condition. Of course supervening acute diseases will cause a certain mortality both of mothers and children, and this will prove unpreventable in the majority of instances, but the

regulation of the patient's life may render her less susceptible to infection and less likely to expose herself to it, and thus be of considerable value.

The second object of the obstetrician is to insure the birth of a living, uninjured child. This is a most important aim, but none the less it must be considered as distinctly secondary to the preservation of the maternal life. It will happen, in rare cases that the interests of the child must be sacrificed for those of the mother, and the obstetrician will be perfectly satisfied if the maternal life is preserved, no matter what the outcome for the child, but such a result must mean that the conduct of the case has not been entirely successful, although the attendant conditions may have been such as to make even this partial failure a satisfactory result. In our ignorance of the etiology of certain obstetric complications we are not a-ble to apply adequate preventive measures in all cases, and the sacrifice of the baby may be necessary to save the mother, but such a result means that owing to our ignorance on certain points we are forced to be content with a partial failure, and obstetrics will never be entirely successful until these partial failures can be eliminated or at least much reduced in number.

The third object of the obstetrician is to bring the mother through her pregnancy and labor in such a manner that when her convalescence is completed she is ready to take her place in the grade of society to which she belongs in as good a condition to sustain the burdens of her ordinary life as before pregnancy began. We are all of us familiar with the fact that nature unaided is very often inadequate to meet this indication, and our aim must be to have such knowledge of the needs of each individual patient as will enable us to supplement nature when necessary. There is nothing in medicine which requires a more perfect judgment, and the most successful obstetrician will be the man whose judgment as to the needs of the individual and the methods which will best meet those needs is least often faulty.

In following obstetric literature I have gained the impression that the preservation of the maternal and fetal life receives the entire attention of the average practitioner, and that the future welfare of the mother is so overshadowed by the other indications as to receive comparatively little attention. From the standpoint of the patient, if the reasons for the advice are carefully explained to them, but most women are extremely ignorant about the hygiene of pregnancy, and what often seems to be disregard of the simple laws of health is due to ignorance, and unless the physician is in a position to appreciate this fact --and to correct it as far as possible-- he may be seriously disappointed by the ultimate results in a given case. When a patient has been properly watched during pregnancy the attendant is in a strong position. He is able to say definitely whether his patient is or is not physically normal. The effect of the pregnancy on her physical and on her nervous condition is known and he can seldom be surprised by being suddenly called and finding his patient in a serious condition, since his constant observation of her will have shown him any abnormality in its early stages. By his preliminary examination in the latter weeks of pregnancy he knows, or should know before labor begins, whether any disproportion exists between the size of the child and the maternal pelvis, and from his previous observations he is able to estimate more or less correctly what the character of the labor will be, and what the effect of labor will be on her nervous and physical condition. With this thorough knowledge of his patient he is in a position to give her the care at the timie of labor which she needs, and will neverbe placed in the unfortunate position of assuming a grave responsibility for a patient about, whom, he knows little or nothing. If she is of a nervous, high strung temperament, reacting in an exaggerated manner to minor impulses, she must be treated in an entirely different manner from the patient who is phlegmatic and who has never shown any marked reaction to the strains which have been laid upon her. To the patient whose nervous equilibrium is unstable the pain of even a normal labor may prove an excessive burden, and it may be necessary to shorten labor by operative means or even to do away with it altogether and to resort to a surgical delivery in order to save her from the nervous exhaustion which may result from a labor of even moderate severity, even though no physical abnormality is present. If she has reacted seriously to

such strains as have fallen to her lot in the past, and particularly, if her powers of recuperation are poor, she must be recognized as being unfit to be subjected to any avoidable strain and be handled accordingly, whereas the woman who has always recuperated fully and rapidly or who has never shown any sign of failure under strain can be considered as a good risk, and allowed to undergo even a severe labor without fear. If the ordinary conditions of the patient's life are such as to tax her powers of resistance to the utmost, both her life during pregnancy and the conduct of labor must be so regulated as to do away with all possible strains, since many of these patients who are living under constant high tension have little or no reserve power, and if their slight powers of resistance are once broken down it may take months or years for them to recuperate, if indeed they ever recover entirely.

In a patient of this class it must be particularly remembered that she will probably return to the life which she has temporarily abandoned at the earliest possible moment, and that no amount of advice is going to materially alter that life, until either a nervous or physical breakdown renders a change imperative. It is particularly important, therefore, in patients of this class to so regulate the pregnancy and labor that all possible strain shall be removed, since if her equilibrium is seriously disturbed it may become necessary to remove her entirely from the burdens of her ordinary life until her balance is restored, which may take weeks or months even, if it is ever entirely successful. The obstetrician who treats all patients of a certain physical equipment in the same way will be much disappointed at the results which he will obtain in certain cases, but if he devotes any thought to his work he must realize that many unsatisfactory results might have been avoided if be had studied his patient more carefully and suited his methods to her requirements.

There is no doubt in my mind but that many cases exist in every civilized community who are relatively or absolutely unfit for childbearing on account of either nervous or physical abnormalities, and in these, cases the methods employed in conducting the pregnancy and labor are of the greatest importance.

The common saying that 95 out of every 100 cases will go through labor without trouble, even though they receive little or no care, has been responsible for a great deal of harm. It is undoubtedly true that the lives of both mother and child will be preserved in the great majority of cases in the absence of physical complications, even though the patient has received no care, but if we are to do our full duty by our patients and get the best results possible, we must go further and consider how to prevent childbearing from having serious after effects on the lives of our patients, particularly those who belong to the class of the unfit in whom comparatively minor lesions may be expected to produce exaggerated reactions.

It is a matter of common knowledge that improper care or better, perhaps, a lack of proper care at the time of labor furnishes the gynecologist with most of his operative material, and the neurologist also benefits largely from the blind acceptance of the dogma that child-bearing is a normal physiological function, and that no special training is necessary to fit a practitioner to oversee it properly. Every gynecologist is familiar with the fact that many patients come to him who show marked lesions as the result of childbearing with comparatively slight symptoms, and he also sees other patients in whom exaggerated symptoms result from minor lesions. This difference among patients points definitely to the fact that obstetric patients must be treated as individuals and not as members of a class, to be judged merely by the question of whether any disproportion exists between the size of the child and the maternal pelvis, and that to obtain good results the needs of the individual must be ascertained and the care which she receives regulated in accordance with her needs. If obstetrics is to be done intelligently we must not wait for the patient's powers to fail before giving relief. In the patient who is comparatively normal no harm will result from allowing her to go through labor trusting to her own powers, simply terminating labor by an easy low forceps operation or allowing her to terminate labor naturally as may be deemed wise.

In a patient of equally good physical equipment the nervous equilibrium may be so unstable that interference may be necessary comparatively early in labor to avoid unpleasant consequences, and in the exaggerated cases it may be unwise to allow a patient to go into labor at all on account of the marked reaction which the patient has shown in the past to such strains as she may have been subjected to.

It may seem radical, perhaps, to advocate Cesarean section when no physical indications for the operation are present, but the fact has been repeatedly demonstrated that certain patients will undergo and recuperate rapidly from a surgical delivery who have been more or less seriously invalided by the strain of a prolonged labor in the past, and Cesarean section, furthermore, has the advantage of avoiding lacerations with their attendant symptoms and the possible necessity of a secondary operation to make good the obstetric damage. The prejudice which exists among certain members of the profession against Cesarean section on the ground that it is an unnatural method of delivery, and, therefore, never to be employed except for physical necessity seems to me beside the point. In our modern civilization we are not dealing with normal, natural women, and the abnormal patient must be cared for in an abnormal way, if good results are to be obtained. There is no question to my mind but that the results of Cesarean section in competent hands are better for both mother and child than the results of difficult forceps operations or versions, and since the object which the obstetrician has in view is the best good of his patient, it seems time to depart from the traditions of obstetrics and give our patients the care best suited to their needs.

The practitioner who follows blindly the teaching of the past will undoubtedly prefer to deliver every patient through the natural passages, if possible, although this may involve such a difficult operation as to place the mother's life in jeopardy and possibly lose or injure the child, and will pride himself on each case in which he succeeds in extracting a living baby by a difficult pelvic operation, entirely ignoring the fact that to accomplish his object he had subjected both mother and child to a serious risk of loss of health, if not loss of life, and will quote the result as atriumph of conservatism.

This brings us naturally to one of the great questions in obstetrics at the present time. What is real conservatism? The so-called conservative claims that childbearing is a normal physiological function which every woman is fitted to fulfill as long as no actual disease or marked physical abnormality is present.. Such an attitude of mind means to me that the so-called conservative has devoted little or no thought to the future well-being of his patient and simply considers that the outcome of her labor is successful as long as both mother and child are fortunate enough to be alive.

The obstetrician who advocates delivery by surgical means for a patient in whom no physical indication for operation can be demonstrated is classed as a radical, and the term is employed as one of reproach, implying a mental attitude which denies the sovereign power of nature and advocates the substitute of surgical methods of delivery for the natural processes.

It seems to me, however, that the above definition of conservatism is open to question, since the first object of every obstetrician in the care of a case should be the best good of his patient, and every patient whose health suffers from the effects of childbearing or whose baby is lost is an example of a lack of conservative care, since such a result shows that the needs of the individual patient have not been appreciated. Unfortunately we all see such cases in our practice.

The essential difference between the so-called conservative and the so-called radical is that the conservative adheres blindly to the methods of the past and refuses to give his patients the benefits of modern progress with the result that the gynecologist sees many patients who date their ill health from childbirth. Each patient who gives a history of this sort is an example of improper obstetric care, or at least of a lack of proper care. The so-called radical is trying to give his patients the benefits of modern progress. He may go too far and perform some unnecessary operations in the fear that his patients cannot safely undergo the strain which a possibly difficult labor may entail, and he will undoubtedly treat many border-line cases according to surgical methods perhaps unnecessarily instead of running serious risks with them by following

out traditional procedures.

It seems to me, however, that the essence of true conservatism lies in the careful study of the patient and the selection of the method of treatment which seems to offer the least risk of a bad result.

I do not claim that the majority of patients, or even any large minority, should be subjected to a surgical delivery, but I do believe that there exists in every civilized community a considerable number of women who should be spared all possible strain, and for whom the strain of labor may be a serious burden, and in whom the danger of lacerations, with their attendant symptoms, are to be avoided by every possible means. In other words, every patient should be studied as an individual, and the greatest care should be taken in adapting the methods employed in the conduct of her pregnancy and labor to her nervous and physical equipment, both from the standpoint of the immediate result and her future well-being.

Errors of judgment will undoubtedly be made by every obstetrician, but it is only by such a study that we can raise the standard of obstetrics. That the standards of obstetrics need to be raised seems to me an unanswerable proposition. When thoughtful physicians are willing to say publicly, that the training and licensing of midwives is an economic necessity, because the poor can receive better care and be placed in less danger, if cared for by midwives than by the members of the medical profession they are in a position to employ, there can be little doubt but that the standards of obstetrics need to be changed, and one of the important steps in making this change, is that our students should be taught to consider their patients as individuals, each of whom may require special treatment, instead of grouping them together and assuming that every patient can take care of herself if left to nature. In addition every student should be made to realize that if he means to handle obstetric cases he must fit himself to take proper care of them instead of trusting to luck or nature. As long as obstetrics remains largely in the hands of men who have never qualified themselves to give their patients proper care and who are willing to attempt serious operations without adequate preliminary training, to say nothing of the fact that they do not realize the necessity of acquainting themselves with the needs of their patients as individuals, just so long will the profession rest under the stigma that little or no improvement has been brought about in obstetric results in the last twenty years. Intelligent obstetrics means careful study of every patient as an individual and the adoption of such methods at the time of labor as she is found to require, to insure not only her life and that of her baby, but her future health.

Although the greater part of this paper has been devoted to the needs of the patient during pregnancy and labor it must not be forgotten that the after-care of the patient counts for a great deal in the ultimate outcome of the case. My time is too short to take this up in detail, but the careful supervision of the convalescence will count for much in the patient's future health, and should be thoroughly followed out.

1915 – Committee on Midwives – New York

Published NYSJM Volume 15 (1915) p. 189-190

To the House of *Delegates:*

Your committee appointed in pursuance of the following resolution passed at the Annual Meeting of The Medical Society of the State of New York held April 28, 1914:

WHEREAS, The demand for better obstetric care has directed increased attention to the practice of midwives; and,

WHEREAS, Necessity demands that the supervision and training of midwives should be undertaken by the state; and,

WHEREAS, At the present time there does not exist in New York State any such supervision and regulation; therefore, be it

Resolved, That the President of The Medical Society of the State of New York appoint a committee of five members who shall immediately after their organization begin a study of the subject as it presents itself in this state, and file their report with the House of Delegates of the State Society at its meeting in 1915.

Beg to make the following report:

The personnel of the committee was changed by the resignation of Dr. John A. Sampson, Albany, and the appointment by the President. of Dr. George W. Kosmak, New York City.

The committee have held four meetings and endeavored to obtain as much information as possible by correspondence.

The committee are indebted to Drs. S. Josephine Baker, J. Clifton Edgar, William E. Studdiford, Miss Van Blarcom, the State and New York City Boards of Health and the eighteen sanitary supervisors of the state.

From the beginning of the investigation to the present time, the scope and importance of the work has grown until the committee have realized that before any complete and exhaustive study with the necessary recommendations, could be made, it would require two or more years' work. In view of the importance of this subject, and the necessity for proper representation of The Medical Society of the State of New York in the activities, connected with the practice of midwives, it would be desirable to have a committee, such as the present one, made a more or less permanent feature of the Society's work.

In taking up the matter the Committee have found that the problem can be divided into two - heads, that of the City of New York and the remainder of the State. This division is arbitrarily made because there are five times as many midwives in New York City as there are in the balance of the State. There are 1,448 midwives in the City. Under the new Sanitary Code there have been registered slightly over 264 at Albany. The midwives of New York City delivered 52,997 children last year. The number of deliveries by the remainder has not yet been determined. Many of the counties of the State have no midwives, as their work seems to be usually among the foreign and factory population. It requires but a glance to realize that the problem in New York City is a complex one when one considers that the entire capacity of the lying-in, hospitals is 11,000 births per year, and that the midwives deliver over four times as many.

In the City of New York the local Board of Health has formulated very definite rules, regarding the practice of midwives and a similar situation exists in the cities of Rochester and Syracuse. In other centers it was found on inquiry that the midwives practiced without any definite control, either by the local Board of Health or otherwise. It seemed to the Committee desirable to recommend a more uniform system of licensure to be applied throughout the State with such modifications as might be demanded by local conditions.

Approaching the question from a purely ethical viewpoint, the natural decision reached is to - abolish the midwife. This your Committee believes is impossible at the present time, although, it is hoped that eventually some substitute will be had so that the midwife, finding her occupation gone, will leave the field to those who are qualified to practice medicine. The practical question, therefore, resolves itself into educating and improving the midwife so that her work will be of such a character to at least partially excuse her existence.

It is the belief of your Committee that the midwife practices medicine, and in so doing violates Medical Practice Act, Chapter VIII of the general Public Health Law.

The first effort of the State Board of Health to face this problem by bringing out Chapter 4 of the Sanitary Code relative to the registration of midwives was made January 1, 1915. Your Committee at first believed the requirements too low, and only after many conferences are they at length convinced that this is a step in the right direction, and will eventually be productive of great good by giving to the State Board of Health the knowledge of the existence of the midwife and her field of labor, and enabling them in the future to better control the situation.

Respectfully submitted,

JOHN VAN DOREN YOUNG, M.D., *Chairman;*
O. PAUL HUMPSTONE, M.D.,
FREDERIC W. SEARS, M.D.,
PETER VAN PEYMA, M.D.,
GEORGE W. KOSMAK, M.D.

April 1, 1915.

THE MIDWIFE PROBLEM IN THE STATE OF NEW YORK*

* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

Published: NYSJM Volume 15 (1915) p. 291-301

By JOHN VAN DOREN YOUNG, M.D., NEW YORK CITY.

At the One Hundred and Eighth Annual Meeting of The Medical Society of the State of New York, held in, New York City April 28, 1914, I presented the following resolutions to the House of Delegates:

WHEREAS, The demand for better obstetric care has directed increased attention to the practice of midwives, and
WHEREAS, Necessity demands that the supervision and training of midwives should be undertaken by the State, and
WHEREAS, At the present time there does not exist in New York State any such supervision and regulation, therefore be it
Resolved, That the President of The Medical Society of the State of New York appoint a committee of five members who shall immediately after their organization begin a study of the subject as it presents itself in this State, and file their report with the House of Delegates of the State Society at the meeting in 1915.

In pursuance of this resolution, the president, Dr. Grover W. Wende, appointed the following committee:
John Van Doren Young, M.D., New York City, Chairman.
0. Paul Humpstone, M.D., Brooklyn.
John A. Sampson, M.D., Albany.
Frederic W. Sears, M.D., Syracuse.
Peter van Peyma, M.D., Buffalo.

During the summer Dr. Sampson, of Albany, resigned and Dr. George W. Kosmak, of New York City, was appointed. The committee felt that while they were sorry to lose Dr. Sampson, they were exceedingly fortunate in securing the co-operation of one so well informed upon the subject as Dr. Kosmak.

From the outset of the work we have realized the bigness of the problem and the difficulties confronting an investigation, and the still greater difficulties of any committee in offering a substitute for the midwives other than simply to say dogmatically, "eliminate the midwife."

For practical purposes the question may be considered under two heads, the midwife in the City of New York, and the remainder of the state.

The ethical question is the same whether in New York City, Rochester, Buffalo, or the outlying districts of the state but the practical question is quite different. Let us consider for the moment the question in New York City. Six years ago there were approximately 3,000 known midwives in the city; today there are 1,448 registered, whose work is supervised by a special bureau of the Board of Health, and whose ranks are recruited from the graduates of one recognized school for midwives in the city, the Bellevue Hospital School for Midwives. It is a startling fact, nevertheless true, that

this body of 1,448 midwives deliver approximately 53,000 babies per year; that all the lying-in hospitals in New York City can care for is 11,000. There are 5,427 practicing physicians in New York City. If the midwives were abolished this would give to all physicians registered in New York City about nine confinements to look after per year. If you eliminate the various specialists who do not do obstetrical work and throw this enormous volume of work upon those who actually do the obstetrics of the city, it would probably mean from 20 to 25 cases per year to each physician.
Is there any ethical reason in the light of the foregoing figures, why the state, and especially the medical profession, should allow about 1,700 violators of the law to do an enormous amount of work affecting in New York City alone over 100,000 lives per year? When you realize that this, in ten years, affects the life and health of half a million babies and the future health and welfare of not less than 350,000 to 400,000 women, the enormity of the problem is at once apparent to you. Whether in a small outlying district of a manufacturing town one or two midwives ply their vocation, known to every practitioner in her neighborhood, and whom she feels she can call upon in the slightest trouble, will do proportionately as much harm as the 1,400 midwives in a large city is a question hard to answer.

On the other hand, one is face to face with the question, should you eliminate the midwife, what will you substitute? The answer to this question is the reason for this discussion. It is an admitted fact that the problem is so complex that the immediate elimination of the midwife is an economic impossibility. I feel sure that eventually the midwife will be a relic of the barbaric past, and that this field of medicine will be in the hands of those qualified as physicians to give such service as the pregnant and parturient woman has a right to demand.

The whole Problem is summed up in the right of the expectant mother to the best possible obstetric care, and this paper is a plea for better obstetrics, for a realization by all practitioners of medicine, in or out of the cities, that there is no more noble work or no work more worthy of their best endeavor than the study and care of the obstetric case. Surely nothing can be more important to the health of the nation than the care given to its mothers, who are the fountain-head of the future generation.

The excuse has been frequently offered for the existence of the midwife by the statement that she is not hurried, that she gives to the woman better practical care, than the overworked, careless and perhaps dirty physician. This is no answer to the question. Better obstetrical care must be obtained by an improvement in the obstetrical training of the physician, and a realization by him of the fact that no more important work will ever fall to his lot to perform, and also by a realization on the part of the public of the necessity of care through her entire pregnancy. This will, in turn, cause them to realize the fact that the obstetrician must be better paid, and this, in turn, will attract more men to the field.

A word as to the history of the midwife. The origin of the midwife is lost in the mists of the past. Ebers papyrus, 1550 B. C., is the earliest known medical production and contains prescriptions for the causing of abortion, for promoting labor and curing displacement of the uterus. Even Moses himself owed his safe lodging in the bulrushes to Puah and Shiprah, two midwives who defied the order of Pharoh. At this time midwives were recognized as a class in Egypt, and therefore antedate by many centuries the advent of the physician in this field of labor, as it was not until the middle of the tenth century that women were attended by any save their own sex. In Greece the skilled attendants were, as with the Egyptians and Hebrews, midwives. The writings of Hippocrates show us that up to that time the physician had studied only abnormal cases, leaving all of the subject of obstetrics and the delivery of women to the midwife, his chief function being the dismemberment and removal of the dead fetus.

The classical writers of Greece tell us that women have charge of parturient women, that divine aid is sought, and goddesses are invoked to facilitate labor. Gods or men were only called in

the gravest necessity, as when Apollo rescued the infant Aesculapius by performing a Cesarean operation on the dying Semele.

The earliest recorded contribution to medical literature on the subject of obstetrics is by one Aspasia, who imprinted her teachings upon the work of later authors. Up to 1600 the midwife had undisputed sway in obstetrical work. In the next fifty years several French and English medical men began to write upon the subject. In 1671 Jane Sharp wrote "The Midwives' Book, or The Whole Art of Midwifery Discovered." About this time midwives in France and Germany published books of a similar character. It may have been the necessity of asserting their power and the fear of losing their hold upon the people that demanded these writings, as it was about this time that medical men began to be called in to natural labors. From this time on the midwife lost her hold upon the practice of obstetrics, and medical men began to realize that the work was worthy of the best efforts of the best men.

It is well to remember that the efforts to control, regulate, educate and improve the midwife date as far back as the close of the seventeenth century, and how much had been accomplished is graphically brought out by a quotation from Dr. J. Clifton Edgar's article written in 1911: "That over 90 per cent of the midwives in New York City are hopelessly dirty, ignorant and incompetent." This was from the work of Miss Crowell in the year 1906. This brings us naturally to the question of control and education. The earliest efforts in this work were begun abroad. In France there were two classes, one that was allowed to practice in any part of France, and had a superior standing, while those of the second class were restricted. They were allowed to vaccinate and prescribe certain antiseptic preparations. They were not allowed to use instruments and must call in a medical man in difficult cases. In Spain midwives are allowed to practice after passing the examination covering studies at least four half-years. The system in Germany is most elaborate and I shall leave its fuller outlining to Dr. Kosmak, who will discuss this paper, who from personal observations of its working, is able to speak authoritatively as to its value in Germany and its possible use in America. Midwives, are recognized in Italy and are compelled to pass an examination and obtain a diploma, In Russia the midwife is under the Medical Department of the Minister of the Interior. Each town has a senior midwife and a number of junior midwives in proportion to the population. In Norway, Sweden, Denmark and Holland midwives are licensed after examination. In England there was no regulation of any kind up to 1902, when the first effort was made to control them. The system in England is under a central Midwife Board, whose duties are to regulate and issue certificates, and the conditions of admission to the roll of midwives to regulate a course of training, taking examinations, to supervise and restrict their practice, and to publish a roll of duly certified midwives, and to eliminate undesirables. Further requirements of the law take up in detail the supervision of their work.

In the United States no effort was made to control the midwife and regulate her practice until very recent years. In 1906 the first serious effort was made in New York City; in that year the Board of Health took upon itself the work of regulating the practice of midwives, and from that time until the present a great work has been accomplished through their efforts, and especially the labor of Dr. S. Josephine Baker. The regulations as now carried out by the Board of Health in New York City are of the greatest importance both to the midwife and to the health of the community. Briefly outlined, they are as follows:

All midwives are compelled to register with the Board of Health, who have the arbitrary right to decide upon the issuance of the license. This power is carried out with absolute justice. A sample copy of the application blank is herewith exhibited.

A circular is issued by the Board of Health showing amount of education required, together with an outline of the studies to be followed in a given school. The only school recognized by the Board of Health is the Bellevue Hospital School of Midwives, the course of which is six months and the training excellent.

Rules governing midwives are published in pamphlet form in English, French, German, Italian and Hebrew. The midwife is provided with proper blanks for registration of births, postal cards for notification to the Board of Health in case of sore eyes.

The Department of Child Hygiene keeps a rigid supervision of the work as carried on by the midwife, her general character and the supervision of her armamentarium, her general cleanliness in so far as possible, and the results to child and mother.

The midwife is instructed in the care of the eyes, general rules of cleanliness, and when to call in a physician.

Important developments in the saving of blindness by the use of nitrate of silver provided by the Board of Health have been demonstrated by the writings of Dr. Baker and Miss Van Blarcom.

The Board of Health of New York City has grappled with a most difficult and complex problem in a masterly way, and has accomplished an enormous amount of work with its munificent benefits by developing a supervision and management of the midwife that is second to none in the United States.

The Board of Health of the State of New York is taking the first steps looking to a similar management of the question in the whole state. Its first effort. was the issuance of Chapter IV of the Sanitary Code, the object of which is to obtain the registration throughout the state of all midwives, and later the regulation. This part of the problem will be dealt with fully in a paper by Dr. Linsly R. Williams, which follows mine.

Rochester and Buffalo have dealt drastically with the problem and have the situation well under control.

There is one side of the midwife question that has not been dealt with in any of the articles that I have read upon the subject, and that is the criminal practice of the midwife. From my experience as secretary of The Medical Society of the County of New York I am fully convinced that this is an important factor and should be taken into consideration in all investigations of the subject. The Medical Society of the County of New York have prosecuted ninety-nine midwives for criminal practice, with the following result:

Convicted, fined and paid $500	2
" " " " 250	5
" " " " 200	1
" " " " 150	2
" " " " 100	7
" " " " 75	2
" " " " 50	17
" " " " 25	1
Case withdrawn	1
Health permit revoked	1
Out on bail	10
Thirty days in penitentiary	1
Discharged	1
Agreed to operate for $40	4
Agreed to operate for $10	1
Agreed to operate	1
Case dismissed	2
Case pending	1
No record	4
Guilty	1
Sentence pending	1
Test case	1
Discharged	1
Not guilty	1
Suspended sentence	1
Sixty days in prison	1
Ten days in city prison, or $100 fine	4
Ten days in city prison, or $250 fine	1
Thirty days in city prison	1
Under bond	1
Thirty days in jail, or $250 (went to jail)	1
Thirty days in city prison, or $75	1
Ten days in city prison, or $50	1
Refused to operate	1
Vulgar, coarse woman, filthy apartment	1

That this work could have been carried to a much greater extent is witnessed by the number of complaints received at the office of the counsel and the secretary. At a conference with the Board of Health of New York City Dr. Haven Emerson inquired of me why it was that so few of the complaints forwarded to me had been investigated by the Society's Legal Bureau. I stated that it was due to a lack of funds, and that the complaints were so numerous and investigations so expensive that the Society had been absolutely unable to cope with the situation. That every effort had been made to enlist the services of the District Attorney and the Police Department without result, and that the Society could not expend the entire amount of funds available for the prosecution of illegal practitioners in. this branch of the work, no matter how fully it realized the importance and necessity of the effort.

One of the requirements for the issuance of a license by the Board of Health of New York City is that a midwife shall have a clean bill of character in so far as charges of illegal practice or convictions are concerned. The futility of this requirement is demonstrated by the statement above made, that there is no constituted authority whose duty it is to investigate the activities of the midwife in this nefarious business. It is a recognized fact that there are certain physicians who devote a large portion of their time to the induction of criminal abortion, and it is a sad and rather gruesome fact that in the annals of The Medical Society of the County of New York three physicians have been convicted and have served prison sentences, all three of whom were pardoned by Governor Dix the last day of his incumbency in office.

The knowledge of the midwife in relation to anatomy, surgical cleanliness and the dangers of abortion would make her a less dangerous factor to the mother and more destructive to child life than in former years.

In talking with the attending physician of one of the large hospitals in New York City, he stated that there were times that it was absolutely necessary to close the wards to incomplete abortion cases, practically all of which were done by midwives. The temptation to the physician, even with his higher moral standard, is great; what must it be to the midwife, who feels safe in her surgical procedure, and who is not hampered by a code of ethics, or a possible investigation. It is well to remember that in the practice of the criminal abortionist, whether a physician or midwife is the guilty party, it is only the occasional case that sees the light of day, leaving to the imagination the computation of the enormous number of pregnancies terminated for a financial consideration.

Another phase of the subject is the care of the patient during the pregnant state. It is granted that this is impossible for the midwife unless she is given the full power of the practicing physician. Today the skilled obstetrician hesitates to face the problem of delivery without a full knowledge of the patient, her functions and her measurements; yet the midwife, with no other knowledge than the ability to "deliver a baby," faces the same problem with infinitely less knowledge of medicine and no study of the patient. The frequency of post-delivery, retroversion and the other complications too numerous to even mention, preventable in a large measure by proper care, are again absolutely disregarded by the midwife.

Care of the child is most superficially considered, if at all. This is not said in criticism of the efforts of the Board of Health in any of the cities to look after the health and welfare of the child from birth up, but is a mere statement of fact in relation to the preparation of the midwife for her self-imposed task.

Let us consider for a moment the situation in a broad sense. Throughout the United States the midwife delivers approximately forty per cent of obstetrical cases. In New York City the figures show that in 1914, 1,448 midwives were registered. During that period 140,647 births were reported, of which physicians delivered 87,650. The midwife delivered 52,997. In other words, to the care of midwives are delivered the health and future of over 100,000 lives a year. At a very conservative estimate, in ten years this would make an enormous total of one million women and children who trust their present and future health to her care. It is appalling to think of the number of cases in this enormous number who need the care of a skilled physician both before and after delivery. Statistics upon the subject are impossible from the very nature of the problem, but deducting one's conclusion from hospital and private practice experience, the number must be very large.

Still another side of the problem is the physician unskilled in obstetrical work. The statement has been made that the midwife gave her patient better care and had fewer post-partum infections, fewer sore eyes, and her results were generally better than many of the physicians who practice among the same class of patients. It is difficult to conceive how this statement could possibly be true, but granted its truth, it does not answer the question at all. The only method of getting at a full comprehension of the ultimate results would be to obtain a record of these patients for a long enough period after delivery to eliminate the later as well as the primary complications of labor. The work entailed would be so enormous as to be a practical impossibility. Again, granting that the midwife does give her patient practical care during her labor, that post-partum infections are rare, and complications, so far as the child, are eliminated by careful supervision, does this justify the placing in the hands of the midwife the right to practice medicine? Most emphatically NO. And again, does the fact that the overworked, poorly paid physician, working in the tenement district, has apparently poor results both as to immediate and secondary complications of delivery, excuse the profession, and the state, from giving to the pregnant woman that care to which she is entitled? Again most emphatically NO. The responsibility of the care of the birth of the nation is upon the

profession of medicine, and New York State, and no avoidance of the issue will give the profession or the state immunity from the charge of neglect of its plain duty.

It has been stated on the bulletin of the Board of Health that a community may, within certain limits, regulate its own death rate. This I believe is true, and I am still further convinced that the first step in this direction is the proper care of the pregnant and parturient woman. It is strictly unprofessional, if not criminal, to neglect so tremendous a duty so plainly placed the profession and the state. The history of obstetrics is as old as the birth of the first child. The realization that there was such a science as gynecology is but fifty years old; therefore, in my opinion, all statistics, no matter how carefully compiled, are valueless except in a general way. One has but to do a few years of clinical gynecology to realize that there has been a great neglect chargeable to the physician.

The plea that I desire to place on record is a plea for better obstetrical care, not only to the rich but to the poorest of the poor, and again, not only to these two classes of cases, but to those who are neither rich nor poor, and who admittedly are least well cared for in their medical needs.

It is due to Dr. George W. Kosmak, whose experience in this field is large and extends over many years, that a committee was appointed by the State Society to look into this most vital of questions.

There are three plans suggested as a possible solution for the midwife question.

First, that of education through properly conducted schools for midwives, such as the Bellevue Hospital School in New York City. These schools could be made to graduate capable midwives, provided, of course, sufficient material for clinical study was available. The education should include the return at intervals of two or three years of the graduate of the institution for post-graduate instruction.

The second plan, as suggested by Dr. William E. Studdiford, the opening of a department in all the large lying-in hospitals for the practical and essential instruction of midwives. This would have many points of advantage from an economic and a practical standpoint. The objection made to it by the hospitals in question is that it would interfere with the work of their staff and students. It would seem, however, that this objection could be eliminated and a course of study given of not less than two years of the greatest practical value to the midwife both in the routine care of the woman during and after delivery, and the care of the child for the first two weeks.

These two plans deal with the midwife question in an effort to improve conditions existing at present and make for better work on the part of the midwife.

The third plan suggested by Dr. Kosmak is the elimination of the midwife by the development of the following solution of the trouble, namely, that there be created obstetrical clinics where patients should apply as soon as they discover that they are pregnant and receive care during the parturient state, both as to instruction in the care of themselves and hygiene. At these stations physicians could receive instruction in the study of the pregnant woman, and become skilled in the art of measurements. These stations necessarily be open night and day and be under the charge of a nurse, who might be resident, or if the work were active enough there might be created a day and night service. Physicians skilled in obstetrics would be in attendance at one or more of these stations, who would have supervision of the general management of the station, and whose duty it would be to see that there were enough students of obstetrics to attend prospective confinement cases. The postpartum visit would be carried out by the nurse at the station, and the post-partum examination made by one of the physicians in charge. These stations might be run in conjunction with one of the lying-in hospitals, or might be developed as a supplement to the Board of Health.

It requires but a glance to see the enormous advantage to the profession in the education along obstetric lines of this plan of work. That such a plan would be well received by the people who most need it is witnessed by the fact that this branch of labor in hospitals, such as the Nursery and Child's and the New York Lying-In, have been most successful, and by the fact that 11,000 women are delivered annually in the hospitals. I believe that were this plan inaugurated, even at an expense

to the state, the ultimate good to the profession and to the people would be so enormous in its economic saving that it would be more than repaid in a few years. It is the only logical solution of the midwife problem, and while it would probably take years in developing, would give to those most deserving it better obstetrical care, and to the profession education in obstetrics that would attract to this state serious-minded, hard-working physicians who desired to master the most important branch of medicine. In New York City alone a nucleus of over 50,000 obstetrical cases per year to draw from would be clinical material of the greatest value.

In closing, permit me to say that it is my belief that the midwife is indeed a relic of the barbaric past wherein the survival of the fittest seemed to demonstrate her right to violate the law, to give a most superficial and unscientific care to a most vital subject, and that eventually the light of education must eliminate her and the public realize that child-bearing, while a normal function, is capable of such variations that only the physician should be provided to deliver the patient who has had special education to enable him to recognize and meet any of the complications arising in the course of the case; at least, to have that skill whereby he can see danger ahead and be prepared before the damage is done.

Those of us who look back on thirty years of experience realize how inadequately a physician was prepared for obstetrical work, but this does not in the least eliminate the responsibility for unpreparedness at present, and with the plan outlined and the enormous clinical material available, it is my belief that for the woman about to be delivered better obstetrical care would be obtainable.

THE POSITION OF THE NEW YORK STATE DEPARTMENT OF HEALTH RELATIVE TO THE CONTROL OF MIDWIVES*

* Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

By LINSLY R. WILLIAMS, M.D.,
Deputy Commissioner of Health,
ALBANY, N. Y.

The midwife problem has been with us for years. Many physicians, without full appreciation or understanding of the problem, have consistently advocated the abolition of the midwife. In various foreign countries midwives have been taught the elements of midwifery and have been granted licenses and supervised so that they might be kept under control. The problem in England was met by the establishment of a central board of control, as is now a matter of general knowledge to those who have followed the various attempts to control midwives.

Realizing that this was a problem which had to be met, it was undertaken by the Department of Health of the City of New York in accordance with a special act of the Legislature, passed in 1907, granting power to the Board of Health in the City of New York to enact regulations for the licensing and supervision of midwives (Chap. 432, Laws 1907).

When the general amendments were made to the Public Health Law of the State of New York in 1913, the appointment of a Public Health Council was provided for, and this Council was granted power to enact regulations controlling the practice of midwifery. In accordance with this authority, the Public Health Council enacted Chapter IV of the Sanitary Code, which provides in substance as follows:

"That no person other than a duly licensed registered physician shall practice midwifery or be registered as a midwife until she shall have received a license to practice midwifery from the State Commissioner of Health. No midwife shall be registered with a local registrar of vital statistics unless she shall have received her license."

Qualifications which were established in October, 1914, and went into effect on November 16, 1914, required that any applicant up to the first day of January, 1915, who was not less than twenty-one years of age, could read and write, who was registered with the local registrar of vital statistics, and whose moral character was vouched for, would be licensed to practice midwifery.

In order to obtain a license after January 1, 1915, the Code required that the midwife be not less than twenty-one years of age, able to read and write, cleanly, and show constant evidence in general appearance of habits of cleanliness, and either to possess a diploma from a recognized school of midwives or have attended, under the instruction of a duly licensed and registered physician, not less than fifteen cases of labor, in regard to which she must present a written statement from the physician or physicians that she has received instruction in the fifteen cases, and must present the name and address and date of birth of each case. She must also present satisfactory evidence of her qualifications of good moral character.

When this chapter of the Sanitary Code went into effect there were 439 midwives registered with the various local registrars outside of the cities of New York and Rochester, which are exempted. Up to January 1st, under these minimum requirements, 238 midwives were licensed.

With the higher qualifications since January 1st, 88 midwives have been granted licenses, making a total of 326 midwives licensed up to and including April 15, 1915.

In order to determine the general character of the work performed by these midwives, four of the nurses of the State Department of Health have been more or less constantly at work since the 15th of December inspecting the work of the midwives outside of the cities of New York and Rochester, and ascertaining, as far as is practicable, all the facts in connection with their work. Of the 326 licensed midwives it is found that only 38 are American or British, 88 are Polish, 81 Italian, 63 German, 16 Slavish, 11 Austrian, and the rest scattered among the Hungarians, Finns, Swedes, Russians, etc. Of the total number, nearly half -134- speak English.

TABLE I

Nationality of Midwives.

Scotch .	1	Russian	5
German	63	Bohemian	2
Polish	88	Slavish	16
Swiss	1	American	8
Hungarian	6	Colored	1
Italian	81	Hebrew	3
French	1	Irish	2
Finn	1	English	30
Swede	5	Dutch	1
Austrian	11		

Language Spoken.

English	134	Hebrew	1
German	37	Lithuanian	4
Polish	69	Bohemian	4
Italian	56	Austrian	1
French	3	Swedish	3
Hungarian	10	Spanish	1
Russian	5	Dutch	1
Slavish	22		

Two of them are trained nurses, 56 have received diplomas from various obstetrical schools, and 32 who have been granted licenses since the first of January, have had the qualification of fifteen cases under medical supervision, and 11 applications for licenses are pending.

It must be obvious that in order to begin any supervision over the midwives, it was first necessary o know where the midwives were. Fortunately, the new Vital Statistics Law, which became operative January 1, 1914, required that every midwife register her name and address with the registrar of vital statistics of the district in which she resided. By this method of registration it was found that 474 midwives were registered with registrars of vital statistics. This gave the department information as to the number of women who apparently were desirous of practicing midwifery.

There were received 593 applications from 46 different counties, and 326 licenses have been granted up to April 15, 1915, in 35 different counties, 84 in Erie, 68 in Westchester, 18 in Oneida, 14 in Schenectady, 14 in Albany, 12 in Nassau, 11 in Onondaga, 10 in Niagara, 10 in Dutchess, and the rest scattered in the various counties as shown in Table 2.

TABLE II.

Number to Whom License Has Been Granted.

(By Counties.)

Albany	14	Onondaga	11
Allegany	1	Ontario	1
Broome	8	Orange	7
Cattaraugus	1	Orleans	3
Cayuga	3	Rensselaer	4
Chautauqua	12	Rockland	3
Chemung	2	St. Lawrence	1
Columbia	6	Schenectady	14
Delaware	1	Suffolk	5
Dutchess	10	Sullivan	1
Erie	84	Tioga	3
Franklin	2	Ulster	1
Herkimer	3	Washington	1
Jefferson	2	Wayne	1
Madison	3	Westchester	58
Montgomery	6	Wyoming	4
Nassau	12		
Niagara	10		326
Oneida	18		

In enacting the Chapter on Midwives of the Sanitary Code, the Council had in mind similar waivers of examination as existed when physicians were first licensed and the waiver of examination of other professions when licenses have first been issued by the State Board of Regents. It was also considered essential that midwives should be granted a license, upon a minimum of requirement. As was expected, a large number of midwives were found to be ignorant and did not wholly understand the requirements they were expected to fulfill in order to secure a license. In the majority of instances the applications for license were filled out by others. Many deferred making application for license until after January 1, 1915, when the requirements were higher than they were previous to November 16, 1914.

After January 1, 1915, the Code required that each midwife should have a diploma from a recognized school of midwives or should have personally attended fifteen cases of labor. Those who have interested themselves in the study of the midwife question, must fully realize that except for graduates of the Bellevue School of Midwives, New York City, but little actual training was given in any school in this state. Examinations held by the Board of Health of Rochester, and the Board of Examiners of Erie County, do, however, set a standard which is far higher than anything else that has been set in the state, and the recent action of the Board of Examiners in Syracuse has also raised the standard in that city.

The value of the foreign diploma is questionable, and there is no way of ascertaining whether or not such diplomas have any particular value, or are granted after any specified amount of teaching or experience. In instances where such diploma was not forthcoming and where the midwife could not give evidence with names, addresses and dates of birth of fifteen cases of labor in which she had been in attendance under a physician, in a statement signed by the physician, she was required to continue as a practical nurse under the direction of a physician until she had completed her fifteen cases.

Criticism has been made of this provision, by saying that midwives will falsify their record and can get almost any physician to sign such a statement. This is a sad commentary on the medical profession if this be a true statement.

The criticism is made that fifteen cases are too few, but this is far more practical experience than the average physician has had at graduation.

In the supervision of the midwives a series of rules and regulations were established by the Commissioner in accordance with the authority granted him by the Public Health Council, which

rules and regulations are identical (with one or two exceptions) to those enacted by the Board of Health in New York City. These rules and regulations define chiefly the means to be taken in securing asepsis, the symptoms and conditions which may arise before, during and after labor which require the attendance of a physician. It has proven absolutely essential that nurses must be maintained either by local boards of health or by the State Department of Health for the supervision of these midwives. All the midwives who have made application for licenses have been examined by the nurses, their homes and outfits examined, and reports made thereon. In many instances, the home, midwife and her outfit are found to be meager and uncleanly, but every effort has been made to improve these conditions rather than to at once revoke the license.

From an administrative standpoint it seems wiser to lead and instruct these midwives rather than to take away their license and to run the risk of their continuing to practice midwifery without a license. It is found that many of the midwives own their own homes and are fairly well to do. The majority of them are married and are assisted perhaps by their children or other members of the family in making out of certificates, which the midwife herself signs. This better class of women are cleanly, fairly competent, and get good results.

A second group are women who are older, who have been trained abroad, who speak little or no English, who live in comparative poverty, and who take care of a poorer class of women, receiving perhaps five dollars for a confinement.

There is a third class of midwives who have received some education, who are young, more intelligent, and of whom it has been learned that they have made examinations for pregnancy, that they have had instruments in their possession and drugs of various kinds for treatment and possibly for the induction of abortion. In investigating this class of midwife the nurses have confiscated the drugs and the instruments and have warned them that they should not have them in their possession and that if found again in their possession the license would be revoked and further action taken.

It is found that in some instances physicians have trained women to assist them in caring for obstetrical cases, and that after a time these women have become midwives themselves. These midwives continue to ask the physician to assist them in difficult cases, and the physician refers to the midwife cases which he does not feel that he can afford to take care of. This is to the apparent mutual advantage of both physician and midwife.

Contrary to our expectation, it has been found that in comparatively few instances does the midwife perform the household duties of the patient, and in some instances does not even care for the baby. Only the poorer class of midwife does this.

All the midwives are required to keep on hand the silver nitrate solution prepared and furnished ,them free by the State Department of Health, and as far as can be learned most of them are using it regularly.

After four months of work, upon revisiting a number of midwives they say that they send for a physician for difficult cases, where four months ago they claimed to be proficient enough not to have to send for a physician. Many of the younger and better class midwives are giving up the practice of midwifery and are working as practical nurses, doing maternity nursing by the day for physicians and assisting physicians in obstetrical cases.

It is found that a number of the midwives cannot use a thermometer, although they are learning to do so. In a small number of instances it has been found that the midwife is comparatively incompetent, not very cleanly and not well informed, but is the only woman in her district who is willing to assist in confinements in families where a physician refuses to go. In one instance recently, a midwife to whom a license had been refused, wrote in and stated that she had recently had two calls which she had refused where the expectant mother was not able to receive any assistance whatsoever, the patients being so many miles away from a physician that a physician's services would cost more than the patient could legitimately afford to pay. In this particular case

investigation proved the facts to be true, and although the midwife did not seem to be a desirable one, license was granted with the hope that she would improve.

It has been found in a few centers of foreign population there were foreign midwives who could neither read nor write and whose services were practically necessary for these poor foreigners. In consequence of this fact, the County amended the Code providing that in cases of midwives of foreign birth, who were unable to read and write, and upon investigation of the case an recommendation by the Commissioner of Heal the Council might waive this requirement. The Council has waived this qualification in 13 instances and 10 cases are pending.

It is the desire of the department to continue the supervision of the midwives at present licensed, to continue to license new midwives for the rest of the year in accordance with the present method, to continually supervise and educate midwives, to weed out those who are absolutely incompetent, to keep closer supervision over those who do not promptly report births, and who have cases of sepsis, and to try and generally improve the practice of the midwives.

The department notes with regret that legislature has only appropriated a sufficient sum of money for four supervising nurses, which will to a certain extent, curtail the work of the supervision of midwives. At the recent session of legislature a bill was introduced which required that the Sanitary Code should not have the force and effect of law until it had been approved by the legislature. This bill was introduced at such a late period of the session that it was impossible even to consider the enactment of the Sanitary Code into the Public Health Law of the state the legislature, so that its passage would have entirely abrogated the Sanitary Code until next session of the legislature. The department felt it absolutely essential to the usefulness of State Department of Health to defeat this measure and noted with regret that the Legislative Committee of the State Medical Society urged the passage of this bill, which would have entirely repealed the Sanitary Code. If this bill had become a law, the power of the Council to enact regulations controlling the practice of midwives would have been taken away and the work of the supervision of midwives entirely discontinued, at least until the next session of the legislature.

From an ideal standpoint possibly it would be to abolish the midwife, but at the present we have, outside of the City of New York, 326 midwives who are reporting perhaps almost quarter of the births, and to abolish them generally would mean, in the majority of instances, one of two things -either that the midwives would continue to practice without a license, or the patients would not be able to receive assistance whatsoever during the period of childbirth.

Discussion

DR. GEORGE W. KOSMAK, M.D., New York

It has been remarked that on every occasion which the so-called "midwife problem" comes up for discussion practically the same people will be found taking part in the same. This must be regarded as rather unfortunate and it would be very much better if the entire medical profession would show a more determined interest in this matter. We must regard the midwife question from a number of viewpoints. Medical practice at the present time has been invaded by numerous outside influences. Such bodies have relegated unto themselves a particular field for the practice of their cults and have become sufficiently organized in numerous instances to demand of state legislatures a license to practice unmolested the particular division of medicine to which their activities apply.

Thus within recent years the optometrists have invaded the field of the legitimate medical practitioner who has given years of study to the eye and its ailments; the osteopathist finds in the spinal column the source every evil and has practically persuaded our legislators that he is entitled to practice in every field of medicine by the exercise of this procedure; the neuropathist, the Christian Scientist, the chiropractors, and others too numerous to mention, have organized themselves in

order to assail legitimate medical practice. In attempting to license and regulate the practice of midwifery by individuals who have not had any medical training in the accepted modern sense, are we not ourselves extending the ranks of the irregular practitioners and favoring the invasion of the legitimate field of medicine? Much can undoubtedly be said to justify the existence of the midwife

and reference is frequently made to foreign conditions as a basis for the regulation of our own. Thus, the German system is frequently referred to, but a moment's thought to what the conditions in Germany actually are will convince the casual observer that this is impossible. In Germany the respect for law and order becomes almost a prenatal influence, and the careful supervision of the midwife by the state can never, from the nature of things, be duplicated in our own country. To one who has been on the field the duplication of the exceedingly well-managed German system must be admitted as impossible under our own form of government. In Germany and other countries in Europe midwives are educated in public hospitals and practically remain public servants, not as with us simply under a more or less deficient public supervision. That even under this highly developed system a great deal of dissatisfaction exists among the members of the medical profession will become evident to anyone who converses with the German practitioner. I have been repeatedly told that they wonder why we should attempt to introduce any such method in our own country although recognizing the effect of a custom that goes back through the centuries. In Germany of today there is certainly more obstetrics done by the medical practitioner and less by the midwife than formerly. The dangers and limitations of the midwife are acknowledged to such a degree that these women are compelled to return for post-graduate courses at regular intervals. Their supervision is not limited to their technical equipment but their mental qualifications are likewise kept under guard. So even the Germans admit that the educated midwife is not a safe institution and they have provided public salaried physicians who must be called upon in case of necessity. I would simply ask can we ever bring about such a condition in this country?

Notwithstanding the good work of the New York City Department of Health in this field and the attempted duplication of its efforts by the State Board of Health, such inspection and supervision leaves much to be desired. Undoubtedly the inferior class of mid-wives will be eliminated, but in view of the lack of teaching facilities can, we ever hope to supply a desired number of so-called educated midwives?

The Board of Health of New York recognizes but one school that fulfills its qualifications, and from a careful inspection of their requirements and examination papers I personally fail to see how any but a very small number of women who might enter this field could ever properly qualify. Moreover, a woman who graduates from a school of this kind considers herself, from the very nature of things, as well qualified to practice obstetrics as the medical practitioner, and the first thing she does is to make a scale of fees in which she competes directly with the doctor practicing in the neighborhood. Moreover, the claim that she acts as a nurse to the mother is all nonsense, as far as my personal experience goes. A midwife of this type makes her post-partum calls
just as a doctor would and pays no further attention to her patient. She leaves this to one of her sisters who has failed to come up to the desired requirements of the local board of health and finds herself compelled to step down to a lower plane.

Referring again to the fact that insufficient facilities are provided for the training of mid-wives, it has been suggested that the lying-in hospitals open their doors for the instruction of such women after the fashion of foreign institutions. Personally I would decidedly object to a proposition of this kind, as we require all our clinical materials in the hospitals for the instruction of the staff and the students who come from the medicals schools to take this as part of their practical training. Our American nurses, moreover, would never accustom themselves to working in the same harness with a personage who cannot be regarded as a qualified practitioner of medicine.

To one who opposes the midwife system per se, the question is often asked: what do you offer as a substitute? A number of very valuable suggestions have been made which fully cover this

point and there is not time to dilate on the matter in this discussion. The solution, in my own estimation, cannot be reached by any attempt to introduce into this country the so-called educated midwife. From the very nature of her surroundings she will not prove a success. However, the conditions at present existing cannot be revolutionized, they must be submitted to a process of evolution and this must depend on a change in the economic surroundings of the patients and a better education of mothers as to the importance of proper obstetric care. Until that millennium has been reached we must content ourselves by gradually eliminating the practice of the midwife as much as possible. This the State Board of Health, by means of its new regulations, may succeed in doing. If so, the organization must be congratulated. The development of substitute agencies is the most essential factor in the elimination of the midwife, and the element of competition will do more to eliminate their practice than anything else.

DR. GEORGE W. GOLER, Health Officer of the City of Rochester: In 1895, the Board of Examiners in Midwifery was appointed, consisting of three members, two of them physicians, who, together with the health officer, should constitute such board. The compensation of the members of the board has not exceeded $80 per annum for the two members other than the health officer, who serves without compensation.

The board is required to examine and license midwives; any of whom found qualified shall be licensed upon the payment of $10. These midwives so licensed shall practice midwifery in cases of normal labor only and no others and shall not use instruments nor assist in labor by artificial, forcible or mechanical means, nor perform version, nor attempt remove adherent placenta or attempt the treatment of disease.

The foregoing statement is a summary of the law as it relates to Rochester. This law passed as a result of the labors of Dr. N. W. Soble, one of the original members of the board, who, with Dr. W. S. Rambo and the health officer, Ex-Officio, were made the Board of Midwifery Examiners and have served for twenty years. Prior to the time when the Board of Midwifery Examiners of Rochester was constituted, there were 30 or 40 midwives practicing, and they attended more than one-third of the reported births. Today there are nine midwives practicing and they attended last year 18 per cent of the reported births. In the past fifteen years but three or four new midwives have been admitted to practice. Any midwife able to pass the examination of the Rochester board must show theoretically that she is as capable as a third year medical student in obstetrics, and she must ,also show that she has had vastly greater practical experience. Midwives must pass examination in English.

The whole midwife problem in America is an attempt to engraft an old continental custom upon the people of the United States. We do not want midwives. The mothers of our children ought not to have midwives. We do want better trained physician obstetricians, whose duty it shall be to protect the mother, both before and during, as well as after, the birth of her child.

DR. P. W. VAN PEYMA, Buffalo: As a member of the Board of Examiners in Midwifery for Erie County during the last twenty-five years, and from about forty years of experience in practical work with them, I am clearly of the opinion that midwives have a field of usefulness. While many are still careless, yet many, also, are cleanly, intelligent and conscientious. The condition would not be improved by turning their practice into the hands of such medical men as could be expected to do the work. The essential difference between a midwife and a physician is that the latter are free to hasten delivery by means of forceps, version, etc. This, in my experience, results in more serious consequences than the shortcomings of midwives.

No community will have good obstetric practice that does not learn to adequately recompense the attendant for time and skill. Time is an element of first importance in labor, and the midwife is more inclined to give this than is the average underpaid physician.

My remarks touching Cesarean section were somewhat as follows:

We have heard much about the technique of Cesarean section and very little about the indications for the operation. The latter interests me more. In placenta previa a fundamental distinction must be observed between the practically central variety and those where only a small portion of the placenta overlaps the cervix. The essential points to be observed are how much placenta must necessarily be out of function and for how long a time, also how much hemorrhage is unavoidable. In a practically central placenta previa, especially in a primipara, Cesarean section will often be the operation of choice. In the lateral varieties, where but a small portion of placenta is out of function and in which type the hemorrhage is easily controlled, Cesarean section is not at all indicated. Various methods of treatment, such as rupture of the membranes, and by pressure on fundus or by traction with forceps, bringing the presenting part to engage and to occlude the cervix and thus compress the bleeding placenta, give good results both to mother and child. In multipara, with quickly dilatable cervix, manual dilatation, introduction of the hand on the side where there is least placenta and version and extraction is also very successful in these cases.

The present wave of operative interferences is disastrous. The writer has delivered naturally several children in cases where Cesarean section had been previously done for supposed disproportion of child and pelvis. Quite recently, in this city, two women delivered themselves while the surgeons were scrubbing up preparatory to Cesarean section.

DR. N. KAVINOKY, Buffalo: The midwife question is not only an administrative and medical one but to a greater extent an economic one. The rich woman gets good obstetrical care of a specialist for good money. A part of the very poor women get the same good help in well-established maternity institutions or general hospitals as charity. The majority of women are not in position to pay the fee of a special obstetrician, nor do they want to be attended for nothing; they are not paupers and they hate and distrust charity. Those who are doing special work are not accessible to them. Even the young physician, who takes obstetrics as a specialty, will not go to the needy districts; he prefers to wait in comparative idleness for a few years until he picks up a more fashionable practice with high fees. Thus these great masses of women are dependent upon the midwife and the busy and often unskilled general practitioner. The work of both is often unsatisfactory, and sometimes disastrous to the life or health of both mother and child.

Will the abolishing of midwives improve this situation? I am sure that if this should become a fact under the existing conditions, a considerable number of women, who are now taken care of by midwives, would be taken care of by plain women with no training or license (such as relatives and neighbors). Many of the pregnant women (especially Polish) do not see a physician or a midwife before labor. They call for help when labor starts and then it is often impossible to get the attendance of a physician, especially if it happen at night.

One more point I would like to bring up. The bad obstetrical work that is being done by the midwife can be diminished to a more or less considerable degree by strict supervision of the health authorities with the assistance of the medical profession. Fear of losing her license or having the same suspended will force the midwife to be more cautious in her work. Can anything or anyone interfere with the activities of a medical man, if he is unskilled in obstetrics and inclined to do hasty work?

DR. W. MORTIMER BROWN, Rochester: In dealing with the question of the midwife, it seems to me that we have been going at it in the wrong way. Instead of trying to legislate and regulate her out of existence I think that we should in a measure forget her, and devote the energy we would expend on her elimination to some constructive effort to build up something to take her place.

At the present time she occupies a place in our social structure which we as a profession have been unwilling or unable to fill. My feeling is that we cannot expect to arbitrarily eradicate her from the community and put nothing in her place.

If we will systematically work to build up a system of care for the poor and ignorant mothers by the means of prenatal or advisory obstetrical clinics, social service work, and the various welfare activities, we will have an educational factor that will do more to remove this evil than any other, that will serve to place the abnormal cases under proper care at once and will ultimately develop some means of caring for the mass of ordinary cases.

1915 – Twilight Sleep Review – DeNormandie - Boston

REVIEW OF THE LITERATURE ON TWILIGHT SLEEP.

Published Boston Med. Surg. J. Volume 172 (1915) p. 590-598

Robert L. DeNormandie, M.D., BOSTON,
and
JOHN B. SWIFT, JR., M.D., BOSTON.

THERE has been so much misconception in regard to scopolamine-morphia anesthesia in obstetrics, or so-called twilight sleep, that it seemed advisable to go over the authoritative literature on the subject. The following article is a review of the chief important articles which have appeared since 1902, when the first work of scopolamine-morphia anesthesia in obstetrics appeared.
In November, 1902, v. Steinbuchel[1] of Gratz first reported the use of the combination of scopolamine-morphia, in obstetrics. He then reported one case as a preliminary report of his further article, which appeared in 1903. In this first report Steinbuchel spoke of the peculiarly antagonistic influences of the two drugs on the human organism and warned us then of the unknown influence on the fetus of even very small dose. He used .0003 gm, or 1/200 gr of scopolamine hydrobromicum (Merck) and .01 gm or 1/6 grain of morphia muriate. He waited two hours before he gave the patient the second dose, which was half the original dose. His second article contained the report of twenty cases, in sixteen of which the results were good, three medium and one a failure. There was no disturbance of the third stage of labor. One case developed marked excitement. Seventeen of the children were born alive and in good condition. Three were lost, but in no way could scopolamine be regarded as the cause.

In 1904 Weingarten[2] of Giesen and Wartapetian[3] at Jena reported forty-five and twenty cases, respectively. Reining[4] followed Wartapetian with thirty-six cases. The results we're variable, both as regards the relief of pain for the mother and the condition the baby was born in.
Pusching[5] reported in 1905, 62 cases in which he used the method was a “treat to the woman." He used .0005, or 1/120 gr of scopolamine, combined with the same dose as before of morphia, gr 1/6. He observed no change in the strength of the pains and no danger to the fetus or that the drugs had any accumulative effect. Up to this time he is the writer who favors most highly this method.
In February 1906, Gauss[6] reported three hundred cases from the Freiburg clinic, and in 1907 appeared his results of the first thousand cases. The development of this form of obstetric anesthesia is due entirely to Kronig and Gauss at their Freiburg clinic, and in order to know what their technic is, their published papers are of the greatest aid. Gauss has written in more detail than Kronig. Gauss says for a method of anesthesia to be useful in obstetrics it must not disturb the pain activity, the abdominal pressure, the placental stage, the lactation or the puerperal involution, and finally, it must not be harmful to the mother or to the child whose functions must be all right the first few weeks of life.

The technic[7] is as follows:
When the pains in a primipara are well established and coming every four to five minutes, or in a multipara every five to seven minutes and last thirty seconds, an injection of .0003 gm or 1/200 gr. or scopolamine is given and then .01 gm or 1/6 gr. of morphia. An effect is usually seen in from 15 to 30 minutes. Three-quarters of an hour after this injection the patient's memory is tested by asking some simple pertinent question; if she remembers and answers correctly a second dose of scopolamine is given, but one-half the first dose. Morphia is not repeated. If the memory is lost, the second dose of scopolamine is held off until by further questioning it is seen the memory is

returning. In the majority of cases the desired condition of amnesia is reached with two and a half doses. (Throughout this paper we regard the standard dose of scopolamine as .0003 or 1/200 gr.). This condition of amnesia is reached slowly by repeated doses of scopolamine, given at from one to three-hour intervals. A fresh injection is given only when the memory test proves the object shown thirty minutes before to the patient or the question asked has been retained in her memory. Throughout this time the memory test is constantly applied and Gauss warns not to keep asking the same questions over and over again, but to change now and then, and to make use of the various happenings of the labor, such as the rupture of the membranes or vaginal examinations.

As the patient comes under the influence of the drugs she sleeps between the pains, only to rouse and groan or cry out at the height of the pain.

Gauss has no desire to keep patients quiet throughout the labor. He specifically warns not to attempt to narcotize the patient so much that she will not respond to the pains. The phrase he constantly uses is that the patients perceive the pains but do not apperceive them. In other words, they respond to the pain, cry out and move about, but they do not store these impulses up in their brains to make much of at a later period. Upon this memory test, carefully and diligently carried out, Gauss says the entire method stands or falls. Gauss insists that if physicians do not carry out the details of the technic as advised by him then this method of twilight sleep must not be condemned if the results do not correspond to his.

Besides the memory test there are other signs which show the patient is under the influence of the scopolamine, but as they are of no such value as this one fundamental one, we simply allude to them, ---the appearance of the Babinsky reflex, the dilatation of the pupil and motor incoordination. In order to have uniformly good results the patient should be guarded from the influence of sensory impressions, such as loud noises and strong light. To do away with such disturbances, Gauss places dark glasses or a towel over the patient's eyes and fills her ears with cotton dipped in oil. Certain of the writers who have had not as good results as Gauss make light of these precautions. Kronig,[10] however, feels that because Leopold in Dresden and Bumm in Berlin have such large clinics and cannot obtain the quiet that is necessary their results are not good. Nurses and physicians trained to follow the memory test accurately are also most essential for the carrying out of this method.

Up to within a relatively short time it has not been possible to obtain a uniformly good preparation of scopolamine. Whether the reason was that the scopolamine which first was on the market was not true scopolamine or that scopolamine is unstable, we cannot say, but we are inclined to think both reasons were present. The pharmacologists say that scopolamine and hyoscine are chemically of the same formula, but it is now well established that the action of the two drugs differ. The unstableness of the drug Gauss recognized early, and warned physicians against using it if the solution showed any cloudiness or flocculi on shaking. Because of the instability and the consequent poor results which appeared, Straub after experimentation found that if mannite were added to the scopolamine it remained stable. Siegel, working at Freiburg, has found such a solution to remain stable, at least a year and a half.

Not only has the preparation used been variable, but the effect on any individual patient is always at first unknown, even at the present time, and that is one of the reasons why in inducing amnesia the doses must be small and given slowly. There are certain side effects which not uncommonly follow the giving of scopolamine, and whether one thinks them of much or little importance, depends upon whether he favors the method or not. The reddening of the face certainly is not alarming. The thirst is not infrequently most annoying and to overcome it water is urged on the patient at short intervals. The motor excitement at times is tremendous, necessitating several nurses to hold the patient in restraint. Fortunately, this is not a common side effect but as yet no one can foretell which patient will show it.

The hallucinations, the incoherent mumblings, do occur, but Kronig[11] states that "these are of no material importance, so long as the relations of the mother do not remain in the room, for these states of excitability make an unpleasant impression on the family. In consequence of this, we only carry on the method of 'twilight sleep' in cases where the relations promise to be out of the room during the whole time of the birth. "

When Gauss reported his first three hundred cases he said that he had used this twilight sleep in 62% of all the cases that came to the clinic, and some time later Beruti, [12] reporting further cases from the Freiburg clinic, said it had been used in but 64.58% of all the cases entering the clinic. We have not found other figures of the frequency that this method may be used. Freeland and Solomans[13] at the Rotunda Hospital began their investigations in the fall of 1908 and yet it was not until the fall of 1910 that they could report on 100 cases. All the other writers give the number of cases but in no instance do they state the percentage on which it was possible to carry out this technic.

Gauss claimed that the course of labor by this technic is in no way interfered with, that the operative frequency is not increased and that the third stage is in no way altered from the normal. Shortly after Gauss reported his first series of cases, other obstetricians took up the method and Hocheisen[14] was among the first to report cases and he was not in favor of its use. He found more than 70% of his patients showed some of the unpleasant side effects such as vomiting, marked headache and dizziness, excessive thirst, restlessness, delirium and hallucinations. He notes that the women did not remember any of these effects but the lay persons seeing it were much upset for they expect a quiet physiological sleep. He claimed the birth was lengthened in 50 cases, 5 times atonic post-partum bleeding and 15 times marked retardation of the involution of the uterus occurred. Eighteen per cent of the babies were born in a state of oligopnea and 15% in asphyxia. One child died during birth and three shortly after birth, yet he admitted that scopolamine could not be blamed for these deaths. He advises the conscientious physician to keep his hands off twilight sleep until favorable effects have been assured.

This article of Hocheisen was very soon answered by Gauss[8] with an analysis of his first 1000 cases. In the course of this paper Gauss showed that Hocheisen had failed to use the memory test and had used a solution of scopolamine which had broken down as shown by a fine deposit with a milky appearance when shaken. He used this same preparation on ten patients and obtained poor results. Hocheisen's paper, coming as it did from Bumm's clinic, made a strong opposition to the quick taking up of this method. In this series of 1000 cases there was no maternal death due in any way to scopolamine. There was no increase in the percentage of post partum bleeding. In 363 cases the amount of blood lost was measured and the average was 277.7 grams which, according to von Winckel's table is well within the physiological loss.

The third stage was completed spontaneously or by a very slight pressure on the belly in 51% of the cases, while pressure or slight Credé accounted for 48.1%, manual extraction .4%, and manual extraction after a Caesarean section .5%.

The maternal morbidity is no different with this method than with any other. It was claimed that insomuch as the drug was excreted by the kidneys, damage would be done the kidneys, but careful examinations by Gauss of the urine of 100 women showed this to be untrue.

From a careful analysis of the length of labor in these 1000 cases there is a slight lengthening of the labor. Kronig says the average length of labor has been increased but half an hour. The opponents, on the contrary, find there is a decided lengthening of labor due chiefly to the prolongation of the second stage. This prolongation of the second stage, the opponents say, is because the women are unable or will not bear down in order to expel the baby. Gauss says that when a patient will not bear down the proper technic has not been followed; that the belly pressure is done away with because too deep narcosis has been obtained through lack of observing the memory test. He argues that if the condition of amnesia only is present, the patients bear down better because

the pain is not apperceived. Writers report several cases where twilight sleep has been maintained 40-50 hours with no apparent detriment to the mother or child, and as much as .00675 gms (roughly 1/10 grain) of scopolamine has been given.

In the first 500 births the operative frequency was 9.68%, while in the second it dropped to 4.95%. In Fehling's clinic the operative frequency without scopolamine was 5.29%. In 163 private cases Gauss stated that "relief forceps were not used once, because," he says, "we are independent of the crying and praying of the mother because we know the patients are in amnesia because of correct twilight."

We must all admit that this is a very low operative frequency when compared with our own percentages. We realize that Bokelmann's statement that 40% of his cases showed operative deliveries, 20.8% of which the only indication was the relief of pain, is much nearer our own results than are those of Gauss.

This difference in operation frequency has been made much of by Gauss and some of the lay writers. Its importance lies only in the fact that an appeal is made to the woman's temperament. If sepsis and morbidity, fetal or maternal, follow operative deliveries, then of course Gauss' claim that the operative mortality is lowered is an excellent point in favor of scopolamine and morphia anesthesia. But we feel that the operative morbidity should be no different in simple low forceps work than in normal delivery, and the time saved to the mother is a very appreciative point. If we assume that the operator will have bad results with high maternal and fetal morbidity, then Gauss' claim for a low operative mortality is important. That presupposes poor obstetricians, poorly trained men, and in that class of cases there is no question but that the fewer operations that are done the better for the patient.

Gauss has given no figures on the frequency of perineal tears, but the impression one gets from reading the articles is that the tears are of less frequency and of less severity because of the complete and slow dilatation of the birth canal. Beruti, however, in 600 cases had perineal tears 88 times or nearly 15%.

Lactation period shows no harmful effects according to Kronig, Gauss or Beruti. Though all the writers are practically agreed that scopolamine is not dangerous to the mother, the result to the child is not so favorable. In about 25% of all births with scopolamine the babies show a definite alteration from the normal breathing. That is, they present a picture of either oligopnea or asphyxia, the former appearing in from 15 to 20% of cases, and the latter in 5 to 10%. The other 75% of the babies are born in a normal condition and their breathing causes no apprehension. Gauss described the condition of oligopnea as the result of the drugs used, but in no way is it to be regarded as alarming. The babies breathe and cry at birth, only to relapse into motionless slumber. The heart action at first is strong, and as the breathing grows shorter the heartbeat, drops even to 60. As the breathing again begins, due to the stimulation of the center of respiration by the accumulated CO_2, the heart beats become more rapid. This cycle repeats itself, the breathing becomes steadily better, the intervals of non-breathing steadily less. When Gauss first saw this condition he made attempts to resuscitate the baby at once. Gradually he left the babies alone more and more. Several children were left absolutely alone while in this oligopneic state and the breathing as slowly but steadily established so that now Gauss puts such babies aside, feeling confident they will in twenty minutes to half an hour begin to breathe normally. In the further condition of asphyxia, apnea, he uses skin irritation and heart massage to stimulate the child's respiration. In this condition the child is at first more cyanotic than in the oligopnoeic condition and later it becomes pallid. That this condition is serious cannot be denied, but it fortunately comes with careful dosage but very seldom. Gauss feels that it is the effect of the morphia on the child, and not the scopolamine, and with careful individualization of each case, the condition will not arise. Gauss at first had a percentage of 13% apnoeic children while Beruti later in 600 cases reduced this condition to 5.14%.

Beruti's analysis of 600 cases in Gauss' clinic is most favorable and we quote some of the figures. Of 609 cases, 9 sets of twins, 602 children or 98.85% were born alive, 7 stillborn or 1.14%, and of these seven deaths, the only ones which could be laid to the twilight sleep method were two. Here it was found that aspiration of amniotic fluid had occurred. But this happens when twilight sleep has not been used. Those in favor of the Freiburg technic claim this depressed condition of the child's centre of respiration makes only for the good of the child, as it prevents, to a great extent, all premature inspiratory efforts.

That this condition of oligopnea, is not very dangerous to the child must be admitted when one realizes how many thousand cases have now been delivered under this method, surely with no higher mortality than without it. It is difficult really to determine the true percentage of deaths that may be laid to scopolamine. There are so many causes which may influence the ultimate real cause of the death, that the relation scopolamine bears to the death is oftentimes minimized or exaggerated, depending upon whether the writer favors or is hostile to the Freiburg technique.

What are we to expect from this technic? Can we confidently tell each and every patient that now she may have her baby without the slightest pains?

From reading Gauss' articles it is clear that the stopping of pain is not his goal or claim. The patient, if the technic is properly carried out, cries out with the pains and shows in every way she suffers. But the action of the scopolamine blots the memory of this suffering from her higher brain centers. In what percentage of cases does this ideal amnesia occur? In Gauss' first 1000 cases it occurred in 76%, while in the next 600 cases reported by Beruti, it was accomplished in only 65%. Kronig now states that this complete amnesia is obtained in 80% of the cases. Some relief was accomplished in 8.2 % by Gauss and in 21% by Berati, and in 5.6% by Gauss and in 13.6% by Beruti there was no result obtained. In other words, even at Freiburg they can use this method in but 62 to 64% of all their cases and in from 5.6% to 13.6% of these cases the drug is without results.
It is agreed that scopolamine should not be given in cases where there is a primary uterine inertia present. Gauss further avoids its use in anemias, where there is disturbance of the consciousness, high grade pelvic contractions, illness with fever, and when communication with the patient, such as deafness or inability to understand the language spoken is present. Also twilight sleep is ruled out where the labor is rapid and the termination is probable within one or two hours. Gauss and others have used this method with excellent results in cardiac conditions and in a few cases it has been tried in eclampsia but no definite conclusions have been arrived at for complication.

It is not to be expected that this method would be accepted whole heartedly by all in the medical Profession or that they would have equally good results in the cases they used the method in as did Gauss. Variable results have followed its trial by other physicians but the surprising thing in practically all the series of cases by other physicians who condemn the method is that they have strayed far from Gauss' exacting technic. One has repeated the morphia until narcosis is complete, another has ignored the memory test, others have changed the doses given without sufficient reasons. Gauss has not changed the technic practically any recently. Beruti, in the Freiburg clinic, tried various preparations and also the giving of veronal in combination with the usual technic.
After Straub succeeded in obtaining a uniform and stable preparation of scopolamine, Siegel, realizing that the use of the memory test intelligently was the stumbling block to the success of the method, attempted to standardize the dose –to bring it to a rule of thumb.

Siegel's[15] scheme is as follows: the first dose consists of .00045 gm of scopolamine and .03 gm (gr 1/2) of narcophin. Forty-five minutes later scopolamine .00045 gm is given and forty-five minutes after the second dose the third is given and this consists of .00015 gm of scopolamine and .015 gm of narcophin. The fourth dose of .00015 gm of scopolamine comes one and a half hours after the third. Scopolamine is then given every one and a half hours following and at every third dose narcophin .015 gm is given in addition to the scopolamine.

The narcophin[16] referred to is a preparation made by Bohringer and Sons of Germany, consisting of a narcotin-morphine-meconate which is said to have a less marked effect on the center of respiration of the fetus than morphia does. At the present time the majority of physicians are trying it out. When it is used it is repeated not infrequently once or twice in half the original dose --in distinction to morphia, for this is practically never repeated by Gauss.
Siegel has reported 220 cases treated under this standardization, with good results. He further altered Gauss' original technic by giving as the head was crowning, inhalations of ethyl chloride, for he found that without it complete amnesia at the most painful moment of birth was not obtained.
Of these 220 cases, 196 were spontaneous deliveries, 18 forceps, 2 breech extractions, 3 versions and 1vaginal section, in all 24 operative cases. Eleven of these operative cases were done under inhalation narcosis, 12 under ethyl chloride and one without any additional narcosis. Eighty-eight per cent of the cases under this form of twilight sleep had complete amnesia, 10% partial amnesia, in 2% of the cases there was no effect. In thirty-two cases an oxytoxic was given to complete labor. Gauss has not written approving this standardization of the dose. Kronig does not seem to be over-enthusiastic about it, for he says " We attempted to bring about a standardization of the dosage of this 'twilight sleep', and in the cases of women of average strength and good health the desired degree of narcosis resulted."

The reason ethyl chloride is used at the expulsion of the head is that unless the exact degree of amnesia that is correct is present, the patient has the sensation of pain. From these few sensations which Gauss has called "memory islands" the patient builds up a story of her entire labor and therefore from her point of view the entire labor has been painful and the method a failure. Rather than run the risk of these “memory isles” appearing, the ethyl chloride or, in other instances, ether or chloroform is used.

Outside of the Freiburg clinic, this method has never taken strong hold of the medical profession. In France it has been used relatively little. In England, Croom[17] reported its use in 62 cases. His results were that in the majority of cases the labor was practically painless and that with ordinary precautions the method is safe. He did not carry out the Freiburg technic. He first used 1/400 gr scopolamine with 1/8 of morphia, then increased the scopolamine to 1/100 gr. He waited until the patient was in the second stage of labor in the majority of cases. In this series no children were lost and the mother showed no untoward effects except, possibly, a tendency to post-partum hemorrhage.
Freeland and Solomans[13] reported a series of 100 cases. Ten of these cases showed complete amnesia; in 57 there was a marked effect in the diminution of pain, in 20 the effect was fair but in 12 there was no effect They gave the drugs hypodermically and by mouth and came to the conclusion that the hypodermic use is only preferable when the patient shows a tendency to vomit
In their series two children born were dead following a forceps delivery after a delay in the second stage, and Freeland and Solomans say that when this occurs the cause is an error in technic and not due to scopolamine.

Freeland and Solomans do not feel that a physician must constantly be present after scopolamine has been given. They do however, warn us that the nurse should be instructed to keep a watch on the perineum, and if the patient be asleep she should be kept on her side to prevent the possibility of the tongue falling back. In their series there were 59 lacerated perineums and forceps was done 19 times and two post-partum hemorrhages occurred.

Giuseppi[18] reported the use of scopolamine in 37 eases, 26 primiparae and 11 multiparae. He used 1/100 gr hyoscine hydrobromide and morphia gr 1/4. When the dose was repeated the morphia was omitted. The English regard hyoscine and scopolamine as identical drugs, therefore, this explains Giuseppi's use of hyoscine. Giuseppi's results were practically the same as those of other observers, though the number of cases is too few to come to any marked conclusions. At the end of his paper is a table giving in detail the results of his observations, which are very interesting.

In this review, we have not included the articles which appeared following Gauss' first articles in 1907 in this country. The results were so variable, the technic followed so different from that at Freiburg, that for our present purpose they are of no use.

Last fall articles on scopolamine-morphia anesthesia began appearing in the medical journals as the direct result of the account of the Freiburg method of twilight sleep that appeared in *McClure's Magazine.* Among the first to publish their results were Harrar and McPherson[19] from the New York Lying-In clinic. They reported on 100 cases and obtained complete anesthesia in 66 cases. The successful cases were those in which the treatment was begun from three to seven hours before labor terminated. These writers did not find any increased, tendency to post-partum hemorrhage, but on the contrary, thought there was less bleeding. Two babies in this series were stillborn, and one child of an eclamptic mother died, but the writers said the stillbirths were due to faulty mechanism of labor and not to the administration of the scopolamine. They do not feel that there is any prolongation of labor. The first stage showed a more rapid dilatation of the cervix followed by a delay in the advance of the presenting part in the second stage. This constant delay in the second stage resulted in an increase in the number of forceps deliveries until they began the use of pituitrin. Harrar and McPherson came to the conclusion that the method was a practical procedure, that it will abolish the "ordeal of labor" in 60-70% of the cases. The disadvantage of the method is the constant observation that is necessary and the inability to use it in private work, unless the finances of the patient permit a sufficient working staff to be present constantly.

Knipe[20] first reported on 41 cases, later[21] increased this number to 101. In this latter report he obtained complete amnesia in 78, partial in 12, analgesia in 2, failure in 9 cases. In the latter cases 5, however, had but one injection of scopolamine. There was no maternal mortality due to scopolamine. There were two stillbirths, one due to failure to resuscitate a baby properly, and Knipe thinks this should have been avoided; the second a prolonged labor with a large child in a moderately contracted pelvis. Eighty-nine of the babies cried at once, 8 showed oligopnea and 2 asphyxia.

Knipe noted no difference in the third stage except in one case there was a moderate post-partum hemorrhage. Only 7 forceps were done, and from this Knipe argues that the necessity therefore for interference is not marked. He suggests that scopolamine be used guardedly in the second stage, and adds that by the judicious use of chloroform or ether amnesia may be continued. Rongy[22] reports 220 cases, and to carry out the Freiburg technic he had the assistance of a recent assistant from that clinic. In 183 cases complete amnesia with anesthesia was obtained. Seventeen cases showed anesthesia without amnesia and in 21 cases the desired effect was not obtained; 186 of the babies cried spontaneously, while 34 showed varying degrees of oligopnea. Rongy does not think the oligopnea is dangerous. Total infant mortality was 6, yet in only one case, where an overdose of narcophin was given, could the method be blamed. Twenty-three cases were terminated artificially. Rongy finds no contraindications, with the possible exception of kidney complications. He feels that the procedure is especially efficacious when cardiac lesions are present. One case developed a post-partum psychosis, who had had scopolamine, and in the same week two other psychoses appeared, yet neither of these patients had been given scopolamine.

Rongy remarked that the tendency towards engorgement of the breasts, was noticeably diminished in this series. In ten patients a severe headache during the entire puerperium occurred, which yielded to medication scarcely at all, and in a number of cases the patients noticed temporarily a lack of power of concentration.

Brodhead[23, 24] obtained good results in 35 cases out of 46, and in 3 cases he had failures. He had no maternal complications. Thirty-one of the babies cried at birth, and in the others some manipulation was necessary to make the
babies breathe. He reports two cases where he thought the deaths of the babies were due to scopolamine. Brodhead says it cannot be denied that in properly selected cases, under competent

supervision, this method will he proved to be safe and of inestimable benefit, but of comparatively limited use.

Humstone[25] reports 20 cases and Polak[26] 51 cases. The former obtained complete amnesia five times and partial amnesia the same. In 16 cases he obtained complete analgesia and partial in four. The babies showed slight asphyxia three times, and in one case it was marked. In the remainder of the cases the babies breathed spontaneously. He does not regard it as a panacea for painful child-birth.

The latter had no failures and in no case was there any recollection of the labor. Asphyxia as present but once and cyanosis in only two cases. Polak speaks of the minimizing of perineal lacerations because of the slow gradual expulsion. In Polak's series, there were two low forceps operation. He is impressed with the wide field of usefulness that this method has, but feels that the general practitioner will hardly use it as a routine in his obstetric practice. In a symposium, "Has the Dämmerschlaf a place in Obstetrics?"[27] , DeLee, Applegate, Zinke, and Hirst and Bovée all feel the method is very limited in its use, while Polak and Knipe favor its use. Schlossing, who was an assistant at Freiburg, naturally favors it and feels that the method will obliterate the fear of childbirth and have an important bearing upon race suicide.

Beach[28] and Hellman[29] favor the method, while Bandler[30] says that for a new method to be a permanent adjunct to obstetric procedure it must do something which is truly valuable and that, without the addition of any risks, and he adds that he is yet to be convinced that this method does this.

Such, then, is the situation of twilight sleep from an unbiased, disinterested point of view. It has, as we have all known, a place in Obstetrics. It is not the panacea that the lay writers would have everyone believe, and neither are the physicians who do not believe in it backward, hardened individuals. All agree that the condition of amnesia is not easy to obtain, all admit that there is a definite percentage where failures occur. In only two writers have we found it stated in what proportion of all cases that enter a clinic is it possible to use it. These two writers, Gauss and Beruti, say they have used it in but 62% to 65% of all cases. The lay writers speak of success in 70% to 90% of the cases, carefully avoiding the statement that the method is available in but approximately 65% of all cases. Many of the lay writers speak enthusiastically of the early getting up after twilight sleep deliveries. This does not belong to the twilight sleep technic, but is a German procedure which has not been accepted by the profession at large.

The rank commercialism, which in many instances has gone hand in hand with the articles on twilight sleep, has done much harm to its acceptance. The showing of babies a few hours old, born during "twilight sleep," the printing of pictures of children some years old and their mothers, adds nothing to the effectiveness of this method. To the most intelligent such means of advertising is repellant and can in the long run be of no use. The American public have taken hold of this method, stirred on by an excellent lay writers' campaign which undoubtedly amply pays these authors.
In New York a Twilight Sleep Association has been formed, its aim being to promote all safe and efficacious means of securing painless childbirth.” In the little folder the association puts out we are given to understand that "twilight sleep" "is actually instantaneous forgetfulness of pain." It states that "the dose required for twilight sleep is smaller than for any other form of anesthesia and the usual dangers of anesthetics are reduced to a minimum."

The authors of this folder do not enlighten the laity why the dose used is so small! Farther along in the folder comes the statement that the "Freiburg Women's Hospital has the lowest mortality of mother and child of any Lying-in hospital in Europe or America," and from this statement one is led to conclude that because twilight sleep is used here then twilight sleep must be the best method to use in obstetric work.

Is a low mortality necessarily a great desideratum in a lying-in hospital? We do not wish to be misunderstood in regard to this point. If a lying-in hospital is to fulfill its highest function

completely it will have sent to its doors many desperate cases, and in these cases the mortality may be high, and yet the good the hospital does may far surpass the work of a hospital which has a very low mortality rate, which is proof that it has a large series of practically normal cases.
Hospitals are being opened for the sole use of carrying on this method. Department stores are having lectures on the subject. The medical profession must investigate and come to a definite scientific answer to this wave of hysteria which is running over the country. That very soon the proper value of this technic will be established, is certain. The standing of the physicians throughout the country who are honestly trying out the rigid technic will bring about within a short time a true disinterested statement of the value of twilight sleep.

REFERENCES

1. Von Steinbuchel: Centralblatt f. Gynäk., 1902, xxvi, p. 1304.
2. Weingarten: Inaug. Dissertation, Giessen, 1904.
3. Wartapetian: Inaug. Dissertat., Jena, 1904.
4. Reining: Centralblatt f. Gynäk., 1904, p. 47.
5. Pusching: Wiener klin. Wochenschr., 1905, No. 1, p. 6.
6. Gauss: Med. Klin., 1906, Feb. 11, p. 136.
7. Gauss: Centralblatt f. Gynäk, 1907, No. 2.
8. Gauss: Münch. med. Wochenschr., 1907, No. 54, p. 157.
9. Gauss: Archiv f. Gynäk, 1906, Bd. 78, H. 3, p. 579.
10. Kronig: British Medical Journal, 1908, Vol. ii, P. 805.
11. Kronig: Surgery, Gyn. and Obstet., 1914, No. 5, p. 531.
12. Beruti: Med. Klinik, 1909, Nos 14, 15, p. 497.
13. Freeland and Solomans: Brit. Med. Jour., 1911 Vol. i, p.187.
14. Hocheisen: Münch. med. Wochenschr., 1906, No. 37, p. 1801.
15. Siegel: Deut. med. Wochenschr., 1914, No. 21, p. 1049.
16. Straub: Münch. med. Wocherschr., 1912, No. 28, p. 1542
17. Croom: Jour. Obstet. and Gyn. British Empire, 1909, Vol. 16 p.16.
18. Giuseppi: Practitioner, 1911, Vol. 87, p 84.
19. Harrar and McPherson: Amer. Jour. of Obstetrics, 1914, Oct.,p. 621.
20. Knipe: Amer. Jour. of Obstetrics, 1914, Dec., p. 884.
21. Knipe: American Medicine, N. S., 1915, Vol. x, p. 29.
22. Rongy: American Medicine, N. S., 1915, Vol. x, p. 45.
23. Brodhead: The Post-Graduate, 1915, Vol. 30, p. 88.
24. Brodhead: American Medicine, N. S., 1915, Vol. x, p. 24.
25. Humstone: Long Island Med. Jour., 1914, Vol. 8, p. 461.
26. Polak: Long Island Med. Jour., 1914, Vol. 8, p. 455.
27. Polak: Symposium on Twilight Sleep, Med. Times, 1914, Vol. 42, No. 12.
28. Beach: American Medicine, N. S. 1915, Vol. x, No. 1, p. 37.
29. Hellman: American Medicine, N. S., 1915, Vol. x, No. 1, p. 32.
30. Bandler: American Medicine, N. S., 1915, Vol. x, No. 1, p. 59.

The following articles were also used in the preparation of the review of twilight sleep.

Biorkenheim: Praktische Ergebnisse der Geburtshilfe und Gynäkologie, Vol. ii, No. 1, p. 1, 1910.
Bosse: Monats. f. Geburtshilfe und Gynäkologie, Vol. 33, p. 316, 1911
Frigyesi: Monats. f. Geburtshilfe und Gynäkologie, Vol. 31, 1910, p. 409.
Heller: Med. Record, Nov. 7, 1914, p. 797.
Hilkowich: American Medicine, 1914, p. 789.

Hobb: American Journal of Clinical Medicine, Vol. xiv, 1907, p.565.
Jaschke: Münchener med. Woch., 1913, Vol. 60, p. 72.
Klinertz: Centralblatt für Gynäkologie, 1908, No. 42, p. 1387.
Mosher: Jour. Kansas Med. Society, 1914, Vol. xiv, p. 441.
Preller: Münchener med. Woch., 1907, Vol. 54, p. 161.

1915 – Twilight Sleep – Druskin and Ratnoff – New York

TWILIGHT SLEEP IN OBSTETRICS - WITH A REPORT OF 200 CASES*

* Read at the Annual Meeting of the Medical Society of the County of Westchester, November, 1914.

Published: NYSJM Volume 15 (1915) p. 146-152

By SAMUEL J. DRUSKIN, M.D.,
and
NATHAN RATNOFF, M.D., NEW YORK CITY.

In sorrow thou shalt bring forth children. Disregarding the teachings of divines and theologians, attempts have been made from time immemorial to alleviate the suffering of woman in the hour of her travail. We take it for granted that medically and ethically there can be no objection to the lessening or the relieving of the pains of the parturient. Indeed we conceive it to be the duty of the physician to bring relief and diminish the suffering of womankind, be it during parturition or at any other time, provided that the relief is not followed by any deleterious effect.

We shall not linger to recount the various means used and methods tried to lighten the sufferings of the parturient woman in this most interesting and important hour of her existence. We only wish to refer to the introduction of chloroform into obstetric practice in 1848; to the strong opposition to its use by the medical profession; to the virulent discussions it gave rise to; and to its immediate and widespread popularity after having been used in 1853 to deliver Queen Victoria of her first born. "Chloroform a la reine" had a widespread but short existence. It is not necessary for me to call the attention of medical men to the shortcomings and dangers of this method in obstetric practice.

The relief of pain by the induction of sleep is a recognized mode of treatment. Among the sleep-producing drugs morphin and scopolamin stand highest in the scale. The poisonous actions of these drugs are manifested in different directions. Morphin causes respiratory paralysis, whereas scopolamin produces heart failure. Investigations have demonstrated that if the two narcotics are given together the sleep-producing effect is greater than the sum of their individual action, provided they belong to groups that are not chemically related. In obstetric practice it is not necessary, as is the case in surgical operations, to produce deep narcosis. The pain of labor is bearable, and to relieve it only moderate slumber or semi-consciousness is required. If this is borne in mind no danger from cardiac or respiratory failure is likely to result.

SCOPOLAMIN AND HYOSCIN

The unsatisfactory results obtained in the early days with twilight anesthesia is attributable in a large measure to the impurity and unreliability of the preparation scopolamin and hyoscin. Confusion still exists in the minds of many physicians as to the source and identity of these alkaloids.

The product $C_{17}H_{24}NO_4$ was obtained first by Reichardt and Hohn in 1871. Its exact chemical formula was first established twenty years later. Until 1894 the alkaloid was isolated from the seeds of hyoscyamin niger. Since then scopolia root became utilized as a source of supply., Although the alkaloids derived from hyoscyamus seeds and scopolia root were considered identical, the name hyoscin was applied to the product obtained from hyoscyamus seeds, and the name scopolamin was applied to the base isolated from scopolia root.

Since 1898, however, the terms scopolamin and hyoscin were used interchangeably without any regard as to the source from which the alkaloid was derived. In 1910 the German pharmacopoeia adopted the term scopolamin hydrobromid with a specific rotatory power of 24 to 25 as a test for its identity and purity. In England the terms scopolamin and hyoscin are used interchangeably. The present tendency, however, is to apply the term scopolamin hydrobromid to the product giving a levo rotatory power of between 24 to 25, while hyoscin hydrobromid is used to designate a salt having a weaker rotatory power. In the United States the term hyoscin hydrobromid is still given preference, although practically all the salt is being imported from Germany and is largely of a levo-rotatory variety.

Scopolamin is an ester of tropic acid and the base scopolin and may exist in three isomeric forms. Two of these, the levo and racemic forms are known. The isomers differ in their physiological actions as well as in their chemical and physical properties. The levo isomer is the one used in medicine. The biological tests for the isomers are difficult and the pharmocopial tests are unreliable. The most accurate indicator as to the purity of the drug is its specific rotatory power. The rotatory power of a good preparation lies between 24 and 25. Precautions must be taken against alkalies coming in contact with the preparation, because even the weaker alkalies convert the levo into the racemic isomer. Solutions of the preparation gradually deteriorate, even when preserved in sterilized ampules. This occurs through saponification of the ester of tropic acid. To guard against this occurrence, alcohol-mannit, a sugar of the sixth power, may be added to the solution. A ten per cent solution of this sugar has been found to answer the purpose best. It is non-irritating when injected hypodermically and preserves the solution for years.

MORPHIN, PANTOPON, NARCOPHIN*

**Narcophin may not be quite as euphoneous as narcophen, but I prefer the latter termination because it is in uniformity with the terminations in the words narcotin and morphin.*

The other ingredient, morphin, used in the production of semi-consciousness is not only a narcotic but has also marked analgesic properties. Opium, from which it is derived, has advantages of a quantitative and also of a qualitative character over it, but it has the shortcoming that it cannot be administered by hypo. A preparation purified of the resins and other insoluble ingredients and capable of hypodermic use has been introduced under the trade-name "pantopon," and has been used with advantage as a substitute for morphin in the production of twilight sleep. Opium contains about twenty alkaloids, but the desirable properties are due chiefly to morphin and to narcotin, an almost inactive preparation. Narcotin exists in opium or pantopon in variable quantity from 1 to 10 per cent. Its marked influence in changing the character of the action of morphin when given in combination is demonstrated by the following example. In cats, the administration of morphin causes excitation and even convulsions; however, when combined with narcotin, drowsiness and sleep results. The combination that gives the optimum result is equal parts of morphin and narcotin. Narcophin is a recent chemical combination of equal parts of morphin and narcotin, held together by the double-barred inactive mecomic acid also existing in opium. Narcophin is not only a stronger narcotic than morphin but it is also a more powerful analgesic. Its action is also of longer duration. Its chief advantage, however, lies in the fact that it is less poisonous to the respiratory center. The main objection to the use of morphin in twilight anesthesia, fetal asphyxia, is thus met by the substitution of narcophin. Other advantages of the preparation are the absence of vomiting, absence of uterine and intestinal atony, absence of a benumbing effect on the higher cerebral centers. Solutions of narcophin rapidly develop moulds. To preserve the solutions from contamination it is necessary to add to them chloroform or boric acid.

The use of morphin and scopolamin alone or in combination for the relief of the suffering during parturition is not new in America, but the practice of twilight sleep on this side of the, ocean is of recent date. The term "Twilight Sleep" was coined by Gauss of Freiburg and stands for a distinct and definite state. By twilight sleep is meant a condition of drowsiness, so light that even slight stimuli will arouse the individual out of slumber, sleep setting in as soon as the stimuli are removed. The stimuli may be those affecting the special or sensory nerve endings. The painful irritations of labor are an unavoidable concomitant of parturition, but all other stimuli, such as noises and bright lights, may be excluded. A darkened, sound-proof room is a great aid in the production of a successful twilight sleep. Plugs of cotton soaked with oil may be inserted into the ears to exclude noises, and a bandage over the eyes may be used to exclude light.

To attain this condition of drowsiness known as twilight sleep, and not to pass into the boundries of deep slumber, a proper technic is required. The failures experienced by others with the use of morphin and scopolamin are due, in the first place, to the lack of a clear notion as to the object to be attained, and, in the second place, to the absence of a proper technic. The technic evolved in Freiburg, known as the memory test, is employed by us to determine whether the proper degree of narcosis has been reached or not. This is a simple, very fine and effectual indicator as to the depth of narcosis and, at the same time, permits a fairly wide range between wakefulness and deep slumber. The procedure is as follows: A patient is shown an object, say a Teddy-bear; she is asked what she sees and replies, "A Teddy-bear." Fifteen minutes thereafter, the patient is shown the same object and asked if she saw it before. On replying, "No," or that she saw it a day or a week ago, we infer that she is sufficiently under the influence of the drugs and we conclude that she no longer recognizes objects. However, upon further questioning as to what she sees and her replying, "A Teddy-bear," we see that the patient is sufficiently conscious to recognize objects, though no longer retaining recollection of them. In other words, she is no longer in a condition to apperceive, though she still perceives. The patient may experience pain, though in a greatly diminished degree, but the impressions are not retained. They fade out as quickly as they are made. The memory test is applied at frequent intervals, say every half or three-quarters of an hour. If attempts are made to obliterate all response to painful stimuli, not only will labor be checked, but dangerous symptoms may manifest themselves. Those who do pelvic surgery know how easy it is to excite a reaction even during inhalation anesthesia by irritating the pelvic gangliae. The first effect of morphin and scopolamin on the mother is the production of slumber. Symptoms of poisoning occur after the stage of deep narcosis is passed. In none of the two hundred cases have we noticed any ill effect on the mother. Gauss, in a series of five thousand cases, has not had a single death that could be attributed to the treatment.

The two drugs used by us are put up as follows:

Solution 1- Narcophin, 3 per cent; aq. chloroform, q.s.

Solution 2 - Scopolamin hydrobromid, 3 per cent; mannit, 10 per cent; aq. destilata, q.s. .

The treatment is begun as soon as the pains occur at regular intervals and discomfort is felt.

The first three injections are given at intervals of three-quarters of an hour apart; subsequent injections are given every hour and a half. As stated above, memory tests are regularly made to determine the condition of the patient, and we are guided more by the patient's amnesia than by the intervals elapsing between injections. At the Jewish Maternity Hospital it is customary to employ only one injection of narcophin. We rather prefer to repeat half the original dose every six hours, and feel safe in doing this; first, because narcophin, unlike morphin, has only a mild depressing effect on the respiration, and, second, because in six to seven hours the effect of the narcophin has worn off. If given, however, at shorter intervals, oligopnia bordering on asphyxia of the child may develop. Below are cited several cases under twilight treatment. The first is illustrative of a normal case, typical of a successful "twilight." A case of persistent occiput, and one of breech presentation are

also given. There is also cited a case where labor was terminated by forceps after having reached the perineal stage. Finally, there is given the shortest as, well as the longest case of "twilight" under our observation.

Case 104, typical "twilight."
R. W., age 24, primipara.
Aug. 18,1:40 A. M.; ext os two fingers, membranes (?), head engaged, R0A, pulse 76, respiration 22, fetal heart 140-160; pains every four minutes of half-minute duration.
First injection 1:50 A. M.; scopolamin 1.5 cc., narcophin .5 cc.
At 2:30 A. M. patient drowsy; at 2:50 A. M. pulse 90, respiration 24, fetal heart 130-160; pains every three minutes of half-minute duration.
Second injection 2:50 A. M.; scopolamin .5 cc.
At 4:20 A. M. pulse 90, respiration 24, fetal
heart 140-160; pains every four minutes.
Fifth and last injection 6:20 A. M.; scopolamine .5 cc. I
At 7.20 A. M. patient receives pituitary extract 1 cc.
At 8.05 A. M. birth of child; cries immediately.
Patient in complete amnesia from 4:30 A. M. until she woke at 2:30 P. M.

Case 178 shows a very good case of "twilight," where a low forceps was required.
M. M., age 27, primipara; highly intelligent but very sensitive and excitable. Inlet of pelvis normal; symphyseal angle at outlet very acute.
Oct. 7, 6 A. M., labor pains began; 11.30 A. M. ext. os one finger, membranes intact, head at brim, L0A; pains every five minutes.
First injection 11:30 A. M.; scopolamin 1.5 cc., narcophin 1 cc.
Second injection 12:30 P. M. ; scopolamin .5 cc.
Third injection 1:25 P. M.; scopolamine .5 cc.
Fourth injection 3.00 P. M.; scopolamin .5 cc.
Fifth injection 4.00. P. M.; scopolamin .5 cc.
5.55 P. M.1 delivery by forceps.
Patient had good strong uterine contractions and bore down with the abdominal muscles. Caput was showing; the sagittal suture was in the oblique diameter, but the head did not rotate on account of an obstruction at the symphyseal angle. A few drops of ether was administered and a low forceps applied, very slight tear of the perineum resulting.
The patient was under the full effects of the drugs at 12.45 P. M. She half woke at 7 P, M., fell into a slumber again and continued to sleep until 10 P. M., She did not remember anything of what had occurred from twelve o'clock noon until seven o'clock in the evening.

Case 162, occiput posterior.
B. C., age 19, primipara.
Labor pains began at midnight, Sept. 25th. 4.30 A. M. ext. os 2.5 fingers, membranes intact, head engaged, L0P. First injection 4.30 A. M.; scopolamin 1.5 cc., narcophin 1 cc. Subsequent injections each of .5 cc. scopolamin were given as follows: 2nd at 6.15 A. M., 3rd at 7.10 A. M., 4th at 8.10 A. M., 5th at 9.10 A. M., 6th at 11 A. M., 7th and last at 12.30 P. M. At 1.22 pituitary extract 1.5 cc. was given. At 1.40 P. M. birth of child as a persistent occiput; no laceration; amnesia complete.

Case 188, contracted pelvis, breech presentation, premature rupture of membranes.
I. K., age 25, primipara; interspinous 22, intercristal 25, intertrochanteric 29, C. D. 9Y4, C. V. 8 puls.

Oct. 16, 1 A. K, rupture of membranes; 6 A. M. labor pains began 10 A. M. ext. os one finger, breech R. S. A.
1.40 P. M. scopolamin 1.5 cc., narcophin 1 cc.
Subsequent injections each of .5 cc scopolamin were,given as follows: 2nd at 2.40 P. M., 3rd at 3.45 P. M., 4that 5.10 P. M., 5th at 6.30 P. M., 6th at 7.45 P. M., 7th and last at 9.30 P. M. Birth of child at 10.25 P. M.; expulsion of placenta at 10.45 P. M.; weight of child 6 lbs. 5 ozs. The breech was delivered spontaneously; the arms were delivered according to Milller's technic; the head was delivered by Smellie-Veit and pressure from above; there was only a mucous tear; no inhalation anesthesia was employed.
Patient came under the influence of the drug at 3. P. M.; she woke at 2 A. M.,. continued to sleep until 6 A. M., when she learned that she gave birth to a girl.

Case 155, shortest successful twilight.
E. L., age 27, para VI.
Sept. 20, 10 P. M., ext. os four fingers, membranes intact, head engaged.
First injection 10.10 P. M.; scopolamin 1.5 cc., narcopbin I cc.
Second injection 10.40 P. M. At 11 P. M. birth; amnesia successful.

Case 138.
K. R., age 21, para I.
Sept. 11, 12.20 A. M., ext. os two fingers, cervix thick, membranes intact, head not engaged.
First injection 12.30 A. M.; scopolamin 1.5 cc., narcophin 1 cc. The subsequent injections of scopolamin, each of .5 cc., were given as follows: 2nd at 1.25 A. M., 3rd at 3.00 A. M., 4th at 4.30 A. M., 5th at 6.30 A. M., 6th at 8.00 A. M., 7th at 9.30 A. M., 8th at 11.30 A. M., 9th at 1.20 P. M., 10th at 3.20 P. M., 11th at 4.20 P. M., 12th at 5.20 P. M., 13th at 6.30 P. M., 14th at 8.55 P. M., 15th and last at 10.30 P. M. Sept. 12th, 2.00 A. M., small amount of ether administered, episiotomy performed, child 9 lbs. 12 ozs delivered by medium forceps; child oligopnic; amnesia complete for more than 24 hours. In addition to the first injection of narcophin, 1 cc. of the latter was administered Sept. 11th at 7.30 A. M. and at 9.05 P. M. One cc. of pituitary extract was also administered Sept. 11th at 3.30 P. M. and another cc. at 8.55 P. M.

Our results with two hundred cases were as follows: One hundred and sixty-six, or 83 per cent, had complete amnesia; seventeen, or 8.5% per cent, had marked analgesia without amnesia; seventeen had no amnesia and but slight, if any, analgesia, in two cases, or one per cent, because treatment was discontinued; in fifteen, or 7.5 per cent, because labor was too far advanced for effective treatment (mostly multiparae) or because of some idiosyncrasy.

THE INFLUENCE OF THE TREATMENT ON THE PROGRESS OF LABOR.

Expulsion of the fetus is due to a combination of involuntary contractions and voluntary effort, and resembles in this respect the behavior of the intestines. The action of the uterine muscles is involuntary and is influenced but little by the treatment. When dilatation is complete and the fetus has entered the vaginal tract, the voluntary muscles are set into play to assist in the expulsion of the fetus. The woman bears down. The woman in "twilight sleep" is not always conscious of a desire to empty the vaginal contents, and therefore fails to bear down, and when she does, the act is rather reflex than voluntary and therefore not quite as effective. There is, therefore, a delay at the perineal stage. For the same reason she forgets, or even fails, to empty the bladder and it may be necessary to catheterize her more often than is the case during ordinary parturition.

The lack of voluntary effort may be compensated for by increasing the uterine contractions through the administration of pituitary extract. The woman may also be urged to bear down, and she will, in many cases, do as directed. However, the slow progress at the perineal stage is not altogether a disadvantage. The lower vaginal tract stretches very gradually and the results are marked by fewer and far less severe lacerations of the perineum than is otherwise the case.

We have seen that if the two drugs are administered in small doses no harm results to the parturient woman. We must not, however, lose sight of the fact that the young are very susceptible to the influence of opiates and that even the minute amounts that reach, the fetus through the placentaI circulation may have an untoward effect on the child. In untreated cases asphyxia in the new-born is generally due to respiratory failure, the heart continuing to beat for some time. Reasoning *a priori*, one would conclude that of the two drugs employed in the production of twilight sleep special care should be taken not to use excessive amounts of the morphin preparation, the drug that has a special predilection for the respiratory center. Gauss has demonstrated that apnea and asphyxia is due to overdoses of morphin in the combination scopolamin-morphin and, furthermore, that large doses of morphin are not necessary for the production of "twilight," and that the ill effect on the child can be entirely eliminated by employing small amounts of the latter drug. He has further proven that if large or repeated doses of morphin alone are employed, deep apnea results, even when progress of labor is not interfered with. On the other hand, the inference that scopolamin alone may be used effectively is not borne out in practice, for if sufficiently large doses of scopolamin are used at the first injection to make up for the absence of the morphin, the child comes to the world in a deeply intoxicated condition, even before the mother has passed under the full effect of the drug.

Gauss considers the condition of the new-born as the finest indicator as to the correctness of the doses employed. On the other hand, the grade of consciousness of the mother will determine, beforehand, the condition of the child. Our results have improved considerably since the introduction of narcophin as a substitute for morphin. They are as follows: One stillbirth, with slightly macerated skin; three cases of asphyxia, one of which was resuscitated after twenty minutes; another died of edema of the glottis after twelve hours, and the third died after one and one-half hours due to faulty development. One hundred and sixty-eight were normal children under no influence of any drugs. Thirty (14.7 per cent) were born under the influence of the drugs and were oligopnic. Dr. Gauss describes oligopnia (delayed breathing), or the condition of the new-born under the influence of the drugs, as follows:

The new-born breathes immediately after birth with either a loud or stifled cry and often remains lying motionless, although sometimes moving its limbs. The heart beat continues active. From time to time a short respiration occurs, so that as a consequence of the accumulated carbon dioxide and lack of oxygen, the child presents a picture of varying degrees of cyanosis. At the same time, it opens its eyes spontaneously, to close them immediately thereafter in a slow and tired fashion.

Gauss continues:

Especially characteristic of this intoxicated condition is the following: The children react briskly to stimulation, but the reflexly-provoked muscle reaction often becomes suddenly interrupted before its complete accomplishment, as if the completion of the intended motion was suddenly forgotten. The heart action during this time depends upon the character of the breathing. As the time between the last respiration and the next increases, the fetal heart sounds become less frequent, until they sink to 60 beats, to return to the normal with the next respiration. This phenomenon recurs again and again in steadily decreasing intervals until spontaneously or through the influence of external stimuli the breathing becomes regular, rhythmical respiration begins, and the children do not vary from the normal.

We have practiced twilight anesthesia both at the Jewish Maternity Hospital and outside of the latter institution since November, 1912. Our information is based on a knowledge of approxi-

mately 270 cases. The present report, however, is limited to an analysis of 200 cases treated at the Jewish Maternity Hospital during the period comprised between June 15, 1914, and October 22, 1914. During this period the facilities at the hospital were very favorable for the administration of twilight anesthesia. The institution had secured the services of Dr. Schlössingk, of Kroenig's clinic, who, in the earlier cases, administered the treatment personally, and later instructed and supervised the house staff. With the improved surroundings and acquisition of the services of men trained in the administration of the treatment, the results have improved correspondingly.

Included among the cases in which treatment was carried out are two of chronic endocarditis and two of nephritis with threatened eclampsia. The former went through labor without shock or stress. Of the latter, one terminated an hour after delivery in convulsions. However, the patient made a rapid and uneventful recovery. In three cases treatment was discontinued: (1) on account of an unpleasant effect on the mother; (2) on account of primary inertia associated with a malpresentation in a contracted pelvis; (3) on account of an unfavorable influence on the fetal heart sounds. The cases are cited below.

Case 114.
M. B.,.age 20, primipara; debilitated, anaemic looking woman.
Aug. 24, 5 A. M., labor pains began; 7.50 A. M. ext. os two and a half fingers, head engaged, pulse 64, respiration 26, fetal heart 134.
First injection 7.50 A. M.; scopolamin 1.5 cc., narcophin .1 cc.
Second injection 8.50 A. M.; scopolamin .5 cc.; pulse 68, respiration 35, shallow, sighing; fetal heart 138. At the end of 40 minutes respiration became normal.
Third injection 9.50 A. M., scopolamin .5 cc.; pulse 80, respiration 28, fetal heart 152. At the end of ten minutes the respiration again became sighing and continued for nearly three-quarters of an hour. Treatment was discontinued on account of the. anomalous breathing. At 12.45 P. M. birth of child. Amnesia is successful in spite of discontinuance of treatment.

Case 188.
F. L., age 26, para 1. Diagonal conjugate 10 minus.
Oct. 11, 7 P. M., rupture of membranes; 10 P. M. labor pains began. Oct. 12, 5.45 A. M., ext. os two fingers, head at brim, L. 0. P.
First injection Oct. 12, 5.45 A. M.; scopolamin 1.5 cc., narcophin 1 cc.
Second injection 6.50 A. M.; scopolamin .5 cc.
Third injection 8.00 A. M.; scopolamin .5 cc.
Fourth injection 9.30 A. M.; scopolamin .5 cc.
Treatment discontinued on account of primary inertia and dry labor in a contracted pelvis with malpresentation. Oct. 14, 4 P. M., delivered by high forceps of a living child.

Case 194.
J. H., age 24, para I.
Oct. 21, 9 P. M., mother's pulse 100, respiration 22, fetal heart sounds 150.
First injection 9 P. M.; scopolamin 1.5 cc., narcophin I cc.
9.15 P. M. fetal heart sounds 180. 10 P. M., fetal heart sounds 200.
Oct. 22, 1 A. M., birth of living child spontaneously, cord once around the neck, a great deal of meconium present in the liquor amnion. Fetal heart sounds immediately after birth 200.
It wag the opinion of the attending physician that the fetal heart sounds were becoming more frequent independent of the treatment, but it was thought best to discontinue.

Of the two hundred and two cases referred to there were one hundred and fifty primiparae, and fifty multiparae. Two hundred and two children were born; one hundred and ninety-eight were single births and two were twins. Of the single births one hundred and ninety-six presented by vertex and two by breech; of the twins, in one case both children presented by vertex and in the other case the second child came breech first.

Interference was required 23 times. In one case there was a breech extraction. Medium forceps was used in four cases, or less than two per cent. Low forceps was used in 18 cases, or less than nine per cent. This already includes two cases of forceps that were performed on account of excessive uterine contractions following the use of pituitary extract.

Lacerations of the perineum were strikingly reduced both in number and degree. In 200 consecutive cases, 75 per cent of whom were primiparae, we had only one severe laceration of the perineum. This was a tear down to the rectum caused by medium forceps operation by one of the younger men. the patient was discharged on the seventeenth day; perineum healed by primary union.

In our series hemorrhage was conspicuous by its absence. We did not have a single case of severe bleeding. This may be due to one of several reasons. First, because 75 per cent or more of the cases received pituitary extract towards the end of the second stage. It may be due to the fact that manipulation and major interference was diminished. It may, however, be a simple coincident, or it may be due to some other unknown cause.

Involution is not interfered with; it may even be promoted. The secretion of milk is not diminished except that congestion of the breasts seems to be delayed about twenty-four hours. Slight restlessness is occasionally present. Mild degrees of mania are rare and may be easily controlled; early in the treatment by reducing the dose, and later in the treatment, the time it is most likely to occur, by the addition of another dose of narcophin.

Thirst is present in most cases, but is rarely marked or troublesome. We let our patients have all the water they care to drink. Vomiting was present in only three cases. Headache was never complained of.

The bladder should be watched. It may be necessary to catheterize it from time to time; otherwise progress of labor may be interfered with. We have also found it beneficial to give the patient a warm enema when the head is at the outlet. It is both an aid to cleanliness and helps the further progress of labor. During the lying-in period the bowels are active and the bladder functions normally. We have not noticed any interference with the third stage of labor.

It has been our practice for the past two years, unless there were some definite contraconditions, to let all our patients sit up in bed at the end of twenty-four hours, and to let them out of bed for fifteen minutes on the third day after confinement. We have found this practice a comfort to our patients and a satisfaction to ourselves. However, many of our patients were surprised when permission to do so was given them, and some seemed to doubt the wisdom of the practice. The cases that have received "twilight," in contradistinction to the ordinary cases, will frequently ask, the day after confinement, for permission to get out of bed. They feel so fine.

Crile has demonstrated that the three most important factors concerned in the causation of shock are violence, insomnia and anxiety. The latter two elements can be eliminated by the induction of twilight sleep. The elimination of these depressing factors plays as important a role in the recuperation from childbirth as it does in the recovery from a surgical operation. These depressing influences produce microscopic changes in various organs. With the removal of the original cause these changes apparently disappear, but that some of the changes are permanent would seem reasonable to believe.

One hundred and ninety-eight mothers were discharged from the eighth to the fourteenth day in good condition. One mother remained until the seventeenth day on account of injury to the perineum. One mother was transferred to another institution on account of insanity she developed on the fourth day of her puerperium. She gave a history of having had several previous attacks.

Of the two hundred and two children born, one hundred and ninety-five left the institution in good condition. One child was discharged in a weakened and anaemic condition on account of melena neonatorum. It was treated with horse serum when hemorrhage was active, and recovered good health in a few weeks. Six children were lost: (1) One was still-born; the skin was macerated in patches. It waS a case of hydramnion. The house surgeon claims to have heard the fetal heart sounds an hour and a half before birth. (2) In one child cardiac pulsation continued for an hour and a half and attempts at respiration would occur with each introduction of a catheter into the trachea. Autopsy revealed a defect on the left side of the diaphragm, a rudimentary left lung, the left side of the thorax occupied by the stomach, large and small intestines and spleen, and the heart transplanted to the right side. (3) One child died several hours after birth with signs of cerebral hemorrhage. No autopsy. (4) One child died from edema of the glottis twelve hours after birth. No autopsy. (5) One child died five hours after birth; it was a premature birth, with a spina bifida. (6) One died five days after birth from melena neonatorum. It came from a family of bleeders.

CONCLUSIONS

(1) The treatment is safe, both for the mother and child.
(2) The treatment is especially to be recommended for primiparae. Not only does it save them the agony of a difficult labor, but it also protects them against unnecessary interference on the part of the physician, due to the pleadings of the patient and family.
(3) In multiparae, it is a question whether a rapid labor, brought about by the administration of minute and repeated doses of pituitary extract, and the pangs of labor relieved by a dose or two of narcophin, is not to be preferred. However, this should be left for the patient to decide.
(4) The treatment is best carried out in a hospital where there is a staff trained in the method.
(5) In private practice, it resolves itself into a question of finances. The surroundings must be favorable. A trained nurse, experienced in the treatment, is a requisite. It is also advisable to have a medical assistant, as well as an assistant nurse. The physician in charge must be within reach. His compensation must be commensurate with the services rendered.
(6) The treatment does not render the care, attention and watchfulness on the part of the attending physician less, but rather increases his labors and makes his work more difficult and complicated, and his responsibilities greater.
(7) Fetal heart sounds must be watched carefully and pulse and respiration of the mother, as well as her general condition, including her state of consciousness, must be observed constantly.
(8) The method is not adapted for the general practitioner, but should be practiced only by, those who devote themselves to obstetrics.
(9) It should be practiced only by those who have watched a fair number of cases, say ten, from beginning to end, and have thoroughly familiarized themselves, with the practical points in the treatment.
(10) It may develop a number of young anesthetists, specially trained in the administration of the treatment.
(11) Pure drugs are indispensable, and attention to all details in the management of a case is essential.
(12) Anomalies of labor do not interfere with the treatment and all minor and major operations may be carried out while the patient is under the influence of the drugs, with or without the addition, of inhalation anesthesia.

In conclusion, we wish to add that the more intelligent, the more refined, and the more cultured the woman, the more readily does she come under the influence of the medication, the less

does she require of the drugs, and the more satisfactory is the result, and the more appreciative is the patient.

1915 – Twilight Sleep – Rongy – New York

*Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

Published NYSJM Volume 15 (1915) p. 340-345

By ABRAHAM J. RONGY, M.D., F.A.C.S., NEW YORK CITY.

It is fully ten months since "Twilight Sleep," as developed by Gauss, has been introduced in this country. During this period various obstetricians have given this method of treatment a fair trial, and have reported their work from time to time through the usual medical channels. It may here be stated that no medical subject in recent years has created such widespread discussion among the public. The press recounted miraculous reports daily of women who had gone through childbirth painlessly. Photographs appeared regularly together with exaggerated descriptions of the wonders that this method accomplished.

Women were informed that labor conducted under the new treatment would suffer no shock, their vitality would be conserved, and that they would be in such fine and fit condition that they could leave their beds the day following the birth of their babies.

The vivid descriptions of "Twilight Sleep," as an absolutely painless labor, naturally attracted the attention of a great number of expectant mothers, and obstetricians were very soon confronted with a problem which they were, as yet, unable to solve. At that time the medical profession had to form their opinions on the work done at Freiburg, and other foreign clinics, and therefore the advice given to their patients was not based upon personal experience, or observation. Very soon investigations, as to the merit of this form of treatment, were instituted in many of our obstetrical clinics, and here, I dare say, that their early reports were tinctured with a certain amount of enthusiasm due primarily to the fact that the statements of the mothers influenced, to a great extent, their opinions as to the value of this method of treatment.

In our enthusiasm we overlooked the most essential fact in the entire procedure, namely, that "Twilight Sleep" and painless labor are not synonmous, and that in a large number of cases pain is but little influenced. Furthermore, the degree of pain bears no relation to amnesia. A patient may suffer a great deal of pain during the progress of her labor, and still have no recollection of it the following day. This will always form the basis for differences of opinion between the medical profession and women who have been subjected to this form of treatment.

That the testimony of these women is incompetent is obvious, and as such should be given no consideration in arriving at conclusions as to the value of this method. Scientifically, we must judge this mode of treatment from the standpoint of analgesia, and not amnesia. It is the actual diminution of pain that the medical profession should be directly concerned with, and all our efforts should be concentrated to accomplish this. It is of comparatively small importance to us, and should be to the woman, whether or not amnesia is obtained. Heretofore the report of successful cases was practically based upon the degree of amnesia obtained, making analgesia of secondary importance.

As our experience increased we, of necessity, were compelled to arrive at a different conclusion. We soon found that a large number of women suffered a great deal of pain and discomfort, and the question suggested itself to our minds whether we were not, to some extent, responsible for an inaccurate presentation of this subject to the medical profession. I believe it the duty of each and every one of us to correct this false impression, both from the medical and lay aspects, and to particularly impress the public that "Twilight Sleep" is not synonymous with painless labor. It is incumbent upon us to point out that professional journalists and other women, no matter how honest

and well meaning they may be, are absolutely ignorant of the scientific aspect of this method of treatment, and cannot possibly have, or form a proper conception of it.

We have now reached a stage in the development of this work where we are confronted with a peculiar situation, which heretofore has been entirely ignored in the various discussions upon this subject. It is now well established that if this form of treatment is properly carried on, it will produce amnesia in approximately 75% of cases. Many of these patients, because of extreme intoxication of the more highly developed nerve centers, fail to retain the memory of pain, leave the hospital honestly believing that they have actually had no pain. Such women will, of necessity, tell other women that childbirth by this method is absolutely painless.

The attending physician, however, has before him an entirely different picture. He knows that these women have experienced pain, he has heard their screams, and was even accused of being cruel for refusing to administer "Twilight Sleep" to them. The opinions of the physician and patient concerning this form of treatment must always differ, and antagonism upon the scientific merit of this procedure will always exist between them. It is quite improbable that any effort to harmonize them would meet with any degree of success.

It is certainly most unfortunate that the first comprehensive description in this country of this form of treatment appeared in the lay publications, for not only did it create a strong prejudice against it within the medical profession, but it also tended to reflect upon the professional reputations of such eminent scientists as Kronig and Gauss, who, after most painstaking efforts extending over a period of eight years, have succeeded in developing an accurate and well defined technic in the administration of scopolamine-morphine in connection with labor.

Our profession has invariably proved itself equal to all occasions, and in this instance it is to be regretted that a number of our foremost obstetricians were unduly hasty in expressing their opinion of this method through rather unusual channels without thorough investigation.

We all know that a legitimate amount of conservatism is absolutely essential on the part of the medical profession, so that a proper equilibrium may be obtained, and the public be protected against the results of over-enthusiasm.

Those who are familiar with the history of medicine are fully conversant with the fact that most new methods of treatment, especially those which have been radical departures from routine and accepted standards, have always brought forth sharp protestation and even condemnation on the part of those who refused to progress with the advances made in science.

In reviewing the history of scopolamine in relation to obstetrics, we find that it is passing through the same process of evolution common to all new methods of treatment. It is but natural to expect, at this day, that a great deal of opposition should arise against it. Not only is it condemned by those who think that they have had some experience, but even by those who have made no attempt to give this method a fair trial.

To produce "Twilight Sleep" clinically, the attending physician must have a concrete conception or mental picture of what he is seeking to accomplish. In Dämmerschlaf the patient is able to perceive but not apperceive. The patient should always be able to answer commonplace questions, even though the responses be somewhat delayed, indicating a sluggish mental state. Between pains the patient should rest quietly or fall asleep. During a pain the patient may moan or even cry out, move about aimlessly and entirely forget its occurrence as soon as it subsides. In other words, an incoordinate subconscious mental state must be evenly maintained and any deviation from this will invariably lead to undesirable results.

As a general rule, it may be stated that no form of treatment will meet with the same success in the hands of all who use it, even though the technic followed be the same. What then should we expect to accomplish with a form of treatment in which the technic and dosage varied with each and every investigator?

A study of the literature reveals the fact that there are two distinct groups opposing this method of treatment. (1) Those who have tried the method occasionally, based upon no definite technic, with results correspondingly unfavorable. (2) Those who have given this method a fair trial but have not followed the technic as outlined by Konig and Gauss.

Before taking up the physiological action of scopolamine and morphine, it would not be amiss to touch upon the physiology of labor pains and our aim to modify or alleviate these by the use of drugs.

We must differentiate between objective pain by which we understand uterine contractions, and subjective pain, which is that sensed by the mother. Any method which has for its object the elimination of subjective pain, must, under no circumstances, interfere with objective pain.

It is a well-known fact that the pain caused by uterine contraction does not affect all women alike. Every experienced obstetrician has occasionally seen a patient in whom labor had progressed to a stage of complete dilatation without any physical evidence of pain. We must, therefore, conclude that the degree of subjective pain depends upon the sensitiveness of a given nervous system. It is equally well known that the degree of sensitiveness can be modified by the use of many therapeutic measures.

The central nervous system is the seat for the perception of pain. Impulses are conducted to and from it. The degree of pain depends both upon the ability of the cortex of the brain to receive and upon the nerve trunks to conduct. If, by any method, we are able to minimize either the perceptive power, or the degree of conductivity, pain may be markedly diminished, or even entirely abolished.

From the above it may be seen that the progress of labor does not depend upon subjective pain, and that this may be diminished or eliminated without interfering with the normal progress of labor. Labor essentially depends upon the degree of uterine contraction for its successful termination. The purpose and object of this method of treatment is primarily to obtain a mental state in the patient by which the receptive and perceptive powers are diminished without the complete loss of consciousness. Clinically, this is best accomplished by the judicious use of the combination of scopolamine hydrobromide and morphine.

It is not my intention to discuss the various physiological manifestations produced by these drugs upon the central nervous system, for I feel certain that their effects are too well known to all. I shall only attempt to call attention to the effect produced by these agents in their relation to obstetrics.

The action of scopolamine is chiefly upon the central nervous system, It quiets the cerebrum and diminishes the perception of pain, without apparently influencing the contractility of the uterus. Labor, therefore, may progress uninterruptedly and the patient may not only fail to recollect these pains, but may even be entirely unaware of them.

CLINICAL TYPES

Clinically these cases may be divided into three distinct groups: (1) Those patients in whom we obtain both amnesia and analgesia, that is, abolition of memory and diminution of pain; (2) patients in whom we obtain analgesia without amnesia; (3) cases which entirely fail to respond to this treatment.

TECHNIC

In order to obtain the best results with this method, certain cardinal requisites must be strictly observed. It is absolutely necessary that the patient be so placed that she will be free from all disturbing influences. A physician or nurse should be in constant attendance. The effect of the drug

should be carefully watched so that it may be repeated at proper intervals. Light in the room should be so arranged that the patient is not disturbed by it. The fetal heart sounds should be carefully studied. The solutions used should be obtained from reliable chemists, and should be accurately standardized. It should be perfectly clear, never having any sediment or flocculence, and should preferably be put up in ampules each containing the quantity required for a single injection.
For purposes of accurate statistics, special charts were printed, indicating the important points to be noted.

Our rule is to admit to the hospital only those patients who are in active labor. We, therefore, have no means of judging precisely when labor sets in, nor the average duration of the first stage.

Treatment is begun only when the patient shows definite signs of active labor. The patient is then put to bed in a dimly lighted room, and an initial dose of 0.00045 gm. or approximately 1/135 of a grain of scopolamine hydrobromide is injected intramuscularly. This is preceded by a hypodermic injection of one-half grain of narcophin. The effects are now carefully observed with special reference to pulse, respiration, pupillary reaction, fetal heart sounds and frequency and intensity of uterine contractions. A second injection of 1/400 of a grain of scopolamine is given about one hour after the first one. About one-half an hour after this injection memory tests are brought into play. The patient is shown some object, such as a doll or watch and a short while later she is asked whether she remembers having seen the particular object in question, or she may be asked whether she remembers having received a hypodermic injection. Any test of memory will do. The repetition of injections is now primarily gauged by the degree of amnesia present, this being the guiding point throughout the treatment. The interval between injections is approximately one to one and one-half hours. The average normal case requires from five to seven injections, although at times it may be necessary to give only two or three, or as many as twelve or fourteen.

At the completion of the first stage, with the presenting part on the perineum, one c.c. of Pituitrin is often given to hasten delivery. In using pituitrin in these cases, especial attention should be paid to the fetal heart sounds, for there may be danger of producing asphyxia in a child which is already oligopnolic. As soon as the child is born, the cord is quickly ligated and severed and the infant is removed to another room. The mother is made comfortable and usually falls into a deep slumber, to awake two to four hours later often in complete ignorance of the fact that she has already given birth to her child.

Our experience with this form of treatment consists of a series of 300 consecutive cases in the obstetrical services of Jewish Maternity and Lebanon Hospitals. As previously stated, these cases were subdivided into three groups with the following results: (a) 231 cases, or 77% in which there was complete amnesia with varying degrees of analgesia; (b) 37 cases of 12%, in which there was varying degrees of analgesia without amnesia; (4) 32 cases, or 11% in which the treatment failed to produce the desired effects.

TOTAL AVERAGE DOSAGE

In primiparae scopolamine hydrobromide 1/50 of a grain. In multiparae 1/66 of a grain.

NUMBER OF INJECTIONS

Smallest number, one; largest, twenty-two.
Dose of scopolamine, smallest, 1/400 of a grain; largest, 1/5 of a grain.

We shall now attempt to emphasize those phrases associated with labor and the, postpartum period which are of special interest to the obstetrician.

DURATION OF LABOR

Since our patients are admitted only when in active labor we have no precise means of judging its exact duration. Labor is unquestionably prolonged, the delay occurring in the second stage. The first stage is somewhat shortened.

The average duration of labor in our series figuring from the time of admission to delivery was eight and one-half hours. The average time that the patient was under the influence of scopolamine was seven hours in primiparae and three and one-half hours in multiparae.

RESTLESSNESS

Six cases had marked restlessness requiring restraint. A great number displayed varying degrees of restlessness not requiring restraint.

HEMORRHAGE

No appreciable alteration in the amount of hemorrhage was noticed by us, and Beruti by actual weights in over 400 cases proved that bleeding was somewhat diminished.

PERINEAL LACERATIONS

Second stage is somewhat delayed and stretching of the perineum is more gradual and lacerations are therefore less likely to occur. Siegel reports six first degree lacerations in seventy-eight spontaneous deliveries in primiparae, or 7%. Harrar and McPherson report thirty-seven lacerations in 100 cases treated with scopolamine as against forty-five lacerations in 100 cases not so treated. In our series there were forty-five, or 15% lacerations in which suturing was required. However, the fetal heart sounds must be watched closely or the life of the child may be endangered.

OPERATIVE PROCEDURES

In this series labor had to be terminate artificially in fifty-two cases, or 17%. In four patients the breech presented and delivery was accomplished by bringing down a foot. In forty-eight cases delivery was terminated by the use of the forceps. Of these five were median and forty-two low. Two cases were nephritic with marked oedema and it was deemed advisable to terminate labor quickly.

ANESTHETICS

In the most recent report by Siegel of Freiburg in a series of over 200 cases, ethyl chloride by inhalation was administered as a routine during the stage of expulsion. This is done in order to further obviate any recollections of pain.

It has been found that in order to carry-out this form of treatment successfully, the patient must be constantly kept under the influence of the drug. Should she at any time during the course of the treatment partially regain consciousness, she will not only recollect the pain which she actually experienced, but will reconstruct the entire progress of labor. Stich isolated periods of relative consciousness are termed by Gauss "isles of memory." These are more apt to occur during the stage of expulsion. In our series we do not find it necessary to resort to the use of the general anesthetic for this purpose.

Ether was the anesthetic used when artificial delivery was performed. The use of chloroform for any purpose during labor was abandoned by us about three years ago. The patients were very quickly narcotized, taking the ether very readily and consuming very small quantities of it.

CONTRAINDICATIONS

With the possible exception of kidney complications and primary inertia, we find no contraindications, for the use of this method. Zweifel even goes so far as to recommend it in eclampsia and reports three cases treated successfully.

Endocarditis was present in eight cases with no untoward effects as a result of, this mode of treatment. On the contrary we believe that this procedure is especially efficacious in labors associated with cardiac diseases, for it tends to eliminate, not only the mental anxiety, but the actual physical strain induced by the patient's efforts to help labor along.

CONVALESCENCE

It is interesting to note how little these patients are physically affected by labor. The exhaustion that usually accompanies labor in primparae is partly eliminated. They usually appear restful the following day, for instead of having passed the previous day in pain and wakefulness, they had gone through labor in a state of semi-consciousness without any undue physical exertion. In this series one patient developed postpartum psychosis on the fourth day. Within the same week two more cases occurred in my obstetric service at Lebanon Hospital. Owing to my absence from the city scopolamine was not given in these two cases. I consider it most fortunate that this method was not used in two of the cases, for I feel certain that the mental state would have been attributed to the use of this drug. This naturally, would tend to discredit this mode of treatment, resulting most likely in its discontinuance. That this coincidence would create a most peculiar situation was more so impressed upon me by the fact that when the attending neurologist was asked to see these patients, he immediately inquired as to whether they had had “twilight”.

Another interesting illustration of this kind occurred in a child which was born oligopneic. Failing to improve, resuscitation by the catheter method (the only method used by us), was resorted to and continued for two hours, at which time the heart action ceased. It was early noticed that the cardiac impulse was on the right side. Permission for autopsy was finally obtained. The findings were very unusual. A large congential opening was present in the left muscular portion of the diaphragm. The stomach, small intestine, greater part of the large intestine and spleen were in the thoraic cavity. Both lungs were collapsed, and the heart was situated on the right side. The liver occupied the entire abdominal cavity. Without autopsy, this death would undoubtedly have been attributed to the use of scopolamine. It has always been the fate of any new method of treatment to ascribe to it many complications that would have taken place ordinarily, and it is only through mere accident that we occasionally are able to account for them
otherwise.

We have also observed that the tendency toward engorgement of the breasts is notably diminished in these cases. This is probably due to the action of scopolamine on the peripheral secretory nerves.

CONCLUSIONS

1. Standard solutions are absolutely essential for the success of this treatment.
2. No routine method of treatment should be adopted. Each patient should be individualized. This method does not merely consist of repeated injections of the scopolamine at prescribed

intervals, but the mental state of the patient should be made the guiding point. A subconscious state must be evenly maintained.

3. Facilities should be such that the patient is not unduly disturbed.
4. A nurse or physician must be in constant attendance.
5. This method of treatment is best carried out in hospitals, although there is no reason why it cannot be accomplished in well regulated private homes. However, if for any reason, the physician attending a patient at her home, does not see fit to institute treatment early in labor, he surely can utilize this method in the second stage, and still save the woman a great deal of unnecessary pain That this may be accomplished was demonstrated in eight cases in whom treatment was institute at the end of the first stage of labor. All of these cases had marked analgesia with complete amnesia.
6. It does not affect the first stage of labor, but the second stage is prolonged.
7. Pain is markedly diminished in a great per cent of cases, while amnesia is present in 75 per cent of patients, but labor is not painless as is generally supposed.
8. This treatment does not in any way interfere with any other therapeutic measure which may be deemed necessary for the termination of labor.
9. Fetal heart sounds must, be carefully watched. Sudden slowing calls for immediate delivery, if possible, or treatment must be discontinued. 15% of the babies were born oligopnolic.
10. Asepsis and antisepsis cannot be rigidly enforced.
11. No change in the course of the puerperium was observed, and convalescence progressed very smoothly in our entire series.
12. Women of a higher grade of intelligence are best suited to this form of treatment.
13. This treatment is best carried out in primiparae or in multiparae with tedious labors. It has no place in short labors,
14. This is an ideal form of treatment in patients suffering from cardiac disease.

Finally, every experienced obstetrician is fully aware of the fact that the number of births showing anomalies, such as premature rupture of the membranes, incomplete dilatation of the cervix, abnormal presentations and primary inertia are on the increase. It is equally well known that, women following a profession requiring a superior mental development have more difficult deliveries. The demands made by hard work, or by social obligations upon the modem woman in our large cities, are so great that their nervous systems are constantly overworked. What we consider a normal nervous system now rarely exists, and therefore pain is not well borne.

In our opinion, subjective pain incident to childbirth serves no purpose in nature, but is rather an unnecessary result of an unchangeable natural law that all severe muscular effort is accompanied by pain. The metabolic end products of muscular activity are irritating to nerve ends causing pain. Thus, we see severe pain accompanying the hurried muscular peristalsis of the bowel in ridding the system of injurious material, the excruciating collicky pain caused by the propulsion of a biliary or renal calculus, and finally, the agonizing pain incident to expulsion of the fetus from the uterus. In trying to relieve these pains, we are not in conflict with a natural purpose. If pain can be relieved, it is the duty of every physician to do so, and no effort should be spared to accomplish it.

For our part we are fully convinced that this method of treatment instills within the woman a feeling of confidence which naturally aids her in passing through this trying ordeal, and although the greatest number do suffer varying degrees of pain, still there is no mental recollection of it in 75% of cases, and if the physician, as well as the patient, contents himself with amnesia as the object to be accomplished then only will its proper place in obstetrics be established.

Discussion

DR. W. T. GETMAN, Buffalo: I think the distrust of "Twilight Sleep" among the medical profession comes from two factors: Lack of personal experience with the treatment, or of non-adherence to the technic worked out so carefully by Gauss.

From all that I can learn of the bad results reported by various hospitals and men it has been from using their own technic rather than the one that has proved safe in a number of thousands of cases. These bad results come from repeating the dose of morphine, over dosage of scopolarnine, and using some other index than that of the memory test for repeating the scopolamine.

We have used the treatment at the General Hospital in forty-seven cases, and I have used it in twenty-five private cases outside, without any foetal or maternal mortality due to the drug, and with better results as our experience increases.

We are, however, using it only in selected cases --primiparae and in multiparae where we expect a longer labor than normal, as I find that if started too late in labor in a primiparae or in the ordinary multiparae with a short labor, that there is a higher percentage of cyanosis. The ordinary baby does not need any more attention than where no drug is given, as practically all of them breathe spontaneously. There is a certain amount of idiosyncrasy in the patient's reaction to scopolamine as shown by one patient that received seventeen doses (the highest in our series) with absolutely no amnesia, but who twice called for a drink of water as the head was passing through the vulva, and seemed more interested in the fact that her throat was dry than in the birth of the head.

I have used it in three cases of preclamptic toxemia during induction of premature labor, and I think it was of material aid by lessening the wear and tear of the process.

Personally, I think very highly of "'Twilight Sleep," and consider it perfectly safe if used properly.

THE IMPORTANCE OF PREGNANCY CARE

Published Boston Med. Surg. J. Volume 172 (1915) p. 385

The lowering of the rate of infant mortality everywhere that special attention has been given to it, although in itself very encouraging, should not blind us to the immense amount of loss of life which is never recorded at all, as from abortion and miscarriage; or but scantly noticed, as in the high percentage of stillbirths which pass unconsidered in reckoning the death-rate. In every hundred pregnancies probably at least 10% fail of fruition and between 30 and 40 children out of every 1000 are born dead. Without counting these stillbirths the deaths of children during the first month of life amount to between 35%, and 40% of the total deaths occurring in the first year, and the greater part of these early deaths are due to prenatal causes or to accidents of childbirth, most of which are preventable.

The value of pregnancy care is shown very graphically by the statistics for five years of such work, given in the last report of the Committee on Prenatal Care of the Women's Municipal League of Boston, for, as this committee gave no obstetrical care to patients until after the date of this report, pregnancy care may fairly be considered as being largely responsible for the results. One nurse alone was employed, as the work has always been carried on as an experiment,--- to test methods rather than to accomplish results on a large scale.

Cases carried safely to labour	1512
Death during labour	0
Deaths during childbirth	9
Percentage	.6%
Miscarriages	3
Percentage	.19%
(No miscarriage has occurred during the past 3½ years.)	
Babies born	1522
Average birthweight including premature babies	7 lbs. 11 oz.
Premature babies including twins and still births, percentage	1.7%
Stillbirths including premature births for two years	1.8%
(Less than half that of the rest of the City of Boston.)	
Deaths of babies born alive but dying in first month	43
Percentage	2.8%
Deaths of babies born alive but dying in first month throughout Boston, percentage	4.3%
Cases of eclampsia	4
Percentage	.2%
Cases of impending eclampsia—diagnosed as such by hospitals and physicians.....1st year	60
Steadily decreasing until these number in the 5th year	2

Although no care has been taken of patients by the committee after the onset of labor, one visit has been paid at the end of a month after the birth of the infant to ascertain the method of feeding and the condition of the child. The results follow:—

Breast-fed, wholly, percentage	84.7%
Breast-fed, partly, percentage	4.5%
Total	89.2%
Bottle-fed	10.8%
Well at the end of month, breast fed wholly	97.5%
Well at the end of month, breast-fed partly	92.3%
Well at the end of month, bottle-fed	72.4%

These figures speak for themselves and further comment is unnecessary.

THE RELATION OF OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY TO THE PUBLIC WELFARE*

THOMAS S. CULLEN, M.D.
BALTIMORE

*Chairman's address, read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Sixth Annual Session of the American Medical Association, San Francisco, June, 1915.

JAMA Volume 66 (1916) p. 239-243

To be selected chairman of any section of the American Medical Association is an honor which a man may be proud of; to be named the presiding officer of this very important section was a compliment I little dreamed of, and I am deeply grateful for the confidence placed in me.

An artist from time to time steps back from his easel to get a good view of the painting he has in progress. The business man at regular periods takes stock to see what are his assets and liabilities. We in like manner should at frequent intervals leave our labors and, figuratively speaking, ascend the mountain peak whence we may overlook the plain of our daily labors and may be able not only to see what has been accomplished but also to detect the weak spots, the points at which our endeavors have fallen short.

In the time allotted to the presiding officer I shall briefly give a panoramic view of obstetrics, gynecology and abdominal surgery as I saw them twenty-five years ago, and shall then compare them with the same branches of medicine as we find them today.

THE OBSTRTRICS, GYNECOLOGY AND ABDOMINAL SURGERY OF TWENTY-FIVE YEARS AGO

Obstetrics- In many localities, obstetrics and diseases of children were still linked together, the accoucheur not only looking after the child at birth but also attending to it during its early years. With the gradual awakening to the fact that childrens' sore throats were often streptococcic in origin, that a case of puerperal fever might follow the too close association of the obstetrician with a case of scarlet fever, that diphtheria was due to a definite germ; and further, with the rapid development of pediatrics into an important specialty; it was deemed wiser to separate the practice of diseases of children from that of obstetrics. Thus at the time of my graduation, just a quarter of a century ago, we had one relatively small, although splendidly equipped, lying-in hospital in a city of about 125,000. It was presided over by a most capable physician who limited his work almost exclusively to obstetrics. He not only obtained excellent results but was also a most able teacher -a man who left his impress on all those who had the privilege of his instruction. Few obstetric teachers did more conscientious work than did Adam Wright who, I am glad to say, is still with us.

Gynecology- In my student days the pupils learned that there were anteversions, anteflexions, retroversions and retroflexions and that some of the displacements might be relieved by appropriate pessaries. We were told of erosions of the cervix and had the value of zinc chloride or Churchill's tincture of iodine as the proper agents in the treatment for such conditions drilled into us day after day. Much stress was laid on laceration of the cervix, and many repairs were done. Now and again a torn perineum was also treated surgically.

Abdominal gynecologic operations were limited almost entirely to the removal of large ovarian cysts. An occasional myomatous uterus was removed, but the fatality in this class of cases was so high that the operation was rarely attempted. We occasionally heard of cancer of the cervix or of carcinoma of the body of the uterus, but the only operative procedures we were familiar with for this dread disease were curettage, and cauterization of the carcinomatous cervix. To entirely remove the uterus for this condition was not thought of.

Abdominal Surgery -Fractures were well handled and the surgery of the outside of the body and lateral lithotomy were successfully and dexterously performed, but abdominal operations were undertaken with great trepidation. Surgery of the stomach was rarely if ever seen. Gallstones were not removed, and I have seen a leading medical consultant watch an appendix abscess for over a week, hoping that it would soon rupture externally. The appendix was rarely, if ever, removed. As an intern in the medical ward, I watched a patient with a perforation due to typhoid ulcer for seven days - until the woman's death - when the diagnosis was verified at necropsy. One of the abdominal cases most vividly impressed on my mind was that of a thin, elderly man with definite intestinal obstruction. He was in good condition when he entered the hospital, but gradually grew worse and died after a few days. Through a small hole in the mesentery a short loop of the small bowel had passed. Even at necropsy this loop could be pulled back with the utmost ease.

The experiences I have just related occurred in a large institution presided over by most capable medical men and surgeons. I have mentioned them in no spirit of criticism whatsoever. Their modes of treatment were similar to those carried out in nearly all the hospitals throughout the land, and the same hospital today is doing first-class up-to-date surgery. To you who have been in practice these many years our former failures are too well known. For those of you who have graduated within the last fifteen or twenty years it is well to realize what great strides have been made in abdominal surgery and gynecology during the last two decades.

I will now pass to the consideration of the obstetrics, gynecology and abdominal surgery of today - a theme with which you are much more familiar.

THE OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY OF TODAY

Obstetrics -The recognition of the absolute necessity of a thorough obstetric training is realized throughout the land, and adequate lying-in hospitals are being furnished in numerous cities -not in all, I am sorry to say. The medical students in many of the schools not only see a large number of births but individually must look after a certain number of obstetric patients. In addition, they receive a systematic course of instruction in obstetric pathology. The fundamental handling of obstetric cases has naturally not undergone so marked a change as has the treatment of gynecologic and abdominal cases, because gynecology and abdominal surgery are relatively new fields.

Gynecology -To the older members of the profession the "gynecologist" may still suggest the pessary and Churchill's tincture of iodine; and it is hard for them to realize that at the present day the surgical procedures dealing with the perineum and of the pelvis are on just as firm and stable a basis as is the surgery of other portions of the body. The fundamental knowledge we owe in large measure to the pathologist, who has traced out the pathologic conditions from the beginning and has indicated the paths along which the disease may travel. For example, given a patient with a gonorrheal infection, we have only to remember that the germ comes from without. It may invade Skene' glands and the urethra; it may implicate Bartholin’s glands, and then in succession the vagina, the cervix the body of the uterus, the tubes and finally the pelvic peritoneum. Knowing the mode of progression of this infection, we can the more intelligently adopt the appropriate medical or surgical procedure.

We now know that a perineal operation alone may of little value in the treatment of a case of prolapse and that failure will often follow if we do not at the same time shorten the round or uterosacral ligaments.

Our knowledge of tubal and ovarian diseases is sufficiently accurate to enable us in many cases to conservative operations instead of unsexing the women. Our studies of uterine tumors supplemented by improved technic now enables us to do a supravaginal hysterectomy with little risk to the patient. When patient complains of uterine hemorrhage we can us ally within twenty-four to forty-eight hours tell with a surprising degree of accuracy the cause of hemorrhage.

Twenty-five years ago cancer of the uterus nearly always fatal; today it is far more amenable treatment. Fully two thirds of all cancers of the body of the uterus can be permanently cured if operated on early, and some surgeons have been able to report 25 per cent of their patients operated on for cancer of the cervix as well five years later. When the splendid work being done by the American Society for the Control of Cancer, the Cancer Campaign Committee of the Clinical Congress of Surgeons, and the Cancer Committee of the Council on Health and Public Instruction of the American Medical Association has sunk deep into the minds of the laity of this country, the results will be even more encouraging.

I might dwell at length on the fundamental advances made by Howard A. Kelly and others in the methods of studying diseases of the bladder and kidney, but with these far-reaching contributions to gynecology you are also thoroughly familiar.

Abdominal Surgery -The advances in abdominal surgery during the last twenty-five years have been so marked that they are almost overwhelming. Even fifteen years ago the ruptured appendix with or without a peritonitis was exceedingly common. The general practitioner has become such a champion of early operation that in many clinics, if the appendix happens to be ruptured when the abdomen is opened, he at once chides himself for any possible delay that may have occurred. Just here I should like to say that I am thoroughly convinced that in the past the one or more doses of calomel and the subsequent dose of salts have been in a large measure responsible for the appalling conditions found at operation. Thus far I have never seen a patient die who was operated on for appendicitis before the appendix ruptured.

Twenty-five years ago few operations were performed on the gallbladder. Now if there he any prolonged discomfort or distress in this region, the gallbladder is promptly explored, in the vast majority of cases with permanent relief. The stomach washings, which were so prevalent even a decade ago, have in a large measure disappeared as a result of the prompt removal of the appendix or drainage of the gallbladder according to the nature of the case, and are, as a rule, resorted to only when it is necessary to make gastric analyses.

Operations on the stomach were formerly rarely undertaken. Now gastro-enterostomy is a common and relatively safe procedure. Ulcers are removed, strictures relieved, and where carcinoma is suspected, an exploratory operation is done at the earliest possible moment.

Inseparably coupled with the advances made in this branch of surgery are the names of William J. Mayo, John M. T. Finney, W. L. Rodman and many others.

Intestinal surgery twenty-five years ago was in the experimental stage, and we in this country are indebted to Nicholas Senn, William S. Halsted, Franklin P. Mall, John B. Murphy and others for their pioneer experimental work in this direction. When intestinal obstruction develops, we do not now fold our hands, saying that the case is hopeless, but at once do an enterostomy and, when the patient has improved sufficiently, hunt for the cause of the obstruction if nature has not in the meantime corrected it. I might describe the advances made in the surgery of other parts of the abdomen, but with these you are also familiar. The great strides made in abdominal surgery and in gynecology have of course been rendered possible by the fundamental labors of Louis Pasteur and Joseph Lister, and by those of Robert Koch[1], who in 1878 published his important paper on the causation of diseases from wound infection. Dr. W. W. Ford[2], in speaking of this work says:

In this paper Koch puts forward clearly the exact state of knowledge on the subject of surgical infections; he explains the difficulties which had to be overcome in working out their etiology and describes the results which others before him had achieved.

To those of you who have had a share in this great advance it must have been the source of the utmost satisfaction. To have lived during this period has been a great privilege. The progress in abdominal surgery of the last twenty-five years has without a doubt been greater than will ever occur in a similar period. The immediate death rate has been reduced from about 25 per cent to 2 or 3 per cent; thus, if we temporarily relieved all patients we could reduce our mortality only 3 per cent more.

There is no reason, however, why we should be in the least complacent. Many of our patients suffering from tuberculous peritonitis are only temporarily relieved. We are helpless in our cases of general peritoneal carcinosis, and many cases of cancer of the stomach, intestine, uterus and ovaries are beyond our control. There is still much to be accomplished.

THE ALIGNMENT OF OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

With the rapid development in these three branches, new problems have arisen, and it may be well for us to consider briefly the relation that these three branches in question should bear to one another.

Obstetrics -A thorough knowledge of this art is infinitely more important to the student than is a clear understanding of gynecology. The vast majority of medical students after graduation attend obstetric cases. These young general practitioners, if living in a fair-sized town or city, may when in trouble be able to consult with an obstetric expert, but often the practitioner's time for temporizing is so limited that lie must rely absolutely on his own initiative. The physician living in the small town or in the country must pilot his patient through the dangerous shoals, relying entirely on the knowledge he has obtained from his former teachers, coupled with his own liberal supply of good horse-sense.

Gynecologic cases rarely call for such speedy treatment. If the general practitioner is uncertain as to his diagnosis and does not know just what to do, he can, as a rule, temporize for a day or two and in the meantime have a consultation with a gynecologist. Furthermore, most of the gynecologic patients are well enough to journey to the city to see the consultant at his office or at the hospital.

In obstetric cases the vast majority of the physicians are obliged to take full charge of the case irrespective of its gravity; hence the absolute necessity of our turning out graduates of medicine thoroughly grounded in the theory and practice of obstetrics. Dr. J. Whitridge Williams has given us a most comprehensive summary of the obstetric teaching in this country, and pointed out in no uncertain terms the growing need for better methods and facilities.

In years past some of the prominent members of the profession tried to confine their labors to obstetrics and gynecology . A few succeeded, but as their practices increased the majority either became obstetricians or confined their work almost entirely to gynecology. This was but natural, as these two branches cannot be well handled together. In fact, obstetrics is similar to emergency surgery. No one can decide exactly when the birth will take place, nor can he determine with any degree of accuracy how long labor will last.

Supposing the surgeon who practices these two specialties arranges for four abdominal operations for tomorrow morning, and that just as he is leaving for the hospital to operate he receives an urgent call to come and see one of his primiparas who is in labor. If this confinement lasts several hours, these four operations have to be postponed, the postponement causing much added anxiety not only to the four patients but also to the various relatives. A few such delays as this, and the friends of the patients will naturally look for surgeons that can be relied on to fulfill their

engagements promptly. In a way this is very unfair to the obstetrician, inasmuch as the delay has been in no way his fault; and yet the fact remains that it has been due entirely to an attempt on his part to combine two specialties that are not compatible with one another.

Again, let our surgeon arrange for a Wertheim operation on a cancer patient for tomorrow morning. This is without doubt one of the hardest abdominal procedures. The surgeon should be in the pink of condition, and it should be his first operation for the day. During the night he is called out to an obstetric case and is detained several hours. If he operates in the cancer case on schedule time, is he doing justice to himself or to his patient?

Is there any wonder that many physicians have given up this combination of obstetric and gynecologic practice? When asking your young medical men what line of work they are doing, they will often say that they are at the present time paying particular attention to obstetrics, hoping later to enter the surgical ranks; and many of the older men, who have good obstetric practices, are relegating that work to associates as their surgical practice increases. Do you blame them? Few there are who would not do likewise. When we look at the subject squarely, it is clearly evident that the obstetric specialist is the true missionary of the medical profession, and the most unselfish member in its ranks. Even though he be the head of his department, his time is not his own and there is no hour of the day or night when he may not be called.

From what Dr. Williams has told us, the obstetric training in America is not what it should be. Is it going to be improved if the head of the department, whenever possible, naturally but gradually drifts over into surgery, leaving the obstetric teaching, both practical and theoretical, largely in the hands of his associates? It is the duty of this Association to so improve the facilities and opportunities of the obstetrician that he will devote all his energies to the furtherance of this all-important branch of medicine. I say "all-important," because on his teaching and practice depends in large measure the life and happiness of the coming citizens of this land.

With the rapid progress in medicine and surgery, the needs of the obstetric clinics have been in large measure relegated to the background. All large hospitals should have capacious and well-equipped lying-in departments and I feel confident that in the near future even the smaller towns will erect up-to-date lying-in hospitals.

The young obstetrician in his preparatory training should include a thorough knowledge of medicine, pathology and bacteriology, and should also serve as a surgical assistant for a relatively long period before taking up his work in obstetrics. When he starts out as a trained obstetrician, he should be able at once to meet any abdominal or perineal surgical emergency that he may encounter. The obstetrician has the right to demand that every possible facility be afforded him. Not until this fact is so thoroughly realized that it is acted on by the profession, will the best men be content to remain in this important but arduous field of labor.

If it could be so arranged that all private obstetric patients were delivered in maternity hospitals, the wear and tear on the obstetrician would be greatly lessened, and he would then have more time to work out the many important and still unsolved problems connected with this branch of medicine. Some of the problems extend over into other branches. Menstruation is undoubtedly one of these. Much has been said about it, but thus far little is known. It seems to me that it will require the combined labors of the anatomist, physiologist, physiologic chemist, obstetrician and gynecologist, together with much experimental work before our knowledge on this subject becomes in any way complete.

Gynecology and Abdominal Surgery -In the early days in this country travel was confined to the seaboard and rivers. If one wished to go from Baltimore to New York, the journey was made almost exclusively by water, and was one extending over several days. Gradually paths were carried back into the wilderness for a short distance, and later primitive roads were built and finally good stage roads. It was thus possible to travel by fast relaying from Baltimore to New York in a few days. Now our express trains require four hours between these two points.

The progress in abdominal surgery and gynecology bears a striking resemblance to the gradual evolution in travel. In the beginning, only the outer surface of the abdomen and the vagina could be operated on. At a later date an occasional excursion was made into the abdomen, as successfully carried out by McDowell. With the epoch-making discovery of asepsis, motive power was furnished, enabling us to traverse all parts of the abdomen. Since that date the "civilizing" influences have been gradually extended until the abdomen and its contents are fairly well understood. There still remain, however, a certain number of dismal swamps and everglades.

The greater part of gynecology deals with the surgery of the lower abdomen. Sometimes the operation is entirely confined to an exploration of the abdomen, but frequently, as in prolapsus cases, in order that a satisfactory result may be obtained, it is necessary to carry out some vaginal operation in connection with that in the pelvis. Where large tumors exist, the confines of the pelvis are temporarily carried far up into the abdomen, occasionally as high as liver, and now and then, the intestines are densely adherent and may require resection.

In a no mean percentage of the cases, digestive disturbances are associated with a pelvic lesion, and naturally require investigation at the time of operation. The surgeon who largely confines his labors to the upper abdomen, not infrequently finds pelvic lesions which he little suspected before the abdomen was opened.

If the gynecologist confines his work entirely to the pelvis, he will not infrequently overlook lesions in the upper abdomen, and the surgeon in like manner will miss serious pelvic trouble.

When you or I take a watch to the jeweler, we expect him to overhaul it thoroughly, examining all portions of its mechanism. If he returns it saying that the mainspring which was broken has been repaired, but the watch still will not go, we are naturally dissatisfied and will try a more competent man. If we do not carefully explore the abdomen in all cases, we are bound to overlook many little-dreamed-of pathologic conditions - conditions that will still render the patient uncomfortable.

Suppose I have done some pelvic operation and have overlooked gallstones or a duodenal ulcer. The patient will usually be far from well and will in a few weeks or months decide to call in a man capable of properly treating the upper abdominal lesion. What does this lack of preparedness on my part entail for the patient? Twice the length of time in the hospital, twice the amount of pain, twice the amount of hospital expense and two operation fees, not to speak of the added risk of the second operation. This is an age of economy, an age of short cuts, and an age when by-products are utilized to the limit. It will not be long before the laity will demand that any one who enters an abdomen must be capable of doing everything necessary in that abdomen, and in those cases in which, an account of the lesion present, a second operation is required, it will be necessary for us to explain carefully just why the abdomen must be opened again. Someone will say, "This is all very well; you should make an accurate diagnosis beforehand." This might be perfectly plausible if the anterior abdominal wall were made of plate glass, but even then, as we all know, sometimes, when the abdomen has been opened, it requires considerable search to find the exact location of the trouble. Now and then, when visiting the clinics of well-known surgeons, I cannot help feeling a twinge of wicked pleasure on seeing that their diagnoses do not always tally with the findings – it makes me feel thoroughly at home. The only abdominal surgeon who makes no mistakes in diagnosis is either the one who has no practice or the one who has given up the scalpel.

In recent years, business men have been greatly aided by economy or efficiency experts. Strangers come in, look over the business and see where, by more efficient methods, more may be accomplished, often with diminished labor. If we called in such an expert, what would he say? In the first place, he would point out that it is not necessary for two classes of surgeons to work in one abdomen -a space the confines of which nature has so well defined. In the second place, he would say to both the surgeon of the upper abdomen and to the surgeon of the lower abdomen: "You spent long years in preparing yourselves for doing abdominal surgery, you have mastered the funda-

mentals of medicine, you have a good knowledge of bacteriology and pathology and have perfected yourselves in the methods of operation; and yet, because one pelvis happens to contain a small round muscular body with two smaller bodies on the sides, one of you confines your work in large measure to men, the other to women. You are only running half capacity. There is absolutely no reason whatsoever why you should not both do abdominal surgery in the two sexes. It is practically the same, the only difference being that there is no operation in abdominal surgery that can compare in difficulty with a complicated Wertheim operation for cancer of the cervix." After seventeen years' experience in abdominal surgery in men and women, I myself am absolutely convinced that pelvic surgery offers many more difficulties and is harder of execution than is the surgery of the upper abdomen.

THE TRAINING OF THE ABDOMINAL SURGEON

Every man who aims to make abdominal surgery his life work should have a most thorough training in general medicine. He will then not forget that pain in the right iliac fossa does not always mean appendicitis. He will know that occasionally this soreness is present in an early stage of typhoid fever. He will remember that there is such a thing as lead colic and that in children severe abdominal pain may be the precursor of a pneumonia. A thorough knowledge of this most fundamental and broadest branch of medicine will save him from many pitfalls.

In addition to his course in general pathology he should have an extensive knowledge of the pathology of all the abdominal structures. The abdominal surgeon of the future must be a well-grounded pathologist; two years in the necropsy room would be of inestimable value to him. Then he should pay particular attention to the bacterial flora associated with the various abdominal lesions. He has now finished his apprenticeship, and should become an assistant of an abdominal surgeon. Here he will not only learn the various operative procedures and perfect himself in these, but he will also become experienced in the preparatory and after-treatment of the patients. The after-treatment, by the way, is of great importance, the postoperative journey often being rough and tempestuous, or relatively smooth, according to the manner in which the assistant handles the case. After several years spent in this way, the assistant is thoroughly competent to start out on his career. The surgery of the United States has made wonderful strides during the last decade. We must prepare ourselves to become the graduate school for the world.

CONCLUSION

In the brief time at my disposal I have hastily scanned the salient points relating to obstetrics, gynecology and abdominal surgery, the subjects treated in our section. Necessarily much has been omitted. The points that I want to leave with you are:

1. Obstetrics must be made more attractive, so that those entering this branch will not be tempted to leave it for less laborious fields.
2. Any surgeon opening the abdomen should be capable of doing everything necessary in that abdomen. In other words, gynecology and abdominal surgery logically belong together.
3. This realignment of abdominal surgery is absolutely necessary if we are to accomplish the maximum amount of good for the patient.

20 East Eager Street.

1. Koch, Robert: Untersuchungen ijber die Actiologie der Wundinfektionskrankheiten, 1878.
2. Ford , W. W.: Bull. Johns Hopkins Hosp., 1911, xxii, 420.

3. Williams, J. Whitridge: Has the American Gynecological Society Done Its Part in the Advancement of Obstetrical Knowledge? J. A. M. A., June 6, 1914, p. 1767.

THE BEHAVIOR OF THE UTERUS AND OTHER ORGANS TOWARD MORPHIN AND SCOPOLAMIN

Editorial in JAMA Volume 66 (1916) p. 77

In "The Pharmacology of Useful Drugs," by Hatcher and Wilbert, recently reprinted from the columns of THE JOURNAL,[1] occurs the following in reference to the morphin-scopolamin narcosis, abandoned by the majority of operating surgeons because of numerous attendant fatalities, but recently exploited in a sensational manner as a preliminary to childbirth:

Effective doses are not very dangerous to the mother, in the hands of those who have mastered the difficult technic of its use, but labor is frequently prolonged by its use, and the death rate among the new-born from asphyxia is certainly higher than with other methods in the hands of the general practitioner.

In this case, as has often happened in the history of medicine, the empiric use of drugs has preceded their more exact investigation.

One might naturally expect that in these days of scientific research, the systematic clinical use of a potent if not actually dangerous drug would be based on or at least fortified by some definite and adequate knowledge of the pharmacologic behavior. This cannot be said to have occurred in the exploitation of "twilight sleep." The staunchest supporters of this method of anesthesia admit that morphin. and scopolamin, even in small doses, may prolong labor. Thanks to researches in the pharmacologic department of the Yale University School of Medicine, encouraged by the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association, and to other recent studies, more accurate information of the action of morphin and scopolamin on the uterus is now available.[2] Studies of the combined action of these drugs on the central nervous system indicate that this-mixture exhibits a true synergism; that is, the narcotic effect of the combination has appeared more profound than the algebraic sum of the effects of the same doses given separately. Smith,[3] working in the pharmacologic laboratory of the University of Michigan, has attempted to determine whether the synergism of morphin and scopolamin is limited only to their narcotic effects, or whether it is more general in scope. For this purpose, experiments were made on intact frogs, and then the effect of the combined drugs on the cardiac functions was studied by perfusion of the isolated frog's heart as well as on warm blooded animals. It appears, according to Smith, that the scopolamins are synergistic with morphin in the frog, and likewise in the mouse, in the latter case probably through their combined action on the respiratory center. A synergistic action is also shown in the case of the frog's heart. The toxicity of the scopolamin-morphin combination in the mouse is increased with the relative increase of the scopolamin content of the combined dose. In such cases the levorotatory scopolamin is more toxic than is the inactive scopolamin or atroscin.

In the case of the direct action of these drugs on the isolated uterus, no synergism or antagonism has been discovered by Barbour .[2] In experiments on animals decerebrated so as to exclude the participation of the central nervous system in the responses to the drugs, Barbour found that neither morphin nor scopolamin causes profound changes in the activity of either the pregnant or nonpregnant uterus. A temporary increase in tone is often seen after the use of both drugs. If the drugs produce a marked depression of the circulation, a relaxation of the uterus may result indirectly. Barbour therefore concludes that the statement that large doses of these narcotics inhibit the activity of the uterus is not applicable to any direct action of morphin or scopolamin on this organ. The delay

in labor produced by either or both of these drugs is probably due entirely to their cerebral action. This valuable information points the way to combat in a rational manner some of the difficulties that are liable to arise when the morphin-scopolamin anesthesia is employed in practice.

1. Hatcher, R. A., and Wilbert, M. I.: Pharmacology of Useful Drugs, Chicago, 1915, p. 71.
2. Barbour, H. G., and Copenhaver, N. H.: The Response of the Surviving Uterus to Morphin and Scopolamin, jour. Pharmacol. and Exper. Therap., 1915, vii, 529. Barbour, H. G.: Morphin and Scopolamin Action upon the Intact Uterus, ibid., p. 547.
3. Smith, M. I.: The Synergism of Morphin and the Scopolamins, jour. Pharmacol. and Exper. Therap., 1915, vii, 407.

ANALGESIA AND ANESTHESIA IN OBSTETRIC PRACTICE

ARTHUR J. SKEEL, M.D.

Fellow of the American College of Surgeons; Fellow of the American Association of Obstetricians and Gynecologists; Obstetrician to St. Luke's Hospital; Consulting Obstetrician to Woman's Hospital Cleveland

JAMA Volume 66 (1916) p. 797-799

For two or three years the attention of obstetricians in this country has been rather sharply called to methods of relieving the pain of labor. Various means to this end have been presented and in turn sharply criticized. Successive reports of work along this line have begun to clarify our ideas. Early enthusiasm has been modified by a longer experience. We are, however, far from adopting uniformly any one procedure as best. Here, as in every field of medical therapeutics, no fixed plan can govern every case; but the patient will continue to expect, and should be given, discriminating judgment as to the needs of her individual case. No rule of procedure should guide us, rather judgment of our patient's condition and temperament, together with accurate knowledge of the drugs we are employing, their indications, contraindications and therapeutic effects should form the basis of our procedure.

In the summer of 1914 1 began giving this-matter special attention. In November, 1914, We used nitrous oxide and oxygen for the first time as a labor analgesic at St. Luke's. Since that time we have developed our plan of procedure, as experience or theoretical considerations pointed the way.

Previous to using gas as an analgesic in labor we had for some time been employing it as the anesthetic of choice, in operative work in all eclampsia and all other toxemia cases, and for various minor operative obstetric procedures in which unconsciousness rather than relaxation was to be desired.

Since that date we have employed gas to relieve the pain of labor in seventy-two cases. In some of these, only gas was used. In many of them morphin was employed, in quite a few ether, and in a few scopolamin. But in all of the seventy-two cases, gas was the mainstay, and the other drugs were used as adjuvants, or to meet special indications.

In most of our cases the gas has been administered by the same anesthetist, Dr. Cornelia Stoeltzing, and to the gradually increasing knowledge of its use, based on this experience, is to be ascribed much of the satisfaction which we have had with the method. Ability to get results with gas analgesia depends to a considerable degree on the knowledge gained by experience. Any one desiring to employ nitrous oxide and oxygen in labor should first master the method himself and should so far as possible give his anesthetizer time to acquire technical skill.

In this article I wish to present no detailed account of cases, but to describe our present practice, with a brief statement of the reasons therefore, and the results obtained. I shall consider three agents, morphin, gas and ether, as the various modifications of their use cover the entire field of our present technic. Our use of these drugs is based on our belief in the accuracy of propositions which may be outlined thus:

PRINCIPAL THEORETICAL CONSIDERATIONS

MORPHIN:

1. Relieves pain.

2. Relaxes a rigid cervix.
3. Interferes with labor pains frequently if given too early.
4. Delays labor if given in cases of true primary uterine inertia.
5. Hastens labor if given in cases in which a hypersensitive os is delaying the first stage.
6. Depresses the child's respiratory center, for a period varying from two to four hours after administering to the mother.
7. By its sedative effect on the nervous system, diminishes the maternal exhaustion due to long continued first stage pains.
8. Is eliminated slowly.

NITROUS OXIDE AND OXYGEN:

1. Probably retards first stage pains.
2. Does not retard second stage pains.
3. Hastens the second stage of labor, by removing the inhibition of voluntary effort caused by pain.
4. Causes no cyanosis of the mother when properly administered.
5. Has no deleterious effect on the baby's respiratory centers.
6. Is eliminated very rapidly.
7. Does not cause muscular relaxation.
8. Does not relax the perineum and pelvic floor, and hence does not aid in the prevention of laceration of a rigid perineum as well as ether.
9. Exerts no known deleterious effect on the liver or kidneys.
10. May be used over a long period of time that is, four, five or six hours, with safety.

ETHER:

1. Causes relaxation of both voluntary and involuntary musculature.
2. Occupies an intermediate position between morphin and gas on the baby's respiratory apparatus.
3. Is not desirable as an analgesic over so long a period as gas.
4. Is more slowly eliminated than gas.
5. If used in any quantity produces nausea and some vomiting.
6. Irritates the mother's respiratory apparatus as well as her kidneys.
7. Produces less prompt analgesia than gas.

NORMAL CASES

In labors not distinctly abnormal, morphin is used during the first stage, and only when the labor is expected to last at least four hours longer. Nature makes a determined effort to stimulate the infant's heretofore unused medullary respiratory centers to vigorous action at the moment of birth. The normal stimulus of this center is the increase of carbon dioxid in the blood. This has been secured by the interference with the oxygen supply through the placenta, by means of the vigorous and prolonged uterine contractions of the terminal moments of the perineal stage. Attempts at respiration are also stimulated by the reflex effect of cold air striking the baby's skin. Both phases of Nature's plan for securing vigorous respiration at birth are interfered with if the baby's nervous system is under the influence of morphin at this particular time. So long as the child is in the uterus the effect of reasonable amounts of morphin is negligible because its oxygen supply at this time is

dependent on its placental-fetal circulation secured by its heart. Respiratory depressants in the fetal circulation at the moment of birth inevitably produce apnea.

Our indications for morphin during the first stage are:

1. A rigid, hypersensitive os.
2. Evidence of considerable pain with a probable first stage of several hours, as in most primiparas.
3. The presence of nagging but ineffectual pains which irritate and exhaust the patient out of proportion to results.

Accordingly many of our patients, particularly if primiparas, get a single hypodermic of one-sixth grain of morphin. If it is desired to stop nagging pains and produce sleep, one-quarter grain is given. Patients in whom ineffective uterine action, that is, true primary uterine inertia, seems to be the cause of the delay are not given morphin.

At the beginning of the second stage, or if the patient suffers severely, shortly before dilatation is completed, the use of gas is begun. We begin with intermittent administration, that is, during the pain only, and with small amounts, as 30 gallons of nitrous oxid to 15 gallons of oxygen. As the head approaches the pelvic floor and finally strikes the perineum, the nitrous oxid is gradually increased in volume to 50 or 60 gallons, and the intervals between administrations are shortened. This gradual increase of the volume of the gas given is controlled by the patient's statement of pain or comfort during uterine contraction. As the perineum begins distending and the most painful stage of labor arrives, the gas is given still more continuously, until at the time of crowning, from 70 to 80 gallons of nitrous oxid are given practically continuously. When the head is born, the nitrous oxid is at once discontinued, and the patient sharply revived by a few inhalations of pure oxygen.

If the woman is a primipara with a rigid, inelastic perineum, and lacerations seem inevitable, we secure the utmost possible relaxation by switching to ether, and pushing to complete unconsciousness at the moment the head crowns the perineum.

All this requires perfect team work between the obstetrician and the anesthetist, who must be able to anticipate the operator's every move. Anything short of this fails to produce the perfect satisfaction of which this method is capable. The basic principle of its administration is to give sufficient nitrous oxid to secure relative freedom from pain, and add sufficient oxygen to prevent any cyanosis. Consciousness, freedom from pain, and good color may all be secured by proper technic. Analgesia permits careful repair of all injuries except those of the cervix. If cervical repair must be undertaken, it is best to have the patient under anesthesia. The ease with which all these various demands of the operator may be met by the anesthetist constitutes one of the chief advantages of gas in labor.

ABNORMAL CASES

When merely making a test of labor preliminary to cesarean section, we administer no anesthetic. If satisfied that natural forces can engage the head and bring it into the pelvic cavity, we use gas freely from the beginning of the second stage, reinforcing the uterine contractions by hypodermic of pituitary extract, giving half an ampule and repeating as the effect wears away.

Under these circumstances we have had some brilliant results, the active cooperation of the patient over a considerable period, made possible by her relative freedom from pain in the presence of vigorous uterine contractions, being highly satisfactory.

Several babies have been secured in this way, in cases in which we desired to avoid abdominal section on account of the risk of previous contamination. Of course this requires that the

obstetrician should be reasonably sure of his diagnosis, and be equipped for major work, if this becomes necessary. I do not mean to minimize the risk of careless or incompetent use of pituitary extract.

When forceps are to be used, gas analgesia is merely increased to complete anesthesia; at the perineal stage ether vapor is added to secure the utmost relaxation in order to avoid laceration.

Webster[1] mentions version as one of the conditions for which he employs gas. I disagree with him in regard to this, believing that the relaxation required for this procedure renders ether by far the better anesthetic for this purpose.

When doing abdominal section for the usual indication, disproportion, ether is our choice of anesthetic because of the greater ease of manipulation under it. When in addition these cases are severely toxic, we use gas with the addition of ether vapor for relaxation as required.

For all minor obstetric procedures, cervical dilatation preliminary to introducing bags, curetting for retained secundines in miscarriage, etc., gas is given the preference.

CONCLUSION

I wish to enter a vigorous protest against the advice at present being so freely given that any one may use gas in labor cases with perfect safety. Gas is a powerful therapeutic agent with infinite possibilities for harm at the hands of incompetent or careless users. The statement has been made and is, I believe accepted, that gas in the hands of an expert is a safe anesthetic, but *the most dangerous* anesthetic if given by a novice. Of course this is far too strong a statement to make concerning analgesia. Even here, however, some knowledge and experience are necessary to secure both safety and satisfaction from its use. Moreover, the temptation to follow a gas analgesia labor with a gas anesthesia for repair is so obvious that I would earnestly urge all those expecting to adopt this method to spend sufficient time in special study of the agents he is to use, so that he can direct its administration. This does not mean that a doctor must equip himself as a gas expert. The skill necessary for its use in labor can be acquired in a short time, but free use of gas by the absolutely inexperienced will surely lead to tragedies

1834 East Sixty-Fifth Street

1. Webster, J. C.: Nitrous Oxid Gas Analgesia in Obstetrics, J. A. M. A., March 6, 1915, p. 812.

The Art of Obstetrics

Writing on this topic, H. Crutcher (Amer. Med., July, 1916) asserts that obstetrics is not among the respectable arts, and never will rank as a respectable art until it is made respectable. Every case of obstetrics comes under one of two heads: physiologic or surgical. There is no middle ground. Either a labor is normal or it is not. The instant it ceases to be normal, it comes within the domain of surgery. There is really no such art as obstetrics, respectable or other. The surgeon should approach a complicated labor precisely as he deals with any other surgical complication. To forestall shock, prevent or control bleeding, unite separated tissues by proper methods are the very essence of surgical practice.

Reports of overcharges in surgery are common enough. Surgery as applied to the complications of laboring women, however, is almost universally underpaid. An uncomplicated appendectomy, requiring a few moments and causing no interruption in the general work, is looked upon as something worth a respectable charge and is often regarded as a feat of the first magnitude; a prolonged labor, accompanied by unavoidable complications, resulting possibly in loss of the child, robbing the attendant of his sleep and keeping him waiting for hours in succession, offers the financial return that would be spurned by many a skilled artisan.

The profession is to blame for the scandalous abuses in obstetric practice. The general public will take no steps to correct something that it knows little or nothing about. There being thousands of robust men and women in the world today who were attended by the "old family doctor" with dirty hands and unclean garments, is of itself sufficient proof that things are well enough off as they are. And, of course, to admit that surgery has a place in the sacred temple of obstetrics would mean the speedy and certain extinction of the human species, so deadly are the ways of modern surgery. When matters arrive at the pass where every baby that comes into the world must be attended by a surgeon, it will not be far to the station where people will be compelled to boil suspected water before drinking and made to sterilize their wearing apparel after it has been infected with the elements of deadly diseases.

A pregnant woman should be told with perfect frankness that her condition at the time of her coming labor will be surgical; that the knife may be as little indicated as a plaster cast or a row-of stitches; that dangerous complications are the exception, but when present must be met with unfaltering determination and appropriate measures of relief-all this, it is urged, should be made doubly plain to any expectant mother, who, in case of accident, will have been prepared in her mind for those indispensable procedures designed wholly for her own security and ultimate welfare. Thousands of persons shy at the word "surgery" just as a horse at a scrap of paper; they are just the people who nurse an infected appendix laden with a deadly charge of infection. Fortunate the woman in normal labor, and doubly unfortunate the one who in the face of surgical complications falls into the merciless hands of the unskilled!

[Those who have read the editorial comments in the last 13 Year-Books will recognize a familiar tone in this paper. -ED.]

Obstetric Surgery a Modern Science.

E. P. Davis, (JAMA, Oct. 14, 1916) taking up the scope and limitations of obstetric surgery, asserts that it is last to share in the advance in medical science. While there remain problems in pregnancy and parturition, a considerable gain has been made in reducing the mortality and morbidity of parturition, and in securing a sound anatomic recovery for the mother, and this with a lessened risk for the child. Antisepsis and asepsis marked the beginning of a new surgery. Application of antiseptics to the parturient woman resulted in deaths from poisoning by antiseptic

agents. When we learned to limit the application of antiseptics to the exterior of the body, to our hands, instruments and appliances, general surgery was vastly improved, abdominal surgery became possible, and obstetric science entered on a new era.

For the mother, modern obstetric surgery aims to obviate the dangers of contracted pelvis and disproportion between mother and child; to deal successfully with foci of infection or pathologic conditions of the pelvis or abdomen complicating labor; to repair the lacerations produced by labor, and thus to restore the mother to a sound anatomic condition after parturition. While these results are certainly important, modern obstetric surgery does far more in the interest of the child. Abdominal section is the safest artificial method of delivery. Not only is the child saved, but also injuries to the nervous system which may seriously jeopardize its health are avoided.

Modern obstetric surgery includes the small class of cases in which vaginal delivery is possible, but the physiologic elements necessary for spontaneous parturition are absent and the suffering caused may be more than the patient can safely bear. In some cases the gross anatomy may be normal, but some condition of the uterine muscle may be present which renders efficient uterine contractions impossible and vaginal delivery dangerous. Elective Cesarean section without labor is very successful in these cases, and may be repeated with success.

Do the results of modern obstetric surgery, as compared with spontaneous labor, justify its existence, or have we lost the art of obstetrics and substituted for it a surgical monstrosity?
The maternal mortality is difficult to estimate outside of institutions. The desire to avoid criticism frequently leads to an inaccurate report concerning the death of puerperal patients. However, the maternal mortality of spontaneous labor is a fraction of 1 per cent under ordinarily favorable conditions. The mortality for the child is that of asphyxia and it is not a negligible factor in considering the results of spontaneous labor. Under the general head of birth pressure, fetal mortality may result in spontaneous labor from visceral hemorrhage.

If we contrast with this the results by the classic Cesarean section, when mother and child are in good condition, it is not unusual to find a series of cases ranging from 40 to 60 without maternal death. If larger series of cases are taken, a mortality of 2 to 3 per cent is stated. In Davis' experience, in 151 patients not septic and not toxic at the time of operation, the maternal mortality was 0.066. As regards the fetal mortality in classic section with mother and child in good condition, the statement is made in the most recent American textbook, that "Cesarean section is the most certain method of delivering a living child which exists" Davis' experience fully agrees with this statement. The most important and essential limitation in obstetric surgery is the choice of persons to practice it. Modern obstetric surgery can best be done by obstetricians, and not by general surgeons or gynecologists. The technical performance of abdominal section is in many cases comparatively simple, and the general surgeon and gynecologist are inclined to vary their practice by short excursions into the field of obstetrics; but they lack the sound judgment in deciding to perform an obstetric operation and in choosing the best method.

Modern obstetric surgery has been slow in development because human life has been cheap. Compensation has been willingly given for the removal of abdominal tumors with a reasonable certainty that they would not return. But the birth of a child is the beginning of trouble and expense for a considerable period of years and the legal value of human life is its wage earning capacity. This is well exemplified in the experience of a young general practitioner who had been trained in modern methods of antisepsis. He was called to attend the patient in her home and made every effort to secure aseptic technic. The husband interrupted him, saying this was an ordinary confinement and he could not afford to have all this done for his wife.

The enormous waste of human life going on at present has created a sudden and renewed interest in obstetrics, and the time is ripe for a permanent advance in this branch of medicine. The multiplication of hospitals, the opening of maternity wards, and the better training of students will produce a certain number of obstetricians capable of properly performing modern obstetric

operations. To these men cases of complicated labor will come and will receive proper attention with a corresponding lessening in maternal and fetal mortality and morbidity and a decided increase in the working capacity, reproductive ability and general health of women.

Meddlesome Midwifery in Renaissance

J. B. DeLee, (JAMA, Oct. 14, 1916) feels no exception will be taken to the statement that there die annually in the U. S. 20,000 mothers from childbirth. The mortality of the new-born also is very high, too many children are lost at birth or from the late effects of either spontaneous or instrumental delivery. According to the Census Bureau, 4,664 women died of sepsis in 1914, but it is impossible even to guess how many suffered from puerperal infection and carry its marks. If we estimate the mortality at 5 per cent, this would mean there were about 100,000 infected puerparæ in the U. S. in 1914.

The accoucheur does not accord the cervix the dignity it deserves. Its mucous membrane is very delicate and easily torn; it is very sensitive to untoward influences, especially infection, and if the latter once obtains a foothold, eradication is almost impossible. The cervix is the center of the tendinous supports of the uterus. It is the protector of the asepticity of the uterine cavity. Yet consider to what insults this organ is exposed. The divulsors with a stretching force of 200 pounds or more; the tearing open by so-called manual dilatation; the cervical incisions; the gentlest of all, but still damaging colpeurynter.

Another structure whose physiologic and pathologic dignity is not adequately appreciated is the web of connective tissue supporting the uterus, bladder and rectum. While tons of literature have been written on the pelvic floor, the importance of injury to this connective tissue has received scant notice. It may be torn or overstretched by the forces of labor or operative interference, or it may be thickened and distorted by inflammatory conditions.

First among the practices which should be condemned as meddlesomeness are attempts to cut short the dilatation of the cervix. As every accoucheur knows, the only way to dilate the cervix safely is Nature's way. Manual dilatation always tears the cervix. Colpeurynters often do so, and almost invariably, if traction is put on them, and in addition, they pull the cervix downward while the uterine action pulls it upward. Overstretching and dislocation of the cervix result, and gynecologic and urologic disease follows. Furthermore, danger of infection attends all these maneuvers, no matter how aseptically the operation is carried out. True, the women seldom die of sepsis, but the morbidity, immediate and postponed, is high.

Another form of interference is the discriminate use of twilight sleep, gas and oxygen and other anesthetics. DeLee admits that he uses anesthetics too often and too liberally. As the direct result of morphin and scopolamin, of ether, gas etc., he has increased the frequency of forceps operations, of lacerations, and of postpartum hemorrhage in his practice. In the dispensary of the Lying-in-Hospital postpartum hemorrhage is very rare, in his own practice it occurs much oftener. The same is true of the forceps. While he almost never delivers a woman without some form of anesthetic he is trying to reduce the amounts required to render the woman comfortable.
Too frequent vaginal examinations, "ironing out the perineum," must also be condemned. The danger of such manipulations is in the installation of mild infections which later lead to invalidism. Occasionally such a mild infection leads to fatal pulmonary embolism, and again a virulent sepsis results. For these reasons the rectal examination should be substituted for the vaginal in nearly all cases of labor. It is astonishing what may be accomplished by the rectal examination and it requires very little practice to acquire efficiency in it. DeLee cannot urge too strongly this point.

Of all the meddling practices, giving pituitary extract is the most dangerous to mother and child. Some 16 cases of rupture of the uterus are recorded, and H. M. Stowe knows of 2. Pituitary extract should not be used except in the presence of a real, scientific indication, and is governed the

same as the forceps operation, i.e., the head must be engaged, the cervix completely dilated, no disproportion between the child and maternal parts, etc.

The abuse of the forceps is an old charge, and we must repeat it today. Some obstetricians deliver the majority with forceps. The forceps are often used to correct bad practice in the early conduct of labor, e.g. use of a colpeurynter which has displaced the head allowing the cord to prolapse, or abnormal rotation of the head; or administration of twilight sleep during which the child's life is endangered, etc.

In conclusion DeLee urges that we depart not too far from our trust in the natural forces of labor, that we remember the obstetrician's duty is not to make of labor a surgical operation, but to conduct it as a natural function, interfering only when called on by the necessity of preventing undue suffering, of saving fetal or maternal life.

A Year's Work at the Rotunda Hospital

The routine of this famous institution has been seriously interfered with by the war. The report for the year ending Oct. 31, 1915, is made by Drs. Smyly, Purefoy and Tweedy, (Dublin Jour Med Sci, July-August, 1916.)' the three surviving past-masters. The master and assistant-masters being at the front.

The post-graduate Foreign and Colonial students, almost entirely disappeared, and very few undergraduates attended. The nursing sisters obtained army appointments, and even the supply of probationers fell off.

Nevertheless there were 1,760 deliveries in the External Department, and 2,070 in the Intern Department. A considerable falling off in the former and a slight increase in the latter as compared with the previous year.

Most of the report is in the form of tables, some of which we here reproduce:

TABLE 1. NATURE AND NUMBER OF CASES TREATED IN EXTERN MATERNITY.

Total number of labors	1,760	Operations—	
Abortions and miscarriages	166	Version	10
Hydramnios	3	Forceps	18
		Manual removal	19
Presentations—			
Persistent occipito-posterior	14	Children stillborn	88
Face	5	(Fresh, 75; macerated, 13)	
Breech	58		
Brow	1	Infantile conditions—	
Transverse	10	Spina bifida	2
Twins	20	Anencephalus	2
Prolapse of cord	9	Hydrocephalus	2
Placenta previa	6	Mortality	4
Accidental hemorrhage	4		
Post-partum hemorrhage	21		
Lacerations of perineum	282		

TABLE II. NATURE AND NUMBER OF CASES TREATED IN INTERN DEPARTMENT.

Total admissions	2,443
Total deliveries	2,070
Primiparæ	791
Multiparæ	1,279
Presentations—	
Vertex, normal rotation	1,901
Vertex, faces to pubes	21
Face	9
Brow	3
Breech	48
Transverse	13
Twins	29
Triplets	1
Complications of pregnancy—	
Hyperemesis	2
Hydramnios	8
Abortions and miscarriages	75
Hemorrhages—	
Unavoidable	8
Accidental, internal	..
Accidental, external	6
Post-partum	18
Lacerations of perineum	555
Contracted pelvis	21
Placental abnormalities—	
Adherent	28
Previa	8
Prolapse of cord	6
Accidental complications—	
Phthisis	2
Myoma of uterus	1
Cardiac disease	1
Eclampsia	9
Phlegmasia	1
Mastitis	6
Operations—	
Pelvimetry	17
Induction of labor	7
Episiotomy	1
Suture of perineal lacerations	555
Operations—*con.*	
Complete	2
Incomplete	553
Suture of cervical lacerations	2
Forceps	96
Version	18
Cesarean section	14
Pubiotomy	3
Manual removal of placenta	28
Laparotomy for ligature of ovarian vein	1
Supra-vaginal hysterectomy with Cesarean section	1
Morbidity (B. M. A. standard)—	
Average	1 in 23.52
Percentage	4.25
Mortality—	
Total	5
Average	1 in 414
Percentage	.24
Fetal abnormalities—	
Ascites	1
Anencephalus	2
Cleft palate	2
Hare lip	1
Exomphalos	1
Spina bifida	4
Talipes	1
Teratoma	1
Hydrocephalus	1
Infantile complications—	
Cephalhematoma	2
Imperforate anus	1
Melena	3
Ophthalmia	3
Icterus neonatorum	1
Goitre	1

TABLE III.

Ages of Patients in whom Forceps was applied.

Age.	Number of Forceps cases.
17-25	31
26-30	39
31-35	19
36 and over..	7

Number of Pregnancy of Patients in whom Forceps was applied.

Para.	Number of Forceps cases.
I.....	74
II.....	9
III.....	4
IV.....	2
V. and over..	7
Total ...	96

TABLE IV. COMPARISON OF MORBIDITY IN PRIMIPARÆ AND MULTIPARÆ.

PRIMIPARÆ.

	Total deliveries.	Cases morbid.	Percentage.
November	43	4	9.30
December	65	1	1.53
January	56	2	3.57
February	44	3	6.81
March	69	2	2.89
April	71	3	4.22
May	77	3	3.89
June	76	4	5.26
July	90	8	8.88
August	65	4	6.15
September	76	11	14.47
October	59	6	11.67
Total	791	51	6.44

MULTIPARÆ.

	Total deliveries.	Cases morbid.	Percentage.
November	97	3	3.09
December	84	.	...
January	105	3	2.85
February	118	6	5.09
March	107	2	1.86
April	94	3	3.19
May	119	3	2.52
June	103	3	2.91
July	115	1	.86
August	116	5	4.31
September	113	3	2.65
October	108	5	4.62
Total	1279	37	2.88

Supervision of the Midwife

J. C. Edgar, (Am J Obst, 1916, 73, p. 386) who has given this subject long and very careful study concludes as follows:

1. The midwife has no place in modern medicine or surgery.
2. For the present the elimination of the midwife is an impossibility.

3. The midwife is to-day a necessary evil, for traditional, social, and economic reasons, attending as she does about 40 per cent of confinements in this country.
4. Of the three professions, namely, the physician, the trained nurse, and the midwife, there should be no attempt to perpetuate the last named as a separate profession.
5. The midwife should never be regarded as a practitioner, since her only legitimate functions are those of a nurse plus the attendance on normal deliveries when necessary.
6. The solution of the midwife question in the rural and outlying districts is to be found in the inclusion of midwifery service in rural district nursing, should a physician not be available.
7. Control of the education, licensing, and annual renewal of license should be in the hands of the State Board of Health or State Board of Education, supervision of the midwife by the local board of health, and annual renewal of license to depend on the midwife's record during the year.
8. State license, state control, high standard of education, annual renewal of license, critical and constant supervision of the midwife, encouragement to trained nurses to take out midwife licenses, and further extension of dispensary maternity services will mitigate the midwife evil, re duce the ranks of the midwife, and render the remaining ones less of a menace to the country, and pave the road for their final elimination.

The author quotes some very interesting statistics from the midwife conditions in New York.

Is the Midwife a Necessity?

J. M. Baldy (Am J. Obst 1916,73,399) believes that theoretically the midwife is unnecessary, just as osteopathy, chiropractic, Christian Science, and other cults of the same kind an unnecessary, but these things do exist and the community demands them.

Since the time has not come when it is possible to eliminate the midwife, the proper thing to do is to educate those already in the field and strictly to regulate those in practice. This will lessen their number in a way which even prohibition would not do.

The education of new midwives, or the admission of fresh ones coming from other countries is of dubious value. Hospitals with maternity departments and maternity hospitals should be developed to the point of highest efficiency, and this class of patients should be encouraged to go to them for help.

A lessening of the number of midwives by the elimination of the unfit, together with the refusal of admission to any or possibly but a few new ones, and the placing of ample service of maternity hospitals and maternity wards at the disposal of the community will go a long way toward eventually doing that which prohibition can not do in the elimination of the midwife.

Progress Toward Ideal Obstetrics.

J. B. DeLee (Am J Obst 1916, 73, 407), is fundamentally opposed to any movement designed to perpetuate the midwife for the following reasons:

1. The midwife is a relic of barbarism. In civilized countries the midwife is wrong, has always been wrong. The greatest bar to human progress has been compromise, and the midwife demands a compromise between right and wrong. All admit that the midwife is not what she should be; it has been proven time and time again that it is impossible to make her so-further, a part can not be equal to the whole, and yet there are those who, crying expediency are willing to foster and perpetuate this evil.
2. The midwife today is not an absolute necessity. The secretary of the Illinois State Board of Health states that about 1,200 midwives are registered, 900 of whom are in Chicago. Of the 101 counties in the state, statistics were received from 87, and it was found that no births

were registered by midwives in 37 counties in Illinois. In our large cities various agencies as maternity clinics are each year caring for an increasingly large number of poor women and gradually displacing the midwives.

3. It is impossible to train the midwife sufficiently to make her a safe person to attend labor cases. Obstetrics is a major science. It requires the highest kind of skill, in addition to much knowledge, to do even tolerable work. Europe has tried to educate midwives for many centuries, and has failed signally. Ekstein, of Teplitz, calls the midwife situation in Austria and Germany "a state of misery." If the medical profession fails to establish tolerable conditions in Germany, can we hope to succeed here?

THE STATUS OF THE CHILD IN OBSTETRIC PRACTICE

JOSEPH S. WALL, M.D.
WASHINGTON, D. C.

J.A.M.A. Volume 66 (1916) pages 255 – 259

The thoughts expressed herein have been of gradual growth, mainly gained by the experience of standing sponsor for the welfare of the maternal offspring after the obstetrician has completed his task and by every good word and deed has brought to a successful ending a period of great anxiety.

Some time ago, in a discussion, I had occasion to remark on the number of children whose health had been impaired by birth injuries, and was immediately taken to task by one of our accomplished obstetricians, just as though I had accused my obstetrical confrères of acts of assault and battery on the babies they were assisting into the world. My intent, far from this had been simply to ascribe to injuries of the cranial contents during the act of labor those distressing afflictions appearing later in infant life, namely, idiocy, paraplegias, hemiplegias, and the like, which are now known to be due to intracranial traumatism at birth.

It cannot be charged against us as it was in the earlier days of medicine that the interests of the child are entirely subservient to those of the mother. The abandonment of craniotomy on the living child was in itself an acknowledgment of infantile rights, which, thanks to modern advancement in medical science, have attained a station hitherto unknown, so that now the mortality to the child is mentioned in the same breath with that to the mother in almost all obstetric conditions and procedures involving a question of mortality.

I am of a mind that there is still room for improvement in judging the rights of the unborn child, and certainly enormous opportunities for advancement in the consideration and attention bestowed on the little individual after birth.

There are certain prenatal, natal, and postnatal facts which may furnish food for reflection. As a general theme I would ask that the product of conception be given a greater measure of consideration in all matters obstetric when the safety or life of mother and child are considered coincidentally, and when balancing one's procedures to be enforced to effect the *desideratum* for the mother, all things being equal (or nearly so), as in high forceps or cesarean section, to weigh gravely one responsibility to the child, rather than to lose sight of it entirely in the greater vision of the safety of the mother.

“PERNICIOUS" VOM ITING OF PREGNANCY

In prenatal matters perhaps the first to call into question the sacrifice of the offspring is the vomiting of pregnancy. The indication for induced abortion is in most instances determined entirely by the alarming condition of the mother, and yet how many of us have seen cases of pernicious vomiting belie their name except in the extent and distress of their symptoms. The term "pernicious" in medicine usually means fatal; for example, pernicious malaria, pernicious anemia, etc. My only observation would be for a readjustment of the medical and obstetric idea of pernicious, for I remember in past years having seen quite a few patients with so-called pernicious vomiting get well without the induction of abortion.

VIABILITY

Another obstetric word needing readjustment, or the readjustment of the obstetrical mind, is "viability." Whoever outraged nature in the past by thrusting into our medical dictionary this elastic and meaningless term, was neither a naturalist nor an obstetrician.

What is meant by "viability?" Along about the seventh month, as commonly accepted, it is believed that the fetus has sufficiently developed to bear separation from the maternal connection which has maintained its life up to that period. In an older and fortunately obsolete interpretation, it was construed as the period before which the child theoretically had no moral or material station, and after which its rights were to be respected *pari passu* with the conscience possessed by the physician. It would be well either to relegate the term viability to oblivion, or to fix its occurrence at one of two periods in fetal growth -either at the moment of fecundation of the female ovum, or at a point 280 days from that time, coincident with the termination of the second stage of labor. Such a conception of viability, especially the latter, would render unto the world a lessened number of prematures, and if constantly borne in mind, even in cases of urgency from the maternal standpoint, would enhance the child's safety by postponing, as long as justifiable, measures involving *accouchment forcé*.

Those of us who have had anything to do with the care of prematures would ask of obstetricians that the period of prematurity be made as short as possible, if it is within their hands so to shorten it. The induction of premature labor to avoid a threatened eclampsia is a well-recognized and thoroughly admitted procedure. If, however, obstetric genius by well-directed treatment can postpone the necessity for such a procedure until the latest period of pregnancy consistent with the safety of the mother, the pediatrists will be duly grateful.

It is a fact that incubators are *passé*, except at county fairs and sideshows. It is a fact that practically all prematures entrusted to institution care die. It is a fact that in the city of Washington the deaths from prematurity reach, 31.54 per thousand births, exceeding every other cause of death during the first year of life, and being 50 per cent greater than the group of deaths from diarrheal diseases in the same period. In Holt's[1] analysis of ten thousand births at the Sloane Maternity, over 54 per cent. of deaths in the first two weeks of life were from prematurity.

SYPHILIS

Many women have a history of having had one or several stillbirths. The occurrence of one stillborn child in the obstetric history of a mother should excite suspicion and should warrant every effort, especially by Wassermann tests, to ascertain the presence of syphilis in either parent.

In an analysis by Williams[2] of 705 fatal death, occurring in 10,000 births, 186, or 26.4 per cent, were due to syphilis, a preventable cause of infant death. This study was based on all deaths occurring between the seventh month, "the so-called period of viability," and full term, as well as those in the two weeks following delivery. Eighteen per cent of Williams' patients died from unknown causes, but because one half of these were macerated when born, he believes that probably 40 per cent of the unknown group were deaths due to syphilis.

In Washington during 1914, 1,140 babies passed under the observation of the infant welfare stations of the Washington Diet Kitchen Association. In all there were eleven deaths, counting among those who died every baby who had ever visited a station a second time. Three of the deaths

were from congenital syphilis. One died of "probable congenital syphilis". Thus it appears that four, or nearly 40 per cent., of all of these deaths, were from certain or probable syphilis.

Herein lies an opportunity for the obstetrician to work untold good by the recognition and certain diagnosis of syphilis, in order that the offspring of syphilitic parents may be born healthy, because of suitable and effective treatment of their forbears.

PRENATAL CARE OF BREASTS

When one recognizes the vast importance of maternal nursing, and when one witnesses, especially in primiparas, the difficulties and abandonment of nursing because of underdeveloped, inverted, fissured and painful nipples, the pediatrist would certainly suggest greater prenatal care of the breasts and so a reduction of the number of babies who must be robbed of their rightful inheritance of maternal nourishment because of the factors mentioned.

Not only is prenatal thought and encouragement and constant suggestion necessary to convince many modern mothers of the importance of nursing their offspring, but in the far more important fortnight of postnatal care, which period is almost always solely under the obstetrician's guidance, a greater effort should be put forth by moral suasion as well as by material means to insure breast feeding and not artificial nourishment of the child. Of this I will speak later.

MOTHER'S DIET

Again, during the prenatal period, if there is cause to believe that the child will be unusually large, or if some degree of pelvic contracture exists, or if there has been a history of dystocia in previous births due to the great size of the child, it is a principle advanced by some that the amount and character of the mother's diet during pregnancy may be so regulated as to exert a beneficial restraining effect on the growth of the child. How serviceable such agencies may be I am unable to say, but there may exist here an opportunity for prenatal care which might enhance not only the safety of the mother, but especially of the child.

I have repeatedly heard it stated that the average colored baby rarely reaches 7 pounds in weight at term, and may not this deviation from the normal average of the weight of the newborn be due to natural restrictions in diet through want and necessity? Could some factors of subnutrition inherent in this race be invoked artificially to restrain excessive fetal growth if the obstetrician is fearful of some disparagement between the pelvic and fetal measurement?

BIRTH INJURIES AND PALSIES

The conditions presented during the actual time of delivery are of necessity those wherein the obstetric art has the greatest sway. Prenatal and postnatal epochs are further removed from the direct supervision of the obstetrician, the former largely because of the belief of many women that a physician's care is not paramount previous to labor; the latter because only too quickly the infant passes under the almost exclusive domination of the nurse and not infrequently becomes the object of casual inquiry on the part of the medical attendant.

It is during delivery that results are looked for by the mother, and in so far as the accoucheur is concerned in producing the desired results, he employs various procedures of recognized obstetric practice to effect the accomplishment of delivery, when such are necessary.

The first serious condition from the standpoint of the child is prolonged and tedious delivery. That the largest number of hopeless cerebral palsies, for example, the terrible affliction of Little's disease, is produced by prolonged pressure on the fetal head I think is an unquestioned fact.

Kerley[3], a man of broad pediatric experience, states that:

Trauma at birth, whether due to use of forceps or to compression of the head in a prolonged or abnormal delivery, may result in meningeal hemorrhages causing cerebral palsy. An immense number of cases are thus caused. The obstetrician should always keep in mind that with him rests the possibility of making a hopeless invalid or an idiot of the child he is about to deliver. It is fully appreciated that under unusual conditions in obstetric practice certain risks of head injury must be taken for the sake of the immediate demands the mother or the child, but the large number of cases of cerebral, palsy and idiocy which I have seen have impressed on me the necessity of treating the child's head during delivery with the utmost care.

When one sees, as I have frequently seen, a hopeless, helpless little creature, who at 2 or 3 years of age cannot hold its head up unsupported, whose spine is bowed, who at 5 or 6 years must be supported to walk on its atrophied, spastic and crossed extremities, whose mind is a blank and its future equally so, one is constrained to reflect on the importance of a warning note.

FORCEPS, VERSION AND CESAREAN SECTION

The boon of forceps must be tempered with the thought as to the utility of "high forceps operations," into a discussion of which I am not qualified to enter. I believe, from a limited obstetrical reading and hearing of discussion, that the old high forceps application is nearing its well-deserved death. From the baby's standpoint an illustrative case might prove an object lesson.

A girl baby of 4 weeks was recently referred to me for supervision. This child had been delivered by cesarean section as a method of choice, weighed 7 pounds 9 ounces at birth, was perfect in every respect, and has since progressed lustily on breast feeding.

The mother of this child, whose birth weight I do not recall, weighed 25 pounds at 3 months of age. Four years ago her first-born, a baby weighing 11 pounds at birth, and 19 pounds at .6 months, was delivered by high forceps after a tedious labor. He now has a terrible scar on the right forehead involving the bone as well as the soft structures, a depression of the orbital arch, strabismus, and total blindness in the right eye. The election of abdominal cesarean section was made from the standpoint of the child, who in after years will no doubt be grateful to the obstetrician, as is the mother at present.

The advent into this world of a martial figure now, large in the public eye was complicated by the failure of delivery of a note to the skilled accoucheur selected to attend the queen mother, so that the post of obstetrician fell to the lot of an obscure physician who has borne, perhaps unjustly, the stain of creating an Erb's palsy in the arm of his royal charge.

There are many Erb's palsies less widely heralded, but none the less real and crippling, which have been due to haste and lack of skill in effecting delivery, and where the status of the child has received scant notice, in the mental and manual efforts of the obstetrician.

The indications for cesarean section, abdominal or vaginal, when weighed in the balance of obstetric judgment, should take into account fully the status of the child as well as that of the mother in determining the proper procedures. It is gratifying to note a general tendency toward the employment of cesarean section as a method of election in doubtful cases, no doubt because the obstetric mind has become convinced that this operation is highly desirable, as it is accompanied with practically no fetal mortality.

If the status of the child be given its proper weight, there would be fewer versions and more sections in late placenta previas. I well remember a distressing case of puerperal mania due to great loss of blood, and mostly I believe, to the mental anguish of loss of the first-born, in a patient with placenta previa delivered at term by high forceps.

The employment of version to effect delivery is well known to increase the dangers to the offspring, yet until recent years this was the recognized procedure in cases of placenta previa.

When one considers the danger of trauma, of asphyxia both from intra-uterine bleeding and from cord compression, the status of the child is relegated to the background in this method of *accouchement forcé*.

TWILIGHT SLEEP

There is another obstetric procedure now being widely discussed by women as well as by physicians, namely, "twilight sleep," which is yet in an experimental stage, but which should receive the earnest thought of all who practice obstetrics. The amount of attention which this subject has received from the feminine standpoint is bound sooner or later to elicit from the profession some definite stand for or against, and it would seem but fair that every endeavor should be made by obstetricians to pass judgment on this procedure by scientific inquiry, conducted under the most stringent conditions as to technic, which its supporters deem so necessary. It is only by such exhaustive investigation that the real worth or harmfulness of this measure can be determined, nor should it be left to the investigation and exploitation of those who are unfitted to determine its place among obstetric procedures.

In determining the usefulness of "twilight sleep," it would seem that the *sine qua non* of its employment rests with the ultimate effects, harmful or innocent, of the drugs on the child.

There is every reason to believe that the fetus is profoundly affected by the remedies employed to produce the necessary state of semi-narcosis. It is believed by some who have used this method that these effects are transient and devoid of lasting influence.

In a report by Gauss[4] of his first 500 babies, 316, or 63 per cent, were lively, that is, normal, at birth. Four were born prematurely and died within a short time. One hundred nineteen, or 24 per cent, showed the condition known as oligopnea.

Dr. Jacobi holds to the belief that every moment of asphyxia in the new-born is fraught with the utmost danger as concerns its subsequent cerebral development. It is possible that later years will testify to the truth or falsity of this belief as applied to the peculiar asphyxia found in "twilight sleep" babies.

Gauss further says:

> *I do not believe that this intoxicated condition harbors any serious dangers to the organisms. I have, nevertheless taken occasion to avoid it experimentally by modifying the dosage. On the strength of my observations I thought that the intoxicating effect was due to the morphin, and I tried therefore to lessen the amount given or even avoid it altogether whilst maintaining or eventually increasing the dose of scopolamin.*
> *… If the quantity of scopolamin was increased beyond a certain limit, eventually even omitting morphin entirely, slight intoxicating effects were observed in the child, which were the more pronounced, the dimmer the state of consciousness of its mother. If the first injections were heavily overdosed, the intoxicating effect on the child took place sooner than in its mother; while the latter still retained unclouded consciousness, the former was eventually born in a state of apnea. Morphin by itself sometimes causes deep apnea in the child at birth.*

In a later report of 3,000 cases, Gauss claims that the oligopnea is devoid of danger if not caused by large doses of morphin, to which the infant is extremely susceptible. His fetal mortality in this series was 1.3.

Brodhead[5] reports 46 cases at the Harlem Hospital in which 31 babies cried immediately after birth, 14 cried after some manipulation, several babies required hot and cold baths, artificial respiration, etc., and one child died thirty-six hours after birth, the necropsy showing venous engorgement of the brain and all the viscera. At the Post Graduate Hospital he reports 20 cases; two in the series had stillborn babies; one baby died thirty-six hours after birth. This child was in deep narcosis at birth and it required one hour and a quarter to make it breathe.

Such instances as cited will serve to call attention to the possible harmful effects on the child of this method of analgesia, but only the collection of a much larger series of carefully studied cases can determine the final judgment of its utility. The last analysis will obviously consider the status of -the child alone as determining the recognition, if any, which will be ultimately accorded it.

POSTNATAL CARE OF INFANT

Granting that the skill and wisdom of the obstetrician have combated the dangers and avoided the accidents to the child during its prenatal and natal period, and that it has entered the world a healthy, lusty being, there are more postnatal pitfalls in store for this tender person, offspring, perhaps he should be called, for he has now undertaken a separate existence.

During the period of his parasitic life, one may call it, the altered conditions in the mother incident to his presence and growth have been the object of solicitude on the part of the obstetrician. The vomiting of pregnancy has been watched lest it become "perni cious"; the urine repeatedly examined, lest his presence be no longer tolerated because of possible eclampsia; in his very passage through the parturient canal his tender head may have been forcibly assisted by compressing forceps, or if not, it has been crowded up against the pubes, lest the perineum of the mother might suffer.

His process of exfoliation is complete with the severance of the cord and he is handed into the arms of the waiting nurse, who from that instant becomes his mentor, guide, and friend. Too often, I believe, this ritual between obstetrician and nurse betokens the presentation of an object from one to the other which is regarded largely in the light of a white elephant by the former.

Altogether too often the obstetrician's attention, so far as the child is concerned, ceases from the moment of its birth. To the nurse is entrusted the instillation of antiseptics into the eyes. Those who have properly performed this operation on the new-born know the difficulties sometimes met with in actually opening the lids to reach the conjunctival sac. Too often one has blundered, and no preventive treatment directed toward ophthalmia has been instituted. Bear witness the patients admitted to our hospital wards with this serious malady.

Among the most fatal of all diseases of the new-born is to be found the group of septic infections. Many of these infections gain entrance through the umbilicus and yet the toilet of this absorptive structure is almost always left to the nurse, no matter how competent or incompetent she may be to enforce the principles of strictest asepsis.

The avoidance of infection of foci other than the umbilicus may sometimes fall within the preventive care of the obstetrician. A few months since I was called to see, with another physician, a baby who had erysipelas, the disease subsequently proving fatal. The infection had gained entrance through an ear puncture made within the first few days of life to insure proper apertures for earrings when the child had attained sufficient size to embrace these features of barbaric adornment.

One might question the inclusion of such a matter within the scope of preventive measures on the part of the physician, but one might be answered by the fact that, in the case in point, the physician himself had made the ear punctures!

The obstetrician who practices strict asepsis, who wears snowy gowns and sterile gloves, who would stand aghast should the nurse dare to touch the maternal parts, by common practice neglects to extend to the infant in the toilet of its tender, susceptible body those features of modern asepsis which he would fail to apply to the mother because of the danger of puerperal sepsis.

FEEDING

My last plea on behalf of the new-born is in regard so feeding. The knowledge that according to estimate, the artificially- fed baby stands from one-tenth to one sixth less chance in early life than the nursling, should influence the obstetrician to use every means within his command, by moral suasion, by psychic appeal, by material treatment of the mother, to secure breast feeding for her offspring. This desideratum cannot always be attained, but the ability to secure it -- granted that it is possible -- rests almost alone with the obstetric attendant, to whom, for the first three or four weeks after delivery, the mother looks for guidance for her baby as well as for herself.

With the failure of the only nourishment ever intended for the human offspring, and never imitated in its entirety by the formulas of man, the question of putting the baby on the bottle arises.

Should this be necessary, it is a matter of supreme importance that all imitations of mothers' milk should be fabricated by the mind of the physician and not by nurse. I recently had occasion to see a three-weeks-old baby who was receiving, as prescribed by nurse, several ounces of rich top milk diluted with water, but further enriched by four ounces, namely a quarter of a pound, of sugar, the whole with rather disastrous results.

Medical nomenclature has coined the term "feeding cases", which include a great proportion of all illnesses and conditions met with during the first year of life. The adjustment of such now comprises a good part of pediatric practice and the evolution of a feeding case frequently begins within the first month of life.

Wile[6] has stated that 90 per cent of physicians graduating are deficient in pediatric training. As an “apologia" to my obstetric confrères for any criticism heretofore expressed, I would venture to assert that a large number of these 90 per cent of physicians were deficient in their ability to properly direct infant feeding because of the incomprehensible teachings of pediatrists in former years; because of the unintelligible array of figures and algebraic formulas heretofore presented whereby infants were fed $x + y$ and sometimes z by the disease-producing fad of top-milk feeding and cream mixtures in an attempt to imitate the fat percentage in mothers' milk; and finally, because the makers of proprietary foods were farseeing enough to place on their labels directions for simple dilution of milk which needed but the average comprehension of a mother, and not the mind of a statistician, to properly observe.

It is a stain on the past years of pediatrists that fat curds were so long regarded as protein curds, and that algebra, a science mastered in school years, was a process of educational gymnastics and not a method of administering nourishment to unoffending infants.

Be it said to the glory of the pediatric art that a time of awakening has come; that in artificial feeding, simple dilutions of cows' milk under simple and rational restrictions as to quantity will give the greatest service in the majority of cases.

These are the methods of feeding which the average practitioner can understand, so that the mental chaos created by fats, proteins, sugars, calories, topmilk, bottommilk, and whey, with which he was formerly befogged, and because of which so frequently the aid of the nurse or food manufacturer was invoked -has been dissipated by simple, intelligible methods.

Reuben[7] says, in a study of 1,500 milk-station infants:

> *In all our bottle babies we used simple dilutions of whole milk. . . . In feeding the healthy artificially- fed infants we usually began with a one-in-three mixture. Seldom was it necessary to prescribe a more dilute mixture. The quantity at each feeding we increased one ounce every fourth week; the strength was increased as the weight and the symptoms indicated.*

Grulee[8] feeds 1.5 ounces per pound weight in twenty-four hours, diluted out to make the proper amount at each feeding.

This is not a paper on infant feeding, but the foregoing statements of exceedingly simple methods which succeed in the majority of cases are made to direct attention to the possibilities within the grasp of the obstetrician to initiate proper and harmless substitute feeding methods when necessary, in place of complicated, harmful combinations, and to plead that the physician himself dictate the beginnings of the infant's nutritional regimen, not relegating the foundation of what may mean health or disease to the hands of the nurse or the manufacturer of patent foods.

There is now being erected in Washington a modern ideal hospital costing some hundreds of thousands of dollars, to be called a "lying-in hospital" -- a place to which women may go to be surrounded by every detail of safety during the birth of their babies, and presumably an institution for enhancing the safety of the child as well as the mother.

On its staff are the names of skilful obstetricians and gynecologists, and yet, in this theater of beneficent activity, there is a Hamlet left out --there's is no pediatrist to assure to the new-born its just measure of scientific protection during a period of its early life so fraught with danger.

2017 Columbia Road.

1. Holt, L. E., and Babbitt, E. C.: Institutional Mortality of New-Born. A Report of Ten Thousand Births at the Sloane H for Women, New York, J. A. M. A., 23, 1915,
2. Williams, J. W.: The Limitations and Possibilities of P Care Based on the Study of 705 Fetal Deaths Occurring in 10,000 Consecutive Admissions to the Obstetrical Department of The Johns Hopkins Hospital, J. A. M. A., Jan. 9, 1915, p. 95.
3. Kerley, C. G.: The Practice of Pediatrics, W. B. Saunders Co., Philadelphia, 1914, p. 495.
4. Gauss: Arch. f. Gynäk., 1906, 1xxviii, Part 3.
5. Brodhead: Post-Graduate, February, 1915, p. 87.
6. Wile: Tr. Am. Assn. for Study and Prev. of Inf. Mort., 1900
7. Reuben: Arch. Pediat., March, 1914.
8. Grulee, C. G.: Infant Feeding, W. B. Saunders Co., Philadelphia, 1912, p. 137.

Several Every-Day Obstetric Problems.

It is pointed out by J. B. De Lee (Amer. Jour. Obst. July, 1917) that the mortality from puerperal sepsis in the last thirteen years has not diminished at all, while the mortality from typhoid fever and diphtheria have been reduced 50 per cent, and that from tuberculosis 25 per cent. Also, as a cause of death among women, between the ages of 15 and 44 years, childbirth ranks second to tuberculosis. De Lee states that 8,000 women die annually in this country from puerperal infections. The resulting morbidity must also be very large, as in only about one case out of five of puerperal sepsis does the patient die. Fever occurs in 10.7 per cent of puerperal cases at the Sloan Maternity and in 10.8 per cent at the Chicago Lying-In Hospital. It is the morbidity resulting from these infections during childbirth that causes the life-long invalidism in so many women.

De Lee thinks that this condition can be greatly improved if proper technique is instituted in the hospitals and proper asepsis is used in the homes. Also the general practitioner should be given a better training in obstetrics.

The Chicago Lying-In Hospital has developed two systems of aseptic technique: the extensive or hospital method, and the intensive or dispensary method. De Lee describes these as follows:

"T" Hospital or Extensive System. In the hospital plan every natural labor, as well as every obstetric operation, including the insertion of a colpeurynter, packing the uterus or vagina, is prepared for as we do for a laparotomy. The accoucheur, the assistants, the nurses, the anesthetist, all wear gowns, head-pieces, mouth cloths, etc.; tables, bed and patient are covered with sterile sheets, etc. Our hospital is an "open" one, and from fifty to seventy-five different physicians bring their cases here for delivery. It requires not a little tact on the part of our internes and nurses to get these men to carry out this technique in all cases, and as fully as is desirable. Particularly the mouth cloth is neglected, and the mouth, emitting droplets of bacteria-laden saliva, is surely a frequent source of puerperal infection. I have had one convincing demonstration of this fact.

In the hospital with so many different kinds of doctors we have to cover everything within reach with sterilized material, and we unavoidably run into another danger. The aseptic operative field becomes too large. Measure the area of the delivery bed, instrument table, solution basins, operator's gowns, internes' and nurses' gowns, etc., and you will be surprised at the number of square feet it will come to. This area has all been sterilized with the greatest care and was sterile when first exposed. But how long does it remain sterile? A delivery lasts from one to four hours. Dust, scurf, droplets of saliva from those in the room whose, mouths are not protected, fall on the sterile sheets, solutions, catgut, etc., and when these are touched by the sterile gloved hands the dust and bacteria am carried into the puerperal wounds. The woman in her throes of pain disarranges the sterile sheets; in her delirium she touches them; when she bears down she forcibly ejects the breath, laden with saliva, over the sterile leggings, and the hands of the operator or assistant. One does not need laboratory proof of these facts. We can see the dust and even hair on the surface of the solutions in the basins, and I have seen drops of spit fly out of the mouth of the bearing-down woman and land on a mirror held over the abdomen.

The Intensive or Dispensary System. Our practice in the homes of the poor is almost identical, but I think our tenements are not so overcrowded. Our labor satchel contains no sterile towels or gloves or sheets or instruments. The gloves and instruments are boiled at the case. The cotton wipes, the cord dressing, the pads are sterile, and carried in sealed containers. The patient is prepared by shaving; the belly is scrubbed, also the inside of the thighs. Clean leggings cover the legs. A clean towel is laid over the abdomen. The interne and student roll up their shirt sleeves and wear rubber aprons. Only the gloves, the insides of the basins, the insides of the jars and the area

immediately around the vulva, just a few inches, are considered sterile, and the vulva is kept so by frequent drenching with lysol and bichloride solutions. This small area may be touched, everything else is considered infected and may not be touched and we instruct the attendants, when they speak to direct the face away from the patient so that saliva is not deposited on the vulva or the sterile things.

Asepsis and antisepsis are not all that is necessary for success. Credé enunciated two principles for the prevention of puerperal infection. One was, limit so far as possible puerperal wounds; the other was, prevent the infection of the inevitable puerperal wounds. The latter principle has been discussed, the other deserves more attention than it is getting. Do we strive to limit the puerperal injuries? We do not. Forceps are applied with great frequency on the slimmest indication and often without any, except bedtime or office hours. Pituitrin is administered to hasten delivery, regardless of the fact that rapid expulsion of the fetus tears the cervix and vagina. Premature bearing-down efforts are insisted on by obstetrician and nurses, regardless of the degree of dilatation of the cervix and pelvic diaphragm. De Lee mentions one man in Chicago who, in the lay press announced his practice of bringing on labor at term by means of bags and pituitrin, forcing the delivery from morning till evening and boasting that for over a year he had not been up at night.

[Also in 100 consecutive cases this man had twenty-five forceps deliveries. Seven fetal and two maternal deaths. –Ed]

It seems as if an operative furore has struck the profession, and the old, time-tried, time-proven and time-honored "watchful expectancy" has been relegated to the past. The mechanism of labor should be studied and closely followed, retarding rather than hastening a normal delivery. Concerning persistent occiput posterior, two classes of cases present themselves -those in which the head does not engage and those in which the head does not rotate to the front during a prolonged watchful expectancy. Great patience should be practiced, the bag of waters should be preserved and a thorough examination should be made to determine the cause of delay.

If it becomes necessary to interfere before the head is engaged in multiparae, version is the operation of choice; in primiparae version is not a good operation. Twist the child in the uterus, passing the hand well above the promontory, operating mainly on the trunk, bringing the back well to the front; then draw the head into the pelvis with forceps, and then leave the case to Nature -or to follow a subsequent indication. The head has become moulded to the pelvis in its new position, the cervix and pelvic connective tissues have been drawn up out of the way, the pelvic floor has been prepared for the delivery by being softened and partly dilated, and thus a formidable "high-forceps operation" is replaced by a relatively simple low, or at most, midplane delivery. While this two-stage operation is very distressing to the patient, involving usually two anesthetics, and is very wasteful of the surgeon's time, the advantages are very considerable.

In those cases in which the head is engaged one may seek to turn the occiput to the front by combined manipulation, working on the head within and without at the same time. As a rule while trying to apply the forceps this head will again twist back to its original occiput posterior position, but De Lee has found that, if, after the head is turned to the front, the scalp over the occiput is grasped in a volsellum and traction is exerted, forceps can be properly applied without fear of the head slipping back into the old position.



Fig. 15. The Hillis-DeLee obstetric stethoscope.

The author condemns the Scanzoni maneuver, as it damages the vagina and pelvic connective tissue.

In the treatment of face and brow presentations De Lee advocates the use of the volsellum with traction on the head while pushing upward on the face to correct the malposition after other procedures have failed. The scalp may be grasped first at the side of the large fontanel and this point worked forward, next another volsellum grasps the scalp further back, etc., until the occiput presents. The author believes that the most critical time for the unborn child is the half hour preceding delivery of the head; at this time the fetal heart tones should be taken with greatest care. For this reason Dr. A S. Hillis has devised a stethoscope (see Fig. 15) that may be worn by the operator by which he is enabled to take the heart tones without violating any aseptic technique. It has the following advantages:

It is aseptic; the operator does not have to touch it. If needful it may be boiled.

It combines the advantages of air-sound conduction and bone conduction in one instrument.

By pressing the bell in deeply one reduces the thickness of the tissues and comes close to the fetal heart. The last two factors render the tones audible even in the presence of outside noises and stertorous respiration of the mother. To one who is hard of hearing also this is a valuable help.

The instrument renders the ausculation of the fetal heart very simple, very quick, very easy, and therefore one will listen ten times more often than he would if, each time, some one had to adjust the ordinary stethoscope to his ears, or if the assistant had to be asked to listen. Further, the danger of the assistant or the nurse touching the sterile field is obviated, and the accoucheur gets personal, and positive information of the condition of the child all the time.

The use of such a special instrument emphasizes the importance of watching and safeguarding the child's life at this critical stage.

By the more intensive study of the fetal heart during the second stage, made possible by this instrument, we will surely add to our knowledge of the accidents of labor, and of the diseases of the child in the first days of its life.

The Nurse Midwife.

As an important step to the solution of the midwife problem, F. J. Tausig (Wisconsin Med. Jour., September, 1916) suggests the establishment of schools of midwifery, admission to which would be limited to, graduate nurses. The curriculum of such school would include the following: Attendance for from six months to a year, entire charge of at least thirty cases of normal confinement, a majority of which should be out-clinic cases, a systematic course of lectures and demonstrations, thorough hospital training in diagnosis, special work in the treatment of emergencies, etc.

Affiliation with a hospital possessing a large obstetrical material and with a medical school having trained instructors in this branch would of course greatly increase the efficiency and standing of such a school. In view of the large number of foreigners desiring the services of women at their confinement, it would be the object of such a school to encourage as many foreign-born graduate nurses to take up this work as possible.

The question arises that this would only substitute one poorly trained person for another and that the physician should take the care of these cases on himself. The author points out that there are only perhaps a score of men, even in large cities, who have had special training in obstetrics and that the average general practitioner as a rule heartily dislikes obstetrics, as it interferes with his regular work. Also, the majority of these men have never had proper aseptic training, while the nurse in her three years in the hospital has had it; and asepsis is paramount in obstetrics. The general practitioner as a rule would attempt to handle complications himself, while the nurse-midwife would call in an experienced obstetrician.

It might be said that nurses would object to being classed as midwives, but if they were, for a while, associated with some visiting nurses' association the public would soon be educated to the fact that the quality of their work was far superior.

In this way the women could be taken care of at home in privacy and not be made objects of charity.

[*The trouble with this plan is that the nurses are so intelligent that they shrink from assuming the heavy responsibilities of even normal labor cases. Really there must be some way to put obstetrics where it belongs i.e., in the hands of legally qualified and adequately trained obstetricians.-Ed.]*

The Midwife Problem in England.

This report points out that the expectation of life at all periods for women is lengthened. The birth-rate diminishes steadily and is now 24.3 per thousand and the death-rate is 14.4 per thousand. The infant mortality rate is lessening, being 104 per thousand. Midwives are licensed and under control, but their compensation is so meager that they seek remuneration in other directions, such as giving instruction to pupils and keeping lying-in homes. While 25 per cent of the total births are attended by midwives, there is, however, a growing tendency on the part of the midwives to call in medical help. There were 393 eases of puerperal sepsis reported last year, 113 of which proved-fatal.

Why the Midwife?

asks J. C. Edgar (JAMA, June 22, 1918). Hospital records bear out the fact that foreign-born women, after their first confinement under the care of the midwife, subsequently turn to the maternity hospital or a physician. After a short residence in this country, the ambition of a foreign-born woman is eventually to be in a financial position enabling her to employ a regular practitioner. During the existence of the Bellevue Midwife School, 235 midwives have been

graduated; 5,125 confinements have been conducted by the pupils, 1,755 in the school, and 3,370 in the homes, with a maternal mortality of 0.7 per cent. Only three patients died in the school itself. Six others died after being trans. ferred to Bellevue for operation. The 5,125 patients were practically all normal cases, as in dystocia, bleeding cases, and other abnormalities, the patients were sent to Bellevue for treatment. As far as the handling of strictly normal cases by midwives go, the results have been excellent.

A plan for better and safer obstetrics in rural districts must recognize two main problem:

1. The best practical care of normal patients, and,
2. the detection of abnormal patients and their care.

By education and supervision the midwife may be rendered reasonably safe for strictly normal labor, safe even for a minimum of sepsis, or for the prevention of ophthalmia neonatorum; but she in not safe for the early care of prenatal complications and fetal dystocia, which caused most of the infant and maternal mortality. Who should determine what is a strictly normal labor? the midwife? Never! Only the trained obstetrician can do so. The obstetrician must ever perform the prenatal examination and care. He must ever be at hand for the dystocia of labor and the postnatal complications.

[*Not a strong argument for the midwife. Alas! the War has stopped our progress in the elimination of this anachronism (the midwife) as it has stopped advancement of many other worthy endeavors.-Ed.]*

Prenatal Care.

The results obtained by the Division of Child Hygiene of Philadelphia, with its 48 nurses during 1916, are set forth by F. C. Child. (Amer. Jour. Obstet., October, 1917).

The area covered, exclusively in the poorer districts, is about 1/5 of the city. There is no central bureau for registration of maternity cases, but in spite of this fact, the nurses were able to help nearly 2,000 prospective mothers. Following are a few of the more interesting items from the Annual Report:

About one-third of the cases were cared for in their homes by private physicians. Approximately one-fourth were delivered at home by dispensary doctors, and the same number by midwives. The rest went into hospitals. Normal delivery, 1,775; abnormal delivery, 139; instrumental delivery, 58; hemorrhage, 1; prolonged labor, 64; breech, 3; twins, 4; placenta previa, 1; Cesarean section, 4; difficult delivery 4; abortion, 18; miscarriage, 13; total, 1,945.Prematures, 25; Stillborn, 31; died in 24 hours, 41. Breast fed, 1,830; artificially fed, 2; mixed feeding, 2.

The first visit of the nurse is more or less of a "feeler," in which she endeavors to make the mother understand she in there in a spirit of friendliness, rather than of investigation. At this time also she will see if the roof leaks, or there is water in the cellar, or if there are any other gross defects, but also if the house is orderly and well ventilated. The social condition may need adjusting --perhaps the father is out of work-- perhaps the children need shoes. No matter what the existing conditions an, the nurse is the agency for referring those needing assistance to the various organizations giving it. The only actual material help given by the Division is free milk and, in the summer time, ice for prenatal cases unable to purchase it. Some 281 cases were thus supplied.
If the case appears to be normal, the nurse makes a visit once a month at first, then twice, and each week as the actual date of confinement is more nearly reached.

At the first visit the woman is told the necessity of placing herself under the care of a good physician or hospital (according to the income) if she has not already done so. The advisability of breast feeding is urged constantly. Most of the teaching deals with facts essential for the mother's

guidance, facts of hygiene and normal living. At all times the effort is made to explain things in a manner that will be within their grasp.

Supervision of Expectant Mothers in New York

J. Sobel (New York Med. Jour., Jan. 12, 18, 1918), Chief of the Division of Baby Welfare in the Department of Health, states that the problem in New York, and that has remained practically unchanged for several years, is as follows:

1. Forty-one per cent of all deaths under 1 year of age are due to congenital diseases.
2. Approximately 37 per cent of all deaths under one occur during the first month of life.
3. About 75 to 80 per cent of all deaths during the first month and approximately 90 per cent of all during the first ten days are due to congenital diseases.
4. From 1884 to 1914, the death rates from diarrheal, respiratory, and contagious diseases have been markedly reduced-while that from congenital diseases has been reduced only 1.5 per cent. In fact, during the past five years, the death rate from congenital diseases has remained practically stationary.
5. The death rate during the first month has remained practically unchanged for many years, while the total infant mortality rate and the rate from the second to the twelfth months have progressively declined:

Year*	Death rate under one month of age	Death rate from 2 to 12 months	Death rate under one year of age
1911	39.24	72	111
1913	37.69	63	100
1916	37.22	56	93

* Based on 52 weeks to the year.

1. While, in former years, diarrheal diseases occupied the first place in the list, today we find this taken by the congenital diseases, with respiratory diseases second and diarrheal third.
2. The majority of deaths due to congenital diseases are dependent upon the health and environment of the mother before birth of the child.
3. The number of maternal deaths incident to child bearing, while showing a reduction per 10,000 women from 15 to 44 years of age, and per 1,000 labors, is still too high.
4. The death rate from conditions associated with pregnancy, other than puerperal sepsis, has declined from 3.79 in 1898 to 2.9 in 1916. The puerperal sepsis death rate during the same period has decreased from 2.58 to 1.02.

The supervision of expectant mothers centers around the 59 baby health stations of the Department. Each of the eight "prenatal" nurses has her office at one of these stations, and draws her clientele from the district boundaries of this station. The nurse holds office hours at the station every morning from 9 to 10 to advise mothers, and is on call for any special emergencies.
It is a fundamental policy of the Department that efforts be made to see the mothers as early in pregnancy as possible. If no attendant has been engaged, the nurse urges the mother to place herself under the care of a private physician or of a recognized maternity hospital or institution. Before the birth, visits are made, in normal cases, every three weeks up to the 5th month, and then every ten days until delivery. In abnormal cases, as frequently as necessary. After the birth, visits are made every two days for a week in normal cases, and then every five days until the end of month. In abnormal cases, as frequently as the cases demand. At the termination of the case, every effort is

made to persuade the mother to continue nursing the baby and to enroll it at the nearest baby station, provided no physician is in attendance.

The following is a summary of this work:

SUPERVISION OF EXPECTANT MOTHERS.

	1914	1915	1916
Number of mothers supervised	1,622	2,482	3,002
Number of mothers delivered	898	1,442	1,841
Percentage of mothers delivered	55.3	58.9	61.4
Number of mothers who died	2	0	2
Number of nurses	7	7	8
Average number supervised by each nurse	231	354	375

If we presume that practically all the mothers delivered by midwives--46,487 in 1916--should receive prenatal care, and add to this a goodly proportion of those delivered in institutions, and in private practice, it will be no exaggeration to say that 75,000 mothers annually stand in need of such service. An analysis shows what concerted action can accomplish.

The number of children born prematurely has decreased from 11.1 per 1,000 children in 1914 to 8.1 in 1916. The stillbirth rate appears lower than that for this special work, but the term "stillbirth" as used in this report refers to the product of conception expelled from the uterus, dead, at any period of uterogestation, and under these circumstances the number of stillbirths reported officially to the Department is far smaller than those which actually take place. This is particularly those which actually take place.

The stillbirths in this tabulation represent actual figures, since all the mothers are under careful observation. If, as has been estimated, one stillbirth occurs for every four living births, then the number in New York during 1916 would have been, with the 137,000 living births, approximately 35,000, instead of some 6,253, the basis upon which the city stillbirth rate was recorded. It is fair to assume that 35,000 stillbirths for New York, in the sense above noted, is a conservative estimate. There was an increased enrollment of mothers at the 5th month, increasing from 37 per cent (1914) to 42 per cent (1915) and 51 per cent (1916). The death rate during the first month of life per 1,000 living births declined from 19.5 in 1914 to 13.7 in 1916, while the city rate per 1,000 living births practically remained stationary during these years. Finally, the percentage entirely breast fed at the end of the first month has been kept at a high standard, and the number of babies artificially fed kept correspondingly low.

[*It is acutely necessary that we come to a general agreement as to what constitutes a stillbirth, an abortion, a miscarriage and a premature birth.-Ed.*)

Need For Intensive Study of Mortality From Childbearing.

The attention directed to the reduction of infant mortality has conclusively demonstrated the necessity for a more complete supervision of the mother, both before and after labor, and as a result of this study, facts have been uncovered with reference to the mortality of childbearing that demand our best efforts for their possible correction. In this country no such decrease in the number of deaths associated with pregnancy has occurred as compared with those due to other causes; for while in the U. S. the death rate for typhoid between 1890 and 1913 fell from 46.3 to 17.9 per 100,000 of the population, for diphtheria from 97.8 to 1.8, for tuberculosis from 252 to 147.6, for pneumonia from 186.9 to 132.4, the total mortality associated with childbearing has not undergone any corresponding change.

Thus, in 1891 the total mortality associated with the childbearing function was 15.3 and showed little variation up to 1913, when it was 15.8. These rates refer to the so-called registration area, between 65 and 70 per cent of the total population. A further study of the last census shows the death rate per 100,000 women of childbearing age in 1900 totaled 50.3 and included 21.6 for puerperal sepsis alone. These figures may, perhaps, be criticized and a more accurate estimate would be one based on the number of deaths of mothers per 1,000 live births. This has only been done in a very few States, but even here we note a rate of 6.5 per 1,000, or in larger figures and round numbers, about 3,600 out of 562,000 pregnancies with live births had a fatal termination. Here again, in about one-half puerperal septicemia in some form was the cause of death. Among the 16 leading nations of the world an examination of the death rate associated with pregnancy shows that the United States stands 14th.

If we admit the facts as stated what can be done to correct the same? G. W. Kosmak (Med. Record, March 9, 1918) believes that an attempt should be made to disseminate a more widespread knowledge of the comparatively high mortality associated with childbearing, so the profession and the public, as well, shall be made aware of the necessity for concerted action and take steps to attain the same. Secondly, the preventable character of many of the fatal complications should be emphasized and due recognition accorded to the necessity for skilful attention for every pregnant woman. Thirdly, it seems essential that a more detailed study be made of the mortality statistics of pregnancy and labor, to determine among other things the antecedent history of the fatal cases and to separate in greater detail the various causes of death, for, at present, the usual classification includes merely septicemia on the one hand and the remaining factors on the other. This gives us little idea of the direction in which to apply either medical or social prophylaxis.

[*There will not be any decrease in the mortality of childbirth until the standard of obstetrics is raised above the level which permits its practice by such women as existing midwives. The war will raise the death rate of childbearing women, because our standards will be lowered. There will not be room for the tens of thousands of surgeons returning home after the war, and they will all feel like doing surgery. Let us get them to take up obstetrics, a field that promises interesting study and matters for investigation, and will win them the love of the mothers who are sacrificing so much for Liberty. -Ed.]*

Extending the Care of Pregnancy

For 20 years, observes I. L. Hill, (JAMA, Sept. 14, 1918) the death rate from childbirth has not decreased in America. Meanwhile many formidable diseases have yielded to medical science and claim fewer and fewer victims. Possibly more new measures have been brought forward for treatment of such diseases. But the means already at our command, if employed generally, could reduce this mortality.

For some reason, women in America receive bad obstetric care. Yet physicians attend the confinements more generally than in the European countries. This is not a country where the midwife flourishes. In the larger cities, where there are extensive foreign populations, there are many midwives. But the midwife has been regulated and closely watched. She has been taught just how far she must go and when she must call for medical assistance. Moreover, in what she is permitted to do, there are certain measures she may take, on penalty of losing her license. In other words she is policed. The doctor is permitted to learn the right and wrong in obstetric practice, but he is policed only by his conscience. In America, it is the doctor who must institute the measures to raise the standard at midwifery.

It has been shown that pre-natal care will diminish maternal mortality and morbidity and will lessen the number of infant deaths in the first month of life, and the number of stillbirths. J. W.

William has prepared for the Children's Bureau of the Department of labor the following fair standard of medical pre-natal care:

1. A general physical examination including heart, lungs, abdomen.
2. Measurement of the pelvis in a first pregnancy to determine whether there is any deformity likely to interfere with birth.
3. Continued supervision by the physician at least through the last five months.
4. Monthly examinations of the urine, at least during the last five months.

The Maternity Service Association (New York) has accepted as the minimum of prenatal care substantially the same standard, specifying also a blood-pressure estimation at each visit and a Wassermann in every suspicious case. But more than 70 per cent of the women of New York are cared for by private physicians or midwives and are not included in the benefits of this newly created standard.

The Children's Bureau (Department of Labor) has made a study of obstetrics in the rural districts. In one district in a prosperous community 48 of the 50 mothers interviewed had been attended by a physician at their last confinement. Only seven mothers had had any prenatal care by a physician, one visit being paid in each case; and only three had had urinalysis. In another section, a plantation district in the South, of 50 women interviewed, 26 were white and 24 colored. Only ten white mothers were attended at their last labor by a physician. Fifteen white mothers and all 24 colored women were attended by colored midwives, not licensed, trained or supervised.

Our purpose must be to extend the care of pregnancy to all classes of women in the cities, towns, etc. Some progress has been made by certain townships, however, only a little here and there. The problem is complex, is immediate, moreover it would seem to be a national one. Sooner or later we shall have a national board of health and a medical cabinet officer. Let the government begin with a national commission to conserve motherhood. Let this commission be empowered not only to study the question and to organize cooperation among existing agencies, but to spend money in creating a system of rural nursing. Let it create and train a body of government nurses. Let it establish, if it sees fit prematernity hospitals for the reception of patients requiring close supervision and too remotely placed to obtain it. Let it furnish the money necessary to extend the work of organizations working along the same lines in the cities and towns. But great as is its scope, this work is not too large a problem for this nation, nor for the profession. Undertaken as a measure to economize life in this crisis of sacrifices for self-preservation, it will survive to ease the trials of womanhood when, once free from our torments, we may feel again the purpose of making life beautiful.

Will Scopolamine-Morphine Improve the Birth-Rate?

Figures are cited by W. O. Greenwood (Brit Med Jour, July 5, 1919) to prove the rate in England is in a very serious condition; that one potent factor is the fear of the actual labor; that this fear has its origin in the pain and undoubted pathologic character of most labors; that the use of scopolaminemorphine entirely abolishes this fear, and has no evil results.

[*Hallelujah! At last some of our British colleagues are beginning to admit that labor is pathologic! The Editor hopes that some British readers of the Year Book were present at the Children's Section meeting of the International Medical Congress in London (August, 1913), when he declared labor a pathologic function, and perhaps they will recall the storm of disapproval that assailed him. The italics are ours. -Ed.]*

Of his own cases at least 7 per cent were induced to submit to that particular pregnancy by the knowledge that they could have the labor conducted under scopolamine-morphine. At first sight this may not seem to be a great many, but on the modest assumption that it were possible for a million potential mothers to be assured of this treatment, we should have an increase of 70,000 births. The true percentage is in all probability greater. The question is, how is this end to be attained? Coercion cannot be applied to the profession. Many cannot afford the extra time demanded for the administration; many have not the inclination; many of the poorer people could not pay the increased fee which every doctor would rightly consider his due.

A great majority of the profession would be glad to be rid of their maternity work, either because of their distaste for it or because it interferes seriously with other work. If this is so, and the question of the birth-rate is so vital, why cannot the State take over this work in the national interest? Public health work is for all intents and purposes a State institution now; there has been some talk of taking over the hospitals (a much more difficult and perilous undertaking). We spend an enormous sum every year on homes for incurables and on asylums for lunatics. If all this expenditure on perfectly useless life is considered legitimate, how much more so would be one for an increased birthrate?

The scheme in view would be the establishment in all large towns, in some very quiet part, and perhaps in certain other centers, of a combined midwifery hospital and home. Half of the beds could be reserved for those who could afford to pay adequate fees, the remainder for those who perhaps could not afford any. The income from the one part would go largely towards maintaining the whole institution, and the burden on the State would not be so great after all. The patients in the one part would have a bedroom each where the labor would be conducted. The others would be in rooms each of which would accommodate 4 to 6 beds, and to each of which would be attached one small lying-in room where the labor would take place. One nurse can quite easily attend to 2 patients in the better-to-do section if they are in contiguous rooms, an extra fee being charged if a patient preferred a nurse exclusively. In the small wardrooms a nurse could easily manage one with some additional help from a probationer. There would be a superintendent obstetrician with assistants, the number of whom would be governed by the size of the institution. The success of it all would depend upon the enthusiasm of the staff, and only those in sympathy with the work would undertake it. This would be a very different matter from public opinion trying to coerce every practitioner into using scopolamine-morphine regardless of his individual objections, which might be perfectly valid.

[The Editor has coined the term Tokophobia to explain the fear women have of childbirth. No doubt this fear is grounded, and all evidence points to that fact that it is increasing. The women demand

relief from the pain and the perils of childbirth. They even ask for Cesarean section and without doubt a part of the large number of sections, of which conservative obstetric authors complain, is made up of these cases. Has a woman the right to demand Cesarean section as a mode of delivery of her baby in order to escape the pain and perils of labor? The Editor will be very grateful to those Year Book readers who will write him an answer to this question. Next year he will express himself on it. -Ed.]

ADDRESS OF THE PRESIDENT

GYNECOLOGY AS A SPECIALTY

By FRANKLIN H. MARTIN, M.D.
Chicago, Ill.

TAGS Volume 44 (1919) p. 1-8

The question that interests the gynecologist is not how much obstetrics, abdominal surgery, or general surgery encroach upon gynecology, but how much of gynecology does not come under the fields of obstetrics, abdominal surgery, or general surgery; how much gynecology has a right to an independent existence as a specialty; and, what is of more importance, if these questions can be answered in the affirmative, how the devotees of gynecology can convince the profession at large, and the students of medicine, of the tenability of its position.

Gynecology is an American institution, developed by the transcendent genius of McDowell, Sims, Emmet, Thomas, Skene, Goodell, and Byford. They and their students dignified the study and practice of surgical and medical diseases of women into one of the most attractive and popular specialties of their generation.

Obstetrics in those days was allowed to remain in the hands of the general practitioner or midwife. Anyone who possessed the necessary patience, and, therefore, interfered little with nature, could become the most successful obstetrician. General surgery at that time was limited to amputations, emergency injuries, and a general fear of the serous cavities. The internist was the bed-side visitor and the prescriber for the acute ills of all persons. In those days of the birth of gynecology the gynecologist was the most envied and conspicuous of all specialists. He treated medically all women who labored under any illness peculiar to their sex that did not come under the head of an acute ailment; he interpreted and treated displacements of the uterus; he repaired at his leisure, lacerations of the perineum, cervix, and vesicovaginal fistulas that followed in the wake of the general practitioner-obstetrician; he presided as the high priest of specialists over the moribund women whose complications of labor were the subject of his call by the waiting practitioners; he occasionally accepted obstetrical cases and gave them the benefit of his impatience and his skill by hastening normal labor through the early application of his obstetric forceps.

Then antiseptic surgery under the genius of Lawson Tait and Joseph Price opened a new and conspicuous era for the gynecologist by developing the surgery of the infected appendages. The veritable orgy of pelvic surgery that followed this discovery established the renaissance of operative gynecology. This the gynecologists properly appropriated by right of discovery, added to it the already developed medical gynecology, and a generation of the most spectacular specialization the world has ever known was enjoyed by its devotees. The initiative and pioneer work that was exhibited by the gynecologists at this time opened the way to the abdominal cavity, and the profession of general surgeons was not slow in acknowledging the debt, and was less slow in taking advantage of the discovery by extending and developing the surgery of the peritoneal cavity.

At this time there were initiated in the history of medicine two great movements that threatened the preeminence of gynecology and succeeded in disturbing its entrenched position, viz.: the science of obstetrics and the science of abdominal and intestinal surgery. This occurred in the middle eighties and the early nineties.

The accuracy of gynecological diagnoses, the perfection of the particular methods and technic, and "our" operative triumph achieved in "our first one hundred or one thousand consecutive

cases," began to be disturbed by complacent discussions on what part of this work should be done by the obstetrician trained abroad, or the abdominal surgeon who had received his training in the larger field of general surgery. The great entrenched specialty of gynecology found itself betweeen the upper and the nether stones, the patiently waiting obstetrician insidiously invading from below, and the aggressive general surgeon, with his ardor, crushing everything before him from above.

Thus the devotees of this important specialty, instead of girding up their loins for renewed efforts in maintaining their enviable status, allowed themselves to be inveigled into a discussion that has neither been fruitful nor particularly interesting, except that it has demonstrated that there is an unsettled and unsatisfactory condition existing in gynecology.

The discussion has been waged from four different standpoints, each one of which has influenced the non-partisan bystander.

First, by the obstetricians, led by an obstetrician occupying a full-time professorship, with great honor and credit, in one of our foremost universities, an ex-president of this Society who dignified it, making obstetrics the subject of his presidential address. His conclusions placed the responsibility for the unsatisfactory condition of obstetrics in this country as follows:

1. The tendency to regard the practice of medicine as an engrossing financial pursuit.
2. Defective ideals and tendencies in medical education.
3. The divorce in this country of gynecology and obstetrics. And he adds:
4. I hope I may live to see the day when the term 'Obstetrical' will have disappeared, and when all teachers at least will unite in fostering a broader gynecology, instead of being. divided as at present into knife-loving gynecologists and equally narrow-minded obstetricians who are frequently little more than trained man-midwives."

Second, the discussion on the side of gynecology which was well voiced by a distinguished gynecologist connected with the same institution in which the obstetrician referred to above is serving as professor of obstetrics, his vehicle of communication being nothing less than an address as chairman of the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association. His conclusions were:

1. Obstetrics must be more attractive so that those entering this branch will not be tempted to leave it for less laborious fields.
2. Any surgeon opening the abdomen should be capable of doing everything necessary in that abdomen. In other words, gynecology and abdominal surgery logically belong together.
3. This realignment of abdominal surgery is absolutely necessary if we are to accomplish the maximum amount of good for the patient.

Third, the war that was waged between the Section on Surgery and the old Section on Diseases of Women and Obstetrics of the American Medical Association, which eventuated in a compromise, both being changed by the addition of Abdominal Surgery to each.

Fourth, the constant discussion in the faculties of medical schools of the country that has confused the status of the gynecologist as judged from the titles given to the men who are supposed to fill such positions. For example, among the "A" colleges, of fifty-four recorded, twenty-nine appear as professors of gynecology; fifteen as professors of obstetrics and gynecology; five as professors of abdominal surgery and gynecology; and five as professors of obstetrics with gynecology occupying a minor position. Among the "B" colleges, of eleven recorded, seven appear as professors of gynecology; one exclusively as professor of obstetrics; and three as professors of obstetrics and gynecology.

Thus it is obvious that there is confusion as a result of much discussion in the ranks of gynecologists, and the present status is unstable and far from satisfactory.

What justifies a specialty, and what maintains it if it is justifiable? A specialty is justifiable when a portion of the human body, physical or functional, is sufficiently distinct and important to warrant a group of practitioners devoting their whole time to the consideration of its diseases, if by devoting their exclusive time to such special subject they make it apparent beyond a doubt that such exclusive attention is justified by the improved results.

Examples of successful specialization are found in ophthalmology, laryngology, dentistry, pediatrics, genitourinary diseases, and obstetrics. These specialties conform to our formula, viz.: Physical or functional distinctiveness, justifying the exclusive consideration by a special group of practitioners as illustrated by their improved results.

Is there any specialty that conforms to our formula more definitely than the one dealing with the surgical and medical diseases peculiar to woman? Is not woman in her physical and mental attributes fully as distinct from children and men as children are distinct from the adult? Are not the organs peculiar to woman as important, and do they not warrant, when diseased, the study and treatment of specially trained practitioners fully as much as do the organs of sight, of smell, of hearing, or as do the children, or the woman in child-bed? The lack of proper recognition in this present day of diseases peculiar to woman, a lack that did not exist among the true gynecologists of the days of Sims, Emmet, Goodell, Thomas, and Byford, is one of the reasons for the decadence of gynecology. Another reason is that the refined gynecological surgeon of twenty-five years ago is now diluting his energy by pursuing the strange gods of the upper abdomen, or exhausting himself by amateurish work in obstetrics, and while weakening his keenness in his own specialty, he is entering into an indefensible competition with those who have proved their special skill in their own work, and who naturally resent the intrusion.

Then, lastly, the gynecologist has undoubtedly lost ground because he has, while watching his neighbors, neglected to make good in the last requisites of our formula for a specialty, viz.: while devoting his whole time to the consideration of its diseases, he has not made apparent beyond a peradventure that such exclusive attention is justified by the improved results obtained.

In my opinion, if the gynecologist is to reestablish the prestige of his specialty, he must recognize that there is enough in the diseases peculiar to woman to claim the exclusive medical and surgical skill of the most highly educated and gifted students of our profession; he must pursue a systematic research that will record the intricacies of difference of the mental, psychological and physical peculiarities of woman; he must establish scientific data that will form these factors and he must justify a system of therapeutic mechanics and surgery that will dignify and reward any physician who pursues the practice of that program.

When in the light of modern methods the gynecologist has by his research revealed the wealth of distinction that marks woman as a therapeutic and surgical entity, the teacher of gynecology in cooperation with the psychiatrist of our medical schools should aid in selecting and directing men because of special fitness to the pursuit of this or any other important specialty.

I may be wrong, but I have always maintained that a practitioner of medicine who is temperamentally fitted for the practice of obstetrics is entirely unfit to practice selected surgery or gynecology. I also believe that the average general surgeon chafes under the restraint of the time-consuming requirements of a true gynecological practice with its medical exactions.

To be more concrete, the gynecologist of this day must show his faith in his work by limiting his practice to his specialty. He must study woman, in regard to her peculiar reaction to glands of internal secretion, and to her reaction to her peculiar nervous system. Woman must be studied in regard to her general physical contour, and her muscular peculiarities; she must be studied in regard to the effect of the organs peculiar to woman in relation to the function of organs common to all individuals; she must be studied in regard to the relation of her peculiar organs which, without regard to their function, make her so different from man. But preeminently she must be studied in relation to the special function of these organs which, through an automatic apparatus, in a few

months marvelously changes the whole being, and then as marvelously retransforms it. The practitioner who cannot interest himself in these facts and take cognizance of their significance in studying the diseases of woman, cannot become a successful gynecologist.

When a proper man is found, those interested in gynecology must see to it that he is educated. To educate him, the gynecologist must be in a position in his clinics and in his practice to show him the worth-whileness and the attractiveness of it all.

Revive, in the hospitals and in the teaching institutions what has been done so successfully in some of them (a conspicuous example of which is the Woman's Hospital of the City of New York), a system of teaching that convinces and interests. Get back to the days of Sims and Emmet when the specialty got the only boosting that anything worth while can thrive on, viz.: Making good by exclusive and superior work.

It is so simple -organization of team work in the open; careful study of cases; proof of diagnoses through scientific methods by accurate laboratory workers; staff discussion of all cases; system of records that reveals the facts to all and obviates the mysterious; follow-up systems that demonstrate the physician's responsibility in results. Then, of greatest importance of all, an invitation to medical students to attend the weekly meetings of the interns and the medical staff, presided over by the chief of staff, at which time the work of the week is reviewed.

It is not inevitable that a program like this, carried out before students of medicine and hospital interns by a staff of earnest gynecologists, will show the value of special study of the diseases of woman when pursued in an institution that has provided every diagnostic and therapeutic means known to scientific medicine.

In discussing this subject, which is so full of partisan bias, which involves so many precious entrenched interests, which involves the reconstruction of hospitals and their attending staffs, which involves changes of medical faculties in their attitude to their specialties, and which involves the changing of names of societies and sections of societies, one is confused by the claims and counter-claims of contestants, and must remain content to endeavor to point out the fundamental difficulties and allow the facts to show the way of dealing with the details. I must be content to summarize my conclusions:

1. Gynecology, as an exclusive specialty, is justified under the formula: "A specialty is justifiable when a portion of the human body, physical or functional, is sufficiently distinct and important to warrant a group of practitioners in devoting their whole time to the consideration of its diseases, if by devoting their exclusive time to such special diseases it is made apparent beyond a doubt that such attention is justified by improved results.
2. Gynecology requires for its successful pursuit practitioners who recognize in its possibilities a specialty sufficiently broad and sufficiently congenial to their tastes to induce them to practice it exclusively. If gynecology requires for its successful pursuit the addition to it of the routine practice of obstetrics or the surgery of the upper abdomen of women, it cannot be ranked as a successful specialty.
3. The status of gynecology must be reestablished by convincing the faculties of medical schools and the medical staffs of our principal hospitals that departments of gynecology are necessary.
4. Gynecologists as medical school teachers and as heads of hospital staff departments must emphasize the importance of their specialty by an exhibition of and teaching of their diagnostic methods, and a demonstration to their students and confr6res of the importance of their medical and surgical results.
5. Discussions as to the relative value and relation of specialties should be abandoned and in their place should be established the old esprit de corps of gynecology, and its devotees

should inaugurate a practical research program that will more definitely place the specialty of the surgical and medical diseases of women on a firm foundation.

1919 – Elective Cesarean Section – Davis - Philadelphia

By EDWARD P. DAVIS, M.D.
Philadelphia

T.A.G.S. Volume 44 (1919) pages 249-263

The indications for Cesarean section have been so greatly enlarged, and the profession has now had so extensive an experience with this operation, that it may be well to attempt to define, in a special group of cases, the indications for this procedure.

Elective Cesarean section without labor, at the end of pregnancy and under circumstances most advantageous for patient and operator, is an attractive field. For the patient, it avoids the suffering and delay of parturition, the disturbance of rest and the uncertainty which is often so trying for the operator; it gives him the most favorable time and circumstances for the performance of the operation.

In one class of cases there can be no reasonable doubt as to the indication for elective Cesarean section. These are patients who have had several difficult labors terminated by the death of the children, occurring at various intervals of gestation and under varying circumstances. In each case spontaneous labor has been attempted with failure and a difficult and, for the fetus, fatal delivery through the vagina. Spontaneous labor in these patients has occurred at varying intervals, so that the question of prolonged pregnancy has not always arisen. Undoubtedly some of the pregnancies have terminated prematurely. Under these circumstances the operator has the choice of three procedures:

1. The placing of the mother upon restricted diet, with careful hygiene, with the hope that the fetus may become proportionate to, the shape and size of the birth canal and that successful spontaneous labor may result.
2. The second procedure would consist in the induction of labor at such a time as might seem most advantageous, but as previous spontaneous labors had occurred unsuccessfully at various periods of gestation, this would indicate the uncertainty of inducing labor.
3. The third choice lies in promoting the nutrition of mother and child in the highest degree throughout pregnancy and at its termination, with or without the first signs of labor, performing elective section.

The advantages of this procedure are the vigorous condition of the child, an uninjured and unwearied mother and the relief from uncertainty and delay which difficult and unsuccessful labor entail.

If husband and wife elect sterilization under these circumstances, shall the operator accede to their wish? This is a question difficult to answer, but we must concede to them the right to request such a procedure. On the other hand if they have no living child they must be urged to avoid sterilization until several children have been obtained by repeated section or some other method.

The phrase physiological incompetence for labor has been employed in discussing the indications for Cesarean section. We must believe that every condition in the human body has a definite physical cause, and that while macroscopically we may not be able to appreciate the condition of the tissues which produces a given result, yet microscopically physiological incompetence for labor is the result of certain definite conditions existing in the tissues. These cases are usually seen in ill-developed, badly nourished and neurotic primipara, some of whom are considerably beyond the usual age of primiparous women. In many of these cases the shape, size and contour of the pelvis are normal, and the pelvis may even be larger than the average. Some of these

patients give a history of irregular and painful menstruation, some are overweight and show symptoms of derangement in the function of the glands of internal secretion.

The most characteristic phenomenon of these cases, after we take into account the evidences of malnutrition which develop during pregnancy, is the failure of the uterus to cause the child to descend and engage in the last weeks of gestation. Uterine contractions are so slight as to be unrecognizable. There is no effort to bring about the fitting of the fetus into the birth canal, and there is not a sign of the development of labor. In many of these patients a pathological condition of the uterine muscle or nervous supply is present. While there may be nothing in the condition which can be recognized by ordinary examination the actual inspection of the severed uterine muscle may show a condition of fibrosis which is at the bottom of the difficulty. These patients have no definite fibroid tumor of the uterus, but the uterine muscle is studded with small fibrous tumors whose presence prevents the efficient contraction of the uterus and thus renders impossible the development of normal labor.

For these patients the induction of labor would be of little, if any, service. The deficient uterus would not act properly under external interference, nor could drugs alter the efficiency of the diseased muscle. Artificial delivery becomes inevitable, and if the interests of the child are to be considered, elective section is the operation of choice. May I illustrate this class of cases by an example:

A primipara, about forty, inherited a condition of nervous and muscular inability. She passed through her pregnancy without incident, the fetus being extraordinarily well nourished. In spite of the constant attention of a skilful nurse she passed into a condition of apathy at the end of pregnancy which made it difficult to care for her. She was made to take regular exercise and her physical nutrition was good. The fetus was in breech presentation, and as the time for labor came and went it was evident that artificial delivery must be practised. The pelvis was of average size and symmetrical. The child was unusually large and the mother failed utterly to produce the phenomena characteristic of prelabor condition. Under these circumstances a consultation resulted in the choice of elective section. A vigorous male child was successfully delivered, mother and child making uninterrupted recovery. No macroscopic reason for the delay in the development of laborwasfound.

An unusually well-developed primipara, aged thirty-four years, passed through a similar experience. Under the care of a skilful nurse she took regular and abundant exercise, followed strict hygienic precautions, but no sign of descent or of labor developed. At elective section the uterine muscle was found studded with small fibroids, none of which fortunately was directly in line of the incision. The first operation was so successful that in the second pregnancy the patient requested section. At this operation the condition of the uterine muscle closely resembled that first seen, and but slight improvement had taken place. The second operation, like the first, was successful. There has been no subsequent pregnancy.

In some cases of repeated unsuccessful labor, or where the mother has a number of living children and yet is in ill health during the greater part of the time, with some uterine condition, both parents may elect delivery by section, followed by sterilization, the operation to be done in such a manner as to cure the uterine condition. In many cases it is best to retain the function of the ovaries, and hence the operation consists of elective delivery by section, followed by the removal of the body of the uterus and Fallopian tubes and the appendix. In one patient so treated menstruation has continued regularly, and without pain, from the uterine stump, the vaginal discharge, being typical and normal.

The choice of elective section in primipara is sometimes difficult. This is especially true in cases of slightly contracted pelvis and in cases in which the fetus is unusually large, the position and presentation abnormal, and where there is reason to fear that the physiological development of the uterus is deficient. This may be illustrated as follows:

A young primipara, with pelvis symmetrical and of average size, was married to a well-developed, athletic man. The head of the fetus was at the pelvic brim, the back of the child toward the right. The later period of gestation passed without the development of descent or engagement. About two weeks followed with no essential change, excepting that the head of the child turned transversely across the pelvic brim when a parietal bone presented. The parents of the patient stated that she had always been a vigorous, healthy girl. Her general development was average.

Under these circumstances the induction of labor would have produced uterine contractions, but would not have altered the unfavorable position of the child, whose descent and engagement were impossible in its vicious position. Induction of labor, followed by version and extraction, would have exposed the child to very considerable risk. To wait longer would have been irrational, for the head of the child would become engaged and time would not alter its vicious position. Furthermore, the fact that labor had not developed raised the suspicion that some unusual condition of the uterine muscle might be present. To complicate matters the husband of the patient, an officer in the army, was absent in France. A consultation was called with the parents and the probable results of the induction of labor, waiting and elective section, were first proffered. An elective section was selected. At operation the uterine muscle was extraordinarily thinned and ill developed. A large male child was readily delivered, but some difficulty was experienced in causing the thin muscular wall of the uterus to properly contract. Under gauze packing and stimulation this was accomplished. Mother and child made uninterrupted recovery.

In some primipara in whom labor does not develop, the pelvis being of average size, some abnormality connected with the fetus must be suspected. Here one must be careful to detect the presence of a hydrocephalic or monster child. If such be present, embryotomy would be indicated; but, in the absence of such evidence, disproportion or some abnormality connected with the child may be the cause of delay.

In a large, well-developed primipara there were slight efforts at descent and engagement at the natural end of gestation. Labor failed to develop, and after some time elective section was practised. When the uterus was opened an unusually long umbilical cord was so coiled about the child that its descent and engagement could only have been possible by the separation of the placenta or the rupture of the cord. There were no abnormal sounds over the uterus, and it is hard to say how this condition could have been diagnosticated before the uterus was opened.

It is evident that the obstetrician takes great responsibility in advising elective Cesarean section. It is the practice of the writer, in all cases in which the lives of mother and child are not plainly endangered, to carefully avoid urging operation upon any patient. The results of various procedures for mother and child obtained in his own experience, and also in large numbers of cases reported by others, are stated to those responsible for the patient's care. They must elect, and the most that the physician can do is to give the facts, offering his own choice and opinion only if such are requested.

In the performance of elective section care must be taken to secure efficient drainage of the lochia. This, of course, is unnecessary when the body of the uterus is removed, but even then it is well to see that the cervical canal is sufficiently open to give exit to such fluid as may accumulate in the upper portion of the stump. When hysterectomy is not done some operators content themselves with passing one or two fingers from above downward through the cervix when the uterus is emptied. Others pass a large-sized solid dilator, while some dilate the cervix with the finger, pack the body of the uterus with iodoform gauze and bring the end of the gauze through the cervix into the vagina. In the experience of the writer this is the, safest and most efficient procedure. The presence of the gauze acts as a stimulus to uterine contraction. The cervix dilates sufficiently to give

free exit to retained material and the removal of the gauze forty-eight to sixty hours after the operation has so far not been painful or dangerous.

Recovery from elective section is often more speedy and complete than after a fatiguing and tedious labor. Morbidity is no greater than after any other operation of equal importance.

DISCUSSION

DR. JOSEPH B. DE LEE, Chicago. -I am particularly interested in the subject of Cesarean section since I have been working upon the newer methods, concerning which I read a paper before the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association last week. I think there can be very little difference of opinion as to the point that our indications for the performance of Cesarean section have increased in more rapid ratio than have the improvements in the results of Cesarean section. In spite of the wonderful statistics of a few operators in large clinics, the mortality of Cesarean section is still very high. It is 2 per cent in some neighborhoods to 10 and 20 per cent in others. The occurrence of intestinal and omental adhesions is still very nearly the rule, and not the exception, after the old classic Cesarean section. Furthermore, paralytic ileus, dilatation of the stomach, and other abdominal complications are still too frequent after the classic Cesarean sections. Again, the scar in the fundus of the uterus not being at rest, so that the muscle layers can lie quietly in apposition, but being constantly worked by the contractions of the uterus, and therefore do not unite firmly, subjects the woman to the danger of rupture of the scar in subsequent pregnancy and labor. To avoid these complications, it is necessary, in order to enable us to enlarge the indications for Cesarean section, that is, if we are going to recommend the old classic Cesarean section for occiput-posterior, or face presentation, and for the nervous and physically unfit, it is needful to improve the Cesarean section. That cannot be done with the old classical operation, but it can be done by means of the newer operations proposed. By placing the incision in the uterus in the cervix and lower part of the lower uterine segment it is possible to reduce almost to nothing the danger of intestinal adhesions. When we place the incision in the lower part it is also possible to eliminate the danger of rupture of the uterus in subsequent pregnancy and labor. When we wish to give a woman the test of labor safely and avoid the necessity of an early elective Cesarean section it is possible to let her go into labor and give her a real test without danger, because the newer methods of operation enable us to perform Cesarean section in women that have been in labor for many hours with just as great safety as in the elective operation. We will eliminate a great number of Cesarean sections if we give the women the test of labor and thus save ourselves the doubt of recrimination of having done a Cesarean section when it might not have been necessary.

I would heartily recommend to you as operators and as teachers to try the newer methods, the cervical methods of Cesarean section, of which there are two, the transperitoneal and the purely extraperitoneal.

I will not discuss the cases of sepsis in labor, but will speak only of performing Cesarean section with a view of saving the baby and avoiding craniotomy. I will describe in brief the two methods. One is to push the peritoneum and bladder off the lower uterine segment without opening the peritoneal cavity, and the other is opening the lower part of the belly, incising the peritoneum at its junction between the bladder and the uterus, making a transverse incision in the anterior cul-de-sac, pushing the bladder downward and forward, and making an incision in the lower uterine segment, then closing the uterine incision after delivery of the child, and leaving a short continuous line of sutures in the peritoneum. When the bladder fills and the uterus comes forward the uterine wound shrinks two or three inches away from the abdominal wall, away from the possibilities of adhesion to gut, omentum or parietes.

DR. J. WHITRIDGE WILLIAMS, Baltlinore. -I have listened with great interest to Dr. Davis's paper, and I am sorry to say that in some respects I think it will do more harm than good. What we want at the present time is to teach the ordinary doctor that Cesarean section is being abused rather than giving him an excuse for extending its use. There is no doubt that in the first class of cases mentioned, namely, women who have demonstrated by past experience their inability to have a child safely, the elective operation is indicated. Likewise, I think that prolonged pregnancy with an unusually large child sometimes affords an excellent indication for the operation, although in most instances the so-called examples of prolonged pregnancy are not such.

For a number of years we have paid a great deal of attention to prolonged pregnancy, and have designated it as such only when the actual date of occurrence of labor considerably exceeded the calculated date, and the child weighed over 4000 grams. In the majority of cases only the time seemed to indicate it, while the weight did not. On the other hand, occasionally when the weight speaks in favor of it, the calculated duration does not. When dealing with very large children we have exactly the same sort of disproportion as in the case of normal sized children with a moderately contracted pelvis, and they should be treated in the same way.

Up to this time I have not become a good enough obstetrician to advise Cesarean section in the cases of physiological incompetency. There may be such, but I have not been able to recognize many of them, and up to this time I have never done Cesarean section for that indication. I do not desire to be understood as criticising Dr. Davis' indications, but I have not as yet been able to establish them in my own work.

In regard to what Dr. De Lee has said, the healing of the Cesarean section scar in my experience depends upon the way the wound is sewed and whether the woman becomes infected during the puerperium. Several years ago I made histological studies of a number of uterine cicatrices; since then I have seen a number more. Only within the last two weeks I have examined a uterus upon which someone else had done a Cesarean section and which was later removed for carcinoma, and I could not find the scar even upon microscopic examination. Therefore, I think when the old-fashioned, conservative operation is properly done that the danger of a weakened scar is very slight, and the probability of rupture remote. On the other hand, when the puerperium following Cesarean section has been complicated, we always have to face that danger.

I have tried the real extraperitoneal Cesarean section in a number of cases, and have not found it satisfactory. In view of the good results with the conservative operation, I have not attempted the transperitoneal technic of dissecting back the bladder, and am somewhat skeptical as to its advantages. But, irrespective of methods, I do want to say that I think we ought to face as a responsible body the fact that throughout the community Cesarean sections are being done upon the flimsiest sort of indications, and in my own service, I have regarded the indications for it from an extremely conservative point of view.

In Baltimore, owing to the presence of a large negro population, we probably have an excessive incidence of contracted pelves, which are present in 8 per cent of our white women and 35 per cent of our colored women. With some 1200 deliveries in a year in our service we do about one Cesarean section in every 100, and I am convinced with the same material that many other operators would do very many more, and that if we followed their example we should do not a Cesarean section a month as at present, but one or more each week.

My attitude in teaching students is that it is a much greater achievement to deliver a healthy child through the normal passages than by Cesarean section. Anybody, who can use his hands and has a few tools can do a Cesarean section, but to get a living baby through a moderately contracted birth canal without serious injury to the mother requires a great deal of thought and skill, so that I take much more pride in getting my borderline cases through spontaneously than I do in opening their abdomens.

DR. ALFRED BAKER SPALDING, San Francisco, California. -There is just a word or two I should like to add to this discussion. This relates to a study I published two years ago of rupture through Cesarean section scars. I was surprised at this time to find that only a few cases of spontaneous labor after Cesarean section had been reported. In one series of 175 pregnancies after Cesarean section I found that 6 per cent of the patients had spontaneous rupture through the Cesarean section scar. This series of case, comprised the patients of a large number of operators. In studying the Cesarean section scar I found in my own cases and in the literature that as many as 16 per cent of Cesarean scars were defective. I believe we are too conservative in reporting the morbidity after elective Cesarean section. Maybe it is due to false pride. In the maternity ward at Stanford we try to maintain a morbidity record in the neighborhood of 10 to 15 per cent. In questioning others and in looking over my own cases I find that the morbidity after Cesarean section runs over 50 per cent.

In California some men say there are only two obstetrical operations, one the low forceps and the other Cesarean section. The man in general practice does not realize that the patient whom he delivers by Cesarean section will very probably never have another baby. If we realize that in good hands 16 per cent of these scars will be defective and 6 per cent will rupture sometimes a month before the expected labor I believe that fewer Cesarean sections will be done and more attention will be paid to methods of delivering the baby spontaneously that should be considered more of an achievement than doing a Cesarean section.

DR. RUDOLPH W. HOLMES. -It is some years now since members of the Boston school presented contributions on the indications for Cesarean section before the Chicago Gynecological Society; much of the purport of these papers was the "Obstetric Misfits," i.e., those who were presumed not to be equipped for the stress of labor, and should receive the beneficence of Cesarean section. I could not admit then, neither can I now, that such a type is a material element in the indications for an abdominal delivery. I fear infinitely more the strong buxom athletic woman who has led an active physical life from early girlhood than the woman who is poorly nurtured. In my experience the former has a long drawn out labor, in a considerable frequency, terminated by a difficult instrumental operation, while the latter will have an easy, comfortable, and often rapid termination of labor. In the one, uterine action is inadequate to overcome the overdevelopment of the pelvic soft parts, while in the other these same structures are so poorly developed they offer slight interference with the progress of labor. Likewise, my experience with elderly primipara leads me to believe that age, *per se*, is an immaterial factor in the determination of a difficult labor; in my experience a woman of forty-five will have the same ease or difficulty she would have had at twenty, if the same conditions of obstetric importance obtained, that is, the influence of pelvic bone deviation, malposition, tonicity of soft parts are the same at one period as at the other. Of course, tumors of the uterus, ovaries, etc., are more likely to be present in an elderly woman than a young woman, but such are the factors of chance, not of age, *per se*. On the other hand, an elderly primiparous woman cannot take the same chances in her labor that a young woman can; it may be her last call, so obstetric expediency may warrant a procedure which would be uncalled for in a young woman. I am convinced obstetric expediency may influence, nay, dictate, the placing of the indication for a section, but, nevertheless, it is a dangerous teaching for the general practitioner to follow.

Some years ago a number of Cesarean sections were slated for a body of visiting surgeons; two of the patients had spontaneous births during the period of operative preparation. These cases were not in the hands of tyros, but in those of expert obstetricians. Such is no novelty for we hear of similar experiences as we go from city to city. There are so many factors which enter into the problem of labor that all may not be determined before labor has been in active progress for a period; what may be seemingly wrong in late pregnancy is corrected when labor develops. I do not believe it

wise to do Cesarean sections except in cases of gross disproportion, or other grave emergency, until the woman has been given a test of labor, even to a point after the membranes have ruptured. Within safe limits the duration of labor is not the determination of safety of doing a section so much as the absence of vaginal examinations.

DR. JOHN O. POLAK, Brooklyn. -It has been my privilege to do a secondary operation on 15 cases that have previously had the classical operation of Cesarean section. Three of these 15 were operated on in our own clinic and had had what we considered a normal convalescence. The maximum temperature after the first forty-eight hours was not over 100.4°. Of these cases 13 had adhesions and 5 of them had a loop of intestine attached to the scar. All those cases were operated on during labor, having been brought into the hospital for observation, so that they could have the test of labor, 4 cases showed a marked thinning of the scar and 2 had a rupture through the scar. One of the patients was operated on by the late Dr. Cragin, and another operation was done by a confrère of mine in our city.

In the case operated on by Dr. Cragin the head had escaped through the scar and was only held there by an adhesion of the omentum that came down and was adherent over the scear. It is such experiences as these that has led me with Dr. De Lee to adopt the newer methods, and the low operation rather than the high. It makes no difference, it seems to me, how perfectly a wound is sutured, we cannot tell which wound will behave, badly and which will not.

Our morbidity in the elective cases of the classical operation is high, much higher than we have been willing to admit. Personally, we feel that all cases should be given a test of labor to dilate the cervix for it is much better and much easier to operate after labor has been established, and if we wait for this we will not need a gauze pack in the uterus for forty-eight to sixty hours, because the uterus will drain itself and we will be rid of the difficulty of faulty retraction.

DR. DAVIS (closing). -Regarding Dr. De Lee's question of elective Cesarean section in cases of occiput posterior or face presentation, this question was not raised in this paper nor was anything said concerning the method. Dr. Williams' observations do not apply in the cases under discussion. I do not understand that this is a society of general practitioners but experts in obstetrics and gynecology, and it is our business, I take it, to find out scientific facts, and if certain things should be done by experts, we should do them. If they should not be done, we should not do them. I believe operations for complicated labor are not for the general practitioner but are for the obstetrician; therefore it was to bring before a society of experts technical questions, where I thought discussion should be elicited, and where I thought the grounds for opinion were difficult to obtain, that this paper was presented.

Prolonged labor of itself is not an indication for Cesarean section, but where a woman has had a prolonged labor with a history of previous disastrous labors and wants to avoid that disastrous history, and yet secure a living child, the question of elective Cesarean section in a multiparous woman must be considered.

As to Dr. Spalding's observation concerning the question of spontaneous labor after section, I have not seen the difficulty which he describes. One of our most instructive cases has been a negro woman, with contracted pelvis, who had a section in labor some years ago. Since then she has had several spontaneous labors. She will not go into the hospital but is attended by students, and her labors are perfectly normal. She has a moderately contracted pelvis. She was brought to us first in labor when it was too late to do anything but Cesarean section.

In my observation Cesarean section by no means tends to prevent afterward spontaneous labor. I do not know what Dr. Holmes means when he speaks of misfits, unless he means dis-proportion, and those cases are to be dealt with in various ways. The development of labor is the test, but when a woman goes on and on in pregnancy without the slightest sign of development of labor

there is cause for it, and if an inherent cause is demonstrable that cause could not have been demonstrated without physical inspection of the organs of generation.

Dr. Polak has found after various operations complications, and in my paper no question was made of the method of section. The question was simply this: are there or are there not at the present time indications for elective Cesarean section, avoiding the delay of the second stage of labor, the pain of contractions for the mother and birth pressure for the child. This paper upon diagnostic points was presented before a society of supposed experts.

1920 - Prophylactic Forceps Operation - DeLee - Chicago

Joseph B. DeLee

American Journal of Obstetrics and Gynecology Volume 1 (1920) page 34-

Commentary from Transactions American Gynecologic Society Volume

The time is not yet ripe for a general recommendation of the procedure to be described in this paper, yet, as obstetric specialists, we must lead the way in improvements of our art-and this is still capable of improvement. The public is demanding, with a voice that becomes louder and more insistent each year, relief from the dangers of child-birth for the child-bearing woman. As regards the pain, the rapid spread of the twilight sleep craze will show the demand. That Tokophobia is spreading among the women is a fact.

If we study our cases carefully the conclusion is inevitable that while we have decidedly improved the maternal mortality and morbidity, and have reduced the fetal deaths somewhat, labor is still a painful and terrifying experience, still retains much morbidity that leaves permanent invalidism. The latter statement is also applicable to the child. Many efforts are being made to ease the travail of the woman and to better the lot of the infant. What follows is another such effort. Experience alone can decide if it accomplishes its purpose.

The prophylactic forceps operation is the routine delivery of the child in head presentation when the head has come to rest on the pelvic floor and the early removal of the placenta. Primiparous labors, and those in which the condition of the soft parts approximates a first labor, are treated by this method, which really comprises more than the actual delivery of the child. It is a rounded technic for the conduct of the whole labor, with the defined purpose of relieving pain, supplementing and anticipating the efforts of nature, reducing the hemorrhage and preventing and repairing the damage.

It is not a complete reversal of the watchful expectancy that is universally taught, but I cannot deny that it interferes much with Nature's process. Were not the results I have achieved so gratifying I myself would call it meddlesome midwifery.

A typical case is treated as follows: As soon as the pains are well established and the cervix opened 2 to 3 cm. the parturient is given 1/6 grain morphin and 1/200th scopolamin. After one hour 1/400 gr. scopolamin is given and in one or two hours occasionally a third dose of the same size. The room is darkened and suggestion used as much as possible to aid the medicines. This is really a modified twilight sleep and usually the cervix dilates and the head comes down on the perineum without the necessity of further drugs. Occasionally 15 gr. chloral and 40 gr. sodium bromide are given per rectum to aid the morphin at the end of the first stage, or gas and oxygen are administered by an expert. It is important to obtain complete *spontaneous* dilatation of the cervix, and the slower the better. The importance attached to this point, the natural dilatation of the cervix and the slow retraction of the pericervical connective tissues cannot be exaggerated. We are unable to imitate this by art.

When the head has passed the cervix and rests between the pillars of the levator ani, and has begun to part them and to stretch the fascia between them -a matter that is easily determined by rectal examinations- the patient is put to sleep with ether and a typical perineotomy (soon to be described) is performed. Under the minutest possible control of the fetal heart tones -either the operator listening frequently every minute, with the head stethoscope, or an assistant doing it- the forceps are applied and delivery accomplished. This is usually surprisingly easy. As soon as the child's head is born, 1 c.c. of Burroughs & Wellcom’s pituglandol is injected into the deltoid muscle.

A nurse stands ready with 1 c.c. of aseptic ergot, and this is injected into the outer thigh muscles as soon as the placenta is visible in the vulva. If there is hemorrhage the placenta is removed at once; if not, we wait five to ten minutes. The operator either changes his gloves or disinfects them with antiseptics and inserts the left hand into the lower uterine segment, palm up, while with the outside hand the hard (pituitrin) uterus is pushed down on the already descended placenta. The placenta slides down the hand like a heel slides along a shoehorn. We call this method of expression of placenta the "shoehorn maneuver," and it is the rare exception that the placental delivery needs more help than light pressure on the contracted uterus from above. Should there be any undue bleeding another ampule of pituitrin is injected directly into the uterine muscle through the abdominal wall. Uterine tamponade is almost never needed.

The woman is now given 1/4 gr. morphin and 1/200 gr. scopolamin to reduce the amount of ether required for the repair work, to prolong the narcosis for many hours postpartum and to abolish the memory of the labor as much as possible. If the pains are strong, perineotomy without forceps may suffice for the easy delivery.

It is surprising how bloodless the operative field, especially the cervix, has become. The cervix is pulled down with specially constructed ring forceps and all tears immediately repaired. I have thus gained a large experience in cervical tears and find it necessary to revise my previous notions of their anatomy. The cervix tears often in even spontaneous deliveries. The body of the cervix often tears, leaving the mucosa internal and external intact. Later such cervices show all the evidences of laceration, chronic inflammation, eversion, erosion, etc. Those lacerations which are open also show the separation of the muscle of the cervix at the sides, and the deep retracted portions of the wound must be pulled out and united, preferably with buried sutures. Our previous failures in cervical repair were, I believe, due to non-recognition of this fact.

The Perineotomy. This is one of the most important steps of the procedure -its making and repair. It is essential to have clear notions of the normal anatomy of the pelvic floor and how the structures are changed during delivery. The models are intended to show these things: The head advancing through the hiatus genitalis (1) stretches the vagina radially and longitudinally -it also, sometimes, wipes the vagina off its fascia] anchorings, sliding it downward and outward. (2) The head stretches the pelvic fascia over the levator ani, and between the rectum and vagina and the layer behind the rectum, also radially and longitudinally, and this also permits the rectum to be wiped downward and slid off its fascial attachments to the levator ani. (3) The head often tears or overstretches the fascia over the levator ani, especially those bundles which hold the pillars of the muscle in position at the sides of the rectum, spanning the hiatus genitalis, and this permits the pillars to separate -a real diastasis of the levator pillars resulting, and the pathology is similar to that of the diastasis recti abdominales. This diastasis of the levator pillars and the wiping or sliding of the rectum and vagina downward and outward are the essential features of most pelvic-floor injuries, and have been, to my mind, the least noticed by current writers. (4) The tears in the levator ani muscle are usually due to improper treatment, and they occur, least commonly, near the insertion of the muscle on the pubic ramus (usually due to cutting by the forceps) and more commonly at the sides of the rectum, behind, near the raphé. (5) Labor always ruptures the urogenital septum, tearing it in all directions, and also from its ramifications with the endopelvic fascia, both above and below the levator ani. (6) The fascia between the vagina and bladder is also stretched or torn, also radially and in a downward direction, tearing the vagina and bladder off its anchoring to the upper surface of the endopelvic fascia over the levator ani and the posterior surface of the pubis.

It is thus evident that most of the damage resulting from labor is due to injury, rupture, distraction and displacement of the fascia and less to tearing of the muscles.

Prevention, therefore, aims to preserve the fascia in its normal position throughout the parturient canal, and when the overstretching or rupture cannot be avoided, to incise the structure at a spot where it can be repaired by suture.

We cannot do anything directly to save the pericervical connective tissues from radial and longitudinal overstretching and tears --we can, indirectly, by avoiding all interference with the natural processes of dilatation of the cervix and restraining the natural powers if they are too violent. This means the avoidance of bags to hasten the dilatation, of manual stretchings, of urging the parturient to bear down before the head has passed the cervical barrier and especially avoiding pituitrin before complete opening of the cervix.

We can take direct action to save the fascial and muscular structures of the pelvic floor, in addition to practicing the measures just mentioned for preserving the connective tissues of the upper pelvis. By incising the fascia at its most vulnerable point, and reuniting it after delivery, we are almost always, not invariably, able to eliminate all damage to the pelvic floor. The first incision is through the skin and urogenital septum, exposing the pillar of the levator ani covered with the fascia endopelvina. Next the vagina is incised and with it the upper layer of the levator ani fascia exposing the rectum, which is seen at the bottom of the wound covered with its fascia propria. Next the fibers of the fiscia communicating with the urogenital septum are cut, which allows the perineal body with the sphincter ani and rectum to fall to the side opposite the cut. Simple episiotomy will not prevent injuries to the pelvic fascia. When the disproportion between the head and the pelvic floor is great, the muscular belly of the levator ani is also incised at a right angle to the fibers' length. The models show these incisions better than descriptions.

Sometimes during the delivery the fascia tears and stretches more than we wish, but never so much that we lose the advantages of the preliminary incisions. By slow extraction we reduce this possibility very much. The repair is done with catgut, layer by layer, vagina, muscle, fascia, urogenital septum, subcutaneous fat and fascia and skin, all in anatomico-surgical fashion. Primary union is the rule and examination later shows that virginal conditions are usually restored.

Now, should virginal conditions be restored? Did not nature intend women should be dilated in the first labor so that subsequent children will come easily? Are not the lacerations normal?

Labor has been called and still is believed by many to be a normal function. It always strikes physicians as well as laymen as bizarre, to call labor an abnormal function, a disease, and yet it is a decidedly pathologic process. Everything, of course, depends on what we define as normal. If a woman falls on a pitchfork, and drives the handle through her perineum, we call that pathologic, abnormal, but if a large baby is driven through the pelvic floor we say that is natural and therefore normal. If a baby were to have its head caught in a door very lightly, but enough to cause cerebral hemorrhage, we would say that is decidedly pathologic, but when a baby's head is crushed against a tight pelvic floor, and a hemorrhage in the brain kills it, we call this normal, at least we say that the function is natural, not pathogenic.

In both cases, the cause of the damage -the fall on the pitchfork and the crushing of the door- is pathogenic --that is, disease producing, and in the same sense labor is pathogenic –disease producing, and anything pathogenic is pathologic or abnormal.

Now you will say that the function of labor is normal, that only those cases which result in disease may be called abnormal. Granted, but how many labor cases, measured by modern standards, may be so classified? Sir J. Y. Simpson, said that labor, in the intention of nature, should be normal, but that in a large proportion of cases it was not so. If the proportion was large in Simpson's days the middle of the last century it amounts to a majority today. In fact, only a small minority of women escape damage during labor, while 4 % of the babies are killed and a large indeterminable number are more or less injured by the direct action of the natural process itself. So frequent are these bad effects that I have often wondered if nature did not deliberately intend women should be used up in the process of reproduction in a manner analogous to that of the salmon, which dies after spawning? Perhaps laceration, prolapse and all the evils soon to be mentioned are, in fact, natural to labor and therefore normal, in the same way as the death of the mother salmon and the death of the male bee in copulation are natural and normal. If you adopt this view I have no ground to stand on, but if you

believe that a woman after delivery should be as healthy, as well, as anatomically perfect as she was before and that the child should be undamaged, then you will have to agree with me that labor is pathogenic because experience has proved such ideal results are excessively rare.

What am the factors that render labor so pathogenic? Dangers, immediate and remote, threaten both mother and child throughout.

First for the mother, infection is always a threat, even under the most ideal conditions. Virulent streptococci inhibit a large percentage of vaginae, and if the second stage becomes too prolonged, if the bruising of the parts is too extensive, if the woman's resistance is worn down by too much suffering or by hemorrhage, they may invade the organism and prove fatal. The death may occur in a fashion that hides the cause from the unobservant accoucheur, e.g., a very mild sepsis or even a single rise in temperature is shown, and, in the second week, death occurs from embolism.

Exhaustion is not infrequent in a second stage that may not be too long for a healthy woman, but in one whose nerve reserve is low exhaustion may lead to immediate nervous shock, and, later, pronounced neurasthenia. If the twilight sleep propaganda taught us anything it showed us the actual value of preserving the nervous strength of the parturient.

Of greatest importance, because of greatest frequency, is the damage to the pelvic floor and perineum; next comes the injury to the vesicovaginal fascia and then the lacerations of the cervix and the connective-tissue supports of the uterus, the so-called uterine ligaments. It is not necessary before a society of this kind to enumerate the immediate and remote effects of these destructions of tissue.

The dangers of the second stage of labor to the child are much greater than one who has not studied the matter thinks. It may surprise some present to know that the following injuries have been caused by the forces of natural, spontaneous labor: Fracture of the skull; rupture of the tentorium cerebelli; intracranial hemorrhage (numerous minute and large ones); retinal hemorrhage, abruptio retinae, dislocation of the lens; facial paralysis; Erb's paralysis; rupture of the sternocleidomastoid muscle, already diseased, resulting in wry-neck, fracture of all the long bones of all the extremities, rupture of the cord, tearing of the cord from the belly, etc.

The most common dangers, however, and therefore the most important, are asphyxia from abruptio placentae or prolonged compression of the brain and intracranial hemorrhages. Brothers, of New York, found that 5 % of children died during labor. Holt and Babbitt, of New York, 4.4 %; Schultz 5 %, and 1.5 % in twenty-four hours from the trauma of labor; Kerness, of Munich, found 5.2 %, and Potter, of Buffalo, had 4 % fetal mortality. A certain portion of these deaths occurs in natural unassisted labor. How many babies are hurt and damaged in operative delivery cannot be determined, but their number is legion-and the same must be said of the effects of natural labor. Anyone who has thoughtfully studied the head of a child molded by strong pains through the tight pelvis of a primipara will agree with me that the brain has been exposed to much injury. The long, sausage-shaped head means that the brain has been dislocated; the overlapping bones indicate that the sinuses have been compressed with resulting cerebral congestion; the caput succedaneum evidences the pressure to which the brain was subjected. If there is a caput on the outside of the skull, what of the inside? The punctate hemorrhages in the skin confirm the last mentioned finding; the subconjunctival ecchymoses show us the possibility of hemorrhage in the retina. From outward visible evidences, therefore, we can deduce that the brain has suffered distortion, congestion, edema, compression and hemorrhages, but we need not only rely on deduction alone. Clinically, if you listen continuously to the fetal heart tones you will be convinced that the child is suffering, and autopsies bring the final proof of the above assertions. Neurologists for many years have pointed out the connection between epilepsy, idiocy, imbecility, cerebral palsies and prolonged hard labors. Observant obstetricians have known this for so long that it is an accepted fact. In 1917, Arthur Stein, of New York, reviewed the literature on the subject; he studied 5562 cases in various homes for feeble-minded children and comes to the conclusion given above. Indeed, although the statistics are

meager they seem to show that instrumental delivery is safer than prolonged, hard, unassisted labor. Stein's article is well worth reading, as it quotes numerous accoucheurs and neurologists of scientific standing who support this view. One may well ask himself whether the short, and moderate in amount, compression of the head in a skillfully performed forceps operation is not less dangerous to the integrity of the brain than the prolonged pounding and congestion it suffers from a hard spontaneous delivery. If a late forceps operation is done on a head and a brain already infiltrated with small hemorrhages the results are worse, compounded.

Anoxemia (anäerosis --the beginning of asphyxia) of the child in the second stage is a not uncommon condition, but fortunately most children are born before the asphyxia becomes fatal. In the Chicago Lying-in Hospital hardly a month goes by but that one or more infants die from this cause. Either the child is stillborn or dies a few minutes after birth or dies within the week from atelectasis. Most so-called blue babies are simply atelectatic. The asphyxia may be primary --from separation of the placenta, pressure on the cord, tetanic action of the uterus, etc., or it may be secondary to cerebral compression or hemorrhage. Its beginning and progress may readily and easily be determined by means of the stethoscope, industriously applied during the second stage. Another result of asphyxia in labor is infection of the fetus. In gasping for air the child inspires vaginal mucus and later develops pneumonia or intestinal sepsis.

Among the late effects of prolonged labor on the child must be mentioned permanent disorders of the special senses, sight and hearing, due to hemorrhages into the nerve endings, the nerve itself or its nuclei. Fetal deaths and all the complications are more frequent in primiparae, as would be expected, even if the statistics and the history of primogeniture did not bear out the truth of the statement.

If we review all these things, and if we admit that they occur even in so-called normal labor, we must ask ourselves, are we today doing all that our refined obstetric art permits to prevent damage and avoid disease of both mother and child? In other words, shall we depart from our old trusty, time-honored "watchful expectancy," i.e., waiting for distinct signs of distress on the part of the mother or babe before interfering --or should we anticipate these dangers, and, as a routine, make the first stage of labor less painful and shorter and eliminate the second stage by a surgical delivery?

For the first stage, as stated before, we can do nothing safely except give narcotics, recommended in the form of a modified twilight sleep -unless we perform Cesarean section. It is surprising to me to receive requests from women for this method of saving them from even the pain of this part of labor. The most radical apostle of early surgical delivery is Potter, of Buffalo. In all cases, as soon as the cervix is fully opened (and oftentimes before), he completes the preparation of the soft parts manually and performs podalic version followed by immediate extraction. This practice has, and in my judgment, justly evoked a storm of disapproval. In Potter's hands (perhaps) the operation is safe, but in less skillful hands there will undoubtedly be a long train of dead and damaged babies, ruptured uteri and torn soft parts. The same may be said, though with considerably less force, to what I recommend for the obstetric specialist --the operation of "prophylactic forceps."

The radical interference with the mechanism of the third stage is intended to reduce the amount of blood lost, shorten the anesthetic period and reduce the danger of infection from retained blood-clots, membranes and insufficient uterine contraction.

Now the writer freely admits that this method of treating labor is a revolutionary departure from time-honored custom and must have really sound scientific basis for recommendation. This it has.

1. It saves the woman the debilitating effects of the suffering in the first stage and the physical labor of a prolonged second stage, and in the modern nervous inefficient product of civilization this is becoming more frequently necessary. The saving of blood, already referred to, has much to do with the quick and smooth recoveries I have observed in my cases. In the combination with morphin and scopolamin in the

first stage, gas or ether in the second stage and operative delivery, we have robbed labor of most of its horrors and terrors, and we ought to thus favor the increase of the population.

2. It undoubtedly preserves the integrity of the pelvic floor and introitus vulvae and forestalls uterine prolapse, rupture of the vesicovaginal septum and the long train of sequelae previously referred to. Virginal conditions are often restored.
3. It saves the babies' brains from injury and from the immediate and remote effects of prolonged compression. Incision in the soft parts not alone allows us to shorten the second stage; it also relieves the pressure on the brain and will reduce the amount of idiocy, epilepsy, etc. The easy and speedy delivery also prevents asphyxia, both its immediate effects and its remote influence on the early life of the infant.

There are three objections to the innovation and one is a real one, but it will be, let us hope, only temporary. Prophylactic forceps will be made an excuse by unskilled, conscienceless accoucheurs for the hasty termination of labor, not in the interests of the mother or babe, but for their own selfish ends. I fear there are already too many forceps operations, and, therefore, I hesitated long before I decided to publish this method. But I have always felt that we must not bring the ideals of obstetrics down to the level of the general, the occasional practitioner -we must bring the general practice of obstetrics up to the level of that of the specialist. Let us trust each man to do honestly according to his limitations. For the one, watchful expectancy; for the other, prophylactic forceps. The other two objections are the possibility of infection and the dangers to the child from an improperly performed forceps delivery, brain injury and compression of the cord. If the woman has an evident infection or if there is a suspicious leucorrhea the operation is contraindicated. In clean cases the matter of infection should not deter us. We practice a technic as painstaking as for laparotomy and have no fear of the results.

As for the forceps operation -in skillful hands the danger is nil. By means of the head stethoscope we are able to recognize danger to the infant from asphyxia, and since the resistances of the soft parts are gone, there is no compression on the child's brain. We should not blame the operation for faults made in its performance.

The results of this new method of treating labor are all that one could wish for. As yet no mother or baby has died and there has been no case of infection or cerebral hemorrhage. The babies have thriven; the mothers have not shown the exhaustion and anemia of olden days. The restoration of the parturient canal has been almost perfect -indeed, perhaps too near perfect. I have gotten the impression that involution is quicker and more complete; that retroversion of the uterus is rarer, and, all in all, the recovery much more rapid and satisfactory than with the older treatment.

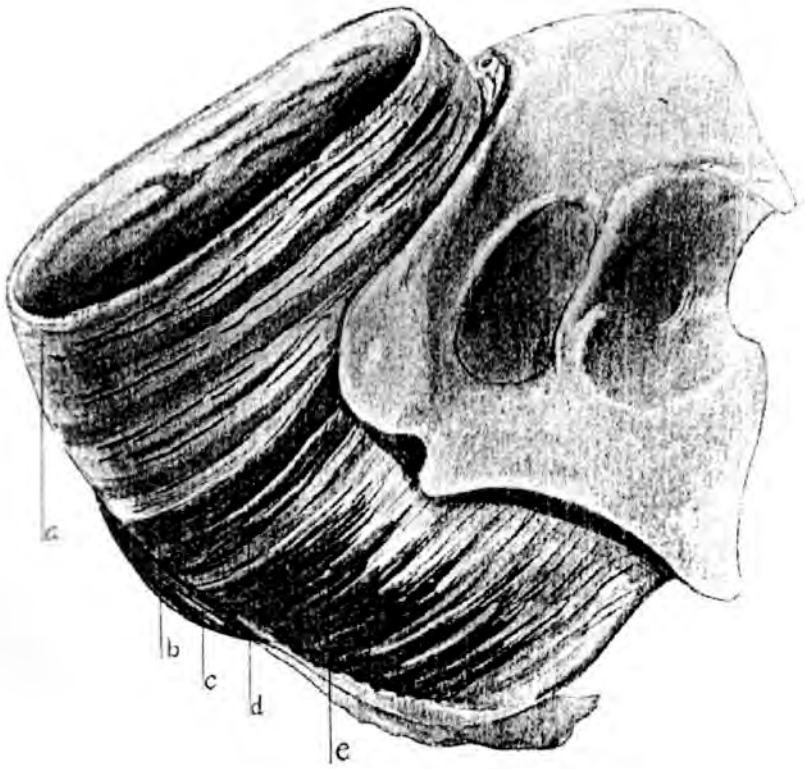


Figure 1. – Partly diagrammatic to show the axial displacement, the distraction and rupture of the fascia and muscles during the passage of the fetal head. a, Urogenital septum much distracted; b, usual site of rupture of levator ani; c, sphincter ani; d, levator ani pubic portion of "the pillars;" e, levator ani ischio-coccygeal portion.

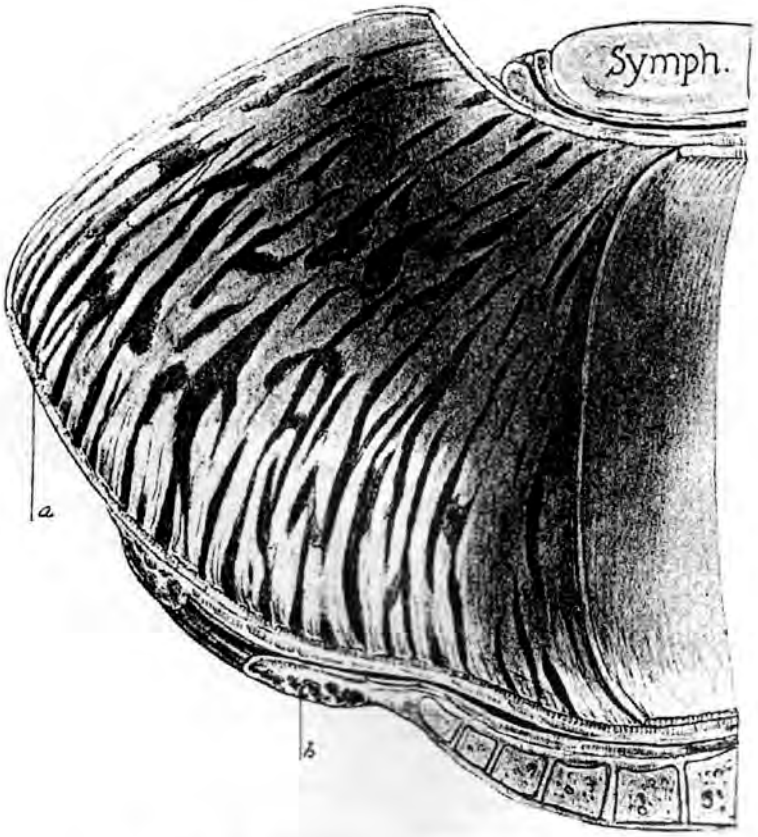


Figure 2.—Purely diagrammatic, to show the interior layer of the ani fascia torn and distracted during the passage of the fetal head. a, Urogenital septum; b, sphincter ani.

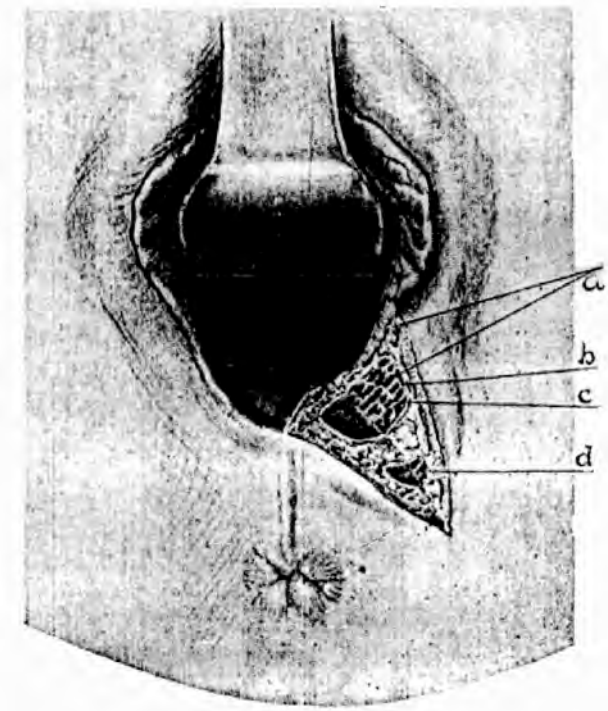


Figure 3.—The perineotomy. Cut are the skin, the vagina, the urogenital septum, the outer layer of the levator ani fascia with its reflection over the deep transversus perinei muscle, the fascia over the levator ani both external and internal (the latter is called the fascia endopelvina). The portion of the fascia endopelvina between the levator ani pillars is called (by the author) the "intercolumnar fascia" and is shown at A. a, Urogenital septum; b, levator ani fascia; c, levator ani muscle or pillar; d, cut edge of deep transversus perinei muscle.

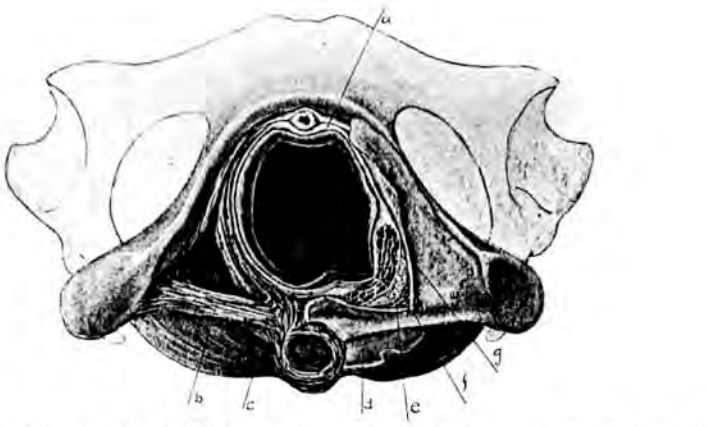


Figure 4.—This model shows the dissection of the pelvic floor during the perineotomy. U.S., Urogenital septum; A, the intercolumnar portion of the endopelvic fascia as it fuses with the urogenital septum in the centrum tendineum of the perineal body. On the left, the urogenital septum has been removed leaving the deep transversus perinei (enlarged) and showing the fusion of the levator ani fasciae with the rectum. a, Vesicovaginal fascia (its destruction leads to cystocele); b, musc. transversus perinei profund. (exaggerated); c, fascia endopelvina portion called "Intercolumnar;" d, external layer of levator ani fascia. Floor of ischiorectal fossa; e, cut edge of deep transversus perinei muscle; f, levator ani pillar incised, pubic portion; g, fascia of levator ani.

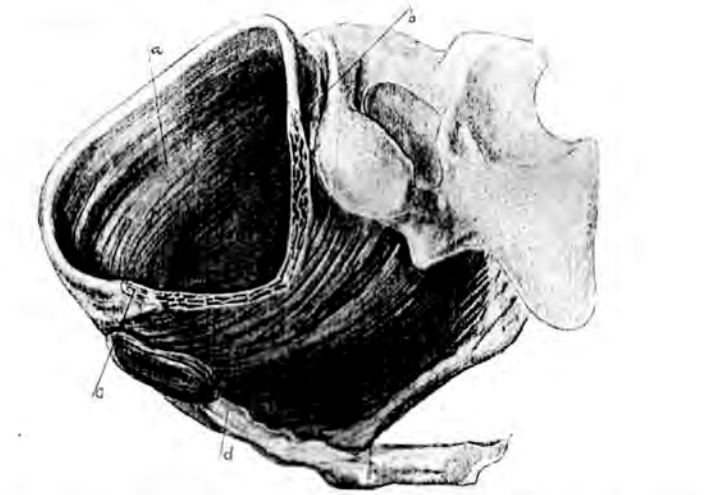


Figure 5.—Condition of the muscles and fasciae at time of exit of head after a deep perineotomy has been made. Note the short perineum, the anus pushed to one side, the intact fascia over the levator ani. Partly diagrammatic. a, fascia over levator ani not distracted or torn; b, urogenital septum not distracted; c, urogenital septum not distracted; d, levator ani pubic portion or "pillar" incised.

DISCUSSION

Dr. Joseph B. DeLEE, of Chicago, read a paper entitled The Prophylactic Forceps Operation.

Published in Am. J. Obs. Gyn.. Volume 1 (1920) p. 77-80

Dr. J. Whitridge WILLIAMS, BALTIMORE: I am sorry to say that there are only two things in Dr. DeLee's paper with which I entirely agree. The first is to allow the cervix to undergo spontaneous dilatation, and the second is the correctness of the general anatomical considerations which he has adduced. With the rest of it I do not agree. Doubtless Dr. DeLee or the majority of those present can deliver women in the manner he has described and leave them in better condition than had they been delivered in the usual way by the average practitioner. On the other hand, I believe that if his practice were to become general and widely adopted, women would be worse off eventually than had their labors been conducted by midwives.

Recently I have inaugurated the practice of having all my patients come back to the hospital for reexamination one year after delivery in order to determine how they have stood the strain of

labor, and what harm delivery has done them. In many instances, I have been greatly surprised to find that they are in far better shape than one has any right to anticipate, but on the other hand I am occasionally surprised to find how marked a degree of relaxation may follow an easy spontaneous primiparous labor. FurthermoreI am quite convinced that if Dr. DeLee's practice should become general, and the women were examined in a similar manner that they would be found to be worse off than the majority I see.

Passing on to what Dr. DeLee has said concerning the treatment of the third stage of labor, I do not hesitate to state that I think he has been perniciously active. In the great majority of cases it is unnecessary to introduce the hand into the vagina, as in most patients the fundus will be seen to rise up within ten minutes after the extrusion of the child, which indicates that the placenta has become separated from its area of attachment and lies in the distended lower uterine segment while all that is necessary for its extrusion is the application of slight pressure above by the obstetrician.

If I have understood Dr. DeLee correctly, it seems to me that he interferes 19 times too often out of 20. Of course what I say applies to normal labors, but cases of hemorrhage must be treated in a totally different manner. I therefore believe should his recommendation be generally adopted that it would do an immense amount of harm and far counterbalance the good which it may accomplish in his expert hands.

PRESIDENT DICKINSON -We have the great honor of having with us a distinguished English obstetrician, Dr. Eden, of London, whom I will ask to discuss this paper.

DR. THOMAS WATTS EDEN, LONDON, ENGLAND -I doubt very much whether this is a prophylactic procedure that Dr. DeLee has described to us. He says he is going to prevent something, Unless he prevents something we are in fear of, I do not think he has made out a case for his operation.He says he prevents laceration which will result in prolapse. He has made two or three admissions on the however, which I think we should not overlook.In the first place, be says he cannot prevent injury which occurs to the pericervical fascia. We do not know it by that name in England. I take it he meant the pubococeygeal fascia. He admits he cannot prevent injury of that which occurs from dilatation of the cervix.It is the injury to that fascia which is the cause of cystocele and his operation is claimed to prevent cystocele. He does the operation to prevent diastasis of the levator ani muscle and fascia which covers them. The time at which he does this is when the head reaches the pelvic floor, and I take it he cannot do the operation when the head presents at the vulva. At the moment it is lying between the levator ani muscles which are already separated, but not to a maximum extent. He also admits by his experience that he cannot entirely control laceration, but more laceration occurs after be has already made the incision. It seems to me, therefore, he is not going to prevent very much by his procedure.

He is performing an operation which will have no effect in preventing a troublesome form of prolapse which we know occurs, and he can only partially prevent the form of prolapse which may result from laceration of the cervix. The latter, unless deep and extending into a part of the rectum, is not followed by prolapse at all, and he is not going to prevent anything like a hundred per cent of eases.

It seems to me, these are serious objections to the operation. I am in favor of making normal labor as simple a process as possible. We have to remember that the number of women in hospitals is small; the majority of women are confined in their own homes under the care of general practitioners, and the technic of Dr. DeLee is a. hospital "stunt," and not one for the general practitioner. It is not right, moreover, that hospital practice should entirely outrun contact with the general practitioner. His students are coming to the hospital, they see the operation, and it is all very

well to tell them not to do it, but they will do it because they have seen it done, and the results will he very different from what they are in his hospital. We ought to make the conduct of normal labor as simple a matter as possible, because it will be from the standpoint of the country at large in the hands of comparatively unskilled men, and the harm which may be done by meddlesome midwifery, although his operation is designed to correct it, may in a few years become widespread. I have no objection to hospitals being kept to the front, but they ought not to get entirely out of touch with general practice. What is the matter, as a preventive, with properly sewing up the ordinary perineal laceration which is so frequently found? If we taught students how to sew up these lacerations properly by vaginal stitching and taught them aseptic methods, in my opinion we would do more to prevent prolapse than by Dr. De Lee's operation.

DR. JOHN O. POLAK, BROOKLYN, NEW YORK -I think the point of Dr. DeLee's paper is to distinguish between what is safe for a specialist to do and what is safe to teach students to do. I am in agreement with a great many of the points Dr. DeLee has brought out, particularly his use of an anodyne for the dilatation of the cervix, and this brings out the point that I have inspected a very large number of cervices after pituitrin has been used when the entire cervix has been effaced, and the diameter has been at least seven centimeters, and have seen these cervices torn with a fresh tear extending up into the fornices.

In regard to the delivery, he does save something. He saves more children by auscultation of the fetal heart when the head is on the pelvic floor than by discission of the pelvic floor. We have saved more children since we have adopted this routine in the last six years.

I do not agree with his lateral discission, I do not believe from the results I have had with it that it compares with the suggestion Dr. Pomeroy brought forward before this Society of median discission, and these are the reasons: Union of a belly of a muscle cannot be obtained as can fascial union. Allowing the head to remain on the pelvic floor for a long time dilates, as the doctor has said, the median fascia. Furthermore, it does something else, it dilates the interior fascia. I have seen women who have had spontaneous labor come back with cystocele as a result of the prolonged second stage of labor. As Dr. Pomeroy has suggested, we now make a median discission after stretching the sphincter in these cases, and we have as a result several hundred women with perineums and anterior pelvic fascia absolutely intact, such as we never had before. Since we have watched other men and have seen their results, I am convinced that episiotomy is a prophylactic procedure both in the interest of the child and the woman's pelvis, whether you do it to the side, as Dr. DeLee does, or in the median line.

I am not at all in accord with his teaching about the third stage of labor. While with the woman under an anesthetic I agree with him that you can push the placenta out, as a rule, it is far better to my mind, and you have less trouble, as was shown in the work we did some years ago, by letting the placenta alone. We got a minimum amount of hemorrhage by leaving these placentas absolutely to themselves. Dr. Williams reports that the quantity of hemorrhage is in excess of what we have had. We have averaged a little less than 250 c.c. in a hundred cases.

DR. HENRY T. BYFORD, CHICAGO -I think the whole gist of the subject is that of Dr. DeLee recommending this procedure in all cases. There is no doubt but that this should be done in cases in which the fascia begins to separate and injury is going to occur. The fact that so many cases get well of themselves where they are left to Nature shows that the procedure should be used in the individual case, not as a routine method.

DR. EDWARD P. DAVIS, PHILADELPHIA -We should teach third and fourth year students how to deliver normal cases without interference, and tell them to wait twenty minutes or half an hour for the placenta to come away. If a student has an abnormal case of labor to deal with that is

complicated, it is as grave a case as an ovarian tumor, and he should summon expert opinion. Then that patient should go to a hospital for forceps application, embryotomy, or other procedure. I cannot see that the procedure advocated by Dr. DeLee is applicable. The fasciæ do not become obstructed necessarily until labor is fully established. When natural labor begins, if anything is done, let it be done thoroughly and surgically under anesthesia.

DR. DELEE (closing the discussion) -I regret very much I did not have five minutes more to complete my paper because a number of points subsequently raised would have been clarified.

First, as regards the danger of this operation and the matter of interference in natural labor. I consider the operation I have described is much less dangerous than the use of pituitrin to induce labor and the use of bag to induce labor at term as has been recommended to you today. I consider these procedures much more radical interferences than the method I described. In the second place, one danger only exists, i.e., doctors who have no business to do the operation are going to do it. That is unfortunate and unavoidable, and I will say no more about this phase of the subject.

Women clamor for relief from the dangers and disabilities of childbirth and we have to afford them relief. They are tired out; they are neurasthenic; they have backache, rectal and bladder trouble, and they say they never have been well since the baby was born, and we have to do something to prevent these bad sequelæ of labor. They even beg for Cesarean section to escape the dangers and pain of childbirth. They will tell you that Mrs. So-and-so who had a Cesarean section done, has no backache, while they have.

Regarding what Dr. Williams said about introducing the hand into the uterus; it is unnecessary to put the hand high into the uterus by this method, The placenta pouts down into the vagina under the influence of pituitrin and all you have to do is to press on the fundus and it falls into the basin. Where it does not come out of the vagina you put your hand into the cervix, and the placenta will slide clown like the heel along a shoehorn. I am not afraid to put my hand into the uterus.

Regarding the remarks of Dr. Eden, if he had heard the rest of my paper he would have learned what incision of the pelvic floor and perineum prevents. It absolutely prevents cystocele. There is extreme circular tension of the fascia at the pelvic outlet, an incision in the posterior quadrant of the fascia relieves pressure on the pubouterine ligaments, the subvesical or vaginal fascia (which is so important in the operation for cystocele), and if the operation of prophylactic forceps does nothing else than to prevent cystocele, I would present it to you with supreme confidence. Dr. Eden stated that the levator and pillars are already separated when I do the operation. That is not so, The right time to perform the operation is when the levator ani just begins to feel the crushing effect of the head.

About sewing up lacerations that occur in natural delivery, I wish to say that I have sewed up thousands of lacerations after delivery and have never been fully satisfied, and I claim no lack of skill; but when I sew up a periteotomy wound I can distinguish fascia and muscles beautifully. When I get a laceration to sew up where the head has been pounding and grinding the muscle like a piece of steak is pounded with a mallet, I cannot get good results.

In what other respect is the procedure prophylactic? Where the baby's head is crowded through a contracted brim you know what has happened to the brain and its vessels. There are minute and larger hemorrhages. The same is true when a head is driven through a tight outlet. In going over the history of primogeniture we learn that the first born had a high mortality and morbidity and that children of subsequent labors, not the first labors, were people who moved the world. Benjamin Franklin was the seventeenth child.

I say that this procedure saves the mother from exhaustion and hemorrhage. I disagree with those who say that women may lose 500 c.c. of blood with impunity. The less blood a woman loses at labor, the better.

Dr. Byford said something about the number of cases that go through labor spontaneously and have good perineums. I have yet to see an anatomically perfect perineum in a woman that has had a spontaneous delivery of a normally large child at term. I have had in the last two years over 200 private cases, and of this number 85 were forceps applications, and 39 cases of prophylactic forceps. I do not do the operation in every case. Most of the cases of multiparæ with large pelves do not need prorhylactic forceps.

In the remarks made by Dr. Davis he implied that what we teach our students is different from what we practice, and I agree that we should teach this method only to our advanced scholars.

Midwife Practice-An Anachronism

Treating of this subject, R. W. Holmes (Illinois Med Jour, January, 1920) takes occasion to point out that any movement which has for its purpose an endeavor to create a new type of midwife is to be deprecated, for it is not conceivable that results will be produced by such move other than to perpetuate an evil which has existed in our midst these many years; midwifery is a remnant of medieval times and is entirely out of harmony with modern prophylactic medicine. We must admit that in times past there was an actual economic necessity for the midwife, especially in Continental Europe where the midwife was a recognized institution for centuries; but, with the development of modern medicine, the several countries of central Europe made increasing requirements for the practice of midwifery, and provided ample accommodations for those who wished to be taught the essentials of the subject both by didactic work and a broad clinic opportunity. After she was educated by the state and licensed, that state inspected her work from time to time to vouchsafe to the public poor a reasonably efficient care and security.

(Yet the president of the Committee on Midwives of the German Medical Association called the condition over there "misery."—Ed)

In this country there never has been this real need or demand; our original native population was so largely made up of British ancestry who never took kindly to the midwife that we merely tolerated her. On the other hand the foreign element who came to our shores brought with them customs of their native lands, and their midwives. It is very evident that as these foreign peoples assimilated our Americanism the necessity of the midwife has become less evident. They, or at least their children, turned to the physician or, in large cities, to the lying-in hospitals and dispensaries for their obstetric care.

The proper care of the parturient woman concerns not alone the physician, but also the sociologist --the interpretation of what is proper care is as much an economic problem as it is a medical one. From the very nature of the case obstetrics has been developed into an actual surgical specialty. Only the properly trained physician who has acquired a surgical technic with a special training in obstetric physiology and pathology is competent to circumvent the many ills of child-birth, and reduce the mortality and morbidity to the lowest possible point.

Holmes believes that midwifery is in such disrepute, and merely tolerated, no legislative or administrative action could raise it to a dignified profession, at least in this country. While practically there are no midwife schools other than so-called diploma mills in this country, nothing would be gained by a scheme to create a midwife school under accredited authority.

First, a concerted endeavor should be made to weed out all unregistered, or faultily registered midwives. An aggressive campaign should be instituted which should secure the conviction of all violators under the medical practice act. Also, there should be a revocation of license of all those convicted of a felony. It is essential that there be a new survey of the condition of midwives at an early moment, so there may be an intelligent knowledge of the situation as it exists today.

At best, midwifery is built upon shifting sands--any attempt to place the practice upon a firm foundation will merely interfere with plans for granting the poor parturient woman scientific obstetric care. A coordinated movement for the purpose of education which will convince the public which we serve that scientific obstetric care is the true conservation of the home will accomplish more good than any aggressiveness in uplifting the midwife.

In the discussion E. L. Cornell read a report from .J. B. De Lee, who is opposed to midwifery for three reasons:

1. The midwife destroys obstetric ideals. She is a drag on our progress as a science and art.
2. The midwife is not absolutely necessary at the present time.
3. European countries for centuries have been trying to bring the midwife up to a tolerable standard and, measured even by their low ideals, have failed miserably.

He is heart and soul opposed to any measure which is calculated to perpetuate the midwife. In educating her the profession assumes the responsibility for her. It lowers the standards, prostitutes ideals, compromises with wrong, and he for one refuses to be *particeps criminis*. To cure the lesser evil, we lose the greater good.

1920 – Analgesia and Anesthesia in Labor – Davis – Philadelphia

Edward P. Davis, M.D.
Philadelphia, Pa.
T.A.G.S. Volume 45 (1920) p. 14 – 30

At the present time much discussion is given to analgesia and anesthesia in labor. The commercial exploitation of so-called twilight sleep drew the attention of the public to this subject. When the true value of this method was appreciated, and it was relegated to its proper place amid the resources of obstetric science, the attention of the profession was engaged by the advocates of the use of nitrous oxide and oxygen in labor. At present the claim has been made that no patient should pass through labor without a thorough and painstaking effort upon the part of her medical attendant to relieve suffering and avoid exhaustion. This claim must be acknowledged to be just and fair, but in the effort adequately to meet it should be exercised.

That actual suffering occurs during labor, and that this suffering is the same as that endured during surgical procedures accompanying wounds and lacerations or under other conditions where nerve filaments are irritated, there can be no doubt. The effort to consider suffering in labor as righteous and inevitable was dissipated by Queen Victoria. It will be remembered that when Simpson proposed to give her chloroform in labor the bishops of her church forbade because pain was decreed in Scripture as the necessary accompaniment of childbirth. The Queen replied that none of the bishops had ever had a baby and that she had passed through this experience, and that her experience should decide, and so it did. She was among the first to receive the benefits of anesthesia in labor.

However fully we may accept this claim, may there not be at present a tendency to fall into error in the neglect of the physiology of labor and Nature's methods to relieve the patient from unnecessary and undue suffering and exhaustion? From our own observation pain in labor is important in direct proportion as it leads to exhaustion. The fact that physical pain occurs during parturition is met by women of strong maternal impulse as the inevitable price paid for offspring, and it is borne by them with courage and patience so long as progress is made. When, however, progress lags and exhaustion threatens, pain passes the limit of physiology and becomes a pathologic condition.

Nature's provision for the relief of suffering in labor is much more successful during the stage of expulsion than during the first stage. In the beginning of labor a test is made of the nervous condition of the patient. Nagging pain of uncertain duration and without apparent progress disturbs rest and sleep and, with nausea, makes a most distressing condition which may seriously retard parturition. For the relief of this Nature has no remedy except the vigorous condition of the patient and her preoccupation in such domestic matters as may divert her attention. In modern life vigorous women are not common, and domestic affairs which may divert the attention of the patients from labor are frequently more complicated and worse than labor. As a result, many cases of parturition pass from the natural to the pathologic because of the tedious and neglected first stage of labor. The best cure for the abnormalities of the first stage of labor lies in the hygiene of pregnancy. If a woman can be brought to labor with sound nerves and muscles a great gain has been made. If she can be under the care of an experienced and able nurse, and if she has the natural maternal ambition and instincts, the first stage of labor may often be passed successfully without the use of drugs. The copious and thorough irrigation of the lower bowel will do something to mitigate nagging pain. The frequent emptying of the urinary bladder, the necessary preparation for labor, moving about and occupation, will all help to pass daylight hours. The healthy woman may doze during the first stage of labor at night and very often she is unable to sleep, and failure of sleep is a good preparation for

exhaustion. Here in many cases analgesia is demanded and its proper administration is of great value. It can be said that the woman will be prepared for labor in proportion as she has avoided toxemia in her pregnancy and has practised well-regulated exercise in the open air. With this background, if sleep is denied her during the first stage, she rightly demands relief. It is evident that the merits of the so-called twilight sleep lay in the psychic control of the patient and in the hypodermic use of morphin. While the former is difficult at times outside of hospital the hypodermic use of morphin, preferably with atropin, is usually possible. With unruptured membranes there is little evidence that this injures the fetus, nor does it seriously delay labor. In the presence of nausea a drug hypodermically given is promptly and efficiently absorbed. Dissolved in various forms it tends to promote dilatation of the cervix and the combination is a reliable and efficient one. The proved objections to scopolamin or hyoscin are the uncertainty of action which may become exciting and its uncertain influence upon the fetus. In our experience a moderate dose of morphin and atropin has never acted unfavorably upon the child. In one case of excessive nervousness, with tedious dilatation of the os and cervix in a neurotic multipara suffering with a mild bronchitis, the hypodermic use of codein through two nights and three days seemed to produce a condition of mild asphyxia in the child. This, however, did not prove serious and the child was readily made to breathe. In cases in which patients are admitted to hospital threatened with rupture of the uterus through impacted fetus and violent uterine contractions the hypodermic use of morphin may be necessary until operation can be performed. We have as yet seen no positive evidence that such use of morphin injured the child.

Formerly hydrate of chloral was used with great freedom during the first stage of labor. Some applied it locally upon cotton to the cervix, as it was supposed to have a peculiar property in promoting dilatation. When the dangerously depressant effects of this substance became familiarly known its use was greatly curtailed.

During the second stage of labor we believe that an opportunity should be given for the patient to establish the normal physiology of the expulsive operation of parturition. This consists in muscular contraction reaching the crest of its wave energy, followed by a gradual cessation and relaxation, and this to be succeeded by a period of absolute rest and often sleep. If the pulse and pulse tension of the patient undergoing this phenomenon be observed they are found to be surprisingly normal. There is no evidence of exhaustion, and it is questionable whether it is well to seriously disturb this condition by anesthesia. There can be no objection to brief anesthesia at the point of greatest muscular activity, provided the conditions are such that the patient, if it were necessary, could be promptly delivered. If, however, the conditions are unfavorable for prompt delivery through the vagina the patient may insist upon anesthesia and abandon all efforts to help herself in labor.

Pressure upon the pelvic floor is painful in proportion to the lack of development of the genital tract, the size and consistence of the presenting part, its position and presentation and the condition of the nervous system of the patient. Unquestionably at this stage of labor anesthesia should be available and usually employed. Here those who urge the use of nitrous oxide and oxygen believe it to be a specific. Our experience, however, has not led us to subscribe to this somewhat enthusiastic claim. In our experience nitrous oxide and oxygen is not a stimulant but is an anesthetic and asphyxiating agent. Its merit consists in its easy inhalation, its comparative safety, and the prompt recovery of the patient. It does not lessen the vigor of uterine contraction nor does it seriously affect the fetus, nor is it a stimulus of muscular and nervous action. In some patients it produces a condition of excitement which is undesirable and it cannot be trusted if the anesthesia is to be carried to the surgical degree for forceps, version or embryotomy. With a preliminary hypodermic injection of morphin it may be used for abdominal section. While the apparatus necessary for its administration is comparatively simple it is more cumbersome and complex than the can of ether and the gauze or simple inhaler necessary for etherization. While we recognize fully the value of nitrous oxygen in labor we should not be willing to keep a patient under its influence

continuously for five or six hours, nor should we be willing to depend entirely upon it in all cases of parturition.

The best quality of ether skillfully administered is successful in the majority of cases of spontaneous labor during the, second stage. If given at the height of the pain, quickly removed as soon as the pain subsides, it stimulates and does not retard labor, but the moment when expulsion occurs a few deep inhalations without air will render the patient insensible to pain, although capable of comprehending sensations of feeling, of hearing or often of sight. The mother arouses easily after delivery and requires no anesthesia while the placenta is separating. For the insertion of stitches immediately after labor, ether properly administered with oxygen is comparatively safe and efficient. We have seen no evidence that such use during the stage of expulsion injures the fetus. It is true that ether is inflammable, that some patients are excited by it, that it is irritable to the bronchial tubes and kidneys and that it is difficult to anesthetize some patients with ether; but if skillfully administered it is usually successful and its combination with oxygen renders it in, our experience the safest of obstetric anesthetics.

For the immediate closure of lacerations it must be remembered that all parts of the genital tract are not equally sensitive. There is not much sensation in the cervix nor is there great sensitiveness in the pelvic floor. In the skin perineum, especially near the anus, the insertion of stitches causes acute pain. If these facts are borne in mind anesthesia may vary during the insertion of stitches in accordance with the needs of the patient.

The comparative merits of nitrous oxide and oxygen and ether and oxygen were exemplified to the author in a recent experience. A multipara was suffering from a hepatic toxemia; while her urine remained comparatively free from albumin and casts the ammonia percentage was rising steadily and so was the percentage of creatin and creatinin and rest nitrogen. Vomiting was incessant and uncontrollable; the action of the heart was increasing in rapidity. As viability had been reached it was deemed necessary to induce labor, and for this purpose it was suggested that to anesthetize the patient with nitrous oxide and oxygen would be useful. A careful physical examination of the patient revealed the fact that the second sound of the heart had disappeared and that the heart was acting badly. There was no asphyxia, but cardiac dilatation seemed threatened. The anesthetizer wisely declined to use nitrous oxide and oxygen, stating that in his experience a similar patient had suddenly died during the administration of the nitrous oxide and oxygen while preparations were made to induce labor. Ether and oxygen were then given and labor was induced. After two hours of ineffectual pain, with continued vomiting and bad heart action, it was believed imperative to deliver the patient. Accordingly, ether and oxygen were again administered, dilatation of the cervix was completed by the gloved hand and the child delivered living by forceps. The action of the heart improved under the anesthetic, and with the aid of vigorous stimulation hypodermically the patient recovered from her labor. It seemed to as that in this case we were practically limited to ether and oxygen. Chloroform was prohibited by the hepatic toxemia present and also by the condition of the heart.

Patients sometimes express a decided preference for a given anesthetic in labor. Thus in the writer's experience a patient was given nitrous oxide and oxygen for the induction of labor, and when the stage of expulsion arrived it was necessary to deliver her by forceps. Nitrous oxide and oxygen were again administered but failed utterly to anesthetize the patient, and ether and oxygen were substituted. On recovering from her labor the patient made a very earnest request that nitrous oxide and oxygen be omitted in her future obstetric experience.

Chlorid or bromid of ethyl is in use by some for patients in labor. They are easy of administration, pleasant to many patients, uncertain in action, causing in many cases considerable excitement and disturbing the action of the heart. Their use must be exceptional.

It is unnecessary in this presence to draw attention to the fact that modern studies in toxemia have practically debarred chloroform as an anesthetic in many cases of labor. Acute acidosis,

acetonemia, acetonuria, relaxation of the uterus and postpartum hemorrhage have all followed the use of this anesthetic. At one time considered the ideal anesthetic for obstetric use it is now in this country less and less frequently employed. Diluted with cologne of good quality it makes an exceedingly agreeable mixture for the patient, but uncertain in action and of doubtful value.

In the experience of the writer the combination of oxygen and ether has proved remarkably successful in parturient women suffering from cardiac, respiratory or nephritic conditions which formerly demanded the use of chloroform. The writer has recently had occasion to operate upon a number of pregnant tuberculous women in various stages of pulmonary tuberculosis and has employed this anesthetic with little irritation and good after-results. In one consumptive woman whose case was complicated by valvalar disease of the heart, abdominal section proceeded smoothly and the patient made an uninterrupted recovery. It is the practice of the writer to require the administration of oxygen with ether in all obstetric operations.

The subject of analgesia and anesthesia in labor is so intimately a part of modern obstetric science that it may not be amiss to call attention to the fact that modern obstetric diagnosis has considerably limited the indiscriminate and dangerous use of anesthetics during labor. Formerly prolongation of labor was considered a valid indication for analgesia and anesthesia, but in some of these cases accurate diagnosis was wanting. The patient with a contracted pelvis and disproportion might be drugged for several nights and days in the belief that labor must ultimately proceed successfully. Finally the discovery would be made that a radical operation was necessary after the patient is brought to face this problem injured by indiscriminate analgesia and anesthesia to which she had been subjected. So too the indiscriminate use of drugs in labor in patients whose toxemia had not been recognized has aided in numerous fatalities. We are quite aware of the danger of the indiscriminate use of drugs which cause violent uterine contraction, such as ergot and pituitrin, especially when no accurate diagnosis of the conditions present has been made. But is there not an equal danger in the indiscriminate use of drugs to produce analgesia and anesthesia when an accurate diagnosis of the obstetric conditions is wanting.

In the matter of diagnosis, nitrous oxide and oxygen may be exceedingly valuable. For thorough examination of nervous patients, for minor manipulations, such as the introduction of bags or bougies, or the introduction or removal of gauze packing, or the opening of a breast abscess, or for other possible conditions in which a brief and not complete anesthesia is necessary, nitrous oxide and oxygen may be of great value. In inducing labor the writer is accustomed to employ these agents, thus enabling him to dilate the cervix somewhat with the gloved hand, to separate the membranes from the lower portion of the uterus and to introduce from one to three bougies without resistance and suffering upon the part of the patient.

The subject of analgesia and anesthesia is of peculiar value to the obstetrician, but in the consideration of anesthesia he shares with the surgeon the study of modern conditions. Unquestionably the administration of anesthesia is properly today a specialty of surgery in all its branches. The modern anesthetizer should be prepared to use nitrous oxide and oxygen, ether and oxygen, chloroform with or without oxygen, changing if necessary from one to another of these during a prolonged operation. In special fields of surgery the invention of special apparatus has made anesthesia vastly more accurate and successful. In obstetric anesthesia we believe that the mother is of too much importance to be given to the average trained nurse or average hospital resident, and that even in spontaneous parturition the services of a skilled anesthetist should be demanded. The remarkable success of women trained for this purpose introduces into obstetric practice an element which is agreeable to the patient and of great value to the physician. The patients should be assured when they engage their physician that special attention will be given to the lessening of suffering and the avoidance of nervous exhaustion. They should be promised such relief as modern obstetric science affords in all cases, but the physician should insist that he or his anesthetist should decide upon the agent to be employed.

Economically speaking this will increase the cost of parturition, but this will be more than compensated by the lessened exhaustion of the mother, her more prompt recovery, the lessening of hospital days and a better resumption of domestic or other economic duties. For the obstetrician, analgesia or anesthesia skillfully given, makes for more accurate diagnosis during labor, and for the successful management not only of spontaneous and normal parturition but of complicated conditions.

It is a familiar fact that recovery from parturition is greatly delayed by exhaustion during labor. In this regard modern analgesia and anesthesia is one of the greatest advances made by modern obstetric science.

One must not forget the considerable fetal mortality and morbidity produced by prolonged birth pressure and by unregulated and violent expulsive efforts. The danger of asphyxia to the fetus during labor by analgesia and anesthesia is vastly less than the danger of cerebral or other hemorrhage from birth pressure, and the avoidance of this latter complication is greatly enhanced by obstetric analgesia and anesthesia.

DISCUSSION

Dr. Carl Henry Davis, Milwaukee, Wisconsin. -It is a pleasure to be asked to open the discussion on Dr. Davis' paper, especially since it strikes a conservative note. Dr. Davis and I fully agree in all but one particular. So far as the value of analgesia and anesthesia in obstetrics is concerned, my opinion regarding the relative merits of inhalation anesthetics in obstetrics is the same today as stated in 1917 in the three papers[1] read that year before the Chicago Gynecological Society, the American Association of Anesthetists, and the American Medical Association. My conclusions may be found in those three papers as published in the current medical literature.

My early experience in obstetrical anesthesia and analgesia was largely with chloroform and ether. Nitrous oxid-oxygen was rarely used except when other anesthetic agents were contra-indicated. I have used no chloroform since 1909. 1 believe that I have tried ether in all suggested manners. During the past few years I have used nitrous oxid-oxygen analgesia as a routine in obstetrics. The results with ether, whether given by drop method or vaporized with air or oxygen, were in no way comparable with those usually obtained with the nitrous oxid-oxygen analgesia. With Dr. Davis I agree that nitrous oxid-oxygen should not be given continually for a long period. I first called attention to the possible dangers of the long-continued analgesia in 1917. When it is given intermittently it has a distinct value over ether in most cases, because it is quickly absorbed and quickly eliminated. Ether is very slowly eliminated. It has cumulative effects on mother and child. It weakens the uterine contractions and frequently causes nausea and vomiting. When the first few whiffs of ether are given to an obstetrical patient we substitute something which may be worse to her than pain, and given at the culmination of the contraction it usually surprises and quiets the woman. After a few inhalations she gets the cumulative effect and a definite relief of pain.

Ether, unlike chloroform, stimulates both respiration and circulation. A patient taking ether with air never has cyanosis because of the ether, and since it does not reduce the amount of oxygen in the circulating blood, I fail to understand why ether given with oxygen can be so much safer in cases of toxemia than ether given with air. Oxygen with ether does not change the physiology or lessen the irritation to the kidneys. The safety of both ether and chloroform may be increased by the administration of alkalies before delivery and after. The photominographs which I am passing are from my research on chloroform, ether and nitrous oxid-oxygen published in 1917.

Recently I have been using nitrous oxid-oxygen analgesia intermittently for mid- and low-forceps deliveries as well as in normal labor.

The nitrous oxid-oxygen is given to a deep analgesia or light anesthesia while the forceps are applied. The mask is then removed, and thereafter the gas administered intermittently as the normal

labor. The patient is instructed to bear down during contractions, while gentle traction is made on the forceps. For primipare I do a primary posterior episiotomy. There is usually an easy delivery with a minimum of traction pressure on tb; head. I cannot accomplish this cooperative type of delivery with ether, regardless of its administration. In my experience. nitrous oxid-oxygen has proved to be the most satisfactory inhalation analgesic for both normal and operative obstetrics. If a long-contined anesthesia is required, I use ether.

1. Am. Jour. Obstet., New York, 1917, lxvi, No. 4; Am. Jour. Surg., 1917, xmd, Anesthesia Supplement, p. 98; Surg., Gynec. and Obstet., 1918, xxvi, 170.

Dr. W. Francis B. Wakefield, San Francisco, California -I feel that Queen Victoria's remark to the bishop applies a little bit to what Dr. Davis has said. I have striven for the last five or six years in San Francisco to make a very honest effort to relieve women of the pain of childbirth. I have used scopolamin anesthesia in all my private cases and have reached the number now of 700 cases. My obstetrical practice is relatively small and confined entirely to private work. I have no clinical practice in obstetrics, so that scopolamin is used entirely on the higher class of women of the city. I have found scopolamin as an anesthetic an absolutely perfect therapeutic agent, and it is discouraging to a man who has used it as honestly and as faithfully as I have done with such gratifying results to have men like Dr. Davis, Dr. Williams, and others relegate this thing to the background as a perfectly useless therapeutic agent.

I do not know why it is that the use of scopolamin has been unsuccessful in the hands of many men. I believe it is because of bad preparations of the drug that have been used. Scopolamin except in fresh solutions from the original crystals that have been carefully preserved from disintegration, or in the form of ampules, is useless.

In tablet form I consider scopolamin almost useless as an anesthetic, and oftentimes injurious, because any exposure of the scopolamin crystals to air will injure its therapeutic effects and produce a wild delirium instead of a somnolent effect.

There is nothing psychic about my use of scopolamin. The patient is under more or less profound anesthesia from the time labor pains become regular until the child is born. No other anesthetic is used at all in labor except during the last half a dozen pains, when nitrous oxid and oxygen are used in conjunction, and invariably my patients go through labor without any reaction, without any pain whatever, and I consider a therapeutic agent that will produce this result without any harm to the mother or child is worthy of consideration, and should not be carelessly relegated to the background.

The San Francisco *Examiner*, not very long ago, came out with an article in which Dr. Williams was credited with saying that it (scopolamin) had been tried and found wanting. Now, that may be perfectly true with Dr. Williams' experience with it, still it gives a bad impression to the general public and undoes very largely the work of others who have had great success with the use of this drug. Scopolamin, properly used, with proper preparation of the drug, is a valuable therapeutic agent; in fact, one of the most valuable I have used in my professional practice.

Dr. Charles E. Paddock, Chicago (by invitation).- I would like to ask Dr. Wakefield some questions. He states that he uses scopolamin-morphin. He tells us that he has had 700 cases. Does he mean that he has used it in every case? When does he begin the use of it, at what stage in labor, and what are the dosages that he gives? Does he give it regardless of pain, and has he had any asphyxiated babies? Can he use scopolamine-morphin without an additional anesthetic?

Dr. John O. Polak, Brooklyn, New York. -As usual, Dr. Davis has presented a conservative paper, but we do not think it is fair for him to condemn morphin and scopolamin, though his caution regarding the indiscriminate use of these anesthetics is well taken.

There is no doubt in the minds of all obstetricians that anesthesia in labor is a necessary adjunct; in order to give our patients the test of labor it is necessary to relieve some of their suffering particularly is this true in the nervous type of patients that most of us are dealing with, and we can do this better with a combination of scopolamin and morphin than with morphin and atropin. The effects depends on how we use it and when we use it. In our clinic it is a routine first-stage procedure. We do not try to get amnesia except in a limited number of instances. But we get some degree of analgesia, and the analgesia holds over so that these patients, during the dilatation stage, have full action of their uterine muscles, hence can complete the second-stage mechanism which Dr. Davis says is so necessary. When the fetal head reaches the pelvic floor, and during the perineal stage anesthesia is again necessary, whether the delivery be accomplished by episiotomy, prophylactic forceps or by nature. Of this stage we have found, after a considerable experience with nitrous oxid-oxygen, that ether and oxygen is the safest and best anesthetic.

One point that I would like to make in closing is, that we discontinue the anesthetic after the delivery of the child and allow the patient to come out from her anesthesia before any reparative work is done. This allows the uterus to contract and minimizes the bleeding. When retraction is firm, anesthesia is continued for the repair of pelvic injuries.

We have not had any postpartum hemorrhages since we have divorced the anesthesia of labor from the anesthesia of repair. I trust I make myself clear on this point.

Dr. Joseph L Baer, Chicago (by invitation). -I should like to subscribe almost without reservation to the views of the essayist. My first experience with nitrous-oxid anesthesia dates back to 1904, at which time, as a member of the house staff of the Michael Reese Hospital, I was sent to Wesley Hospital to watch Dr. Weller Van Hook do perineal prostatectomies under nitrous oxid. We then started using it at the Michael Reese Hospital, and for several years I was official anesthetist, during which time I gave many hundreds of nitrous-oxid anesthesias for abdominal surgery.

In obstetrics I believe the only place for nitrous oxid-oxygen is in the second stage of labor, before the end, and only with such women as cannot be controlled by the presence of the accoucheur, who is cooperating with his patient during her second-stage contractions. My view is, if the accoucheur is with his patient and steadies her, so to speak, she will be very much better and will usually choose to do without anesthesia during the second stage until near the end, at which time I rather prefer ether to nitrous oxid. The patient is usually controllable under light ether anesthesia for the purpose of actual delivery, and is not always controllable under the nitrous oxid-oxygen.

During the first stage I use almost entirely, if I use any combinations, morphin hypodermically and chloral hydrate per rectum or by mouth.

A word as to scopolamin. When " twilight sleep " swept over the country, we at the Michael Reese Hospital decided to give it a thorough trial. My article published in 1915 dealt with a series of 70 cases and was for us a conclusive answer, and we have discarded its use in obstetrics.

Dr. Benjamin P. Watson, Toronto, Ontario, Canada. -I think one of the very important things which Dr. Davis told us in his paper was that we should be particularly careful of the patient during her pregnancy. If one can see a patient frequently during the course of pregnancy and gain her confidence and be with her for some time at the commencement of labor, one can do a great deal to help that patient in her labor and stave off the administration of any anesthetic for some time at any rate. On the other hand, there are patients to whom one must administer some form of anesthetic in the first stage of labor.

I am entirely in accord with those speakers who have upheld the use of scopolamin and morphin. We use it frequently, but never before giving the patient a chance to go through the first stage without an anesthetic. I think it is a mistake to administer drugs as a routine, when a certain stage of dilatation of the cervix has been reached; but if the patient is getting worn out, is fretful, and not bearing pain well, in morphin and scopolamin, or in the hydrobromate of hyoscin, we have valuable drugs. It has been my experience that, with a preliminary dose of 1/6 gr. of morphin and 1/150 gr. hyoscin hydrobromate, there is no bad effect on the mother or child. The morphin is not repeated, and if the hyoscin hydrobromate is repeated it should be given in from 1/300 to 1/600 gr. dose. With that administration we usually have to give some general anesthetic toward the end of the second stage. We have used both nitrous oxid and oxygen and ether, and personally I trust to the administration of ether toward the end of the second stage of labor. I have seen no bad effects from morphin-hyoscin administered in the manner I have mentioned.

Dr. Ralph H. Pomeroy, Booklyn, New York. -I urge upon this Society to recognize, from the nature of this paper and discussion thereon, that we are neither seeking nor expecting to find a fixed and standard process of drug administration for the relief of distress in labor.

In order to meet the psychology of satisfaction on the part of the patient the obstetrician must be convinced, when she is through with her labor, that she has not had a terrible experience. If we are to meet that requirement at all we must recognize that there is no fixed order of administration of these analgesic and anesthetic drugs which can be standardized. Furthermore, we must understand that labors cannot be standardized, and that we must possess equipment, knowledge and experience in order to apply to variations of labor, and to variations of temperament and physical condition, an adaptation of our knowledge and equipment appropriate to the psychology of satisfaction for the individual patient. Any organization or hospital, or any teaching staff, that does not recognize the usefulness of various combinations of morphin, scopolamin, nitrous oxid gas, ether and chloroform, worked out with reference to the individual case, is missing the greatness of this subject.

Dr. Edward P. Davis, Philadelphia (closing the discussion). -May I suggest to Dr. Carl H. Davis that in his last statement relative to analgesia and nitrous oxid-oxygen in low forceps he got into an entirely different topic, which will be discussed by Dr. De Lee in a later paper. Have we come to the point in obstetric science where natural spontaneous labor is not to be expected, and should we substitute an artificial, more or less surgical, procedure for every parturition? If so, then nitrous oxid-oxygen anesthesia and low forceps is a surgical procedure, and the anesthesia is only a small part of it, and Dr. Davis has gone a little further than my paper went. I have nothing to say on that point except to bring up the question, are we going now to consider sharply that position? Are we or are we not taking that position concerning parturition?

As regards scopolamin, which is used by our member from San Francisco (Dr. Wakefield), I was very much interested in hearing his experience. Most of us are not so situated that we can obtain absolutely pure drugs in this part of the world, and the importance of furnishing absolutely pure drugs was shown by the German government and the German manufacturers, who instituted propaganda during the flowery days of scopolamine to give it by the mouth.

After hearing the discussion it is evident that there is a psychological interest exercised by the gentleman upon his patients. I envy him in that.

Regarding the remarks of Dr. Polak, it is always interesting to have him come out with something which seems good to him, It strengthens me. I think he is right in what he has said about labor and repair. They are not the same thing, and hence anesthesia should be different. Dr. Baer in his conservatism comforts me also, and I am glad to find that even in the stimulating atmosphere of Canada Dr. Watson finds ether is a good anesthetic for women in parturition.

As regards Dr. Pomeroy's remarks, he touched on a very important thing. After all, a woman in labor is approaching a supreme physiological test, and the damage to her being is psychological. She is at present the psychological entity of modem civilization. She cannot be considered *en masse*. There is no standardization, and hence we must approach the patient with the idea of helping her the best we can.

I leave seriously with you this one thing. I did not see that patient who died just as labor was being induced under nitrous oxid-oxygen. It was not my case. This woman had been given stimulation. She had been vomiting for some time. She was prepared for the induction of labor by stimulating her heart. It is the experience of anesthetists that a stimulated heart yield's rapidly and fatally to nitrous oxid-oxygen. I may warn you, therefore, that if you attempt to anesthetize patients with nitrous oxid-oxygen who have been toxic, and to whom it is necessary to give stimulation, you may have collapse. She died under inhalation of the gas without the uterus being touched. It was such a warning that I have taken the liberty of bringing it before you.

1920 – Obstetric Practice Massachusetts

OBSTETRIC PRACTICE IN THE STATE
Published Bost..M.S. J., Volume 183 (1920) Page 368

The JOURNAL has reserved for special comment the letter of Dr. Charles Malone, published on September 2nd, regarding the mortality of childbirth, because it contains a plain statement of fact and a clear suggestion for a remedy of existing conditions.

The first two paragraphs of this letter read thus:

"It does seem to me that an unfair comparison was made in your editorial of August third in regard to the considerably lower mortality of maternity patients treated by Harvard students at the Lying-In Hospital and those treated throughout the State by the profession.
"As I understand the situation, patients register at the Lying-In Hospital, are examined; the cases that are complicated by disease or those cases which promise to be hard are taken into the Hospital; those that are normal are delivered outside by the students."

With this view the JOURNAL agrees absolutely. It wants to see the medical profession of the State put in just as advantageous a position as are the Harvard medical students of today. It wants to see the general practitioner caring for the normal ease, but it does not wish to see the general practitioner left to battle alone, unprepared, and under most disadvantageous conditions with the abnormal case.

The first requisite is that the abnormal case be detected beforehand. The need of this both the public and the practitioner must recognize in greater degree than at present. For this reason great emphasis has been laid on the need in any proposed legislation of requiring a patient to apply for maternity aid a sufficient number of months before the date of expected delivery. But in how many communities throughout the State will this make material difference at the present time? Does not the need lie rather in pregnancy clinics, in maternity hospitals, and in the specially trained obstetricians who can act as consultants and advisers for the general practitioner? If such clinics and consultants could be established throughout the State, just as they are now established for tuberculosis, would not the general practitioner be placed in as advantageous a position as are the medical students? We do not for an instant maintain that the students are as well qualified to care for the patient as are the physicians, but we do want to see the handicap of the physician taken away.

We do not want to hurt his practice. The State consultant in tuberculosis is to help him. The obstetric consultant should help him, and relieve him of much anxiety and strain.

The JOURNAL feels that the ominous and steady increase in the maternal death rate will impel the Legislature to some definite action. As physicians, we must give advice as to how existing conditions may be improved. The JOURNAL asks for further discussion through its columns. It feels that it is futile to ask that no action be taken. If action is to he taken, two avenues are open. There is a very strong sentiment throughout the State for direct financial aid to poor mothers. There is another sentiment for treating the question of maternity aid as a public health problem, making the granting of financial aid an object only where it will better the health of the patient. No bill yet presented meets the health problem entirely satisfactorily.

Unless we as physicians can agree along general lines, the decisions will be made independent of us.

THE IMPORTANCE OF A FOLLOW-UP SYSTEM FOR OBSTETRIC PATIENTS

By GEORGE W. KOSMAK, M.D., New York City

Published: TAGS Volume 45 (1920) 294-312

In these days of "health-conservation measures" the question may well be asked whether the recently delivered mother in either private or hospital practice is accorded as much attention in a follow-up sense as a patient recovering from medical or surgical illness. It is now commonly regarded as essential to the proper functioning of a hospital that each patient be kept under observation during a definite period after discharge, and to report for examination at stated intervals or be visited by the social service worker. Thus not only the immediate but the later results of treatment are known and can be acted upon. In surgical cases, particularly, the final physiologic, as well as the anatomic, outcome of the particular operation is insisted upon as a matter of record and study. Does this development in modern methods apply with equal force to obstetric patients? Is the proper care extended for a sufficient length of time after delivery to obviate the possible production of pathologic lesions and to provide for their correction if noted? Laudable and constantly increasing attention has been accorded by maternity institutions to provisions for antepartum care, both for the sake of the mother and her unborn child. A thorough physical examination of the prospective mother is urged, and with blood-pressure observations, urinalysis, pelvic measurements, etc., is regarded as essential in every well-ordered maternity, but once the interest and excitement attendant upon delivery are over the patient in many cases is discharged with the cursory examination at the end of a stated period and little more attention paid to her. This also applies in many instances to private patients. There is no reason why this condition of affairs should be allowed to exist. Although accepted as physiologic, the process of parturition verges so closely upon the pathologic that it is often difficult to draw a line of demarcation. Moreover, the process of involution is by no means complete when the patient is able to be out of bed, and complications may develop and escape notice if a pelvic examination is not made after the usual period of two weeks in the hospital. We may briefly inquire at this point into these possibilities and then discuss means for their correction. The usual method of postpartum examination when it is conducted takes note of the breasts, the degree of uterine involution as determined by the lochia, the size of the uterus, its consistency and mobility, the state of the adnexal organs and the condition of the cervix and perineum. If the results of this examination are fairly satisfactory the patient is ordinarily discharged and in many cases not seen again unless complications develop. Let us consider these points somewhat more in detail, although we may be accused of dealing with trite and elementary facts.

The involution of the uterus, as already stated, is usually gauged by the size, consistency and character of the lochial discharge. Ordinarily the bright red lochia should disappear after the eighth or ninth day, but inquiry will often elicit the fact that in a great many cases the bright discharge reappears after the patient has been up for several days. A bloody discharge means a halt in the process of uterine involution and above all requires rest in bed with the possible administration of oxytocic measures. A considerable amount of blood may be lost, unless this condition is promptly checked, and not only does the patient suffer from this, but the congested uterus is more liable to be displaced either downward or backward. As concerns malposition of the uterus, we often find an apparently normal anteversion at the end of ten to twelve days converted into retroversion if the patient be examined again four to six weeks later. This is usually accompanied by enlargement

and congestion, which have probably contributed to the displacement. If appropriate measures are not immediately instituted involution is further retarded and the uterus may remain permanently in this abnormal position. At this time postural treatment is indicated; including the knee-chest posiion, the so-called kangaroo walk and having the patient avoid lying on her back. The bowels must also be kept open and oxytocics administered to reduce the size of the uterus. There is no value in the use of pessaries at this time, and t hey should not be employed until the uterus has involuted properly and has been returned to its normal anteverted position. I have recently observed several cases in which retroversion pessaries have failed to retain the enlarged uterus. The possibility of these malpositions shows the necessity of making regular pelvic examinations at the end of the first and second month, other wise the condition will be overlooked.

Perineal lacerations should also be observed at regular intervals. I have seen a perineum only partially healed at the end of the tenth day, yet the patient was discharged from the care of the hospital and physician. The process of repair varies with the general condition of the patient. In some it takes place quickly and a good result is present at the end of a week. In others a failure occurs because of the inherently poor character of the tissues or because of extensive trauma. In the former there is nothing to do except to re-operate at a later time. If infection has resulted or sloughing in the case of bruised tissues, operation must be postponed. Secondary perineorrhaphy at the end of ten days or two weeks is often followed by good results when the lochial discharges are fairly clean, but in the presence of a continuous foul lochia such intermediate operations had best be deferred and the wound allowed to heal by granulation. There is another class of perineal lacerations that must be noted, namely, those involving the sphincter ani and that have not been diagnosed immediately after delivery. Several cases have come to my notice in which after a week or ten days, with apparently normally functionating sphincter ani muscles, incontinence followed and examination showed that an attenuated sphincter was either torn or exposed in a perineal tear that had failed to heal. Such cases can usually be satisfactorily operated on at the end of two weeks. Episiotomy, either lateral or central, provides for better healing in many cases, and while I hesitate to recommend a routine operation, I think that it serves a good purpose in those cases in which a rigid outlet impedes extension and delivery of the head. Lateral episiotomy has the advantage of being somewhat further away from the course of the lochial discharges, but it is more difficult to repair and the resulting scar may be more painful than in the central variety.

The importance of unhealed cervical lacerations has been underestimated. The minor degrees undoubtedly heal without much disturbance, but in many cases the bilateral tears fail to unite and considerable eversion of the anterior and posterior lips results. This exposes the lining membrane of the cervical canal and so-called "erosions" of the cervix usually follow. Unhealed lacerations of the cervix offer an opportunity for the absorption of septic material that undoubtedly in a great many cases leads to milder grades of infection involving the cellular tissue in the lower portions of the broad ligaments on either side and also the area back of the uterus included in the region of the sacrouterine ligaments. The course of this infection is insidious, but is probably an important factor in producing the backache which so many women complain of during the first year after childbirth. A careful examination of postpartum cases within the first few months after delivery has demonstrated quite clearly to me that this is a complication to be reckoned with. It may be avoided to some degree by treating these so-called ulcerated areas as soon after delivery as possible by appropriate local measures. In a series of hospital cases which I examined recently every lacerated cervix case was exposed through a bivalve speculum and the raw surfaces swabbed with nitrate of silver or iodine. The patients were then directed to return to the hospital at least once or twice a week for further treatment. I have also followed this out in my private cases, and I think with good results, in so far as a limited number seem to have been free from further complicating symptoms. The immediate repair of cervical injuries might be referred to at this point. Some years ago at the Lying-in Hospital every primiparous cervix, which was lacerated, was immediately sutured; but we

found a marked rise of temperature in so many cases that we discontinued the procedure and limited suture of the cervix to the advanced degrees when it was necessary to control hemorrhage. I do not believe, however, that in the majority of cases proper healing of the cervix results, as we find a great many instances in which the marked eversion of the lips already referred to shows that union has failed to take place.

The abnormalities noted include the commoner postpartum lesions to which others may be added, such as mild degrees of pelvic inflammatory processes, particularly of the tube; involvement of the urinary tract, urethritis, trigonitis, cystitis and pyelitis, which often are not disclosed until several weeks after labor; relaxation or inflammation of the pelvic joints, phlebitis of the pelvic veins, and finally, among the more unusual conditions, degenerative changes in fibroid uteri or torsion of pedunculated ovarian cysts. Any one of the above may escape notice or may not have been present at the usual time of the antepartum examination. In many instances the occurrence of such lesions may not have been preventable, but whether or no, timely recognition and treatment will at any rate reduce the invalidism which often follows in their wake.

In the hope of stimulating a more general interest in a follow-up system, particularly for institutional patients, the writer recently undertook the circulation of a questionnaire to obtain some information as to the actual methods which had been employed by various maternity hospitals. A copy of the questionnaire is appended. A total of over 60 were sent out and replies were received from 48 institutions distributed over the country.

An analysis of the results shows that 36 out of 48 have some sort of a follow-up system for their obstetric patients, including regularly organized clinical facilities in charge of the attending staff. In the majority (28) the patients only return if abnormalities develop, but they are not directed to report at stated intervals after delivery. In 31 institutions a social service system is maintained by nurses for following their cases and some provision is made for babies in 37 institutions. Provision for the treatment of gynecologic conditions noted after labor is made in 37 maternity hospitals, and in all they are referred elsewhere.

The admission is made by practically everyone who answered the questionnaire that a follow-up system for obstetric patients is not only desirable but necessary. In this connection the difficulties attending the institution of such a system for hospital patients must be acknowledged. A woman who is busy with the care of her family is not always able to come back for subsequent examinations unless the condition is serious enough to compel her attendance. This applies particularly to patients that live a considerable distance from the hospital, but should not apply to private patients who ought to be encouraged to visit their physician at least once a month for three months subsequent to delivery. If this is not feasible, arrangements might be made with a local physician. In the case of hospital patients the follow-up system is favored by the employment of visiting nurses, just as is now done by surgical, medical and gynecologic services. A number of institutions have already adopted this plan, and if the visiting nurse finds any gross abnormalities a hospital physician visits the case or the patient is directed to an institution. The organization of so-called “maternity center associations," as in New York City, may be of great value in the development of this scheme, especially as their clinics are ordinarily located nearer the patient's home than the hospital in which she was confined. Cooperation and coordination could, it seems to me, bring about working agreement in which the function of the "maternity center" could be increased in a most valuable manner and the hospital perhaps saved a certain amount of trouble and expense.

A regularly organized postpartum clinic should be part of every maternity hospital equipment. To this clinic every mother should be directed to come at stated intervals if possible. At such subsequent visits abnormalities which have developed since the discharge of the patient from the hospital can be detected and appropriate treatment instituted. Patients who present gross lesions, such as unhealed lacerations, uterine displacements, pelvic tumors and other conditions, could be

kept under observation and treated surgically if the occasion demanded. It also seems desirable that gynecologic operations be done either in the same or related institutions, so that the patients remain under the observation of the same attending staff through the entire period. Such postpartum or we may call them gynecologic clinics should be under the direct supervision of attending surgeons, and, if possible, especially in the cases of operative deliveries the operator personally ought to make the follow-up observations.

Admitting the value and necessity of adequate observations on postpartum cases, what may be considered a practical scheme for developing this for institutional or private patients? The return of every recently delivered mother to a state of health at least approximating that before pregnancy, if not surpassing the same, should be the aim of every maternity service and also, every physician who takes care of obstetrical cases. It is difficult to estimate how large a proportion of invalidism in women who have borne children can be traced directly to abnormalities of their pregnancy, labor or puerperium, but it cannot be denied that the proportion is a considerable one. The tendency of modern medicine has been toward prevention; can it be said that this effort has been sufficiently developed in the handling of woman's most important function in life? The results of childbearing cannot be expected to leave every woman in as good condition as she was previous to parturition, but an attempt should be made to diminish the proportion of invalidism as much as possible. I believe that this can only be done by concerted effort; by impressing, on the one hand, upon our institutions and physicians the necessity of keeping these women under a longer period of observation than has hitherto been the case, and, on the other hand, impressing upon the patients and their families the necessity and advisability for such supervision. A prolonged period of education may be necessary to accomplish this desirable end; but what has been accomplished in the domain of the contagious diseases, of cancer, of venereal disease and other conditions can likewise be duplicated in our obstetric practice. The survey of the situation which I have previously referred to shows that, in so far as maternity hospitals are concerned, great variation occurs as to the extent to which postpartum observations are carried out. It is unnecessary to refer to specific institutions, but it was found that in many instances patients were dismissed in from ten to fourteen days after delivery without any definite instructions to return for subsequent observations. In other cases the social service workers or follow-up nurses visited the patients in their homes in conjunction with the work done with the babies. It is, of course, a difficult matter for large institutions to maintain a sufficient staff of follow-up nurses to see all their cases, especially those living at a distance from the hospital, and, as already stated, it is a difficult matter for many of these patients to make personal visits to the hospital for examinations, but it ought to be possible to overcome these difficulties in most instances. Recommendations cannot be made in a general paper of this kind that would be suitable for individual institutions, and this matter must be left to the indications demanded by each particular case. Hospitals and patients residing in their immediate vicinity ought not to have any difficulty in bringing them back for subsequent observation on stated days when a clinic in charge of a physician could provide for the necessary examinations. This is excellent training for the younger men who would learn by repeated observation on the same patient the course of involution after labor and other postpartum conditions. Many of the simpler lesions can be immediately corrected and those of a gross character kept under observation for possible future operation.

Such reformation of the accepted routine of obstetric hospital facilities as I have suggested will undoubtedly mean in most cases additional equipment and services that hospital managers may find it difficult to acquire under present conditions. But if it is the privilege and duty of our specialty to supervise the process of gestation from the time of conception through the delivery, this must also include the entire puerperal period and a revised conception of the length of the latter beyond the usual ten days must be made to prevail.

Hospital standardization is the cry of the hour, and in so far as this applies to obstetric institutions it must be made to take cognizance of the fact that responsibility toward the recently

delivered woman does not cease with her discharge on the tenth or twelfth day, and the shortcomings of institutional work apply with equal force to private practice.

There is another phase in discussing the question of appropriate and longer postpartum care to which in conclusion attention may be directed. Sociologists have seen, perhaps before the medical profession, the advantage of proper and more prolonged care after childbirth and have sought to attain this end through the medium of compulsory maternity insurance developed under state auspices. There the working classes might benefit by a scheme whereby a period of recuperation after labor could be secured is a question that must be given serious consideration, and much as we may have in general revolted against all plans of compulsory state health insurance thus far proposed as too paternalistic, socialistic and un-American, some modification of such plan may prove a desirable means of lowering the morbidity and mortality of childbearing. The subject is one that the profession may well consider from the standpoint of constructive rather than destructive criticism. During the last decade the development of standards for prenatal care have marked a great advance in our specialty in which we were led or goaded, stimulated perhaps by certain outside influences, but in conclusion I may venture a prophecy and hope that the next decade or two will witness an equal acceptance of the fact that more prolonged and studied observation of the postpartum period is a part of the responsibility which as conscientious physicians we owe to our patients.

APPENDIX

AN INQUIRY INTO A FOLLOW-UP SYSTEM FOR OBSTETRICAL PATIENTS

Does your institution maintain an organized system of observing mothers and babies after their discharge from the hospital? If so, please describe briefly the salient features of the system, particular attention being paid to the following points:

1. On what day after delivery is the puerperal patient discharged?
2. Is she directed to come back to the hospital at a stated time, or only if abnormalities develop?
3. Is there a definitely organized postpartum clinic provided on certain days to which patients may apply?
4. Under whose charge is the clinic, -attending surgeon or house staff ?
5. Do attending surgeons see their cases at definite periods after discharge?
6. Are notes taken of such subsequent visits?
7. Have you any method of following up cases at their homes by social service workers or nurses?
8. Have you any information based on your cases of the proportion of postpartum women examined in whom the following conditions have been noted: Malpositions of the uterus, exudates, cervical erosions, lacerations, condition of perineum and results of perineorrhaphies.
9. In the event of lesions being found that demand operative or other treatment, what facilities are provided for their treatment in the same or other institutions?
10. Are such operations done by your attending staff, or are the cases referred elsewhere?
11. Do you consider the establishment of a postpartum clinic and follow-up system an essential duty of the hospital?
12. Are steps taken to insure proper supervision of the baby by visiting nurses or reference to pediatric clinics?

DR. JOSEPH B. DE LEE, Chicago. -As the hour is late, I shall make but few remarks on preventive obstetrics, particularly from a sociological point of view, and the value of women having babies to society. The value of a woman having a baby to society is 100 per cent, and the safeguarding of the woman to society depends upon the obstetrician. Why do we not have more obstetricians? Why do we have so many surgeons and so many men representing the other branches of medicine? The answer is very simple, too simple. The life of the obstetrician is not a happy one; the work is very hard, and the remuneration is very little. The sociological aspect then will require careful and economic studies of the women having babies, and it is more than possible that when industrial insurance and compulsory health insurance come the obstetrician will have to be one of the first to be consulted. It costs money nowadays for a woman to have a baby. The amount of time which prenatal work requires is not small. The number of visits, the number of urinalyses, the number of investigations of the woman's condition are large in the course of seven months' antenatal care. The time spent in caring for the woman at labor is not minutes, but hours, sometimes days. Postnatal care also requires time, and now comes Dr. Kosmak's follow-up system which will take another six months. If a few women can afford to pay for all this attention over a period of fourteen months, well and good, but there are very many others who cannot afford to pay fees commensurate with the work; therefore, somebody must put up more money to give the poor women good obstetric care. Midwives cause a large percentage of the trouble, but the main reason for the trouble in women having babies lies in the function itself. Labor itself causes trouble. It is not possible for a large baby to pass from the uterus without causing material damage. How can we prevent this damage? We have to educate our doctors, but we cannot expect ideal results with obstetrics as low in public esteem as it is. People will not pay for obstetrics with the present standards. As long as the state allows midwives to practice obstetrics, people who have money to pay for it will not consider a confinement requires an expert, and so we have yet the task of raising the ideals of obstetric practice. If you will regard obstetrics as of pathologic dignity, you will immediately raise the ideal, for anything that is pathologic requires proper investigation and study and expert attention. Dr. Eden reminded us of the high mortality of babies in normal delivery. It is a great confession on his part that a normal delivery can cause the death of the baby. I would say this is pathologic. Dr. Kosmak told us of the difficulties and the dangers of injuries to the pelvic connective tissue and cervix; that they have much to do in the causation of chronic inflammatory conditions in the pelvis. The prevention of these things requires a high degree of obstetric skill, much higher than is generally known, and the only way to get the public to appreciate that is to let them know that we doctors consider a normal obstetric case of the highest pathologic dignity.

RECENT PROGRESS IN OBSTETRICS

By Hugo EHRENFEST, M.D.
St. Louis, Mo.

TAGS Volume 45 (1920) pages 157-174

When readily accepting the suggestion of the Council to read a paper on "Recent Progress in Obstetrics," I was under the decidedly erroneous impression that in the turmoil of the War probably comparatively little had been published in the medical literature of the world that could prove of particular interest to the obstetrician. When starting actual work in the preparation of this paper the error of this assumption became all too evident. This survey of the obstetric literature of the past three or four years, concise in spite of its apparent length, is based on the more or less careful perusal of several hundreds of papers and monographs covering many thousands of pages. A brief summary of this sort requires by way of introduction a few words of explanation and also of apology.

Obviously, only a very small fraction of recent contributions can be actually mentioned. Thus I was forced to prepare, instead of an objective resumé of the obstetric literature, rather a critical review of only that material which, in my opinion, is interesting and represents an advance in knowledge. Under present conditions, furthermore, unusual difficulty is experienced in gaining access to foreign literature. Up to the present day it is available in medical libraries only in very incomplete form. Many of the obstetric and gynecologic journals of Europe during the war had temporarily or permanently discontinued publication. This holds true for the one journal of this kind in Great Britain and at least for three of France. The situation seems identical in Italy. Russian literature fails to appear even in abstracts in other periodicals. Peculiarly enough, of the many German gynecologic journals only one, a pure abstract journal, obviously was forced to discontinue publication temporarily. All the others, in almost complete files, are again to be found on the shelves of the two medical libraries at my disposal in St. Louis (Washington University and St. Louis Medical Society). This fact together with the desire, for the sake of brevity, not to take up too much space with American literature (known to you, and indeed, mostly written by you) will easily, and I trust satisfactorily, explain the obvious prevalence of quotations from German literature in the following pages.

One of the German writers quite frankly states that the surgeons, epidemiologists, pathologists, etc., have made ample use of the unusual opportunities offered by the War for solving many interesting and important questions, that, therefore, also the gynecologist should not let pass this unusual chance of studying on material, not available under normal conditions, certain theoretical and practical problems of special interest to him.

Siegel was among the first to realize the probable value of a careful study of short, two and three days' leaves of absence, given to married soldiers, in their possible bearing on such questions as: the most favorable time of conception in the menstrual cycle; determination of the sex of the child; duration of pregnancy, etc.

His very first paper created a great deal of interest, and abstracts were quoted broadcast also in American literature. In Germany it induced many investigators to start researches along the same or similar lines. The two main startling observations recorded by Siegel, briefly stated, are as follows:

1. Of 300 one-time cohabitations, resulting in pregnancy, in 53 per cent coitus was performed on the sixth day after beginning of the last menstruation. The high incidence of conceptions continues up to the twelfth and thirteenth day and then drops rapidly.

2. Conceptions occurring within the first nine days result in boys; conceptions between twenty-second and twenty-eighth day in girls.

This latter point he used for elaborate theoretical discussions of the problem of sex determination by the definite selection of the time of cohabitation.

It will be more convenient to dispose right here of the literature on this latter problem, one of never-failing interest to physicians and laymen. No other investigator was able to duplicate Siegel's findings. They undoubtedly are the accidental and erroneous result inherent to statistical studies based on small numbers of observations. While Moesser, Peller, Richter, Loenne and others are unable to find any noteworthy difference in the sex of the child in relation to the time of fertilizing coitus, others supply figures worthy of consideration; some at least in part supporting Siegel, others directly contradicting him.

Ruge considers his personal experience as too limited, but collects from literature 521 war cases, in which cohabitation time is exactly known. From them he figures for impregnations between first and ninth day after menstruation 65 per cent boys; for impregnations between fifteenth and twenty-second day 62 per cent girls. In consideration of a normal ratio of 53 boys to 50 girls, the early postmenstrual conceptions show -not to the extent claimed by Siegel but still in accord with his findings- a definite increase of male births, the premenstrual conceptions a striking prevalence of girls. But that even such figures cannot be accepted as valid proofs of Siegel's theory can be easily seen when we find that Nuernberger in 215 personal war observations discovers exactly the normal relation of 105 boys to 100 girls for early postmenstrual impregnations; while, on the other hand, Pryll in a large number of peace cases, in which the time of cohabitation also was exactly known, discovers that fertilizing premengtrual cohabitation resulted in a surplus of males in the proportion of 2 to 1.

To support his contention Siegel is forced to deny the generally accepted view that an intervening menstruation destroys an unfertilized ovum present in the genital tract. He speaks of an "over-ripe" ovum, which had survived through a menstrual flow, and which, when fertilized, invariably develops into a male child. Siegel fails to find any supporter for this hypothesis, and it seems that the hope, that war observations have led to a final solution of the problem of sex determination, remains unfulfilled.

Kroehl's like Ruge's figures show that coitus in the period between the sixth and thirteenth day is most likely to result in a pregnancy. Pryll's peace curve coincides well with a curve made by him from 713 war cases collected from literature, which indicates that in 60 per cent of the one-time cohabitations the coitus had been performed on the eighth day after beginning of last menstruation. Nuernberger finds that of his 215 war cases in 41.3 per cent cohabitation fell into the early postmenstrual period, in only 9.3 per cent. in the premenstrual period and in the remaining 49.4 per cent. in the interval. While not strikingly in agreement with the observations of Siegel and others, Nuernberger feels that his own figures at least show the evidently greater chances of conception for cohabitations soon after menstruation, and the definite decrease of this chance for the premenstrual period. He also points out one obvious defect of all these statistics, namely, that really accurate deductions concerning an optimum of conception could be made only if it were possible to compare the number of fruitful cohabitations with the total number of all cohabitations consummated within the same period-an impossible task. Personally, I would raise still another objection, to my knowledge nowhere made. This high incidence of early postmenstrual cohabitations, quite uniformly ascertained for pregnant women seen in maternity clinics, at least in part, could be but the natural result of a preference of short leaves of absence for a time when the wife most likely would not be menstruating; this is the week immediately after a menstruation. It is well known that wedding days customarily are chosen in this manner.

Logically, this extensive discussion of a possible optimum of conception also led to renewed interest in the question of the exact time of follicle rupture and of the duration of life of the spermatozoid.

The time of ovulation is not definitely known. While Fraenkel places it at eighteen or nineteen days after the beginning of the last menstruation, others, among them in his recent study Ruge, claim it to occur, as a rule, between the eighth and fourteenth day, conceding that exceptionally the follicle may not rupture until the third week of the cycle. The war observations, quoted above, in general tend to support Ruge. It seems most plausible that the optimum of fertilization exists when a fresh spermatozoid meets a fresh ovum, i. e., when cohabitation occurs soon after the follicle rupture. The fact, agreed to by all investigators, that ovulation late in the cycle is rare, satisfactorily explains the general observation of the low percentage of conceptions from premenstrual coitus.

Ruge in one of his papers discusses thoroughly the question of the assumed longevity of the sperms, cell, in his belief based on faulty deductions made from observations on animals. All available evidence, in his opinion, clearly points to the fact that both for the human ovum and for the spermatozoid, life is limited to but a few days. The spermatozoid, entering the female genital tract late in the cycle, will encounter a fresh and impregnable ovum only if ovulation had occurred exceptionally late.

Pryll from a careful analysis of 713 pregnancies following a single coitus calculates that a spermatozoid may keep alive up to between six and ten days. Ignorance concerning the accurate time of ovulation makes it impossible to give this figure more exactly.

The entire problem is comprehensively set forth in a most instructive paper of Grosser, an expert embryologist. In all mammals, ovulation, impregnation and conception practically coincide. Recent investigations, in his belief, seem to concur in the observation that conditions are not very different in the human; surely that the time interval between ovulation and fertilization is so short that it might well be neglected. Neither the ovum nor the spermatozoid remains very long fit for their biologic function. If all investigators concur in establishing a maximal opportunity for conception around the eighth or ninth day we are forced to the conclusion that this, in all probability, is the time of ovulation and fertilization of the ovum. Under normal conditions the implantation of the fertilized ovum seems to occur approximately on the twenty-second day, presumably ten days being consumed by the ovum for its passage through the tube, another four days for further development in the uterus to reach the implantation stage of development. This would closely resemble the condition actually established for the dog.

The unusually large number of pregnancies resulting from one-time coitus, which had been observed during the war years, has not offered any new information concerning the duration of pregnancy. Nuernberger in 206 such cases found labors to occur anywhere between 253 and 297 days after the coitus. The old Naegele method remains the only available method of calculating the probable day of labor.

Febling calls attention to the striking fact that since the beginning of the war, with increasing frequency, he sees pregnancies after a state of primary or secondary sterility. He terms this type of cases "war pregnancies." Various papers deal with this phenomenon and many explanations are offered. A few might be mentioned here: The enforced sexual rest favors the spontaneous cure of slight inflammatory processes in tubes and uterus responsible for this sterility. The enforced sexual abstinence increases libido of both the husband and wife. Some speak of an "invigorating" influence of sexual and alcohol abstinence on the sperm cells. When, however, identical observations are also recorded in families in which the husband stayed at home, some writers suggest that this increased fertility might stand in a relation to the evident decrease of excessive adiposity as the result of undernourishment and heavier work.

This brings us to the consideration of another large group of papers which deal with the possible etiologic relation of malnutrition, heavy work and mental excitation under war conditions to various obstetric and gynecologic anomalies.

A discussion of fascinating interest is carried on concerning eclampsia. As early as 1916 Warnekros shows that practically all large maternities have noticed a material decrease in the number of eclamptic patients. During the next few years various theories are propounded to explain this undeniable fact. Mayer speaks of a toxic effect of sperma, resorption occurring in the course of pregnancy when sexual relations continue uninterrupted under normal conditions. A corresponding benefit is derived from the absence of the husband in war service. This hypothesis evidently has not met with favor.

Warnekros in discussing this point emphasizes that the majority of writers seem to regard more acceptable an explanation which ascribes the reduction in the number of eclampsias to the marked deficiency in fats, and especially in proteins, of the war diet (Ruge). But many objections are raised also against this theory. Mayer asks: How can this explanation be made to harmonize with the indisputable increase of nephritis during the War also ascribed to food conditions? Franz answers: "War nephritis" is the result of the many epidemics of various infectious diseases which have swept through Europe. A gynecologist serving in the Austrian army enters the discussion by offering statistical proof that the soldier, physically exhausted and frequently exposed to colds, is likely to develop a nephritis merely from the toxicosis caused by the various prophylactic vaccinations. Therefore the evident frequency of "war nephritis" has no bearing on the eclampsia problem. Gessner thinks that the seeming benefit of the war *regimé* to the pregnant woman in avoiding eclampsia is entirely due to the successful prevention of overeating in combination with the necessity for more physical activity. Zangemeister doubts the feasibility or possibility of establishing statistically any relation of changed food conditions to this undeniable reduction of eclampsia patients, and feels satisfied, from his own studies, that this decrease of eclampsia is almost proportionate to the decrease in the birthrate. With that sagacity often noticeable in Lichtenstein's controversial papers he discusses and repudiates all these theories. An analysis of the eclampsia patients treated in the large German maternities in prewar years shows that a considerable number of them had been brought from distant places. The inefficient and at times completely interrupted railroad service, the absence of all automobiles, the notorious inadequacy of ambulance service for the civilian population and the crowded conditions of all hospitals, necessarily pre vented many eclamptic women from being admitted to hospital wards. To this probably large numbers of patients unable to reach the clinics must be added another group which now is kept out of the hospitals by the attending physicians. The insistent teaching of obstetricians during the past decade that forced delivery is not the only method of dealing with eclampsia, that the conservative treatment is useful, and, indeed, preferable in many instances, fortunately is beginning to bear fruit. The practitioner has finally learned the technic of the Stroganoff therapy which can be successfully carried out in the home of the patient. Also after the return of normal conditions the larger maternities will see fewer eclamptic patients than before the war. Whether this very plausible explanation of Lichtenstein is correct or not is a question which will have to wait for a final answer until postwar experience has revealed whether this decrease of eclampsia was only temporary or permanent. Lichtenstein's point, however, seems well taken. A very exhaustive monograph of Winter culminates in the assertion that in the future the discussion of eclampsia therapy not any longer can deal with the problem "operative versus conservative" treatment. Both now are firmly established and have their respective definite fields. Both are advantageously combined in some cases.

This controversy on the apparent decrease of eclampsia probably indirectly is responsible for many other papers dealing with other phases of this toxemia. Ruge and others again emphasize the etiologic importance of defective liver function, first suggested by Dienst. Others, among them Schickele, in an exhaustive study, argue vigorously against this conception.

Zangemeister restates his former contention that the eclamptic convulsions are caused by abnormal intracranial pressure, the result of an acute edema of the brain, which in turn is brought on by the increased blood-pressure. Proper eclampsia treatment must attack prophylactically the cerebral edema by reducing therapeutically the high blood-pressure. Entirely in accord with this theory seems Kirstein, who finds the pressure of intraspinal fluid normal during normal pregnancy, but markedly increased in eclamptic women, proving the existence of abnormal intracranial pressure. The convulsion is released by a further exaggeration of the already abnormal blood-pressure which, during the seizure, causes an added rise in the intracranial pressure.

It occurred to Lichtenstein that a study of the effect of war conditions on hyperemesis gravidarum might throw some light on the problem of the causation of eclampsia. He ascertained that, like in eclampsia, there seems to exist also a falling off in the number of patients suffering from hyperemesis. An actual decrease, he argues, might be shown statistically and still it would be impossible to employ these statistics to prove the dignity of this or that etiologic element as long as we know that calculations will have to include such uncertain factors as nervous, mental or internal secretory disturbances. We possibly can say that any numerical reduction of these cases, speaks against any notable etiologic significance of the mental factor, since all kinds of severe psychic insults and emotions during the war undeniably have affected pregnant women more extensively than ever before. In a general way one is forced to the conclusion that the necessity of leading a more active life, of taking more exercise and of having less time to brood over her discomforts, over real and imaginary troubles, as a whole, had a beneficial effect on pregnant women. Also the theory of the solely ovular origin of the eclampsia toxins must lose some of its present popularity, and in accord with this change of view the indications for artificial termination of pregnancy in hyperemesis will have to be further restricted. Winter, on the other hand, emphasizes the etiologic significance of the psychogenetic factor. Careful and at the same time tactful questioning, which in his experience apparently can be done with greater ease under present conditions, in many of his hyperemesis patients very clearly revealed the responsible psychic element. Relief of the symptoms promptly following proper psychic treatment also convinced him of the correctness of his views. Winter's conception, answers Sigwart, surely is out of harmony with modern teaching and experience. As further proof for the fallacy of Winter's conclusions he details several experiments he made on patients suffering from hyperemesis. Some he made to believe that the ovum had been removed, others he deceived concerning the actual removal. In both groups the attempt to either stop or continue the symptoms by means of strong suggestion failed. Only the one fact stood out clearly, that whenever the pregnancy was interrupted vomiting actually ceased.

Many papers deal with the assumed deleterious influence of war conditions on other phases of pregnancy and labor. Notably German contributions, published early in the War, dwell upon the disastrous effect of malnutrition on the pregnant woman, entirely the result of the food blockade, which is rarely mentioned without the additional descriptive adjective "criminal." Reports, appearing later, sound less distressing. It has been mentioned in the foregoing survey of the eclampsia literature that after most exhaustive discussion of the question finally the reduction in the number of eclampsia, patients by some writers was ascribed to the practical impossibility of overeating. Loenne, in summarizing literature on the question, emphasizes that, contrary to earlier claims, the average duration of labor seems to have been shortened, possibly on account of better muscular development from enforced physical activity. This is particularly evident in the case of the old primiparæ, observed in increasing numbers since the beginning of the war. No change in the frequency of required instrumental deliveries, in maternal mortality or in the ratio of the sexes among the newborn can be demonstrated. He believes that the average of birth-weight has decreased, but in this point is emphatically contradicted by various investigators, e. g., Schmidt. Especially convincing in this respect are the figures of Peller and of Perles, both based on clinical material observed in Vienna, the city which suffered more from actual starvation than any other large city.

Identical results are recorded by Hofmann, who does not limit himself to the study of birth-weight, but also finds all the other characteristics of maturity uninfluenced. In conclusion, he points to the fact that this evident absence of any effect even of excessive undernourishment on the development of the fetus cannot properly be interpreted as conclusive proof of the uselessness of the Prochownik diet. Obviously a restricted war diet differs in many essentials from that outlined by Prochownik. A very valuable contribution on this particular subject comes from Zuntz. By carefully planned experiments on animals he proves anew that even excessive starvation during pregnancy reduces fetal weight only very slightly, but that it leaves entirely uninfluenced the calcium metabolism, which alone is the deciding factor in the possible value of the Prochownik diet for the purpose of avoiding a dystocia in certain cases.

Undernourishment and overexertion by a few writers are held responsible for the increase of abortions, rather generally noticed. Arguing against this theory, some authors are willing to concede that these two factors may have augmented the number of premature labors, and they interpret in this manner the suspected but not proved reduction in the average of birth-weight.

Mayer, a strong believer in the disturbing effect of severe emotions on all functional activities of the female genitalia, is satisfied that a psychic shock can be accepted as an entirely acceptable explanation of an abortion if no other cause is evident. To the same conclusion comes Ebeler in a rather indirect way. He feels that the statements of those of his patients who ascribed the spontaneous termination of the pregnancy to a definite emotional insult, in general, must have been correct, because these cases did not exhibit the high percentage of febrility characteristic of criminal abortions. In support of his views he quotes Baudeloque, who reported 92 abortions occurring apparently as the result of the explosion of a powder magazine.

The majority of writers, however, express their full agreement with Fehling, Bumm and others who have demonstrated beyond any reasonable doubt that the total of abortions during the war has been chiefly increased by the appalling frequency of criminal interference both in married and unmarried women. The possible, and indeed probable, relation of an increased number of abortions to the frightful spread of syphilis among all nations is extensively discussed in literature, but it is impossible to include references to this literature in this paper.

In a somewhat unique relation to changes brought on by the War stands a renewed interest in twilight sleep. Helene Stoecker, the leader of the feminist party in Germany, started a most successful agitation for the general employment of some form of anesthesia to render childbirth painless. Women, she claimed, weakened from malnutrition and overwork and unnerved by worry, anxiety and psychic shocks, are neither willing nor fit to stand the agonies of labor. They will have to be assured that they will be spared all suffering. The demand became urgent and universal enough to force German obstetricians to start once more to experiment with twilight sleep. The schematic administration of the scopolamin-morphin combination, as suggested by Siegel, is severely condemned, especially by Feldman and Gruenewald; also by Engelman, who feels that newer observations only confirm the experience of the past, that twilight sleep has its many disadvantages and is not a safe procedure except when practiced by experts in hospitals. This alone precludes the general adoption of the method as a routine procedure. Chloroform, carefully given in small doses, remains the only really practicable and entirely satisfactory form of pain relief during labor for common use.

But the vigorous support of obstetricians in Germany's active "Bevoelkerungspolitik," i. e., in the diversified and strenuous efforts of increasing her population, was not by any means limited to renewed attempts in relieving labor pains or to devising more extensive (and apparently very successful) welfare actions in the interest both of the pregnant woman and the newborn infant. Scores of papers, most of them thoroughly discussed before medical societies, and at least one large new book (by Winter, published by Urban & Schwarzenberg) deal exhaustively with the various conditions which might justify an artificial interruption of pregnancy. They cannot be quoted here in

detail, but the zealous attempt to confine medicinal abortions in future within decidedly narrower limits is most obvious. Similar restrictions are advocated by other writers in regard to tubal sterilization, an operation which nowadays too often is thoughtlessly added to other gynecologic operations simply because the patients are asking for it. From various sources most seriously the suggestion is made that proper legislation should make sterilizing operations and medicinal abortions illegal if not first sanctioned by a special commission. Another problem, which cannot fail to be interesting to American physicians, is the attempt started in various European countries to prohibit the sale of all preventives. Polano, after thorough personal investigation, is convinced that the most common and almost general method of prevention, practised both among the married and unmarried, is coitus reservatus. Therefore, he concludes, no good can come from the prohibition of the sale of preventives. It surely would not increase the number of births but very likely the number of venereal infections. Some of the articles sold for the purpose of preventing pregnancy probably more extensively are employed rather as a means of precluding the transmission of a venereal disease-a point worthy of most serious consideration.

Not all obstetric literature, however, deals exclusively with the problems of war. The Abderhalden reaction seems to be losing rapidly much of its former prestige. Frey in a very elaborate monograph states that so far about 200 investigators have contributed a total of about 300 papers to this subject, but that it is still impossible to pass definite judgment whether experimental and clinical experiences so far actually confirm Abderhalden's hypothetical assumptions. Of late many writers have asserted that his theory is incorrect and have denied to the method any practical value for diagnostic purposes. From his own very extensive investigations, given in detail, Frey concludes that (1) Abderhalden's dialization reaction cannot be regarded as a reliable diagnostic criterion for or against pregnancy; (2) the dialization method with the micro-N-determination under certain conditions proves useful in the diagnosis of pregnancy; and (3) the outcome of the reaction is too much dependent upon the temperature at which the serum had been kept up to the time of its use for the reaction. Bar and Ecalle maintain that the clinical benefit so far derived from the numerous and difficult researches in the problem of the serologic diagnosis of pregnancy is mediocre and entirely out of proportion to the efforts made. The various biologic diagnostic tests prove reliable and definite only so late in pregnancy that no complex reaction is any longer required. They consider Abderhalden's test among them as the least trustworthy. It may be mentioned in this connection that an Italian pediatrician, Caronia, records a positive Abderhalden in all newborn infants, at least up to the sixth day of life.

Werner reports satisfactory and encouraging results from the intravenous use of quinin as oxytocic. Following an earlier suggestion of Halban and Koehler he employed a 5 per cent. solution of the easily soluble quinin bihydrochlorid in distilled water which is sterilized by boiling. He injects 10 c.c. of the solution, i. e., one-half gram of the drug intravenously and shortly afterward the same amount intramuscularly. Fairly extensive experience prompts him to claim that while not clearly superior the method seems in no way inferior to pituitrin.

A new method of treating puerperal septicemia is advocated by Schaefer. In the treatment of streptococcic septicemia neither the antistreptoccic serum nor any of the colloidal silver salts proved of value. Also methylene blue, which had been tried for years, failed in cases of puerperal streptococcic sepsis. Most promising, however, are results obtained by him with a combined administration of the serum and methylene blue. He injects 50 to 60 c.c. of the serum into the thigh, followed in one or two hours by a subcutaneous injection of 0.05 gm. of methylene blue dissolved in 20 c.c. of warm normal salt solution. Under control of the blood for bacteria these injections are repeated daily for several days. Schaefer assumes that the streptococcic serum sensitizes the cocci in the blood against the effect of the methylene blue. The method fell short of expectations only in the cases of disintegration of septic venous thrombi and of general peritonitis. Benthin claims that in the

cases of puerperal and gynecologic peritonitis the new method of pouring ether into the peritonea] cavity proves equally as effective as it has been found during its extensive use in war surgery.

This survey of the obstetric literature of the past few years can be fittingly closed with a reference to most noteworthy work done in studying labor in roentgen-ray pictures.

Roentgenographic technic recently has advanced to such a degree that Warnekros, in a large atlas (published by J. F. Bergmann) and in several papers, is able to show the entire process of labor in a series of most remarkable, one might well say, of astonishing pictures. As the result of "direct observation" of the fetus within the uterus, Warnekros claims that the fetus during pregnancy is not in a forced attitude as usually taught. If there are no anomalies of the uterus or the fetus the latter holds his head not in a forced flexion but in a comfortable middle position. The curve of the fetal vertebral column adapts itself to the elliptoid shape of the uterine wall. Also the extremities are flexed only so far as the limited space requires. The fetus changes its position even late in pregnancy. In one instance the fetus was observed to turn completely around its long axis in the course of labor. The actual position of the fetal back is dependent upon the mother's stature and is influenced by the tonic condition of the uterine wall. With the beginning of the engagement of the head. no further flexion occurs. In breech presentation the effective transmission of the fundus pressure by the vertebral column to the presenting breech cannot be doubted any longer. It would be impossible to quote here further details of the many observations, recorded by Warnekros, especially in regard to various points in the mechanism of the second stage.

Of particular interest, however, is the radical change required in present views concerning the mechanism of the third stage of labor. The detachment of the placenta begins immediately after the expulsion of the fetus, sometimes in the center, sometimes at the edge. A very few contractions suffice to accomplish the complete loosening. We should not any longer speak of a Duncan or Schultze mode of detachment. The common inversion of the ovisac, usually designated the Schultze mode, actually occurs in the vagina.

One may feel some doubt whether these investigations by means of roentgenograms, so far obviously made only on a limited number of cases, have gone far enough to warrant Warnekros' far-reaching deductions. But any doubt is dispelled, if we see that Weibel arrives at the identical conclusions. He claims, and apparently must be conceded, priority in his attempts to photograph the placenta within the uterus. He was entirely successful in 28 cases and states positively, that the placenta, as a rule, is detached by the first two uterine contractions after expulsion of the fetus; that the placenta always passes through the internal os edgewise, and that, therefore, the mode of expulsion, Schultze (more properly termed Baudelocque) or Duncan, has absolutely no relation to the mode of detachment from the uterine wall.

It seems evident that a new, useful and reliable method now is available for studying and comprehending the mechanism of labor. Older views and theories, if not confirmed by such direct visual observations, will have to be discarded as obsolete.

In summarizing this review of obstetric literature of the years of war the statement seems well justified that obstetrics has not lagged behind surgery, epidemiology, pathology or any other branch of medicine in the advancement both of theoretical and practical knowledge.

BIBLIOGRAPHY

1. Bar et Ecalle: Arch. mens. d'Obst. et de Gyn., 1919, viii, 372.
2. Benthin: Zentralbl. f. Gyn., 1919, x1iii, 873.
3. Caronia: Jour. Am. Med. Assn., 1919, lxxii, 382.
4. Ebeler: Zentralbl. f. Gyn., 1916, xi, 15.
5. Engelmann: MiInchen. med. Wchnschr., 1919, 1xvi, 1138.
6. Fehling: Zentralbl. f. Gyn., 1918, x1ii, 937.

7. Feldmann: Zentralbl. f. Gyn., 1920, xliv, 74.
8. Franz: Zentralbl. f. Gyn., 1917, x1i, 480.
9. Frey: Arch. f. Gyn., 1919, ex, 103.
10. Gessner: Zentralbl. f. Gyn., 1919, x1iii, 1033.
11. Grosser: Arch. f. Gyn., 1919, cx, 297.
12. Gruenewald: MiInchen. med. Wchnschr., 1919, Ixvi, 1139.
13. Hofmann: Arch. f. Gyn., 1919, ex, 451.
14. Yirstein: Arch. f. Gyn., 1919, ex, 328.
15. Lichtenstein: Zentralbl. f. Gyn., 1917, x1i, 473; Zentralbl. f. Gyn., 1918, x1ii, 425.
16. Loenne: Monatschr. f. Geb. u. Gyn., 1918, x1viii, 9.
17. Mayer: Zentralbl. f. Gyn., 1916, A, 793; Zentralbl. f. Gyn., 1917, x1i, 569.
18. Nuernberger: Monatschr. f. Geb. u. Gyn., 1918, x1vii, 560.
19. Peller: Deutsch. med. Wchnschr., 1917, x1iii, 178.
20. Perles: Monatschr. f. Geb. u. Gyn., 1918, x1vii, 187.
21. Polano: Ztschr. f. Geb. u. Gyn., 1917, Ix:xix, 566.
22. Pryll: Mftnchen. med. Wchnschr., 1916, 1xiii, 1579; Ztschr. f. Geb. u. Gyn., 1917, lxxix, 523. Ruge: Monatschr. f. Geb. u. Gyn., 1918, x1vii, 37 and 494; Arch. f. Gyn., 1918, cix, 302; Zentralbl. f. Gyn., 1918, x1ii, 489.
23. Schaefer: Arch. f. Gyn., 1917, cvii, 109; Ztschr. f. Geb. u. Gyn., 1918, lxxx, 466.
24. Schickele: Arch. f. Gyn., 1917, cvii, 209.
25. Schmidt: Monatschr. f. Geb. u. Gyn., 1918, x1vii, 390.
26. Siegel: Deutsch. med. Wchnschr., 1915, x1i, 1251; Theorie der wiUk. lGeschlechsbestimmung, J. Springer, Berlin, 1918.
27. Sigwart: Zentralbl. f. Gyn., 1919, x1iii, 379.
28. Wamekros: ZentraJbl. f. Gyn., 1916, A, 897; Arch. f. Gyn., 1918, eix, 266; Ztschr. f. Geb. u. Gyn., 1918, lxxx, 719; Arch. f. Gyn., 1919, cx, 793.
29. Weibel: Arch. f. Gyn., 1919, cxi, 413.
30. Werner: Monatschr. f. Geb. u. Gyn., 1918, x1viii, 309.
31. Winter: Ztschr. f. Geb. u. Gyn., 1916, lxxviii, 366; Zentralbl. f.* Gyn., 1919, x1iii, 177.
32. Zangemeister: Ztschr. f. Geb. u. Gyn., 1917, lmdx, 124; Zentralbl. f. Gyn., 1918, x1ii, 153.
33. Zuntz: Arch. f. Gyn., 1919, ex, 244.

1920 – Obstetric Mortality in Massachusetts

Published Boston Med. Surg. J. Volume 183 (1920) p.338

A month ago the JOURNAL in an editorial article called attention to the increasing death rate in childbirth, to the increase in puerperal septicaemia, and expressed the opinion that the condition of obstetrics in the State should not be tolerated. Exception has been taken to this opinion. Exception has further been taken to the inclusion of statistics of 1918 because of the influenza epidemic of that year.

The JOURNAL does not question the obstetric skill of many physicians, but it does feel it a duty to lay before the medical profession again and in more detail the facts regarding the deaths due to pregnancy and childbirth throughout the State.

The annual average death rate from diseases of pregnancy and labor per 10,000 deliveries calculated on a three-year average is shown below. Alongside the figures for the State have been placed figures calculated on the same basis for the Boston Lying In Hospital Out-Patients. The steady increase for the State makes a very striking contrast to the decline for the patients of the Lying-In Hospital.

	Massachusetts	Out-Patient Dept., Boston Lying-in Hospital
1901-1903	38	16
1904-1906	42	19
1907-1909	45	8
1910-1912	49	8
1913-1915	51	4
1916-1917*	59	6

* Two years only.

That later statistics are not going to be better is indicated by the fact that the number of deaths of mothers per 10,000 births and still births in Boston was 63 in the first half of 1919 and was 88 in the first half of 1920. Among the out-patients of the Boston Lying-In Hospital in 1919 the death rate per 10,000 was eight (one in 1232 and that due to influenza).

These figures are laid before the medical profession. They are taken from the Report of Vital Statistics of Massachusetts for 1917, pp. 122-125, and from the reports of the Boston Lying-In Hospital. The late figures are from the Monthly Bulletin of the Health Department of Boston for June 1920. If they “contain an indictment of the whole medical profession” the JOURNAL agrees, that "it behooves those of the profession in any way interested to ask for an honest, impartial, and scientific inquiry into the condition of obstetric practice in Massachusetts." That was the purpose and aim of the first editorial article to which reference has been made. The JOURNAL is of the opinion still that the death of one mother in one hundred and fourteen in the city of Boston in the first half of the current year indicates a condition of obstetric practice which is intolerable. The facts are available to the public: can the medical profession afford to ignore them?

1920 – Maternal/Infant Welfare Centers - Boston

THE ESTABLISHMENT OF MATERNITY AND INFANT WELFARE CENTERS

Published: Boston Med. Surg. J. Volume 183 (1920) p. 268-269

Throughout the country, considerable interest is being manifested by communities in the establishment of some form of child-health supervision and maternity care. In many instances investigations have been conducted by the co6perative efforts of the Public Health Service and State boards of health and maintained at local expense. Some communities have employed public health nurses for carrying on child-welfare work; others have organized maternity and baby health, centers. As the extent to which this work is organized depends not only upon the resources of communities but also on public-health education, it may be useful to call attention to abstracts, published in a recent Public Health Report, from a memorandum issued by the British Ministry of Health in regard to maternity and infant welfare centers.

The primary purpose of the infant welfare center is in the main educational; mothers are given advice and instruction in the care and management, feeding and clothing of infants and children under school age. Each mother should be interviewed individually at the time of consultation by some competent member of the teaching center. This can be followed up by collective teaching by demonstrations and health talks to groups of mothers. Women pregnant for the first time often need special classes for instruction in the most elementary hygienic principles. Other classes in sewing, home nursing, infant care, personal hygiene, cooking, and first aid can be made both helpful and interesting.

In order that the infantile welfare centers may be easily accessible to mothers, the density of the population should be estimated and the districts made as compact as possible. It is probable that a center cannot adequately take care of an area larger than one in which about four hundred births occur annually and the daily average attendance is not above thirty or forty. Every child attending the center should be seen by the medical officer at certain intervals: children under six months of age at least once a month, and older children less frequently. Home visiting by a public health nurse affiliated with the center is important in following up the work of the center and in securing regular attendance. There should be included in the medical staff one or more physicians skilled in the diagnosis of children's diseases and in the nursing staff one or more public health nurses trained in child supervision, whose duty it shall be to assist the physician, weigh and measure children, assist mothers in preparation for examination by the physicians, and visit the homes of the mothers.
Each infant welfare center should be equipped with a waiting room, which may be used for classes, a weighing room, a consultation room for the use of the physician, and adequate sanitary arrangements. As, a general rule, except for minor ailments, treatment should not be given at the center but at some hospital or out-patient clinic with which special arrangements may be made. The British plan of linking several welfare centers with one center devoted solely to treatment has been found practical in that country and might be followed here. It would be well for infants under six months to, be weighed every week, for those between six months and a year, once every two weeks, and for older children to be weighed at intervals varying from one to three months. The interest of mothers is increased and their attendance seems to be improved by the distribution of weighing cards on which the weights of the children are recorded regularly. Wherever it is possible to do so, milk should be sold to mothers at a cost slightly under retail price, and given free of charge to those unable to pay for it. If the funds of the center are sufficient to allow it, there may be provided a few beds so that premature infants and poorly nourished children may be cared for under scientific supervision.

Mothers seem to appreciate less the value of medical supervision during pregnancy than the care of their infants after they are born. It is the function of the maternity center, therefore, to gain the interest and confidence of the mother and advise her in regard to conditions directly associated with pregnancy and with ailments which indirectly affect her physical welfare and that of her child. The center should be made attractive as well as useful and the competent aid secured of physicians and midwives, public health nurses, and other agencies. In promoting the work of the center, the mothers themselves may often assist by helping to educate the public to an appreciation of the value of the services which i the center is prepared to give. The maternity center should be provided with suitable rooms for waiting, dressing, and consultation, and a special gynecological chair, couch, or table. There should be also adequate facilities for the testing of urine and, if possible, provision for the examination of pregnant women suspected of having tuberculosis. The work of the maternity center should include consultation by a qualified physician, home visiting, educational classes in the hygiene of pregnancy, the provision of milk or food in cases where it is needed, dental treatment, arrangements with state and municipal laboratories for microscopic and serologic diagnosis in cases of suspected venereal disease, and provision whereby complicated cases may be eared for at some lying-in institution.

The value of the infant welfare and maternity centers has been demonstrated in many communities. There still exists a need for considerable enlightenment on the part of the public before the benefits of this work can be fully appreciated and adequately extended.

1920 - Maternity Aid - Boston

Published Boston Med. Surg. J. Volume 183 (1920) p. 690-692

The physicians of Worcester North District, through A. H. Quessy, M.D., present the following brief to the Senate Ways and Means Committee: Mr. President and Members of the Committee: You have listened to the proponents of the Maternity Aid bills, and have heard them speak of the machinery they wish to create to give prenatal and postnatal care. You have been told with what paternal care the State Department of Health is willing to take it under its wing. Some have told you that it would cost the State the ridiculous amount of two hundred thousand dollars; others have admitted it would more probably cost at least two millions. The most important wheels of all this proposed new machinery are the physicians of this Commonwealth, the men upon whom you must depend, otherwise these bills would be useless. What do the physicians of this Commonwealth think about these bills? Have they been consulted? No. It is safe to say that not 50 per cent of the physicians have an intelligent knowledge of these bills, and the reason is obvious because these bills have not generally been put before them for consideration. I have been delegated by the physicians of the Worcester North Medical District, and the physicians of the Fitchburg Medical Society, to appear before you and tell you what they think of these bills. I have been instructed to voice their unanimous opposition.

It seems necessary at this time to correct a wrong impression which may have had some weight before the Joint Committee at previous hearings, when it was said that the Massachusetts Medical Society and its 3800 physicians were in favor of these bills. This is not so. The Legislative Committee of the Massachusetts Medical Society, we are told, endorsed these bills, but they did so without referring the question to the different districts. The Worcester North District, after careful study, opposes these bills; so does the Bristol South District, and the Franklin District, and I have no doubt other districts would also oppose them. Therefore, when a speaker before the Joint Committee said he represented the 3800 physicians, members of the Massachusetts Medical Society, all in favor of the bills, that statement could not have been correct.

We ask, from what source or sources comes the demand for Maternity Aid? Are the physicians asking for it? No. To properly administer prenatal and postnatal care under State control it would be necessary to establish a department and sub-departments with high salaried officers and sub-officers, and we can understand why some specializing in obstetrics might favor these bills. We also believe it would be more fitting for the State Department of Health to be in a receptive mood rather than advocate these bills before the legislative committees. Is the demand for maternity aid statewide? No. Is organized capital demanding it? No. Are organized and non-organized labor voicing the expression of the rank and file for it? A few; not many. Is it the women with the large families, the real producers who seek it; or rather, is it the childless or the unmarried women who, instead of reproducing, feel that they must devote all of their time and energy to their poor unfortunate sisters who are doing their bit to increase the population of American citizens? These bills come from an erroneous idea in the mind of some people, based upon questionable statistics, that the health of the American nation had gone far below the universal standard, and that prenatal and postnatal care is the sole panacea for all our evils. We are sick and tired of social reforms which are constantly being foisted on us to cure us of what ails us, when nothing at all out of the ordinary is the matter with us.

We are told that it is a health measure; that this legislation, if passed, will reduce defective population, lessen need for state care of the insane, the half-witted, the indigent, the tubercular, the blind, the alcoholic, the criminal, the drug-ridden, and all the others of the fifty-seven varieties. What a dream! We were made right, but we have not kept ourselves right. Generations and generations of wrong living, bad habits, and what not have brought upon us the above conditions. Women and men

as well have degenerated from the high standard of physical perfection which God gave us when he first made man. Why place the blame upon the few months that precede or follow our birth? Do the proponents of these bills propose to undo, by prenatal and postnatal care, what have been brought upon us by years and years of wrong living? It is well to seek remedies for the above evils, but it is ridiculous to say that prenatal and postnatal care is the cure. If the proponents of these bills are really in earnest in their endeavors to better the human race, the expectant mother and the offspring, I would suggest that they devote the same amount of energy in advocating more religion, better morals, better habits, better protection, by right dressing, better living and working conditions, less dancing, less theatres, more fresh air, less burning of the midnight oil, and many other things too numerous to mention. The results obtained would fade into insignificance the prenatal and postnatal proposition.

These bills are not wholly health measures. Germany had such laws, and to what did they lead? Germany adopted, years ago, those and other such laws, that she might produce a superman. Did she produce one? America has never had such laws. Was the American fighter inferior to the German soldier? The health and physical condition of the American people can well compare with that of any other nation; there are defects in all of them. Australia has prenatal and postnatal care and it is admittedly a failure. Germany with her prenatal and postnatal laws, and all her other social laws, did not produce a superman; she did produce a machine man, a man, State controlled; the State looked after the pedigree of his birth, controlled his education, regulated his habits, suggested his thoughts, etc., but he had no individuality. His health was not superior. While the German machine was winning, the German superman was at his best; when the machine began to lose, the superman went to pieces. Having no individuality of his own, he had cultivated no thoughts of his own his courage was gone; he had no initiative of his own. The superman has proved himself to be the inferior man. These measures are essentially socialistic in tendency, as they are in Germany, and we don't want Socialism parading in this Commonwealth under the guise of health measures.

These bills are coming up at a very inopportune time; a feeling of unrest and dissatisfaction exists in our land. Our Government was founded upon true Democracy, guaranteeing to every man his rights and privileges. We have grown to be a great nation, our institutions have flourished, industry has prospered, labor conditions and wages are the best in the world. America has been a Heaven to the emigrant; our social and economic conditions have been inviting to all. And yet, some people are dissatisfied. And is it surprising when some faddists and social reformers suddenly discover that everything is wrong and must be reformed? Our system of education is said to be wrong and must be reformed and State controlled. Our habits and appetites seem to have been in need of State and National control, etc.; we have not even been born right in the past, and in the future, the State must see to it that the child receives a better and more scientific birth. Probably, also, the necessity for birth control by the State may develop in the fertile mind of some reformer. Our great Democracy is slowly giving way to Autocracy; individual rights are slowly but surely being sacrificed by such pieces of legislation and similar law, and we are plunging head first into Autocracy or State control. The State is not supreme; the individual is supreme; that is true Democracy. The individual existed before the State. The Pilgrim Fathers came here to enjoy rights and privileges which Autocracy denied them across the sea. They established a form of government--Democracy-- to guarantee the rights and privileges they sought; thus the State was created for the individual. We have been living under this same form of government happily and contentedly.

Recently our country went to war; our soldier boys faced death that Autocracy should perish and. Democracy should endure. Was the war we fought an unjust one ? Can it be that we were wrong in fighting for Democracy in the face of so many late attempts to introduce Antocracy? Control by the individual is Democracy; control by the state is Autocracy, or, in other words, Socialism. These bills lead to control by the State, or Socialism; Socialism leads to Bolshevism;

Bolshevism leads to Anarchy. We therefore oppose them because they lead the way to Socialism and because they are radically wrong.

Physicians have been told that such legislation must go through and that it were better to steer it than oppose it. The physicians of Worcester North District believe that the senators and representatives of the State of Massachusetts are willing to listen to an honest expression of opinion from the individuals who will be most affected by these bills. We don't want to steer them, even to have them amended. We oppose them *in toto* because they are radically and wholly wrong and cannot be partially right.

We oppose them because they are a step towards State control of the practice of medicine. They are a cat in a bag. You are asked to pass these bills which are not at all specific. The proponents cannot tell you how much it will cost to administer these laws, they cannot point to good results obtained in any country, they cannot specify in what way they propose to employ physicians, nor what remuneration they intend to give them for their services. They cannot specify in what adequate way they intend to give nursing and expert prenatal care, or nursing and hospital care at the time of confinement; yet, all these things are called for but not specified in the bills. They tell you the modified bill does not propose to give pay for medical services, and yet in Section 4 of Senate bill No. 506 we read: "The recipient of maternity care under this act, if remaining at home, shall be allowed in all cases to choose her own physician, subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the said department governing this act." By what authority, then, shall the state allow a Woman to choose her own physician if the State is not paying for it? The interpretation of Section 4 leads us to believe that the State does intend to pay the physician, to allow the woman to choose her own physician, and that the physician must first accept the fee schedule, and all the rules and regulations which it is proposed to establish. Is not this controlling the practice of obstetrics? These rules and regulations are to be made at some future time by the State Department of Health, whose duty it shall be to thus control the practice of obstetrics. We therefore oppose these bills, because they are an entering wedge to State control of the practice of medicine.

We oppose them because they cast reflection upon the competency of the medical profession. The State Board of Registration in Medicine has passed upon the qualifications of every physician in this State, and has issued certificates and permits to practise medicine, obstetrics included; that ought to be sufficient. The bills establish another Board of Registration in the Department of Health. If there is anything wrong in the present system and arrangement of things, let the Board of Registration in Medicine see to it; that's what it was created for. Each department has enough of its own business to attend to without trespassing upon the duties of others. The place for a physician to train and qualify is in a medical school, not in the State Department of Health.

We oppose these bills because they are unnecessary. We have, at present, laws on our statute books. What is needed is to work out these laws to their fullest extent, then if they are not sufficient, amend them or make new ones. The State Department of Health has never been given more than advisory power; we have no objection to have that same power continued. The force of law has always been invested in the local departments of health; that is home rule, and we trust that it shall prevail. The very things sought for are now in a measure being accomplished. Physicians, under the law, report all births as they occur; the local Board of Health then sends a visiting nurse or the district nurse to follow up the case and help the physician to give postnatal care. This costs the State not one penny. It would be an easy matter to extend the work and make it even more effective under the same mode of procedure. Expectant mothers engage their physicians several months in advance; the attending physician is thereby in a position to give advice and prenatal care, examine urines, prevent complications, such as eclampsia, etc. Here again it would be an easy matter for the physician, in conjunction with the local board of health and the visiting nurse, to extend the work, the advisory function of the State Department of Health would find a very useful and broad field of endeavors. Thus we oppose

these bills because they are unnecessary and because the same results can be obtained without cost to the Commonwealth.

We oppose them because of the enormous financial burden upon the taxpayers of this Commonwealth; the price would be astounding and prohibitive. Just think of it, a very conservative amount for prenatal and postnatal care would be at least two million dollars, and that alone is the cost price of the newly born. After the State has bought and paid for the child, we suppose, if the State is consistent, it would then be found necessary to give it an education and physical training under State control at a few million more. When the child is grown to adult life, the State again must consistently finance the control of its health and working efficiency, and when old age has brought to an end his useful career, an old-age pension would be the next thing on the program; add several millions more. Death would come as a fitting climax, and the least that could be done would be to give him a decent burial. All told, it's a simple problem of mathematics; if it costs two million for the birth of the State's children, how much would it cost by the time they were brought up and then dead and buried? The answer would be, millions and millions. Can the State afford it? No. Taxpayers could well object with righteous indignation.

One argument advanced by the proponents is based upon that contention that His Excellency the Governor favors these bills. Is it possible that His Excellency has given all due consideration to the pros and cons concerning this matter before making a recommendation? We doubt if His Excellency, realizing that these bills are filled with inflated ideas, that they are socialistic, that they are unnecessary, and that the cost would be ruinous to the State, we doubt if he would still desire to advocate them. If the object of all this philanthropic chatter is to give financial aid by the State to the poor and needy expectant mother, why not say so in plain words, and legislate accordingly? No one would object to that. Time and again physicians have given their services gratuitously in such cases. We believe it is unwise to force legislation by insinuation or by passing the buck to the Governor of this Commonwealth.

No trade or profession can claim more self abnegation than the medical profession. Physicians are far from being selfish. Day and night, they administer to the needs of the sick; the poor have always found the doctors their friends. The doctors have voluntarily cooperated in all measures which would really improve the general health and reduce accidents, knowing fully well that by so doing they were reducing their own source of revenue. They subscribe to preventive medicine; they believe in it for the sake of humanity, but when it comes to handing over the practice of medicine to State control, the physicians of Worcester North District most strongly object.

PHYSICIANS OF WORCESTER NORTH DISTRICT, AND of FITCHBURG MEDICAL SOCIETY. By A. H. QUESSEY, M.D.

1921 - Unsolved problems in gynecology and obstetrics – Blair Bell - England

By W. BLAIR BELL, M.D. (LOND.)
Liverpool, England

(By Invitation)

TAGS Vol 46 (1921) p. 142-152

Today gynecology and obstetrics stand high among the developments of surgery along scientific and specialized lines; yet, the more I think of this, the greater is my wonderment that it should be so. It seems such a short while since our specialties were struggling towards the light.

When, therefore, I received your invitation to read a paper before this learned society it occurred to me that it might not be inappropriate if I were to consider for a few moments the principal avenue through which approach may be made to the secrets still hidden from us and the personnel and equipment required for the task.

I do not think there can be any doubt that the collective status of the gynecologists and obstetricians of the world in regard to clinical acumen and surgical technique is nearing the limit which must be set to human achievement, and that the same will soon obtain in regard to the bacteriological aspects of our special subjects. But in contradistinction to this must be placed the unsatisfactory character of our advancement, the slow progress we are making, in the more essentially biological, including biochemical, problems, connected not only with the normal morphology and physiology of the female genitalia, but also with the pathological developments that may be associated with, the structure and function of the reproductive organs. Concerning the actual details of these problems I shall have but little to say, except by way of illustration.

First, let me consider how far our present methods of education are conducive to the correct mental attitude of the future investigator whether they are methods that stimulate the powers of perception and make every student an interested observer from the beginning.

It is a curious commentary on the value of the allied sciences to the surgeon of today, that there is a growing tendency -at any rate in my own country- to minimize the importance of biology and to urge the superior -I might almost say 'exclusive'- claims of the final hospital study; and this attitude is not confined to the student. This seems to me unfortunate, for it means that we are catering entirely for men of moderate intelligence and not at all for those on whom may fall the responsibility of sustaining progress in our science. As a result of our existing methods, the clinical aspects of gynecology and obstetrics have been thoroughly illuminated, as I have said, while the more abstruse biological features are but very imperfectly understood and their claims hardly realized. It may be argued that there are many expert physiologists, biochemists and comparative anatomists, and this is true, but alone they cannot help us because they do not yet know our difficulties, neither have they the clinical nor technical knowledge with which to guide their steps. Up to the present the teaching of elementary gynecological anatomy and physiology has been conducted by the clinical instructor, because these subjects have been almost invariably ignored by the physiologist and anatomist. This means, generally speaking, that expert physiologists and anatomists have remained in more or less complete ignorance of these matters, and are, therefore, even now unaware of the hiatuses in our knowledge. There can be no doubt, I think, that the man who continually has to face difficulties in practice is the one most likely to find the means of circumventing them, provided he have sufficient all-round knowledge and adequate facilities for his task. It is only natural, however, that each should turn his attention to those matters concerning which he is best informed. It is obvious, therefore, that if the many biological problems connected with gynecology and obstetrics, which so far have baffled us, are to be elucidated, we must modify

the general plan of education in regard to those who may perchance attempt to throw light on what is now obscure and indistinct.

In attempting to indicate the direction in which improvement may be made, I shall doubtless merely give verbal form to what must already have taken shape in the minds of many.

In our educational methods, we are too apt, I think, to set store on detail. We should, I believe, aim at encouraging a comprehensive and inclusive outlook. We destroy originality by overloading the young mind with so-called facts which often are the easily deducible results of observation. Again, it seems to me that the different subjects of the general curriculum are taught in too disjointed and exclusive a manner. As gynecologists and obstetricians we should have the right -and the same applies to teachers in the other branches of final medical study- of defining the subject-matter of the physiological and anatomical courses. The anatomist should be required to demonstrate and to teach comparative and human anatomy on the lines we desire, and the physiologist should be obliged to lead, by experiment and demonstration in the laboratory, more directly to what will be taught later in regard to the human subject. There must, in fact, be more co6rdination throughout. It would be better, for instance, if the key-subject, biology, were taught in such a way as to make the student realize that in it Man is included in a wide generalization with the lower animals, and that Man is but the evolutionary physiological and morphological climax. The student should be more definitely impressed with the knowledge that in his biological and biochemical studies he is watching the evolution of Man, that he is following the simple to the complex, and that what may be normal at one stage is pathologic in a higher state of evolution -that hermaphroditism, for example, is normal in the earthworm but abnormal in Man. If the student could be imbued with some conception of the ultimate value of all his biological work, and could be taught not to look upon it as a separate and isolated obstacle to arrest his onward course, not only would his hospital studies be more interesting and more relatively important, but also his mental attitude and outlook would be as much fitted for the investigation of biological as for the study of purely clinical problems.

The present trend, then, of medical education in Great Britain has been towards the production of good clinicians, rather than of men with their minds alive to the biological, morphological and physiological, including biochemical, import of the phenomena they observe. I often wonder how far this question has been realized in America this training of the student towards a wider scientific mentality. In Great Britain, where general practitioners are now being urged to cooperate in an investigation concerning the beginnings of disease, it is clear that there is a need of reform in our methods of education if we are to expect results on the lines I have indicated.

Supposing, however, that the student has been educated on these principles, in what circumstances and in what environment will he find inspiration and obtain the best results?

The establishment and success of clinical units and of units for group-study in North America and Canada may provide the answer. Their foundation is, of course, open to the interpretation that these systems have been brought into existence because the brain of the average intelligent man is incapable of grasping and understanding all the side-issues that go to make up the sum of medical knowledge; and I have heard it stated by an advocate of them that this is their *raison d'être*. Moreover, it is said that only in them can material properly be utilized and the one-line worker find an immediate use for his output. While the last part of this statement is true, I cannot agree entirely with the first. A properly educated man of wide perception is not necessarily a man of encyclopedic knowledge, but, rather, one whose mind is so saturated with basic principles that the mosaic of detail falls into an orderly pattern under the influence of his prescient intelligence. A man with the index type of mind is rarely original, and is not, therefore, necessarily worthy of encouragement. I have already referred to this in regard to the education of the student. Hunters and Pasteurs are, of course, born, not made, but I believe that useful imitations can be developed by proper education and training, -imitations good enough, in the helpful environment of which I have just spoken, to obtain results. Because the great biological and medical discoveries in the past have emanated from the

brains of men ploughing a lonely furrow, there is no inherent reason why men of similar intellect should not again arise and in the more perfect environment that can be assured today unravel the outstanding questions. Meanwhile it should be possible now for men of lesser ability with proper education and in a helpful environment to surmount difficulties which the master-minds of the past, with their more limited opportunities, could not overcome.

I would once more urge the importance, so well recognized in this country, of clinical work going hand in hand with scientific laboratory investigations. You have many wise foundations for this purpose, whereas we are sadly handicapped for want of them. In this continent there I is offered to the well-educated man every opportunity for attacking these problems at a living wage; but in Great Britain we cannot always secure the best men for the service of science, for we are unable to offer them a reasonable financial reward, a reward in any way commensurate with that to be obtained from practice. This is a matter that is exercising us greatly, for times are changing, and while clinical matters are so well established that they can take care of themselves, there is urgent need that further progress, which, as I have stated, is largely biological, should not be crippled and hampered for want of proper organization in teaching and postgraduate research.

If, then, the last ramparts of gynecological and obstetrical diseases are to be captured we must modify to some extent our methods of education and we must bring correlation, breadth, and inspiration into the musty empiricism of the preliminary studies. I know the curriculum is overcrowded, but it is mostly with what could well be spared. We must, also, encourage scientific enterprise, and, after educating our students for their lifework, give them the opportunity of utilizing their talents and of advancing the science of obstetrics and gynecology.

I shall now endeavour briefly to substantiate my statement that the great outstanding problems in gynecology and obstetrics are biological in the narrowest sense of the word.

MORPHOLOGICAL PROBLEMS

The development of the human ovary can now be described with a considerable degree of certainty, but the same cannot be said in regard to that of the genital passages. To what factors, for instance, is due the fusion of the Müllerian ducts in the genital cord? This is of considerable importance in connection with the common so-called malformations of the uterus and vagina. Professor Wood Jones, who has done so much excellent work on the comparative anatomy of the genital organs, believes that we should look upon these conditions of imperfect union as atavisms rather than malformations; and in this light the comparative anatomy of the genitalia becomes both interesting and instructive. Indeed, it is from this point of view alone that information can be obtained. If serial sections be cut of the divided and uniting uterine horns in various species of rodentia and carnivora, all the later stages in the development of the human uterus may be seen. Moreover, it will be made clear that the human uterus has morphologically but two muscular coats, not three, as usually described. Nevertheless, we do not yet know what determines the final development of the human uterus, and we can hardly expect to know until we have decided definitely what are the variations in the factors that lead to the different degrees of Müllerian union that are normal, constant phenomena in closely related animals. In rodentia there may be seen the complete didelphic condition with double vagina (viscacha) and the gradual evolution to the single vagina and bicornute uterus (aguti).

Again, can the peritoneal pouch that encloses the ovarian extremity of the tube and ovary itself, a structure seen in certain rodents, and, as I have found in a less complete form in hedgehogs, be passed over as a freak structure, in spite of the fact that, as Bland-Sutton has shown, it may exist as an atavism in woman? It seems to me that a structure so useful to fertilization and conception is worthy of serious study, especially from the point of view of the state of peritoneal currents and

other influences in the creatures concerned. An investigation concerning the nature of the secretion of these sacs would also be of considerable interest.

Let me take another matter which, possibly, is of more clinical importance. How far are we familiar with the causes of the irregularities in the female bony pelvis, apart from those resulting from gross postnatal disease, such as rickets? We talk about civilization, athletics and the rest, but what causes a generally contracted pelvis in a well-developed non-rachitic woman who has been guilty of none of the enterprises that militate against functional perfection.

The work of Whitridge Williams and others has demonstrated beyond reasonable doubt that the typical funnel-shaped pelvis is associated with high assimilation, but I do not think the cause of high assimilation is definitely known. Such an important matter, especially in this country, is deserving of extensive systematic investigation. Comparative racial studies, in which different races were examined in their natural environments, might throw considerable light on this and on other pelvic abnormalities, for there can be no doubt that civilization may greatly affect structure as well as function.

As a last morphological point of interest, albeit there are many others, let me say that I look forward to the day when some gynecologist or obstetrician will give us the clue to the mode of origin of pathological neoplasms. After all, the gynecologist and obstetrician has, time and again, given a lead to the rest of the profession, and in the problem to which I refer he is on his own ground, for his work is chiefly concerned with the preservation of the structures and functions through the medium of which neoplastic developments normally occur.

PHYSIOLOGICAL PROBLEMS

It is within the last twenty years that practically all the recognized facts concerning the female functions have been discovered. We now know, if I may quote one of my own aphorisms, that a woman is a woman on account of all her internal secretions, and not only because she possesses ovaries. But we still lack certain evidence as to the nature of the controlling force that determines the primary sex-characteristics of the person concerned; nor do we know how it comes about that even in the course of development a conjunction of sex characteristics may occur -a condition of hermaphroditism. Even if it be that the masculinity or femininity balance of the internal secretions is disturbed, this is still an effect, not a cause. That this fascinating and intricate problem is capable of solution I am convinced. It may well be the life-work of some one capable of estimating the gradual changes through the numerous classes of creatures that indicate the evolutionary origin of Man, of some comparative morphologist with all the histological technique of the present at his disposal on which to graft new methods of observation; and then, when the gross serial steps have been demonstrated, he may perchance gain an inkling of that on which they depend -an inkling of the forces which imbue the fertilized ovum of Man with maleness and femaleness.

There are few, surely, who cannot recognize today the vast importance of femaleness as opposed to maleness, and few, too, who are not conversant with the essential physiological, that is to say, biochemical, differences that influence the mind and body.

We have, too, some knowledge of what constitutes puberty. It is, we believe, the time of life when the metabolism has met the claims of somatic growth. The potentiality of a girl's metabolic resources, especially in regard to the calcium salts, at this time is such that it can support the strain of reproduction and all that this involves. But we do not know what happens at puberty to start the new train of events. What is the hormone that makes the ovary aware of the situation; is it then that the genital functions of the ductless glands come into being, and, if so, what leads to this awakening? That it is not a habit of life is too obvious to need discussion: it is due, rather, to a series of chemical events closely connected, as I believe with the calcium metabolism that may be altered and delayed by many circumstances of nutrition and environment.

Then again, have we established without the possibility of fallacy the nature of menstruation? My view that it is an excretory process in regard to the principal elements required during pregnancy for the building up of the fetus, and during lactation for the formation of milk, as is made evident by the calcium metabolism, requires full confirmation and elaboration in regard to the exact part played by the ovaries and other internal secretions.

To pass on, I would ask whether there is general agreement concerning the factors involved in the production of the climacteric? I myself, for instance, disagree with those who think that the normal menopause is the result of primary ovarian atrophy, although many of the phenomena of the menopause are due to this change. The fact that the artificial menopause is produced by o8phorectomy has been a blind to all of us. If the ovaries are removed from a young woman with protracted amenorrhea and ovarian insufficiency, menopausal symptoms do not supervene. The artificial menopause is induced only when there has been preexisting ovarian activity. At the commencement of the normal menopause the ovaries are normal and active; indeed, at the end of that phenomenon the woman may be capable of conception. Why it is that ovarian substance or extract of any kind, and in any combination whatever and however administered, does not produce specific results at the physiological menopause, whereas whole gland ovarian substance, especially in association with thyroid substance, gives relief in cases in which the menopause has been induced by operative procedures? There are some, I know, who will dispute this; but I believe the facts, as I have stated them, to be true. From this jumble -shall I say? -of observations, it appears justifiable to ask you to consider as a working hypothesis for further investigations the view that there is at the climacteric some substance circulating in the blood, some natural biochemical toxin, or something withdrawn from it, which leads riot only to ovarian atrophy but also to the other physiological and structural alterations that take place at the 'change of life.'

Another group of important correlated functions about which we know but little is that concerned with fertilization and conception. I think that light will soon be shed on that curious anomaly I call ‘selective sterility’. In view of recent additions to our knowledge in regard to the incompatibility of the blood of persons in different groups, it is not unlikely that selective sterility, as well as successful homoplastic, as opposed to autoplastic, ovarian grafting, will be found to depend on a similar phenomenon. I have observed, however, that a difference in the blood-grouping of married couples has no direct relation to the possibility, or otherwise, of conception.

Again, the normal interrelations that exist between the mother and the fetus in utero have been studied to some purpose; but we are still ignorant of the way in which the growing embryo controls the development of the chorionic epithelium that sometimes takes on such disastrous activity when the control is removed.

I do not think the theory that in such circumstances there is lutein over-growth is sufficient, for it is common to see vesicular mole and chorionepithelioma without abnormal lutein development.

Moreover, how little we know concerning the toxemias of pregnancy! Before we can arrive at any proper idea of the disturbance produced, we must know far more intimately the normal metabolic mechanism concerned and the maternal forces that are marshaled against the deleterious effects produced by what is, after all, a new growth in the uterus. If the recent work of Dold and Obata concerning eclampsia be correct, as seems possible, we shall be placed in possession of very interesting information concerning a biological phenomenon of vast importance, for I do not doubt that, if it be fully confirmed, we shall be able to test the blood of every pregnant woman before so serious a condition as eclampsia supervenes and to treat her with normal human serum. I have myself seen excellent results with blood-transfusion.

Although hundreds of thousands of human beings are expelled from the uterus daily, we have but a faint glimmering of the biochemical factors leading to the termination of parturition. Is it a gradual or sudden increase in the infundibulin content of the blood? And what of lactation? Is the

mechanism of the simple nature I have described in the 'Sex Complex'? If so, we are little in advance of the ancients who, owing to their powers of perception, have always been worthy of consideration in matters of priority.

Such gynecological and obstetrical problems seem to me almost infinite when I let my mind wander around the outposts of our small impregnable position of certain knowledge. I have, however, today the desire to emphasize not only the importance of these unsolved problems, which we all admit, but also the essential biological nature of them. I have attempted, too, to show that our education tends to drive us forward almost entirely along the deeply trodden paths rather than along those barely to be seen or yet uncut through virgin country. I would plead, therefore, that our students and our postgraduates be more broadly educated at least in the great principles of biology, for I believe that only by way of physiological, especially biochemical, research, and by the comparative study of simpler forms of structure shall we be able to bring our art towards scientific perfection.

DISCUSSION

DR. WILLIAM E. STUDDIFORD, NEW YORK CITY. -I feel that Dr. Bell has brought before us some very large problems which we are as yet unprepared to solve. I quite agree with him that it is necessary to broaden the lines along which we teach our students; that their curriculum is already overloaded, and that there is necessity not only for increasing our clinical facilities, but of combining the clinical with the laboratory facilities. I believe that our teaching is largely developed along two distinct lines. The laboratory men have built up their own, special branches, but there has been a tendency for the laboratory men to get away a little bit from the clinical side. It is the same way with the clinician. While clinicians have utilized the laboratory facilities, they have not always been in distinct harmony, and in the last two years, and especially since the war, there has been a tendency to break down the barriers that have existed between the laboratory and clinical side of medicine. There has also been a tendency to develop "group medicine. "

Let us consider some of our obstetric problems. Take the question of eclampsia. It is not a simple problem for the obstetrician. It is a problem in which the internist, the laboratory man, the physiologist, the biochemist, are all interested, and unless we can get a group of men who are proficient in these various lines of working on the problem the solution seems as far distant as it has been in the past; but if we can combine these sources of information, our efforts may result in a ,solution. It is the same way with regard to many other gynecologic problems. The question of the development of fibroids is not only one for 'the gynecologist but for the physiologist, the pathologist, and the histologist. All these men should be interested, and it will be necessary to get such a group on the obstetrical service and on the gynecologic service if we are to eventually solve certain problems.

I was very glad to hear Dr. Bell speak of the necessity of having departments of anatomy teach anatomy along special lines. That is an effort I have been making in the last few years, and it has been of great help to the students to get the anatomic department to take up the subject of pelvic anatomy from a gynecologic and obstetric point of view, and not simply teach it as in the old textbooks. The same applies to comparative anatomy, the study of the development of tl~e ovum being combined with the department of biology, utilizing such lectures and ,such teaching with special reference to obstetrics at the time the student reaches that point.

During the past year the department of biology took our students and elaborated on the previous lectures that had been given in the first two years, and when the class started their obstetrics they elaborated their previous lectures from a distinctly obstetric point of view. In is only by combining our various departments, and getting them interested in our problems that a solution seems possible.

DR. EDWARD A. SCHUMANN, PHILADELPHIA, PENNSYLVANIA. -To those of us who live in the atmosphere of the biologic concept of medical problems, Dr. Bell's paper comes as water upon parched soil.

In Philadelphia, under the wise direction of Dr. Charles P. Penrose, we have attempted in a feeble way to solve some of these problems. At the Zoological Gardens in our city, which happens to be one of the larger ones of the country, there is a museum of comparative anatomy, with a paid pathologist and the requisite technicians and assistants. This pathologist has added to the staff of the Zoological Gardens a so-called consulting staff. He has a consulting neurologist, a. man who is engaged in the active practice of neurology, a consulting internist, a man in the active practice of internal medicine, a consulting gynecologist and obstetrician. Every animal in that garden which dies is subjected to a most careful postmortem examination, and it is the duty of the staff member along the line of the particular specialty involved to examine and report upon the organs of the animal as they are removed. Furthermore, there are conferences held at the Pathological Society, and those of us who are interested in biology attend the autopsy work in the Garden. Each year aai annual report is published which includes the discussions of the various specialists upon the comparative anatomy and pathology of the specific group or set of organs. We not only note- differences between groups of animals, but we observe what might be called the generic characteristics of the Various species of animals, and it is the duty of the members of that consulting staff to publish their results from time to time. This work has not yielded as yet very much in the way of results, but we hope for development in the future, and we hope to elicit the interest and influence of a larger body of the medical profession in spreading this system of education to the other zoological gardens of the country.

DR. EDWARD P. DAVIS, PHILADELPHIA, PENNSYLVANIA. -Our education at present, it seems to me, has outgrown the interest of operative teaching and is somewhat weak, as has been so ably indicated by Dr. Bell. The slogan of teaching clinically is largely responsible for this condition of affairs, and so far as obstetrics and gynecology are concerned, we certainly need to revert as well as we can to the broad principles enunciated by the essayist to whom we have listened. He has indicated some of the most important clinical problems of obstetrics, not only in our studies of the question of toxemia, the condition of the blood in pregnancy, but also in lactation. Lactation is neglected in the study of obstetrics and in the teaching of obstetrics to medical students, and there is abundant evidence that lactation is a complex process; that it is one of~ those blood crises incident to parturition which throws valuable light upon some other conditions, and that the well-being of the mother and oftentimes the well-being and life of the infant may depend upon an intelligent appreciation of this fact. For instance, we are familiar clinically with the fact that in some cases of unexplained fever after birth, that in some cases of abnormalities in lactation the administration of the extracts of the ductless glands will bring about a, happy solution of the pathologic condition. So in preparing pregnant women for successful lactation it is quite likely that we may yet, and very soon, evolve indications from a comparative study of the blood and in some cases administer extracts of the ductless glands with great benefit.

I think the numerous suggestions made by the essayist are exceedingly valuable. One which comes to my mind is especially timely, namely, so far as the teaching of obstetrics is concerned, the question of not laying so much stress on mere technic and possibly the performance of operation, but by leading the student through biology, comparative anatomy, biochemistry, indicating to his mind that the parturient woman is a complex individual, and that the larger part of her physical prosperity and that of her offspring will depend upon a close study of physiologic phenomena. Moreover our scientific knowledge must be utilized to remedy any defects or difficulties -which may arise in the physiologic and anatomic condition of the mother and the child.

DR. JOSEPH BRETTAUER, NEW YORK CITY.-I feel that very few of us can discuss Dr. Bell's paper as intelligently as we would like to. The suggestions he has thrown out are so clear and yet so difficult to be made use of, that I for one feel it requires a different basis than the one we have to carry out work along the lines laid down by Dr. Bell.

There are two distinct principles on which teachers of medical students ought to act. We must not lose sight of the fact that we have not only to teach students and the younger men to be helpful in practice, but we have to teach them how to treat a sick woman. A man of average intelligence can be taught how to treat a sick woman. The average student, however, cannot be taught to do the work which is required to follow this line of research. It takes a man with more than the average intellect or average brain to carry out the work of this kind. Biochemistry is one of the most difficult subjects which the younger men can study and very few will become really efficient in it. If you look over the membership list of a chemical society or a society of physiologic chemists as they call themselves now, you will find among a membership of 150 to 175 scarcely half a dozen, possibly one or two more, who have done real original work in-this line.

I happened to be present at the discussion of a subject which was far beyond me. In that discussion one of the real pathfinders complained that he could not find young men to carry out that sort of work; that it could only be done in institutions which are amply supplied with funds. Therefore, I do not think the ordinary clinic, which has not at its disposal a fully equipped laboratory, can undertake this work. When I say a fully equipped laboratory I do not mean simply a microscope, the various histologic appliances or even chemical appliances, but a biochemie laboratory, which means an enormous outlay. I think it is special work which will never be done in conjunction with any obstetric or gynecologic clinic. It must be done by men who do nothing else. Of course, it is entirely different with comparative anatomy. We are fortunate enough to have among us a man who has done a great deal in that line, and he has certainly taught his students more of special anatomy than the usual anatomist does. To repeat, I am sorry to say that while it is most likely this subject will receive proper attention and direction in the future, yet at present, I think the average student will not be able to follow it.

DR. BELL, Liverpool, ENGLAND (closing).-I am grateful to the gentlemen who have spoken for their kind words concerning my work and for expressing their views in the matter I have brought forward. It was with considerable difficulty that I made up my mind as to the subject I should discuss before this Society. Finally, I decided on a difficult problem that has been a matter of the greatest interest to me all my professional life. When I was a student little biology was taught, and in going about I find very little is being taught today. My research work has been chiefly along the lines of biology and embryology, mostly straightforward biology.

Today there is a tendency toward ultraspecialism, such as the specialization in regard to operations, yet we know that in considering gynecology and obstetrics we have to consider the whole woman. Gynecology extends far beyond the limits of the pelvis.

I was interested in the remarks of Dr. Schumann regarding the anatomic and pathologic work being performed at the Zoo in Philadelphia. Many of the interesting articles of Bland-Sutton were based on information gained while he was making pathologic investigations at the Zoo in London. There he did splendid biologic work when he was a young man.

There are many things of interest in regard to the anatomic conditions existing in animals, for instance, in the lemur. I have found that there is a natural state of exophthalmos and that the thyroid gland in this animal has the same appearance as that seen in the human subject suffering with exophthalmic goiter.

THE DRUDGERY OF OBSTETRICS AND ITS EFFECT UPON THE PRACTICE OF THE ART, WITH SOME SUGGESTIONS FOR RELIEF

By BROOKE M. ANSPACH, M.D.
Philadelphia, Pa.

TAGS Volume 46 (1921) p. 32-45

To recite the demands made upon the practitioner of obstetrics, that constitute the drudgery incident to the practice of the art, is like carrying coals to Newcastle. For the purposes of this paper, I shall mention briefly only those that seem to be the most distressing.

The uncertainty as regards the time of onset of labor is proverbial. Who can determine in a given case precisely when labor will take place? Although, in a majority of instances, computed by the customary rule, the date can be fixed approximately, a variation of from ten days to two weeks is not unusual. Such variation cannot be regarded as abnormal so long as there is no way of ascertaining precisely when ovulation and conception took place. This uncertainty leads to much annoyance and inconvenience for the patient, her family, the doctor, the nurse, as well as for the management of the hospital, if she elects to go to one, in which she is to be delivered.

It is upon the obstetrician especially that the burden falls most heavily. Thus he finds it difficult to leave town or must delay his going, since some one is always overdue; or if the coast seems clear and he is permitted to depart in peace, an unexpected or premature labor is sure to call him back. And so his plans invariably miscarry, for he is either detained at home, or sent for when he leaves.

As soon as the patient falls into labor, the obstetrician must revise his daily routine to some extent at least, rearranging his visits and his work so as to be able to reach her as quickly as possible, or he may accept the risk of the day's work and trust to good fortune to be on hand when he is needed. In complicated cases there is no choice, for here he must be in more or less constant attendance throughout the entire labor. How frequently it happens, in such cases, that, at the end of an extended period of observation, the best judgment and skill of the obstetric attendant are required to effect a successful outcome, and this, too, at the most inopportune time, when the physician is exhausted and physically and mentally unfit to undertake the work.

It is doubtful whether there is any more troublesome exigency in any branch of medicine or surgery, or one that requires more well-balanced judgment and greater skill. Neither is there any situation in which the physician feels more keenly the burden of responsibility -the mother and the child, the anxious relatives. It is an undeniable fact that at this time, in order to do his work most successfully, the obstetrician, as well as his nurse and assistants, should be unfatigued.

Upon the obstetric nurse the hardship is in some respects even greater. She it is who spends weary hours listening to complaints, attempting repeatedly to comfort the patient, who, forsooth, cannot be comforted. She must bear the stress of possible operative delivery at the conclusion of this trying period, followed by the immediate after-care. She has two patients instead of one. In private home cases many additional cares are added to her already heavy burdens -the preparation of meals, the laundry, dealing with the servants and members of the family, etc.

As a consequence, many physicians and most nurses dislike obstetrics, and avoid it to as great an extent as possible. It is often quite difficult to persuade a good surgical nurse to undertake obstetric nursing. The number of physicians who endeavor to practice obstetrics is small as

compared to those who enter other specialties, and in the nursing field the most skillful workers do not commonly select this as their chosen sphere of usefulness.

What is the result of the unusual demands made upon the time, convenience, and patience of the obstetrician? Does it influence him in his conduct of labor? First of all, it is natural that, in order to save himself as much as possible, so that he may be in better condition to overcome the difficulties that he may be required to face later, the obstetrician may not, during the earlier stages of labor, give his patient the close attention she might reasonably expect to receive. The question here arises whether obstetricians as a class are doing all that is possible, under existing conditions, to alleviate the pains of the first stage of labor. "Twilight sleep" has come and, fortunately, gone. Was there not, however, some little truth, at least, to be taken from it? Would it not be desirable to do a little more than is done usually to ease the sufferings of the first stage, for example, with either morphine and scopolamine, or with nitrous oxide 'and oxygen, or with
all of these combined? And in the second stage, is the obstetric attendant usually at hand to begin analgesia as soon as complete dilatation of the os is accomplished? Does not the patient often wait weary minutes or even hours until the obstetrician arrives? May it not be merely the joy that the pain is over and that another soul is born into the world that keeps some of our patients from reminding us of the pains they have been permitted to suffer and to reproach us for the little we tried to relieve them?

It is not hard to perceive that efforts, conscious and subconscious, are made to remove these difficulties in obstetric practice'. The expectant mother grasps quickly at any new plan that will bring on her labor at the appointed time, that will hurry it along and save, her from pain, etc., little knowing or weighing the disadvantage to herself or to her baby. And the obstetrician, no matter how conscientious he may be, is almost tempted to induce labor at a set date, administer stimulants for the pains, and adopt manipulative or operative measures to shorten the period of parturition. But who would have the temerity to declare that an artificially induced, conducted, or terminated labor is as safe for the mother and the child as a normal one? And are we not all agreed that the best plan is to let the obstetric patient alone until some actual indication arises for giving assistance?

This problem, and it is by no means an easy one, of relieving the practitioner of the drudgery of obstetrics, is yet to be solved. We can do no more than formulate plans, and then put them to the test of experience. With this purpose in view, I venture to offer the following observations and suggestions:

While the almost general and universal use of hospitals for obstetric cases has infinitely lessened the drudgery of obstetrics, much is still to be desired in the direction of securing close cooperation between the obstetric intern and the practicing obstetrician. The obstetric intern should not only be permitted, but should actually be trained to examine the women in labor under his care. Indeed, before she enters the hospital, the patient should be made to understand that the practicing obstetrician will call into cooperation with him, the obstetric intern.

During pregnancy the obstetrician should be careful to write a full history and make complete and regular notes of visits and examinations, including the results of pelvimetry, the diagnosis of position, etc., which should be sent to the hospital as soon as the patient goes into labor. These notes, with perhaps a telephone conversation, will give the obstetric intern the information he requires. As a result, he will be better able to look after the patient during the early stages, and will summon the obstetrician when he is needed. In the larger maternity hospitals fresh attendants may be provided throughout labor by a shifting staff of anesthetist, two nurses, and an obstetric intern, every eight or twelve hours.

If the period of labor of a patient continues beyond the time allotted to the staff on duty when she is admitted, the notes made by the first staff may be turned over to their successors. By this plan perfect analgesia throughout labor may be maintained by well-trained attendants who are unfatigued and thoroughly awake to the necessities and requirements of the case. There need be no attempt to

hurry labor, unless this appears to be to the distinct advantage of the mother or child. Induced labor will be unnecessary, and if the patient requires skilled operative or manipulative attention, this can be secured from one who has not borne the stress of the earlier stages, and who is unfatigued and therefore at his best.

An elaboration and possibly an outgrowth of this plan would be the association of several obstetricians, men of approximately equal standing and experience in one maternity hospital. Instead of engaging a particular obstetrician to care for her, the patient would enlist the services of the group collectively, stipulating that she would be willing that any one of them should look after her, the choice depending upon the time of her delivery.

In certain large surgical centers, a patient is not permitted to name his surgeon, the selection being made by the management. The layman is satisfied with this arrangement since he realizes that, after all, it is to his advantage. So, too, the laywoman appreciating that what is done is to her advantage, might grow perfectly content. She might then look confidently forward to securing comfortable accommodations, regardless of when labor begins, to perfectly conducted analgesia, and to the services of a skillful obstetrician at his best. She would be spared the induced labor, the long hours of indifferent or absent analgesia, and the anxiety of waiting for the physician to come. The result to women as a whole could scarcely fail to show improvement. More physicians and nurses would take up obstetrics enthusiastically, and the most important episode in the life of any woman would receive the careful and skillful attention it deserves.

DISCUSSION ON THE PAPERS OF DRS. RUDOLPH W. HOLMES, JOHN O. POLAK AND BROOKE M. ANSPACH

DR. IRVING W. POTTER, BUFFALO, NEW YORK (by invitation) -I appreciate your invitation to open this discussion. I have been very much gratified at the papers and very much entertained by the statistics. I am not sorry that I read my first, second and third papers on version, for I can see a considerable change in the expressions of opinion from observers in different sections of the country, and I am going to continue to read papers on version and to do the operation. I am striving all the time to reduce my fetal mortality since the presentation of my first paper. I have had better results since. I am sure that I will get still better results and so will every one who does intelligent elective version.

Our conditions at home are somewhat different from those that most of you have. We have no large hospital where we can take all of our cases. There is not a hospital in Buffalo that will give me the number of beds I want; consequently I am working in five or six different institutions. That in itself will raise the fetal mortality, will raise morbidity, but things are gradually getting better, and it is gratifying to me to find that men from different parts of the country, after they come to Buffalo and see me at work, have changed their views in reference to my work from those they held five years ago.

It seems to me, that the discussion of these papers must be largely upon the following questions, first, whether or not we have any right to interfere in the progress of a case of labor, whereby we may in any way shorten the duration of that labor in the interests of the mother, to relieve her of her suffering and pain as well as the damage to her soft parts from prolonged pressure, and secondly, in the interests of the child, in relieving pressure both cranial and body. Have we any right to relieve pain? It seems to me that we have. Have we any right to shorten labor provided no damage is done to mother or child? I think we have.

Granting that we have such right, how shall we use it? Personally, I am opposed to the induction of labor and the use of bags. Bags do not give the obliteration of the cervix desired nor the degree of dilatation of the os that is required. Such obliteration and dilatation must occur from the rearrangement of muscle fibers beginning at the fundus and not from the cervix. Bags also have a

tendency to displace the presenting part and allow prolapse of the cord or one or more extremities. My preference in the management of these cases is to do an elective version. By that term I mean to perform podalic version at a certain time during the progress of the labor and that time is at the end of the first stage or early in the second stage, thereby endeavoring to eliminate the second stage entirely or at least the greater part of it. In view of the fact that so many complications arise, is not this method of early version justifiable?

My claims for such a procedure are that patients suffer less pain, are less liable to infection because of the lessened mutilation of the soft parts, have a better involution of the uterus, and a better sense of well-being at the end of the lying-in period. No cystoceles or rectoceles are seen following this procedure when properly performed, and extensive lacerations are unheard of. Neither need one fear hemorrhage.

As to the child, we have frequently observed that it was easier to deliver a larger child by version, than it was by an oncoming head; that the damage to the child was far less apparently, than in prolonged forceps operations; that the children are in as good, if not better conditions at the end of 10 days as to gain in weight and general appearance, than in cases where a prolonged second stage was allowed. Our maternal morbidity is less than formerly and the maternal mortality should be nil. The fetal mortality we claim is lowered. Our latest statistics covering our last 1000 cases show a 4.5 per cent fetal mortality.

Mr. President and Gentlemen, this is not a fad or a fancy, but a procedure that is allowable in the hands of a properly trained man. These statements are facts and can be substantiated by hospital records.

Surely, with our present knowledge of asepsis, if we cannot invade the uterine cavity with safety in the interests of the suffering woman, then I must agree with Dr. Holmes that obstetrics is a lost art.

DR. JOSEPH B. DE LEE, CHICAGO -In the first place, I desire to dispose of some of the arguments which my colleague (Dr. Holmes) from Chicago has advanced.

The statistics which he has adduced are some old, some new, mostly bad and useless. Statistics in general are very insecure building stones on which to base judgment. The, statistics of Newark should not be applied, even if they are true, to the general practitioner neither should they be applied to this Society. Dr. Holmes is charging windmills in a great many of his remarks.

Let us eliminate from the discussion cesarean section for placenta previa. Let us also eliminate the treatment of eclampsia by active measures. Let us limit it to the five points which Dr. Polak has brought out, and which really are the subjects for discussion. With one sentence I will dispose of pituitrin. Pituitrin in my opinion is an almost criminal agent if used before the delivery of the child.

Regarding the early expression of the placenta, Dr. Polak is right. The placenta should not be expelled before it is completely separated. If the placenta is in the vagina, usually visible without pressure, but if not visible without pressure, visible by separating the labia, there is no reason why it should not be expelled, and its expulsion by pressure on the fundus will not increase the hemorrhage.

Regarding the so-called prophylactic forceps, a name which I have the honor and perhaps disgrace to have introduced, there are present before me a certain number (how many I cannot tell) who are doing prophylactic forceps right along. Some of them have acknowledged it to me. That is not to their discredit; I consider it to their credit. We must, as Dr. Polak points out, prove that this interference in labor brings good results, and that in course of time we will probably be able to do.

The time has come, and for some of us has long passed, for a division in the methods of treatment of natural delivery into that by the specialist and that by the general practitioner. The women are beginning to realize that they need not suffer the damage of labor, the permanent

invalidism and death that their mothers suffered. They have learned to seek expert skill and they are willing to pay for it. Further, they are not willing to suffer the pain of labor, and demand its relief.

Many women are ready to undergo the slightly increased risk of cesarean section in order to avoid the perils and pain of even ordinary labor. I am confident that if the women were given only a little encouragement in this direction, the demand for cesarean section would be overwhelming.

A careful study of one's own cases will show that even natural labor can cause much damage. The damage is mainly in the cervix, the pericervical tissues, the pelvic fascia and the pelvic floor. It is unnecessary to enumerate the many sequelae of these injuries. We cannot deny their frequency and their role in the causation of permanent invalidism. In the last two years I have paid particular attention to these damages. One in five mothers has good closure; four have tears or relaxation, though there need not be bad symptoms at present. These come later. With few exceptions, all women show evidence of anatomic damage.

We know that too many babies die in labor, even in natural deliveries, yet when last year I presented a simple and harmless method for saving a percentage of these babies, several of our members criticized the method unfavorably.

Last year I read a paper called "Prophylactic Forceps." In the discussion, our guest, Dr. Eden, of London, condemned the operation. On the same day Dr. Eden complained bitterly of the high mortality of the neonates of his clinic and the large number of stillbirths. Fifty healthy babies, he said, had died in spontaneous normal labor in the hands of his own expert assistants, and he thought something ought to be done about it. I, too, think something ought to have been done about it, and I wonder how many of these full term, healthy babies might have been saved by the prophylactic forceps operation. If I may be permitted to hazard a guess, I would say perhaps 40 of them. However, it was a great concession by Dr. Eden, to admit that normal labor could kill babies, and I am also wondering how he can escape the conviction that natural labor is pathogenic.

I claim that the powers of natural labor are dangerous and destructive in many instances to both mother and child, and that interference by a skilled accoucheur at the proper time can prevent a goodly portion of this danger and much of this destruction.

It will need a high degree of obstetric skill to determine when interference is less dangerous than Nature's own methods, and to render the interference less dangerous, but the first is what we specialists are for, and the second, is what we are being paid to do. There is no question that in unskilled hands, many things that we can do with safety, will prove dangerous and fatal, but this is no reason why we should not do them.

We must not pull obstetrics down to the level of the practice of the general practitioner. We must pull the latter up to our level. As to one method of interference in natural labor, I can refer to my paper of last year, the prophylactic forceps operation. The objects of this procedure are:

1. To save the pelvic floor and fascia from destruction.
2. To save the woman from exhaustion and hemorrhage, even moderate bleeding.
3. To save the child from injurious pressure or death.

The essentials of the method are:

1. Procure complete spontaneous dilatation of the cervix.
2. Use morphine and scopolamine or other narcotics freely in the first stage.
3. When the head has come down on to the pelvic floor, and before the fasciæ have been destroyed and the levator ani pillars parted, incision and forceps delivery.
4. Pituitrin and ergot to save blood.
5. Early removal of the placenta from the vagina.
6. Anatomical repair.
7. Morphine and scopolamine to save ether and produce amnesia of the labor.

I had the opportunity to demonstrate this operation to Dr. E. C. Dudley, Dr. Austin Flint and Dr. Brooke M. Anspach. The two first named were enthusiastic and readily admitted that both mother and child had suffered less damage than in a normal labor. Dr. Anspach may express himself here. I believe many of those present frequently deliver women early in the second stage, but do not publish it.

For Dr. Potter's method of delivery I have no sympathy. His own declared results condemn it. He had 10 fetal deaths from hemophilia, 14 deaths from convulsions, 5 unexplained deaths, in addition to 41 deaths during delivery itself, in 1100 cases. His own published mortality of 1123 cases, including 80 cesarean sections, is about 7.5 per cent of the babies. This is much too great, and these women are paying too high a price for their relief from pain in the second stage. At the Chicago Lying-in Hospital under conservative management in the last 9258 cases we have had a gross mortality of 336, or 3.6 per cent. This includes all premature children after the seventh month, weighing 1000 grams or over; it includes all macerated fetuses (86), monstrosities, and also those children born alive and dying before the mothers left the hospital. There were 228 stillbirths and 109 dying after birth. Only one child died from hemorrhage; 1 in 9258. Dr. Potter had 10 deaths from hemorrhage in 1123. It is well known that injury predisposes to bleeding in neonates. One of Dr. Potter's disciples published fetal mortalities ranging from 8 to 17 per cent. Dr. Potter claims that he has no more or greater lacerations with his version than the ordinary practitioner. This argument has weight against his method of delivery. We must learn how to reduce, we cannot eliminate, the damage of labor.

DR. RALPH POMEROY, BROOKLYN, NEW YORK -I personally have no definite opinion about this matter. I am trying to learn something at this time, and I have been through certain stages of development that almost call for presentation, because I find myself very curiously in a position among the profession of being a radical among many followers of extreme conservatism, and I do not know exactly how to account for it.

In the first place, some 15 years ago I presented for the first time a dilating bag that created a good deal of commotion. Everybody who understood mechanics thought it would do the thing I supposed it would do very nicely, and that is, expand the cervix, but soon after I had published the matter it was taken up as a method of inducing labor. I was never willing to induce labor with anything except by the usual means, consequently I have had the reputation of inducing labor with an apparatus with which I never intended to induce labor.

In the next place, I advocated one principal kind of incision of the perineum as a prophylactic measure, and I have been accused of cutting everything. My own immediate assistants know that is not true, and that the cases are selected.

With regard to the work of Dr. Potter, I sent my own assistant to see him work, and I repudiate any possibility that I am likely to imitate Dr. Potter. I have a most emphatic and wholesale admiration for the development that Dr. Potter has made in the mechanics and surgical process of podalic version plus extraction, but to revert to the general proposition, the principal point I wish to make is that our units of conservation in labor and pregnancy are not the first born but the family, and I refuse to follow Dr. Potter to his logical conclusion that every large child must be taken out by a cesarean section, because it will not be easy or safe to take it in any other way.

With reference to delivery by cesarean section, Dr. Potter has done it on one of every 13 cases. In other words, there are 18 deliveries by cesarean section in his report of 1000 cases. It is a perfectly logical thing to do if we think of obstetrics in the extreme cases as well as in the moderate and in the minor. Does this assembly accept the proposition for one minute that safe obstetrics is midwifery obstetrics? Of course, it does not. The trouble with obstetrics is that we know a whole lot about it and are just as much entitled to have progressive radicals in trying to see what can be done with serious problems as the surgeons have, because this is a major subject in surgery.

Dr. Potter should be honored, and Dr. De Lee should be honored, as well as others, who have published books on obstetric surgery, for their enterprise. But who practices our obstetrics? Midwives, trained and untrained, students trained and untrained, and interns, all amateurs, most certainly should receive training in this regard, and perhaps a few of us who practice obstetrics. There are not enough obstetricians to go around. The individual woman knows what she wants, and Dr. DeLee and Dr. Anspach have indicated that very clearly, but Dr. Anspach should remember one point, that he will never get any woman to be cared for at his invitation or agreement. She selects her obstetrician as she selects her bridesmaids. In other words, pregnancy and labor is a social event and not a physical event. The woman wants to get away with it with safety and comfort, and with no actual damage, and she hopes there is some one who can carry that out.

My experience is that the only way we will ever solve this problem in an institution of magnitude is by being residents in the institution, one relieving the other every twelve hours, and then we may slip up if we do not have a system by which every item of fact is exchanged in connection with the case when a new man comes on. In cases of prolonged labor it is much better to work in relays rather than adopt the mental attitude and mental picture of the surgeon who is trying to see a case through from one end to the other.

In connection with the statistics given by Dr. Polak and Dr. Holmes, the one thing to be brought out is that obstetrics is not practiced as it is known. In other words, the execution of our work is not up to the standard of our knowledge, and it is extremely difficult to make it so.

DR. PHILANDER A. HARRIS, PATERSON, NEW JERSEY -I wish to speak from the standpoint of the psychology of Dr. Holmes' statistics as presented to us in his very elaborate tables and in his very extensive review of cases. He referred to Newark; I live near Newark. He spoke of better recoveries and a less mortality in the hands of midwives in Newark than among members of our profession. I think it would be a mistake to publish that statement in a report of our proceedings or in a medical journal and let it go broadcast, because this information would be placed in the hands of a lot of people who belong to the extremely radical elements of socialism.

We know that industrial health insurance has to be fought out in almost every state in the Union. The New Jersey Medical Society this winter spent a tremendous lot of time on this subject, and some of our best physicians went to Trenton for weeks to see the representatives of the legislature, and what for? To prevent having industrial health insurance put over in New Jersey. At the same time, they had two other duties to perform. They had to work to prevent osteopathic practitioners from getting a full board of examiners, so that they could follow their kind of practice in New Jersey. I sincerely hope that when Dr. Holmes publishes his paper, he will keep in mind that the midwife, as I understand it, does not have any deaths. When her cases are bad, they fall into the hands of others, who make out the death certificates, and Dr. Holmes should revise or rearrange that part of his statistics which will show this. It is of great importance that this be done now, because unless his statements are corrected or modified, they will be the first thing we will hear about in the legislature this winter.

DR. EDWARD P. DAVIS, PHILADELPHIA. -Spontaneous delivery is not without injury. Concerning the discussion this morning, it points very clearly to our condemnation of two things. First, pituitrin before the child is out of the uterus is dangerous. Second, I am glad to know we have learned that a dilating bag cannot dilate the uterus successfully because it does not favor retraction of the cervix uteri.

We must first consider the good of our patients, which should be the first aim, and then the good of our profession. Dr. Potter and Dr. DeLee illustrate what skilled specialists can do. Other men devoting the same time, with very similar lines of research and practice, will do as well. What is the profession to do? I would speak as a teacher who is accustomed to addressing men who are

shortly to become practitioners. This is my expression to the senior class: I hope that few of them will undertake major obstetric operations; that such operations should be done by specialists only, and I do not believe in making serious obstetric procedures attractive or apparently easy for the graduating student. The graduate student should be taught carefully the signs of normal labor and its mechanism and the physiology of analgesia and anesthesia in normal labor; delivery of the patient by spontaneous parturition, the immediate closure of lacerations; the methods of asepsis and, when a normal labor is attended with difficulty, it is time for expert skill. The profession should stand firmly on that ground and the public should be educated to that point of view, and not until then will there be a substantial improvement in obstetrics. I deny absolutely that the best operators in this country are doing wrong in spreading the doctrine to apply skill, intelligence and judgment toward terminating the sufferings of mothers and saving infant life. I do not believe that for one moment. Great advances have been made in the treatment of toxemia and in obstetric surgery, but the latter must be done by obstetric surgeons, and I do not believe any recent graduate can so denominate himself justly and rightly.

Furthermore, we still lack in this trial two important portions of evidence. You have heard the claimants present certain statistics. The statistics of pediatricians and neurologists must also be brought forward, which will tell us how many infants have epilepsy or deficient mental development. Let them report these conditions, and let us know how many of these cases, where epileptic convulsions or deficient development followed, occurred after spontaneous parturition. In the second place, the statistics from the gynecological clinics should be presented, showing how many patients required a secondary operation for repair who were delivered by obstetric surgeons. Then we will be able to come nearer the truth.

DR. WILLIAM S. STONE, NEW YORK CITY. -I cannot refrain from expressing one thought in this discussion which I regard as a most important review of obstetric therapeutics; and I am particularly impressed with the expression which Dr. Polak used which, it seems to me, goes to the basis of the whole thing, that is, intelligent, aseptic expectancy. I regard that as the basis of teaching, and that upon that principle a man should be taught to carry out obstetrics, but who is going to do that? I am quite sure that the expectancy part makes it an impractical thing for any of the men assembled in this room, except the experts in obstetrics, to carry out, and Dr. Anspach suggested something in the way of a remedy.

I would like to call your attention to one thing as I have observed obstetrics develop in New York. We do not really have consulting obstetricians. Our obstetricians are professors of obstetrics, they take cases of obstetrics themselves, and the result is that I do not believe that men who are so busy can carry out all the knowledge which we have of obstetrics. In other words, in medicine we have consulting medical men who do not take cases of pneumonia themselves or typhoid fever cases, but they come in as real consultants. It seems to me, there is a field to be developed here, and that for those of us who are skilled obstetricians to limit our work and to give the benefit of our experience in the way of consulting work, and then our teaching will be based upon the principle that Dr. Polak has suggested.

DR. GEORGE W. KOSMAK, NEW YORK CITY. -I am rather astonished at the character of the statistics brought forward by Dr. Holmes, and I think very likely I express the sentiment of wonder in the minds of a great many of us here at the advisability of bringing them forward in a discussion of this kind. These statistics on the various abnormalities of pregnancy and labor, which refer to observations made 50 or 100 years ago, I think are hardly a fair basis for comparison because at that time the standards were different. There were a great many conditions then accepted which we would not accept at the present day, such as puerperal fever, I think almost every pregnant woman, during the first fifty years of the last century who went into labor, expected to have puerperal fever,

and for that matter they felt that labor would necessarily last a considerably longer time, especially in a first pregnancy. It is hardly fair to accept the statistics of the earlier writers in comparison with what has been accomplished during the past few decades.

I believe that Dr. Holmes is entirely too pessimistic as regards the obstetric situation, and that we are warranted by the accomplishments of the last few decades, in assuming a more optimistic attitude.

I desire to refer also to the remarks made by Dr. Harris which I had hoped he would develop somewhat further. Gentlemen, we are facing a rather serious proposition as obstetricians because our state of mind is going to be very much shocked within the next few years by the efforts at reform by lay persons, methods that will not be based on medical facts and on medical experience, but on sociological experiments. You will have brought before you at the executive meeting of this Society a report by the special committee appointed last year to consider this subject of maternal welfare in a broad general way in connection with other committees from other societies. I hope you will bear in mind the discussion today when you consider that report. Specifically, I desire to refer to legislation now pending in Washington in the shape of the Sheppard- Towner bill which on the face of it is one of the most radical steps to which we as medical men have been asked to subscribe. It will practically take out of the hands of the medical profession the care of pregnant women and children, and place their observation in the hands of lay persons, not to be solved as a medical but as a sociological problem.

DR. FRANKLIN S. NEWELL, BOSTON. -There seems to be one point that has not been brought out in the discussion so far. I will say my own personal bias is in favor of Dr. DeLee's prophylactic use of forceps, but when it comes to the question of how every woman should be taken care of, we must study the needs of the individual patient. In the first place, one woman can be delivered with little or no anesthesia in spontaneous labor without any ill effects, while the next woman must have labor shortened, or she will suffer mentally or physically as a result of it. Some women are better delivered by version. To adopt any standard routine and say that a woman must be delivered by a certain method is unintelligent obstetrics. In regard to analgesia I believe that nitrous oxide reinforced by morphine or scopolamine, if needed, is the most valuable method of making labor easier for a woman. In delivering my patients I have nitrous oxide started when the patient feels the need of relief. Patients do not want the anesthetic postponed until we are convinced that they must have relief.

One other point I wish to bring up is that I do not believe in the induction of labor except for cause. If a patient needs to have labor induced, that is a different matter, but to interfere with normal pregnancy for no cause seems to me meddlesome and pernicious. I feel very strongly that most postpartum hemorrhages are due to unwise interference in the third stage of labor, and the longer the placenta there is left in-situ, i.e., until complete separation has taken place, the better the results for our patients.

DR. ROBERT L. DICKINSON, BROOKLYN, NEW YORK. -This discussion sharply differentiates between the expert with his hospital experience, such as Dr. Polak has demonstrated, and the general practitioner who must take care of the bulk of cases, and the midwife who must take care of the foreign population.

Medicine is proverbially myopic. We refuse to see what the social workers see; therefore, the social worker has got busy and has proposed a remedy. What do we do? We try to thwart it.

The Sheppard-Towner bill is not what we prefer or favor; therefore, instead of taking half a loaf, we refuse bread. We refuse appropriations if the money does not go where it belongs. If it is not done by the state, it is helped by the nation, therefore it is bad legislation and we will refuse it.

Again, we have the name of not being progressive. We must welcome these statistics, however bad they are in form, on prenatal care. The President and apparently the Senate are feeling the pressure of popular opinion brought to bear on a measure which we are not in touch with. We teachers, we professors, are disappointed. I confess myself I am one of the most disappointed men that ever stood on his feet in such an assembly. For nearly twenty years I have tried what little I could do to leaven the mass of the obstetric work of the general practitioner, to raise that level. Gentlemen, whatever progress we have made in our maternities, we have failed to raise that level. Let us then in God's name welcome any outside help, however mistaken, for social health insurance and all that are inevitable. We cannot stop it.

DR. J. WESLEY BOVEE, WASHINGTON, D. C. -A great many years ago we had a definition of obstetrics by Dr. Goodell, "a fellow feeling for a human being." We have seen it emphasized here today I think to an alarming degree.

I want to speak, however, in opposition to the plea suggested by Dr. Pomeroy and of Dr. De Lee of treating patients as they wish. I hold that a patient should be treated as judgment dictates; that we should act as practitioners of medicine instead of those who cater to the wishes of our patients.

DR. JOHN A. McGLINN, PHILADELPHIA. -Not long ago in this Society, I remember it was considered criminal to stick a hand into the vagina, although it was gloved. We had to stick the finger up into the rectum. Cesarean section should hardly ever be performed unless total hysterectomy was done. Still at the present time, in cases of normal delivery we have to do podalic version to get the whole arm into the uterus. To shorten the pains of the second stage of labor, we have to split the vagina and put on forceps, and these advances are good things.

So far as obstetrics is concerned, it is the same as any other problem in medicine. There is a good deal in common sense. You cannot lay down any hard and fast rules how to deliver every patient. You have to individualize, and these problems are individual. Prophylactic version may be the ideal thing in a certain case. Central episiotomy may be the ideal thing in a certain case, but podalic version is not an ideal thing in every case, nor is prophylactic forceps an ideal thing in every ease, or central episiotomy. Certain cases will go through spontaneous labor without difficulty, and our problem is to recognize when cases are not normal and apply the proper remedy with our art and skill, whatever remedy that may be.

DR. N. SPROAT HEANEY, CHICAGO. -I take it that we, the audience, are to be the judges in this presentation of briefs, and since the evidence does not all seem to be at hand, I wish to ask for information.

The advocate of one procedure says that the cervix should not be interfered with in any way during the natural process of its dilatation and places all the importance upon the avoidance of laceration of the pelvic floor. Why is the pelvic floor so important while the cervix is unimportant as far as its injuries are concerned, and why should a method be elaborated which concentrates on the pelvic floor and disregards the cervix? If the spontaneous dilatation of the cervix is not dangerous, why is the spontaneous dilatation of the vagina and perineum so full of danger? Dr. Polak has given us some beautiful results to study and I think that we should be interested in the immediate results of labor and until they are impossible of improvement, we should not worry about the late results. A low child mortality is the real criterion as to the superiority of one method of delivery over another, provided the maternal mortality is the same in both instances. Another peculiarity in Dr. DeLee's presentation that I cannot understand is, that he elaborates upon the dangers of the caput succedaneum to the child and says that he avoids this with prophylactic forceps. The question is, since he never interferes with the first stage of labor, whether or not a caput succedaneum only forms in the second stage of labor. We know that it does not, since who among us has not seen a caput succedaneum on children born by cesarean section? This argument then will have to be discarded,

DR. HUGO EHRENFEST, St. Louis, MISSOURI. -Dr. Davis has referred to a fact which is important in this discussion. He would like to have the neurologist testify as to the damage done by forceps extraction.

The neurologist indeed is the one who wants the baby extracted quickly because long-continued compression of the head in his belief is disadvantageous to the later physical and mental development of the child. Unfortunately the obstetrician has accepted this opinion, though as a matter of fact it positively is incorrect. It is based solely on statistics collected in institutions for the feebleminded and insane asylums, by asking the mother of such a feebleminded child whether she had a forceps operation, or whether she had a hard labor. Babies, stillborn after forceps delivery, obviously are not counted at all, and by simply taking the mother's word for it, the large number of those who had a hard labor is not surprising. Actual evidence now available proves beyond any doubt that intracranial damage is due rather to quick compression, to quick and excessive molding than to continued compression. This evidence has been supplied by obstetricians who have followed up their own cases and have compared end results with the exact history of the labor ten to fourteen years ago. Such investigations proved beyond any doubt that all procedures which hasten the passage of the child, and which cause quick and excessive molding, such as the use of pituitrin, of forceps or breech extractions, are more likely to be responsible for intracranial injuries manifesting themselves only later in life than merely a long labor.

DR. CARL HENRY DAVIS, MILWAUKEE, WISCONSIN. -As it has a definite relation to this obstetric symposium, I wish to report the results of a recent questionnaire sent to twenty members of this Society.

Last winter a surgical colleague asked me to examine his wife, a para 2, who had been delivered of her first baby by cesarean section because of a central placenta previa. She wished to go through a normal labor. He wished to know if this were safe since she has a normal pelvis. I went over the situation with the husband as regards the probabilities in the case, and gave him the results of my study of the literature. In addition, I sent a questionnaire to twenty members of the Society, stating briefly the facts and outlining a possible plan of management.

In answer to the question, "Do you favor the dictum -once a cesarean, always a cesarean?" 13 out of 20 answered "No"; 7 out of 20 answered, emphatically "Yes"; 13 out of the 20, with more or less qualifications, favored giving this woman the test of labor, while 7 were opposed to any test of labor. The husband in going over the situation with the family and the two surgeons with whom lie is associated finally decided that in view of the wide difference of opinion among experts, cesarean section should be repeated.

On the 16th of May the patient was delivered by the surgeon who performed the first section. It was found that for the most part there was a good sear, but at the upper angle of the old scar there was a very thin area about the size of a quarter. The scar was excised, the uterus again sewed up carefully and it is believed that she can go through a subsequent pregnancy with relative safety. She probably could have gone through this labor spontaneously, but with such a marked thinning of the uterine sear at one end, with a third pregnancy she might have had an early rupture.

Will Dr. Polak tell us whether or not in his private practice the number of operative deliveries are proportionately low? I judge that his statistics are from clinic cases, which, of course, do not correspond to cases specialists see in private practice.

DR. HAROLD C. BAILEY, NEW YORK CITY -If we are to reduce our infant mortality, we must go back to the autopsy room and follow up the head cases where there is cerebral hemorrhage. In 100 consecutive cases in which the head was opened, nearly 50 per cent were spontaneous deliveries; 9 were forceps deliveries, and 6 were versions or breech extractions. The 50 per cent

going on to forceps or breech extractions were operative deliveries for dystocia. Over 50 per cent with cerebral hemorrhage were spontaneous deliveries.

DR. FRED L. ADAIR, MINNEAPOLIS, MINNESOTA -In following up the causation of hemorrhage in the newborn it has been found associated with delayed coagulation time and delayed bleeding time in most cases; therefore, we will have to record a considerable proportion of these hemorrhages as not purely obstetrical but associated with certain underlying blood conditions which can be readily corrected by appropriate therapy.

R. RUDOLPH W. HOLMES, CHICAGO (closing on his part) –The one great thing that I tried to picture in my paper was that modern obstetrics has not produced the diminution of maternal and fetal mortalities which was promised; that I felt the recent tendency of considering all pregnant women in a pathologic state, necessitating radical intervention, contributed to our failure. Further the oft-repeated statement that "this paper is prepared for the purpose of presenting a new operation for specialists," is far from the mark; any physician has the right under the law and his conscience to attempt it. As a result, too often an unwise recommendation is promiscuously accepted. All the cults of modern obstetrics have their adherents: what one man may accomplish by exceptional skill is more than offset by those who fail in a refined technic and dexterity. The modern general trend in operative obstetrics has not benefited the woman or the unborn child. It is time that what is privately conceded to be the fact should be publicly decried.

I regret that I have stultified Dr. DeLee's intelligence by my statistics, but death is the completion of all things for the individual; the concrete evidence that the percentage mortality in hospital now is directly comparable to a hundred years ago deals with plain facts.

If Dr. Harris does not like my figures he must go to Julius Levy of the Infant Welfare Department of his own state, for he made the investigation concerning the midwife practice of Newark. I know the fallacy of figures, but if we concede the old statistics quoted were wrong then we must concede the recent figures are wrong; if one is right we have equal justification in accepting the others.

I stand back of what I have written; I am merely opening the trail so that others may pave the way, that we may have conservation of mother and child which is to be attained, not by operative intervention routinely, but by truly scientific investigation into the causes of maternal and fetal deaths, and furnish an adequate preventive measure or measures. If all women having passed through a normal confinement were required to have gynecic operative repair to correct the injuries of labor, then it would be a timely thing to devise routine operative means to consummate delivery without those ravages. But so long as it is merely the incidental woman who demands operative correction of traumatism of birth a routine obstetric operation of some sort or another is a great mistake, and does not correct or mitigate the many evils of labor -on the contrary, unwise intervention increases the risks.

As I see it, the progress of the future in obstetrics is coming from the development of knowledge of antenatal pathology, the correction of diseased states in the fetus by scientific prenatal care and therapy. Who knows but that a refined gestational care may eliminate pelvic deformities in the fetus so that the future woman will be born with normal pelvic structure, and therefore will mature anatomically and obstetrically perfect. Endocrine pathology is of moment in obstetrics today; the' future will show that internal secretions have an enormous import in the normal physiologic maturation of the fetus; disturbed, they abound with possibilities in the causation of what kills so many infants, "congenital weakness."

For many months I have asked each and every pregnant woman who came to me how many of her friends prevented conception from fear of labor, and one only had a friend who inhibited the

possibility of a family on this ground. Selfishness and economic problems are more important in this connection than any assumed fear.

DR. JOHN O. POLAK, BROOKLYN, NEW YORK (closing). -My paper has brought out the discussion I had hoped for, and apparently all of us are absolutely agreed, but, it seems to me, we are looking at this matter from different angles. We are specialists. Therefore, we can give these women something that the general practitioner cannot give them, and we do it, but we have no right to teach our students in the face of such statistics as have been brought forward resulting from the plan of aseptic expectancy, and interfering only where there are definite indications, that DeLee's method or Potter's method or anybody else's method is the thing to do. We have no facilities in any medical school in this country to teach that sort of obstetrics.

I have the highest regard for Dr. Potter and his work. I have seen his work and am familiar with it. I have learned to do version better by reading what he has written and seeing him do it. He has included in his method everything that is worthwhile in version, but it is going to do harm and cost numberless babies' lives if we as a Society say this is the plan to teach our students.

I will answer the doctor's question by saying no, my statistics are taken from the cases as they come to us in the clinic where they have had thorough prenatal work. My private operative incidence is very much larger than that reported, for not only are the majority of my cases pathologic, but I am doing what Dr. DeLee and Dr. Potter are doing, I am endeavoring to give every woman the benefit of a relatively painless labor in the hands of a specialist by individualizing the cases.

THE FADS AND FANCIES OF OBSTETRICS. A COMMENT ON THE PSEUDOSCIENTIFIC TREND OF MODERN OBSTETRICS

By RUDOLPH W. HOLMES, M.D. Chicago, Ill

TAGS **46**, 12-23, 1921

It is useful, now and then, to look backward, for an occasion may arise when necessity will demand that we shall retrace our steps, or at least that we may measure our progress. Without retrospect we may lose the proportion of things and awake to the fact that we have made no advance, in fact have merely run around a vicious circle. We all know how phenomenal have been the advances in obstetrics in many particulars; untold benefits have come from the introduction of anesthesia and asepsis which have made possible many operative procedures which were the dream of the obstetricians of the past. Under the new regime the indications, at first, were clearly and definitely drawn; as the certitude of the freedom from pain from anesthesia and the proximate eradication of sepsis were realized, indications were placed on a broader basis, until they became so loosely laid down that they had no real justification beyond what the operator determined for himself. It is not far from the fact that obstetrics, today, is in identically the position that oophorectomy held some twenty-five years ago. The indiscriminate employment of operative intervention in obstetrics has accomplished little in the way of conservation of life of the mother and child; in fact, as I see it, conservation of life is not to be realized by operation beyond the exactness in determining its justification, its correct use. If figures may be interpreted to mean anything I believe my data prove conclusively that our endeavors during these years have been misspent: true conservation is to come from the scientific investigation of the pathology which underlies and is responsible for so much of our disease in the pregnant and the unborn child. A ruthless operative course in all parturient women is not the solution, for many of the troubles which come to women and the baby are directly incident to the hazards of birth and these are augmented by unwise interference.

We all know how wonderful has been the diminution of the mortality rates for women and infants in private practice: however, the safeguards placed about the mother have accomplished more than they have for her offspring. How many of you know that the death rate for women, in hospitals, is as great today as it was a hundred years ago -the decrease being so negligible that one hardly would know it.

How many know that in hospitals the fetal death rate is essentially what it was one century ago? These startling findings are the excuse for presenting this paper. It is my purpose to attempt an analysis of the conditions, to give a tentative explanation and to open the trail so that others may pave the way, so that obstetrics may be a scientific specialty, not a makeshift as it is now.

Is it not seemly that we should take cognizance of conditions obtaining, when this country of ours is fourteenth in the list of civilized countries having statistics dealing with the mortality of the new mother? Is it not seemly that we should consider this matter when 8,453 obstetric women died, according to mortality statistics, in 1910? To be sure cancer kills 9,857 women, but cancer takes its toll at 58.4 years on the average, while child-bearing takes the young woman in the fullness of life at the age of 29.8 years. Does it imply that neither the public nor medical profession has fully appreciated the benefits of prophylactic medicine? Or is it that scientific pursuit has not yet solved the problem, and we are still groping in the dark!

The masters of the century ending with the beginning of the antiseptic era had developed the art of obstetrics (in contradistinction to the surgery of obstetrics) to a high degree: the skill with

which they were able to deliver women in the presence of all sorts and conditions of complications developed a nicety of technic which left little or nothing for the modern authority to improve: in fact very little has been contributed these forty years on the art of obstetrics. The old masters, in spite of the restrictions imposed by the risks of infection, and therefore, lacking an opportunity of developing a technic from practice, were able to conceive the essential principles of the mutilating operations on the mother which now more euphoniously are denominated obstetric surgery.

The fact that modern maternity hospitals, where is centered the obstetric skill and knowledge of our profession, have been unable to decrease the dangers of birth to mother and child over the figures obtaining the early part of the nineteenth century is *prima facie* evidence that modern obstetric surgery is ineffectual in combating those dangers. Table 1 has been prepared to demonstrate this contention.

TABLE I

MATERNAL AND FETAL MORTALITIES

REFERENCES	PERIOD	TOTAL NO.	MOTHERS DIED	%	ABORTIONS	STILLBORN	%	CHILD DIED	%	DIED 14 DAYS	%	DIED TOTAL	%
Clarke: Collins'	1782	17650								2944	17.		
Mid. p. 514, 1835	1784	8033								a419	5.2		
Ramsbotham: Murphy's Mid., 1862	22 yrs.	48996	220	.44				2723	5.5				
Hardy & M'Clintock: ibid., p. 698	1856 1861	6634	65	.92				467	7.03				
Sinclair and Johnson: ibid.		13748	163	1.18				968	7.04				
LaChapelle: ibid., p. 699.		22243				b130		837	3.7				
								c967	4.3				
Arneth: ibid., p. 700	1847	6527	127	1.9				d244	3.7				
Dublin Lying-in: ibid.	1747 1861	182997 e185737	2352	1.28		10184	5.4	6670	3.59			17851	9.6
Körosi: Ashby and Wright: Dis. Child. p. 13, 1893	1875	26623								1610	6.05		
Schultze: Winckel Handb. Bd. 2, Tl. 3 P. 1706.	1893 1902	236050				7653	3.2						
Annual Report, N. Y. Lying-in, p. 79, 1897	1890 1896	10233 f9816	42	.41	417	359	3.65			214	2.18	573	5.8
Bulletin: ibid., p. 27, June, 1911	1910	g5165 f5002	50	.96	226	271	5.4	171	3.4			442	8.8
Ibid., p. 56, March, 1913.	1912	g5606 f5412	57	1.01	245	262	4.59	165	2.89			427	7.86
Ibid., Jan. 1917	1915 1916	g6266 f6100	50	.8	237	255	4.07	155	2.47			410	6.6
Cragin: Prac. Obs. 1915, p. 836	1908 1913	10000 f9767			231	499	4.5	389	3.9			838	8.5
Edwards: J. A. M. A. Oct. 16, 1915	1907 1914				32	94	2.77			89	2.63	183	5.4
Williams: Ibid., Jan. 9, 1915		10000								705	7.05	705	7.05
Moran: Ibid., Dec. 25, 1915.	1876 1915	10533				h716 h358	6.79			623	5.9	981	9.5
Augustana Hos. Chicago.	1911 1920	g1964 i1975	15	.76		57	2.8			82	4.6	139	7.03

ABOVE FIGURES ARE SUGGESTIVE: DOES MODERN LIVING ENHANCE RISKS OF CHILDBIRTH? WHAT INFLUENCE DOES THE ARGUMENT HAVE THAT MORE SERIOUS CASES ARE ADMITTED TO HOSPITALS OVER FORMER PERIODS! THE N. Y. LYING-IN HAS ABOUT 10% OF EMERGENCY WORK. Abortions are excluded in getting percentages of stillbirths and children that died as abortions are as yet not preventable. KEY: a. After ventilation introduced: b. premature and deformed: c. total deaths: d. includes feti dying within 9 days: e. total children includes twins, etc.: f. abortions deducted: g. mothers: h. Moran did not separate abortions from stillbirths: one half taken as rough estimate as stillbirths: i. twins; included. "Children died" may include stillbirths and those dying in the hospital—no explanation thereon given. Williams' figures comprise stillbirths and those dying in 14 days.

The fluctuations in the maternal death rates, before 1880, ranged from 0.44 to 1.28 per cent, and are only variants which would come to any institution from year to year. Since 1910 the rate varied from 0.41 to 1.01 per cent in different institutions. An analysis of the children was not so graphic in view of the fact that some writers, as Moran, combined abortions and stillbirths, others included stillbirths and those dying in the hospital. Still, the figures show how little progress has been made
these many years. There are many arguments which might be advanced to show why present hospital statistics are not comparable to those of olden times -the main one being that now it is customary to send women with complicated labors to an institution which largely, in the former period, were

treated at home. Harrar (10) shows this graphically in his report on the deaths in the New York Lying-in. How much is offset by the tendency to treat those complications by surgery rather than by obstetric methods is debatable.

Two complications of pregnancy may be briefly discussed to show how negligible has been the advance in recent methods of treatment. Eclampsia stands out preeminently as a complication which demanded some method of delivery ever since Blundell, (1) in 1834, discussed the advisability of acceleration of delivery, and Carl Braun (9) popularized it. During the last twenty years various obstetricians have improvised operative measures which might accomplish the result with a minimal lapse of time. More discussion has been employed on how to empty the uterus in eclampsia than has been expended on all other phases of the problem. The most evident thing about the question is the paucity of evidence adduced which might elucidate the cause, and then develop a rational therapy. Surgery for eclampsia as the essential part of the treatment is clearly and definitely indefensible. If there be anything to Stroganoff's treatment, it shows most positively that eclampsia is a disease, as popularly treated, which carries a dual mortality -that incident to the toxemia and an equal hazard from the surgical intervention. In Table 3, I show that in the preantiseptic days the maternal and fetal mortalities were respectively 20.4 and 33.3 per cent: the modern methods exhibited mortalities of 19 and 39.6 per cent: while in cesarean section in the period covered by modern treatment, the deaths were 34.8 and 25.9 per cent, respectively. Our modern conception of the treatment considers many things other than prompt delivery: really, it was not until 1850 that remedial agents were advocated other than blood letting, and purging. Blundell (1) did discuss, as did others, the use of opium, but many years elapsed before sedatives, anesthetics, etc., became established adjuvants to the therapy. It may be said that the older authorities had no real therapy, yet their results were as good, even better, than ours. In other words, no modern therapy has modified the lethal progress of mother and child with the single exception of that of Stroganoff: a comparison between the results of the latter with the much lauded cesarean operation shows that approximately one baby is saved at the expense of nearly four mothers. I believe Peterson did an unwise thing in his cesarean-eclampsia papers when he attempted to show how many babies might be saved by the operation, and not showing how many were destroyed by the disease; there is a great difference. Eclampsia always has been a fulminating, acute malady with a high death rate: the operative measures so popularized are carried out on bad surgical risks. Anuria, bowel stasis, anhidrosis, with marked cerebrospinal manifestations, characterize the disease and, as a result, women have died from the toxemia and the operation: likewise, the infants succumbed to the intoxication and the hazards of a forced delivery. Newell (2) has given ample evidence of the pernicious influence of the teaching that eclampsia demands major surgery.

TABLE III

ECLAMPSIA MORTALITIES

REFERENCES	PERIOD	NO. MOTHERS	DIED	%	NO. CHILD	DIED	%
Ramsbotham: Murphy Mid.	1840	43	3	6.9	53	18	33.9
Collins, R.: 1862 p. 698.	1835	30	5	16.6	32	18	56.2
Hardy and M'Clintock: Ibid.	1857	13	3	23.	13	6	46.1
Sinclair and Johnson: Ibid.	1847	63	13	20.6	69	23	33.3
Mme. LaChapelle: Ibid.	1821	8	?	?	8	2	25.
Arneth: Ibid.	1849	13	4	30.7	13	6	46.1
Braun, C.: Gyne., p. 833, 1881.	1878	73	20	26.	73	15	20.5
Totals: Before antiseptic era.		235	48	20.4	261	88	33.3
Modified Expectant Methods							
Dührssen: Eclampsia; Winckel's Handb. d. Geb., ii Tl. 3.		80	30	37.5	80	60	75.
Friedman, B.: Ibid., p. 2411.							
Goedecke: Ibid., p. 2412.		403	69	17.1	403	194	48.
Franz: Ibid., p. 2421.		17	2	11.8	17	5	29.4
Sommer: Ibid., p. 2421.		16	6	37.5	16	10	62.5
Jardine: Ibid., p. 2423.		22	6	27.7	23	13	56.3
Sturmer: Ibid., p. 2423.		43	5	12.2	?	?	
Mangiagalli: Ibid., p. 2423.		18	1	5.5	?	?	
Stroganoff: Ctb. f. Gyn., 1910, p. 756.		400	26	6.6	360	77	21.6
Lichtenstein: Arch. f. Gyn., 1911, p. 183.		400	74	18.5	371	144	38.8
Hammerschlag: Op. Gyn., p. 433.		8	3	39.	?	?	
From R. Peterson, Am. Jour. Obst., 1911, lxiv, p. 1.							
Bumm-Liepman: Ibid.		90	28	31.1			
Esch (1904-5): Ibid.		79	20	28.8			
Esch (1905-6): Ibid.		145	42	28.9			
Glocker: Ibid.		9	3	33.3			
Möhlmann: Ibid.		10	1	10.			
Winter: Ibid.		8	3	37.5			
Zweifel: Ibid.		49	16	32.6			
Totals: Modified expectant cases.		1795	335	19.	1270	503	39.6
Peterson, R.: Am. Jour. Obst., 1911, lxiv, 9. Vaginal Cesarean.		530	124	23.4	315*	67	21.2
					530†	282	53.3
Peterson, R.: Ibid., 1914, lxix, 924.		500	174	34.8	381*	25	6.5
					481†	125.	25.9
Cases before 1908.		198	95	47.9	133*	16	12.
					198†	81	53.3
Cases after 1908, to 1913.		283	73	25.8	248*	9	3.6
					283†	44	15.5

*Results obtained by eliminating children weighing 2000 gm. or those up to eighth month of pregnancy or that were judged to be premature, living or dead: no child was counted which was known to be dead at time of operation.

†We are dealing with a disease having a high mortality, influenced by various treatments, not the dangers of a major operation: i.e., for the sake of comparison it is necessary to add such figures to the infant mortality as will account for the babies not included in Peterson's statistical report.

Maternal mortality has not been ameliorated these one hundred years. Fetal mortality has not been diminished, either. Cesarean section robs the fetus of many of the lethal stresses of forced delivery, therefore Cesarean section saves babies at the expense of the mother.

Mueller (3) stated that one half of the deaths from placenta previa were due to infection. The mortality of the mother has decreased one half by cleanliness, not from an improvement of technic, or startling innovation in treatment. Obstetric treatment has not affected the fetal mortality whatsoever, though cesarean section has reduced the percentage from 55.5 to 35.6. Again, the section has not diminished the maternal mortality over approved obstetric methods and, comparing the results of the average cesarean mortality with the findings of such experts as Stratz, Welti-Pinard (5), and Koblanck (6), who demonstrate the gifts of skill, we still find that the section kills women in order that babies may be born alive. A priori, it would seem that a previa should only be handled by surgery when the woman is a good surgical risk, free from possible contamination, at or near term, the baby definitely alive, and some valid contributory necessity such as a minor pelvic deformity. The advocacy of a routine cesarean for all previas will bring upon the public malign results similar to those depicted by Newell for eclampsia.

I think the facts I have outlined for those two great obstetric complications are sufficiently alarming to warrant your attention. If a comprehensive comparative study were extended to cover a multitude of ordinary accidents of childbirth I am sure data would be presented which would still further substantiate the general principles I have deduced, namely, that modern obstetrics has not safeguarded childbearing logically as it should be.

The commonly accepted explanation for the maternal and fetal mortalities as they obtain today is given succinctly in the Journal of the American Medical Association (7). "Two causes are suggested: ignorance on the part of the public of the dangers connected with childbirth and of the need of skilled care and proper hygiene to prevent them, and the difficulty of securing proper obstetric care *** and the public still regards childbirth as an entirely normal process and a certain number of deaths are unavoidable. This has reacted on the medical profession, producing low fees, so that, with the exception of the city specialist, obstetrics has become the worst paid, although the most difficult and exacting branch of medicine."

TABLE II

OBSTETRIC RESULTS OF MIDWIVES AND PHYSICIANS OF NEWARK COMPARED*

	MID-WIVES	PHYSI-CIANS	HOSPI-TALS	CITY RATE
Proportions Confined	49%	39%	12%	
Puerperal deaths	10	31*		
Puerperal deaths, women having been given antenatal care, No. 586.	.17%			2.02
Children dying under 1 year of age— 2 year period, per cent	7.07%	7.43%	9.74%	9.74
Children dying under 1 mo.— 2 year period, per cent	2.51%	3.82%	5.73%	
Stillbirths in women receiving antenatal care	.68%			4.17%

SPECIAL THERAPEUTIC MEASURES	MOTHERS DIED	STILL-BIRTHS	DIED IN 14 DAYS	TOTAL
Midwifery data brought down.	.17	.68	2.51†	3.19
Routine Version: Cases 1113 (1a)	.179	3.7	3.05	6.7
Routine Version: Cases 200 (1a)	1.5	9.5	6.5	16.
Routine Dilatation by bags: Cases 200 (1b)	1.	1.	5.	6.

*Levy, Julius: Am. Jour. Obst., Jan. 1918, p. 41.
Routine version: Am. Jour. Obs. and Gyn., Mar., 1921.
Routine version: Ibid.
Routine dilatation by bags: Ibid., Oct., 1920.
†30 days.

No one may refute the correctness of the views here quoted in so far as they go, but many other factors have their determining influence. Ignorance and credulity as regards medical matters are dominating characteristics of the lay mind, but just these elements are clay to be moulded by altruistic physicians in educating the public. Patent medicines and spurious medical cults have their success assured by playing upon these weaknesses of the public. The public wants something better: the public may believe now and then death awaits at the door of the confinement room, but it wants that incidental demise to occur elsewhere than in its own home - if the public knew the solution it certainly would have it to ward off the evil. The crux of the problem lies within the education of the profession and there is no need of an endeavor to place the onus upon the ignorant public.

The rise and fall of the efficiency in judgment of the general practitioners in their obstetric work are reflections of the attitude and efficiency of the obstetric teachers: and by teachers I mean not only pedagogic members of college faculties, but also contributors to current medical literature. The former and the latter may be one, but from the fact that one may be a professor in an approved medical school gives added dignity and weight to his utterances, and therefore, will be more dangerous from that fact if his teaching be faulty. With a few possible exceptions, probably the quality of the teaching of our colleges is as defective as Williams (8) found it some years ago. A few maternities have expanded since Williams prepared his paper: largely, they are still inadequately equipped, with insufficient capacity for proper teaching, or for developing the clinic experience of the teachers themselves. What may one expect of the average teaching force other than

it will give inadequate and faulty instruction: that its mediocrity in experience and capabilities will be reflected in the mediocrity of thought and attainment and ability on the part of the students faultily trained. Too often teachers do not instill into their students the breath of conservatism, of sound thinking, of deductive reasoning, so later, as physicians, they grasp at the most nonsensical recommendations. We all can recall our student days when the professor who gave spectacular clinics was more popular than he who conducted his clinic without ostentation: in many of our principal colleges the obstetric clinic of the present is too largely the pyrotechnic exhibition which characterized the older surgical arena. An aggregation of complex, unusual problems are presented, leaving scant time for the ordinary run of obstetrics, such as will be indispensable to the student as a practitioner. Certainly a clinic which gives a student 18 major obstetric operations in his two weeks' practical training has misappropriated the student's time. The modern trend in obstetric teaching interferes with a student's perspective: a student who sees an array of heroic surgery out of all proportion to his practical clinic and didactic work, is so befuddled that he naturally conceives that nearly all cases need intervention. Then again, the student's perspicacity may discern that the professor's indications are weak -but later, as a physician, he will do likewise, backed by eminent authority.

TABLE IV

TREATMENT OF PLACENTA PREVIA
MORTALITIES COMPARED

OBSTETRIC TREATMENT TABULATED BY HOLMES	MOTHERS NO.	DIED	%	CHILDREN NO.	DIED	%
Ramsbotham*	82	?	?	82	50	60.9
Collins*	11	2	18.1	11	5	45.4
Hardy and M'Clintock*	8	3	37.5	8	3	37.5
Sinclair and Johnson*	24	6	25.	24	13	54.1
Arneth*	9	1	11.1	9	6	66.6
Braun, C.†	37	9	24.3	37	18	48.0
Klein*	11	2	22.2	12	12	100.0
	100	23	23.	183	107	58.4
Read, Wm.: Placenta Previa, 1861, 12 tables.	978	206	21.2	850	447	50.8
††Blacker: all since 1880	22	1	4.5	22	8	36.3
Kouwer	8	3	37.5	8	3	37.5
Ribbius	98	7	7.1	98	39	40.8
Stratz	57	1	1.7	57	36	63.
Fry	14	0	0	14	5	35.7
Galabin	92	15	16.1	92	69	75.
Hautel	123	12	9.7	123	92	74.1
Hirst	28	0	0	28	24	50
Siebert	24	10	16.8	24	8	33.3
Dorman	84	10	11.9	84	38	45.
Welti-Pinard	149	4	2.6	149	34	32.7
Lomer	236	21	8.9	178	105	60
Drejer	49	2	4.09	50	12	23.5
Platzer	46	4	8.7	46	25	53.2
Zedler	16	2	12.5	16	6	37.5
Higgins	75	8	10.6	?	?	
Rotunda Hospital	74	3	4.	?	?	
Murphy	61	2	3.2	?	?	
Klein	138	13	9.4	?	?	
Schauta	234	16	6.8	234	127	54.
Strassmann	231	22	9.5	231	144	61.2
Driessen	125	19	15.2	125	80	64.
Doranth	216	20	9.3	216	152	70.3
Fournier	7	0	0	7	3	43.
Koblanck	467	18	3.8	?	?	
DeLee	30	1	3.3	31	13	41.9
Amadi et Ferri	100	5	5.	100	32	32.
Behm	52	0	0	52	30	60.
Totals.	2756	213	7.4	1985	1075	54.1
Jewett: Am. Jour. Obst.	2010	221	10.9	2020	1159	57.3
Behm, omitted, repeated	40	0		40	31	
	4726	434	9.2	3965	2201	55.5
Abdominal Cesareans.						
††Cases collected by Holmes: also 7 babies died within 14 days.	25	5	20.	25	9 16	36. 64.
Jewett: Am. J. Obs., p. 943, June, 1909.	95	11	11.5	97	37	34.
Davis, Asa, Am. J. Obs., p. 120, Jan. 1915.	21	2	9.5	21	7	33.3
Davis, E. P., Penn. M. J., p. 292, Jan., 1915.	18	0	0	18	7	37.7
Foulkrod: Am. J. Obs., p. 459, Mar. 1913.	4	1	25.	4	1	25.
Doederlein: Cent. f. Gyn. p. 1383, No. 38, 1913.	146	12	8.9	146	44	30.1
Total Cesareans	309	31	10.	311	111	35.6
Obstetric Treat.	4726	434	9.2	3965	2201	55.5
Preantiseptic Period.	1078	229	21.2	1033	554	53.6

*Murphy: Midwifery, 1862, p. 698, et seq.
†Braun, C.: Gynecology, 1881, p. 561.
††Blacker et seq. to Behm taken from table in "Cesarean Section an Improper Procedure," Jour. Am. Med. Assn., May 20, 1905.

The contributions to the literature are the postgraduate instruction of men in active practice. The authors are the bellwethers of those who read and learn: these writings may be the guides to the thoughtful to a better understanding, and to a more perfect solution of the difficulties which constantly arise in practice or they may be merely the occasions for commercializing the writer, who does not exhibit a celerity of judgment in his recommendations. Unfortunately, too often readers are unable to differentiate between the gold and the dross and as a result any one who will report an operation or a line of treatment, necessary or unnecessary as it may be, for some ordinary or

extraordinary indication, will have imitators who pass the bounds of reason. It may be difficult for the average reader to discriminate between fallacy and truth in the writings of a subtle author: for that reason a man of judgment will not rush to print until long, mature experience justifies the exposition of his theme. There have been too many unwise exploitations which were precipitated upon the profession in the hopes, if they proved popular, priority might be claimed. We all recall the fiasco of twilight sleep furor. We all know the dangerous results which came from the thoughtless laudation of the reputed harmless virtues of pituitrin. The pen is reputed to be mightier than the sword, and it surely is more deadly when wielded by the sophisticated writer. The basic error has crept into the obstetric field that pregnancy and labor are pathologic entities, that childbearing is a disease, a surgical malady which must be terminated by some spectacular procedure. There is too insistent preachment by those who are defending a reign of terror, of promiscuous operative furor, by the argument that women have so degenerated that childbearing is a phase of pathologic anatomy.

These discussions have gone so far that practitioners, supported by spurious authority, are operatively interfering when conditions demand a watchful expectancy, or at most some minor intervention --the culpability lies not with the general practitioners, but their sponsors. And no one is doing so much of this needless operative interference as many of our reputed leaders, and they know not the wreck they have wrought, for they hear only the encomiums on their fallacious representations and their misapplied skill. Those who have stopped, looked, and listened have seen and heard the catastrophes which have accumulated in the wake of the false promulgations. I believe there should be a most emphatic declaration that childbearing is not a disease, is a normal physiologic function which may develop pathologic aspects and for that reason all women should have a most careful conscientious prematernal care so they may guard themselves and be protected against possible disaster to themselves and their offspring. The general polemic that labor is a species of the torture of the inquisition has been advanced so frequently that many defend most drastic interferences on the score of saving women this horror -that the dread on the part of women of this frightful agony warrants any and all kinds of expedients to relieve them of the various stages of labor, when, in fact, too often these strictures are merely the shibboleths of those who would operate with little or no provocation. In consequence, we see some who claim the great object is to shorten the first stage by the routine introduction of the bag; another, that it is an obstetric crime to interfere with the delicate mechanism of dilatation, but the moment dilatation is completed, then, the parturient canal must be slashed, and the baby and placenta delivered by high art. Another holds that the baby must be ushered into the world as custom dictates it shall make its mortal exit -feet first; again, we find men who believe the cesarean operation the panacea for all ills and make it a routine procedure. I have been credibly informed that for a woman to be more than six hours in labor brought censure or reproach upon the physician in attendance, in one of the large towns contiguous to Boston. A former student was showing me through a hospital where he was resident: he informed me he was told, as a joke, that the "office hours" was the principal indication for forceps, but when he got on the obstetric service he found it was the plain truth. I have yet to be convinced that the average woman is repressing the reproductive function from the fear of the pangs of labor: the woman who is so loath to assume motherhood on this score probably has such an absence of maternal instinct that her progeny, uncreated, are more happily situated in the *here-to-fore* than made subject to her selfish influence. Those who have studied the situation know full well that sociologic-economic necessity transcends all others in the restriction of families.

In the past, conservative writers arraigned those who did meddlesome midwifery, the vogue of the times being minor transgressions like protracted digital dilatation which accomplished no purpose, titillation of the clitoris for the purpose of exciting pains, or making the hapless woman forget her troubles, pulling on the cord, or too frequent application of the forceps, etc. Meddlesome midwifery has now taken a more serious turn until it comprises all the known methods of necessity,

even major surgery, without the vital essence of a valid indication: the favorite rôle being those which will consummate delivery with the minimal expenditure of time. Is it not a parody on modern scientific obstetrics that each advocate of his special form of interference will proclaim results not in consonance with the experience of experts, will declare the simplicity of the procedure is such that all may do it, no untoward effects need be expected, when in our hearts we know their allegations, probably based upon thoughtless enthusiasm, are most egregiously exaggerated? And when these advocates appear before a scientific body, with their specious claims, all laud their skill, and rarely is one courageous enough to combat the irrational and untenable interference. It was a natural consequence that all obstetric procedures had their indications widened as their relative safety became established. But that any operation, because asepsis makes it reasonably safe and anesthesia keeps the patient quiet during its performance, should be so inordinately broadened in its scope that the suspicion (no candid admission) is evidenced that it is being done for the convenience and conservation of time of the operator, is a travesty on scientific endeavor. I feel that the modern trend of obstetric practice has been to apply surgical manipulation to normality to a degree which is not in consonance with refinement of judgment. What is needed is a reformation in the rules and the development of an obstetric conscience which will permit intervention only when intervention is imperatively needed. Strict indication is one thing, but the widespread use of operative interference with no indication except the whim, or plain obsecation of the attendant, has spelt disaster, has retarded the progress of obstetrics, and has fended off the days of conservation of the expectant mother and her unborn child. It is a reproach on the medical profession that a city like Newark may advertise the fact that it is safer to be delivered by a midwife than by a physician or in a hospital.

CONCLUSIONS

1. In safe conservative hands maternal and fetal mortalities have decreased in private practice.
2. The maternal and fetal death rates, in hospitals, have not shown an appreciable decline in one hundred years.
3. The fact that the death rate among, the emergency cases (i.e., those sent in by medical attendants) is over ten times that of regular applicants in the New York Lying-in Hospital is a reflection on the preliminary medical training of the profession.
4. Scientific investigation of antenatal pathology which will promote a prophylactic therapy will lower infant mortalities more than the present attempts to do so by routine operative termination of labor.
5. A properly conducted prenatal clinic, combined with conservative conduct of labor is a more certain method for securing declining death rates than promiscuous intervention.
6. Under normal conditions, spontaneous labor, aided by proper analgesia, is the safest way for mother and child. Inordinately applied operative interferences increase the hazards of birth.
7. The authorities who have fostered a peculiar method of routine interference in all parturient women, with their imitators, have retarded the advance in obstetric care, and are part contributors to the high American mortalities incident to childbirth.
8. It is a lamentable thing that properly controlled midwives will have less mortality than those who practice a routine intervention.
9. The proponents of operative cults have produced no evidence to show that their systems are more worthy, less risky, and promise a higher conservation of life than carefully watched spontaneous labor.
10. There are no more reasons why all parturient women should be delivered by operation than that all people should be inflicted with routine enemata or catheterization.
11. A medical fad should be discountenanced: precept and example founded on injudicious enthusiasm lead to many unwise courses.

12. Indications for obstetric operations demand revision: certainly, they should be more clearly drawn and curtailed, rather than extended.
13. A wise conservation in obstetrics will be more productive of ideal results than injudiciously used skill.
14. Obstetric teaching is so deficient in most colleges that there should be a sharp and early improvement: so long as obstetric teaching is defective so long will obstetric results be bad in practice.
15. An obstetric curriculum should be devoted to practical instruction on the manikin, in the class room, and in the clinic; obstetric surgery should be a very small part of the coordinated whole. The proper place of the latter is in postgraduate courses, intended for those preparing for the specialty.

REFERENCES

1. Blundell: Obstetrics, 1834, p. 657. (1a.) Ibid., p. 652.
2. Jour. Am. Med. Assn., Feb. 24, 1917.
3. Mueller, L.: Placenta. Previa, 1877, p. 195, et seq.
4. Stratz: Centralbl. f. Gynäk., 1899.
5. Corr. Blatt f. Schweizer Aerzte, 1896, p. 498.
6. Koblanck: Encyclopedia f. Geb. u. Gynäk., 1900, p. 189.
7. Jour. Am. Med. Assn., April 28, 1917, p. 1266
8. Jour. Am. Med. Assn., Jan. 6, 1912.
9. Braun, C.:Gynaekologie, 1881, p. 837.

A CRITICAL ANALYSIS OF TWENTY-ONE YEARS' EXPERIENCE WITH CESAREAN SECTION.

Williams, J. W. (Johns Hopkins Hospital Bulletin, June, 1921), in an interesting article based on his long experience presents the following conclusions:

1. This analysis is based upon 183 caesarean sections performed upon 145 women up to December 31, 1920.
2. The operations were done in a series of approximately 20,000 deliveries, and comprise 104 single, and 79 repeated sections. The latter were done upon 41 women, 34 of whom had two, and 7 three sections each.
3. Although the number of white and black patients in the service was approximately identical, many more caesarean sections were done upon the latter--114 to 69, while 30 to 11 required repeated sections.
4. The following types of operations were done:
    a. 121 typical conservative sections.
    b. 4 extraperitoneal sections.1postmortem section.
    c. 57 Porro sections.
5. The gross mortality was 5.46 per cent, but, upon deducting the cases in which death was not attributable to the operation, the net mortality was 3.45 per cent; or 4.07 per cent. in the conservative and 1.82 per cent. in the Porro Sections. All deaths, except one from hemorrhage, were due to infection.
6. The mortality was 13 times greater in the first 50 than in the last 133 cases--10 to 0.77 per cent. This remarkable diminution was not due to changes in operative technique, but to the avoidance of ascending infection by operating before the onset of or during the first hours of labor.
7. The conservative section late in labor is always dangerous, even if vaginal examinations have not been made; while the Porro section is relatively safe. The most important means of lowering the mortality of conservative caesarean section due to disproportion is by learning to determine before the onset of labor whether operation will be required or not.
8. The Porro operation is relatively safe even in infected or exhausted patients, as the absence of the involuting uterus hinders the spread of infection.
9. Disproportion due to contracted pelvis was the indication for interference in nine-tenths of the black, and in six-tenths of the white patients.
10. The several varieties of rachitic pelvis afforded the predominant indication in the blacks, as compared with the simple flat pelvis in the whites.
11. The most frequent non-pelvic indications were eclampsia and serious cardiac decompensation.
12. Caesarean section is not the ideal treatment for eclampsia, and is indicated only in the rare instances in which the cervix is rigid and undilated and venesection has not led to improvement.
13. It is likewise only rarely indicated in placenta previa. We have done but one section in 66 cases, and regard the rubber balloon as the best treatment.
14. Generally speaking the patient should be sterilized at the third section, either by amputating the uterus or by an operation upon the tubes.
15. We make the abdominal incision below the umbilicus, as it permits amputation of the uterus or operations upon the appendages, when necessary, without extending the incision.

16. The uterus should be incised *in-situ*, and eviscerated before incision only in the presence of infection. Our experience indicates that in normal cases the latter procedure increases the incidence of infection.
17. The uterine incision should be sutured in layers, and the greatest care taken to insure the closest approximation of the peritoneal margins.
18. The uterine cicatrix ruptured once in 48 women with repeated sections, as well as in 12 deliveries through the natural passages subsequent to section. The frequency of its occurrence is probably exaggerated, so that the dictum "once a caesarean always a caesarean" is not necessarily correct. On the other hand, the possibility of rupture must always be faced and constitutes the strongest argument against the unnecessary employment of caesarean section for non-pelvic indications.
19. The placenta was inserted upon the anterior wall of the uterus in two out of every five of our cases. Consequently, it is frequently involved in the uterine incision. This has no other significance than a momentary gush of blood.
20. The delivery of an asphyxiated child occurs less frequently than is generally believed. Somewhat over one-half of our children cried immediately after delivery, and only 7 per cent were deeply asphyxiated.
21. Notwithstanding the extraordinary value of pituitary extract in stimulating uterine contraction, pronounced atony with danger of death from hemorrhage is still to be reckoned with, and necessitated amputation of the uterus in two of our patients.
22. Uterine adhesions were absent in one-quarter of our repeated sections, and were extensive in one third of them. They are not necessarily the result of infection, as the puerperium was normal in 36 per cent of the cases in which they developed. In many instances they appear to be associated with imperfect approximation of the uterine wound or with other traumatic factors.
23. The old superstition that boys originate from the right and girls from the left ovary can be definitely discarded. In two-thirds of our patients the corpus luteum persisted until the end of pregnancy, and its location bore no relation to the sex of the, child.
24. Finally it should be remembered that cesarean section is not devoid of danger, and is relatively safe only when under appropriate conditions before the onset or during the first hours of labor. As the uterine cicatrix constitutes a *locus minoris resistentiæ* in subsequent pregnancies, cesarean section for other than pelvic indications should be performed only when necessary.

It is his conviction that the operation is being abused throughout the country, and if accurate statistics as to its results were available that it would be found to be accountable for many unnecessary maternal deaths.

It should be recognized that, although it is frequently the easiest manner of delivering the patient in the presence of various abnormalities, it is not always the safest, and that ideal results are obtained in only a few clinics.

J. B. H.

1921 - SHEPPARD-TOWNER Bill

Published; NYSJM Volume 21 (1921) 272

The American Gynecological Society, at its Forty-sixth Annual Meeting, held June 2 to 4, 1921, took the following action regarding the bill for the protection of mothers and infants, commonly known as the Sheppard-Towner Bill.

This action of the Society was taken, almost unanimously, after careful consideration of a report of its Committee on Maternal Welfare, acting jointly with a similar committee of the American Child Hygiene Association.

This Society wishes definitely to state its position for the information of the medical profession and others who are interested in this legislative program:

1. The committee is in thorough accord with the ends which this bill seeks to attain, namely, the protection of the health of mothers and infants.
2. We endorse the co-ordination of all health activities under one head. We consider the protection of mothers and infants to be a health measure of paramount importance to the individual and the State.
3. We oppose in principle the control of health measures by non-medical individuals or boards.
4. We believe in the local control of health activities as distinguished from Federal. We approve and indorse the idea of propaganda and investigation emanating from the Federal Government.
5. We do not indorse the Sheppard-Towner Bill in its present form because it does not conform to the above principles and because it embodies the questionable plan of subsidizing State health activities.
6. We indorse the project of establishing a National Department of Health.

GEORGE GRAY WARD, JR., President.
ARTHUR H. CURTIS, Secretary.
GEORGE W. KOSMAK,
FRED J. TAUSSIG, Committee.
FRED L. ADAIR, Chairman.

1921 - Maternity Benefits - Boston

From: Boston Med. Surg. J, Volume 182 (1921) p. 121-123

Last year several bills for maternity benefits were under consideration in the Legislature. One of them passed in the Senate and very likely would have passed in the House had it not been held up in the Committee on Ways and Means in order that it might be perfected. Last autumn the former chairman of that committee and now the leader of the majority in the House, Mr. B. Loring Young, asked me –as president of the Massachusetts Medical Society to study the different bills, to confer with the Department of Public Health, and to suggest whatever changes would be likely to make such contemplated legislation acceptable to the medical profession, which of course is most intimately concerned. After seeking the advice of several of our District Medical Societies and of the Obstetrical Society of Boston, and after careful consideration by the Joint Committee of the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society on State and National Legislation, I offered some suggestions, all of which were accepted. And the following Bill has been introduced into this session of the Legislature:

AN ACT

TO ENABLE THE STATE DEPARTMENT OF PUBLIC HEALTH TO PROVIDE ADEQUATE CARE FOR MOTHERS AND CHILDREN DURING THE MATERNITY PERIOD.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. From and after the first day of January, nineteen hundred and twenty-one, the State Department of Public Health shall have charge of the administration of maternity care, in accordance with the provisions of this act.

Section 2. Maternity care may be granted for such a period before and after confinement as the State Department of Public Health may determine. Any woman who is pregnant and who desires advice, instruction, nursing, or medical care for herself or infant shall be entitled to the benefits of this act provided that she make application to the State Department of Public Health at least three months before the expected date of her confinement, and provided that she accept and carry out such instructions in general hygiene and infant care as, in the judgment of the State Department of Public Health, her individual case demands, and, in the discretion of the State Department of Public Health, hospital care or home nursing or both medicine and medical care, and such other obstetrical care as may be necessary. No woman, however, shall be entitled to care provided under this Act who shall not have been a resident of the Commonwealth for one year at the time of her confinement or anticipated confinement.

Section 3. Maternity cases under this Act shall not be given to a city or town physician, in his or her official capacity. The recipient of maternity care under this Act, if remaining at home, shall be allowed, in all cases, to choose her own physician, subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the State Department of Public Health, governing this Act.

Section 4. The State Department of Public Health shall make, and may from time to time add to, alter, amend or repeal, such rules and regulations as may be necessary to carry into effect the provisions of this Act, including rules to define and delimit as accurately as may be possible, the conditions under which, and the time when women are entitled to benefits under this Act.

Section 5. The commissioner of public health and any person or persons duly assigned by him for the execution and enforcement of the provisions of this Act, may, in the discharge of his official duties

pertaining thereto administer oaths and affirmations; and any person knowingly making any false or misleading statement under oath or affirmation so administered shall be guilty of perjury and punishable by the penalties prescribed by law for that offence.
Section 6. This Act is hereby declared to be a public health measure and the maternity care under this Act shall be' granted free of cost to all persons entitled thereto regardless of their financial condition.
Section 7. For the purpose of making necessary preparations for carrying out the provisions of this Act, there shall be appropriated, to be paid out of the treasury of the Commonwealth from the ordinary revenue, to be expended by the State Department of Public Health, a sum not exceeding twenty-five thousand dollars. The provisions of this section shall go into effect July first, nineteen hundred and twenty.
Section 8. From and after January first, nineteen hundred and twenty-one, the State Department of Public Health may expend such sums for administering the provisions of this Act and providing maternity care thereunder as may be annually appropriated by the general court.

Regarding this Bill there is great diversity of medical opinion. Physicians in general are not socialists. They do not like the present Industrial Accident Insurance business. They dread the threatened health insurance measures, of which this Maternity Benefits Bill is very probably only the beginning. Not only as citizens do they object to the tremendous increase of taxation involved in such paternalistic governmental measures, but professionally they object to such interference with their freedom.

Overworked country doctors complain that even the present state and national requirements are almost unbearable. Bad enough, they say, to have to particularize death certificates to suit the State House and to count their morphine tablets and make record of every dose of paregoric, without having to send to the Department of Public Health the pelvic diameters and blood pressures of their obstetric patients. Moreover, some fear that when the State pays the bills, the women will demand continuous medical attention during labor, instead of being content, as many are now, with having the doctor present just at the last, and with, perhaps, a couple of subsequent visits. Nor are the obstetric specialists in any agreement regarding the probable effects of the Bill. Some believe it will reduce both maternal and infant morbidity and mortality by requiring greater prenatal and obstetrical care than is now generally given. But others see in it all sorts of disadvantages.

In all the discussions much time has been wasted over economic and political issues. We were fairly warned that some such legislation is extremely likely to be passed. And, as Governor Coolidge recommended it in his annual message, no veto need be expected. That we were given every chance to make the Bill unobjectionable was certainly a courtesy to be grateful for and to take advantage of. Nor is it yet too late to ask for amendments. And one purpose of this communication is to ask for further suggestions from the profession for bettering the Bill.

The joint committee on legislation decided that, even if possible to defeat the measure, it would not be wise for the state medical societies to appear in opposition. Therefore it was voted to take part, as we were asked to do, in framing the Bill, and if our suggestions were adopted, to support whatever received the endorsement of the Department of Public Health that will have full responsibility in carrying the measure into effect. Here is an instance of the great responsibility resting upon this committee when there is no unanimity in the medical profession regarding proposed legislation. And in such instances it is incumbent upon those of us who are in favor to give our reasons: Here they are:

1. This Bill is intended for the benefit of our patients, not for our benefit. And yet, in the large and true view, whatever benefits our patients also benefits the medical profession. The only real question then is if this legislation will really benefit Massachusetts families.

2. While the rich in their own homes, and while the poor in lying-in hospitals can now have excellent obstetrical and nursing service, and while in the smaller communities all families in such times of need are perhaps well served, there yet can be no doubt that at least in our larger cities families of moderate means cannot afford and so do not receive first-rate service.
3. In other conditions of helplessness, by means of state and other civic institutions, and by various semi-charitable organizations, families having only small or moderate incomes can get excellent professional and nursing service. Is there any reason, why such families shall not likewise be helped when the mother's health and even life is in jeopardy --to say nothing of that of her infant before or after its birth?
4. In the division into specialties the medical profession is making great advance in usefulness. But this is not as true of the obstetrical specialty as it is of some others. To begin with such specialists are as yet few and far between. Nine-tenths, if not more, of our babies are born into the hands of general practitioners, per *vias naturales, it* may be remarked in passing. One potent reason why obstetrical specialists are still few is because it is so generally by obstetrical service that the general practitioner becomes the family physician; furthermore, and because of this, many physicians undertake obstetrical practice and continue it long after they wish they could afford to decline such calls. Except in the large cities, there is thus small room for would-be specialists in obstetrics. They will have far better chances if this Bill becomes law. For manifestly it will be necessary to provide a supply of consulting obstetricians throughout the State. This will lift the standard of obstetrical practice.
5. The troublesome question of midwives will also disappear. For when the State stands ready to furnish the service needed, both obstetrical and nursing, the lesser fee of the midwives for this combined service of doctor and nurse will lose its present attractiveness.
6. If for no other reason, I am in favor of the Bill because of its promise to provide the proper nursing service that now is unobtainable in most families. In prenatal oversight and in subsequent child-welfare visiting such service has latterly been shown to be fully as beneficial, as in the period *of* the labor and of the confinement in reducing maternal and child mortality and morbidity. It scarcely needs to be pointed out that, by the efficient organization and distribution of a better nursing service, great advantages may also confidently be expected by both doctors and nurses.
7. Immense responsibility will devolve upon the Department of Public Health if the proposed Bill becomes law. For while the choice of her physician is allowed to the expectant mother applying for state aid, such choice is restricted to physicians who agree to accept the fees -- and also the rules and regulations of the Department. This will insure against the employment by the State of physicians whose practice is not up to the standard. Herein it is plain there is rich opportunity for all sorts of trouble. But the acceptance of the other horn of the dilemma would be far worse. For it is plain that in furnishing the service the State in no small measure guarantees that it shall be of standard quality.

ALFRED WORCESTER, M.D.,
President, Massachusetts Medical Society.

1921 - Maternity Bills Before The Legislature - Massachusetts

Published Boston Med. Surg. J. Volume 184 (1921) p. 184-185

On February 24, the Committee on Social Welfare will give a hearing in the auditorium of the State House on the two measures now before the legislature, dealing with maternity benefits. Copies of these bills and of the report of the Maternity Commission may be obtained at the State House or through any Senator or Representative. An abstract of the Commission report has been published in the Journal. Abstracts of the Spencer bill, which will be considered in the morning, and of the Commission bill, which will be considered in the afternoon and evening of the 24th, are printed below.

THE SPENCER BILL

The Spencer bill (Senate 162) "to protect mothers and children during the maternity period, " provides that maternity benefits shall be placed in charge of the State Department of Public Health. Any woman, a resident of the Commonwealth for a year before her anticipated confinement who applies to the Department and is found " to be without means of providing the ordinary and proper care for herself or infant or both during a reasonable period before, at, and after childbirth, " is entitled to the benefits provided, without incurring the stigma of pauperism, and without publicity being giving to the aid received. The bill provides that the applicant shall receive and "must accept such instruction in general hygiene and infant care as the individual case demands, and hospital care or home nursing or both medicine and medicinal care, and such other obstetrical care as may be necessary."

Furthermore, a cash benefit to be paid directly to the woman of not more than twelve dollars a week is provided when necessary, provided she refrains from gainful employment while this benefit is received.

The recipients of the benefits can choose her own physician and nurse, provided they agree to the fees and regulations established by the Department of Public Health. The physician's fee shall not be less than fifteen dollars for each confinement.

This statement involves the essentials of the bill. Other sections deal with administrative details.

THE COMMISSION BILL

The bill prepared by the Maternity Commission, which is included with the Report (House No. 1835 of 1920) provides as follows:

"The Department of Public Health is hereby authorized to provide advice, instruction and visiting nursing care to women (resident in the state for six months) during their pregnancy and confinement, and to mothers and their infants after childbirth, regardless of their financial condition.

When "any such woman is in need of aid other than that" already mentioned, it is provided that the commissioner of public welfare or the local authorities shall provide it without the stigma of pauperism.

The Department of Public Health is given authority to make reasonable rules and regulations, which must he obeyed. Nurses may be employed on full time or on part time, and in the latter case are exempted from civil service rules.

The Department is authorized to disseminate information regarding the objects of the act.

In another column the Journal comments on the relation of the medical profession to these bills. It wishes to point out here the essential differences between the two bills. The Spencer bill is a measure

of poor relief; it provides at state expense, nursing, obstetrical care or hospital care, and, if necessary, financial aid, to any poor woman, who applies and is found, on investigation, to be deserving. The state is to pay whatever physician and nurse the woman chooses, provided they agree to abide by any rules laid down and accept the established fees. This measure is comparable to others which propose state aid for the deserving poor. It must be considered as a social and economic question, not as a medical question, unless it is shown that the provisions will so improve obstetric and nursing care as to make the matter one of medical importance.

The Commission bill is, in the unanimous opinion of the Commission, the best method of cutting down an unduly high maternal and infant mortality. This is to be done by the state furnishing to any woman pre-natal, obstetric, and post-natal instruction and visiting nursing care. Other aid of whatever sort, if found necessary in any individual case, must be supplied by the proper state or local authorities.

This bill is a health measure. The physician is not mentioned anywhere in the bill, except by implication in the clause last quoted.

The consideration of the bill involves two questions. The first is the medical question, whether the best way to cut down maternal and infant mortality is by supplying visiting nursing care. The Commission says it is because experience elsewhere has shown this to be true. The second question is political and economic. Is this visiting nurse care best supplied by the state? At this latter point many physicians balk. As physicians, we must take steps to cut down mortality if, as is directly stated in the report, it has been done elsewhere. We must accept the remedy suggested in whole or in part or suggest some other remedy which can be shown to be better. Action will be taken soon. The profession should exert some influence in the matter.

1921 – Maternity Legislation - Massachusetts

Published Boston Med. Surg. J. Volume 184 (1921) p.574-578

May 21, 1921

Walter P. Bowers, M. D.
Managing Editor
Boston Medical and Surgical Journal, Boston, Mass.

Dear Doctor:

Recently the Boston Medical and Surgical journal invited open discussion on certain subjects. A subject of the greatest importance to physicians concerns Maternity Legislation which is now before the U. S. Senate.

I have previously sent you a copy of the briefs I presented to the Massachusetts Legislature, as you had requested I should do, but as yet I have seen nothing of them in the "Journal."

I am sending you herewith a copy of the brief I presented to the U. S. Senate Committee on Education and Labor, May 5, 1921. If it is your desire to invite discussion on matters of importance I shall expect you to publish this brief in the very next issue of the "Journal." I mention the "next issue" because discussion at this time is very important on account of the coming meetings of the M. M. T. and the A. M. A.

Let all arguments pro and con be heard.

A controversy is interesting only when both sides are equally informed.

Differences of opinion amongst Physicians should find expression in our Medical Journals; a legislative hearing is not the best place to develop them. When Physicians disagree with Physicians, when Physicians disagree with Health Authorities in the presence of legislators, is it surprising that these legislators should afterward turn a deaf ear to other good health problems? Is it surprising that some really good bills advocated by practically all Physicians have been turned down? Let us have a clearer conception and understanding of our own problems and then stand together if such a thing is possible.

Let us at least argue amongst ourselves before arguing in public. No one sided opinion should alone be heard nor assume to be right.

If Physicians are to subscribe to maternity legislation they must consistently subscribe to the whole problem of Social Health Insurance. If they are opposed to Social Health Insurance *in toto*, then they must consistently be opposed to maternity legislation which is only a part of the whole. Physicians must either stand for or against Poternobism (sic) as related to the practice of medicine. Which shall they do? Discussion is necessary that the right decision may be made.

Kindly publish this brief which is in opposition to maternity Legislation; likewise I would be pleased to read any arguments in favor of same.

Very truly yours,
A. H. QUESSY, M. D.

Note: Copy of brief referred to as having been forwarded was never received.
Editor.

Brief Read Before The U. S. Senate Committee on Education and Labor, May 5, 1921, by A. H. Quessy, M. D., Fitchburg,Mass.

GENTLEMEN OF THE COMMITTEE:

The Study of Maternity Legislation is now before the Nation. Physicians cannot and should not remain silent when action and free discussion are imperative to set the Nation right on this subject. A controversy is interesting only when both sides are equally informed.

Well may we ask from what source or sources comes this proposition for Maternity Legislation? It is far from being popular. There is no evident demand for it on the part of the great American public; capital and labor are not demanding it; physicians throughout the country are opposed to it. Women of the Nation are not clamoring for it, excepting a few only who have money to burn and time to lose to favor certain pet projects, amongst which is Maternity Legislation. Women with the large families, the real reproducers, are not seeking it. Who are those few women who favor Maternity Legislation; who are those few self-constituted champions of so called women's rights? They are women, many of them married or without children. They are mostly members of Women's Societies. These women claim to be the representatives of their sex, but who, may we ask, invested them with that authority.

The arguments for Maternity Legislation have been placed before you and the Nation in glowing colors. Marvelous results have been promised and upon these promises the proponents have gained support. Do not be led astray. Maternity Legislation is a huge fabrication of inflated, socialistic and wrong ideas, and its only claim to public attention is because, like many other forms of propaganda, it has been cleverly popularized in the minds of some people, who with the best of intentions are allowing the heart to dominate the brain. Maternity Legisla**tion** is in error, it will not and can never give the promised results because Maternity Legislation is based upon wrong premises and because the cause and remedy for Maternal and Infant Mortality is being sought at the wrong source. Let us not be guided by false sympathy, nor be led into error when we know that physicians, nurses, Medical educators, Departments of Health, Nursing Associations, Child Welfare Organizations, Women's Leagues, Hospital Staffs, and numerous other agencies have been in the past and are now actively at work to protect the Health and life of the Expectant Mother and her off-spring.

Maternity Legislation comes from an erroneous idea in the minds of some people based upon questionable statistics, that the health of the American nation has gone far below the universal standard, and that prenatal and postnatal care, and maternal and infant hygiene are the sole panacea for all our evils. We are sick and tired of social reforms which are constantly being foisted on us to cure us of what ails us when nothing at all out of the ordinary is the matter with us.

Maternity Legislation has just been defeated in the Massachusetts Legislature. The Physicians of Massachusetts were strongly opposed to it, and they are equally opposed to Maternity Legislation, be it State or Federal. The American Medical Association whose membership is made up of Doctors from every State in the Union is opposed to Maternity Legislation. Furthermore, the principles concerning Maternity Legislation were voted upon and not approved by the council of the Massachusetts Medical Society. We are told that Maternity Legislation is favored and endorsed by certain women's organizations. Much publicity has been given to only one side of this question; public sentiment easily reflects the work of propaganda. Endorsement on a bill does not guarantee that this bill is 100% correct, nor that it has been well understood, neither does it mean that the endorsers are the best judges. Maternity Legislation is purely a medical problem, the value and necessity of which cannot be better judged than by physicians.

Physicians oppose Maternity Legislation, State or National:

1. Because Maternity Legislation is unnecessary and superfluous.
2. Because it is not really a Health measure as it is claimed. It is essentially socialistic in tendency as it is in Germany and elsewhere, and we don't want socialism parading in this nation under the guise of health measures.
3. Because Maternity Legislation and its accompanying bills are in error and are exaggerated.
4. Because they are based upon assumptions which are fundamentally wrong.

5. Because they point to the wrong cause of and the wrong remedy for Maternal and Infant Mortality.
6. Because they are a direct attempt to give autocratic power to the department of health in each State where advisory power alone should prevail.
7. Because they are an entering wedge to State or National control of the practice of medicine.
8. Because they are an invasion on the realm of private rights, personal liberties and constitutional safe-guards.
9. Because present day methods are giving and will give better results than any form of Maternity Legislation that may be proposed; the burden of proof to the contrary is up to the proponents.
10. Because this Legislation is coming up at a very inopportune time; a feeling of unrest and dissatisfaction exists in our land; our government was founded upon true democracy, guaranteeing to every man his rights and privileges. Recently our Country went to war, our soldier boys faced death that Autocracy should perish and Democracy should endure. Can it be that we were wrong in fighting for Democracy in the face of so many later attempts to introduce Autocracy? Maternity Legislation leads to Socialism; Socialism leads to Bolshevism; Bolshevism leads to Anarchy. The Physicians most strongly oppose Maternity Legislation because it leads the way to Socialism and because it is radically wrong.
11. Because Maternity Legislation in other countries is a poor example for America to follow. The Doctors of Austria are starving; the Doctors of Germany are in open rebellion; the Doctors in England are much dissatisfied.
12. Because State or National control of the practice of Medicine would be harmful.
    a) It eliminates competition---there is no incentive to become skillful.
    b) It would not be necessary to build up a practice.
    c) There would be less revenue for the skillful and competent man.
    d) There would be less incentive to study medicine and fewer doctors in the future.
    e) The young man will be driven to other and better fields of endeavor.
13. Because as stated by a Brother practitioner in Massachusetts, "Maternity benefits or Legislation is paternalism, communism, Sovietism, and all the other isms of the kind condensed into one. It is the entering wedge for all the various forms of compulsory insurance such as Health, old age, sickness, etc. It is the camel's head in the tent, soon to be followed by the rest of the camel. It makes the white man the equal of the lndian, a ward of the State or Nation. The State or Nation has as much right to pay my Grocery bill as to pay that under discussion."
14. Because in all the shuffle resulting from Maternity Legislation, the good and trustworthy physician will be lost, expectant Mothers will be turned over to amateur consultants and advisory committees, and God help the women in confinement if they are, and God help the American people, if during the Influenza epidemic in 1918, the Physician had been lost in some such shuffle.
15. Because Maternity Legislation is in error and based upon wrong premises. When Dr. Oliver Wendell Holmes was asked at what time he would begin prenatal care, he replied "Two hundred years before the child is born." Heredity therefore plays a very important part and physical imperfections are handed down from generations which cannot be changed by prenatal and postnatal care, nor by the ridiculous methods proposed by Maternity Legislation. Whether we are willing to admit it or not, the true cause of impaired physical energy lies in our moral and social conditions. According to ministers of all denominations, the lack of morality is deplorable in this country as well as elsewhere. Venereal diseases are affecting the health of womanhood and manhood. Slavery to fashion and pleasure are lowering the general health and powers, of resistance, making girls arrive at the stage of Motherhood,

weak, anemic, ill-nourished, nerve-wrecked, deformed and very often unfit to bear children. If the proponents of Maternity Legislation are really in earnest in their endeavors to better the human race, the Expectant Mother and the Off-Spring, I would suggest that they devote the same amount of energy in advocating and encouraging more religion, better living and working conditions, better morals, better habits, better protection by right dressing, less dancing, less theatres, more fresh air, less burning of the mid-night oil, and many other things too numerous to mention. The results obtained would fade into insignificance the proposition for Maternity Legislation.

16. Because Legislation cannot be depended upon to reduce Maternal and Infant Mortality. Even if it were 100% efficient women would still die in confinement, and Infants would still die before or after birth**,** no matter what the skill of the obstetrician or the laws that might be enacted. It is a law of nature to die and nothing can prevent certain deaths. Medical science in all these years has progressed without State or Federal control; it does not need State or Federal control to continue.
17. Because Maternity Legislation is wholly and radically wrong, and the bills now up for consideration, and any substitute bill cannot be partially right.
18. Because the Sheppard Bill (S1039) is apparently identical with the report made by a Special Commission to the Massachusetts Legislature. This report was thrown aside by the Massachusetts Legislature, and therefore, the physicians of Massachusetts are opposed to the Sheppard bill (S1039). Bill S1039 is very cleverly worded, but potentially it is as far reaching in State control as was any bill ever yet presented. It is objectionable and should be opposed. All that can be said against Maternity Legislation in general applies equally well to Bill S1039 or any of its kindred substitutes.
19. Because in addition, this Maternity bill stipulates, under Section 1, that its purpose *is to promote the care* of Maternity and Infancy in the several states. Now, what is meant by, and what is there underlying, the word *"care"?* This word is not clear; it is vague; its interpretation involves much latitude of thought and ideas. What real meaning is disguised by this word? If medical service, if hospital service, nursing service, medicines, etc., are involved in the interpretation of the word *"care,"* we object. The whole practice of obstetrics thus becomes condensed or centralized in this one word *"care"* This part of the bill is objectionable because it establishes a foundation upon which to build future state or national control of the practice of obstetrics.
20. Because there is *danger* in this bill when its purpose is to provide instruction in the hygiene of maternity and infancy and its *related subjects.* There is grave danger in assigning to a nurse duties which far exceed the scope of her training. There is still greater danger in providing for nontechnical instruction as specified in the bill under Section 9. A nurse is a nurse, she is not a Doctor. Advice and instruction should be given to women during pregnancy by Physicians, not by nurses nor by persons, nontechnically trained. Physicians know better than anybody else the conditions and facts in the case and are better qualified *to* advise and instruct regarding the signs, dangers and treatment or care of eclampsia and other diseases. Nurses cannot properly interpret the analysis of urine and much injury may be done pregnant women by injudicious advice or instruction in kidney, heart or other complications. The diet must be under the direction of a Physician for he knows what foods containing this or that element are necessary for proper foetal development and the preservation of the Mother's physical welfare. In fact, the care of pregnant women belongs to properly trained instructors and pysicians alone are properly trained to instruct pregnant women. Advice in hygiene, though important, is secondary and should be carried out by the nurse under the direction of the Physician only. Gentlemen, ask yourselves what you would prefer to do concerning the person dearest to you, your wife. Would you prefer to seek advice and

instruction for her from a Physician who knows something, or from some person who knows nothing?

21. Because instruction in *subjects related to* maternity and infancy, as provided for in section 9, would be a probable means of circulating literature or advice accompanied by unwelcome and unwise intrusion into the most intimate of private affairs, and what guarantee have we that this would not be done? What guarantee have we that, amongst other evils, birth control cult would not find here a fertile breeding place? A proponent in Massachusetts has already said: "We want quality, not quantity." Would the brazen advice to refuse to bear children, flaunted before the women of this nation by one of their own sex, be passed along as the best means of preventing death from childbirth? And if these disseminators of information should choose to go so far, who is going to follow them from home to home to check them? We refuse to place our confidence in nontechnical, amateur and unscientific instructors, especially in *subjects related* to maternity and infancy, and we refuse to subscribe to any proposed legislation which might make possible these things.
22. Because any state which passes a similar act must, in order to secure federal appropriation, accept the provisions of this federal bill and thereby accept federal supervision. The Children's Bureau of the Dept. of Labor is to be charged with the carrying out of the provisions of this act. This means, under Section 8, that any state must submit to, the Children's Bureau in Washington for its approved detailed plans for carrying out the provisions of the Act; these places, it is stated, shall be in conformity With the provisions of the Act and will not be approved until due notice of such action is sent to the State by the Children's Bureau. Not much choice nor, freedom of action is left to the State by virtue of Section 8. If this is not placing in the hands of the Children's Bureau in Washington the whole obstetrical situation in both Nation and State, then, what is it? If this is not providing insidiously for future national control of obstetrics, then what is it?
23. Because according to information gleaned from the latest report of the Department of Commerce, the public debt of the United States apportioned among all people, men, women and children, makes a debt of $235.40 for each and every American to pay. And in the same report one learns that the Federal government took $62.42 per capita to keep the wheels of government running in 1920, and in 1916 it was but $7.62. We therefore believe that his Excellency, Governor Cox of Massachusetts has struck the right chord when in newspaper items he is reported as saying: "Assistance is being asked from the State to help along work that ought to be done or carried on by the individual or family. It is our duty to ask ourselves whether the benefits secured from State aid will justify public expenditure. Careful analysis often discloses that it is far better for the Commonwealth to refuse State Aid than to grant it." These words apply equally well to Federal Aid. It seems that Uncle Sam's debt is now large enough without making it larger without good and sufficient reasons. If any additional expenses to be voted let me express the hope that it will be in favor of our ex-service men.
24. Because we believe in the motto "Law and Order" which made famous, Ex-Governor Coolidge of Massachusetts now Vice-President of the United States. Physicians cannot and must not strike with any more justification than did the policeman in Boston. But if it is wrong that policemen should strike, if it is wrong that physicians should strike, then it is just as wrong to impose upon them working conditions or conditions of State or National servitude which would be repulsive and unbearable. Justice must be dealt out if law and order shall be guaranteed.
25. Because Physicians cannot believe that it is necessary to give autocratic power to the different States in order to continue preventive work. Are we to believe that our whole structure is obsolete and must crumble to make way for the imaginary scheme of social reforms? No. Past achievements in the line of preventive medicine without State or Federal

control lead us to the conclusion that we must not pause but continue. We must renew our courage and pursue our object, with added energy by following that same path which has brought glory to the practice of medicine in America and will lead to further and greater achievements. Gentlemen, the 10th amendment to the Constitution declares that the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively or to the people. The people who hold reserved powers are the people of each and every State. To them and to their States certain powers are reserved. Are these reserved powers subject to be taken away by three fourths of the States through the amending process? This union must be a union of States held together by a National bond that was formed through the establishment of a central authority for certain limited purposes, and a most important part of the strength of the whole system consists in the recognition of local and personal rights, without which there can be neither peace nor progress, nor security, nor public tranquility, nor private happiness. It is time to rebuke these tendencies of opinion and feeling which indicate dissatisfaction with the political institutions that for a period of 140 years have guarded this country in a course of development, prosperity, and happiness that is unexcelled.

26. The doctrines favoring the centralization of power in Washington are becoming more and more obnoxious to the thinking people. The doctrines advocated by Thomas Jefferson and Abraham Lincoln favoring a government of the people, by the people and for the people are gaining in their hold upon the public mind and heart. The people of this country are becoming intensely jealous of their rights as communities, of their inalienable rights as sovereign citizens.
27. In other words, the centralization of all power in the Federal government at Washington is distasteful to the people's sense of justice, and thoroughly out of harmony with their views of liberty.
28. No trade or profession can claim more self-abnegation than the medical profession. Physicians are far from being selfish, day and night, they administer to the needs of the sick; the poor have always found the Doctors their friends. Doctors have voluntarily co-operated in all measures which would really improve the general health, knowing fully well that by so doing, they were reducing their own source of revenue. They subscribe to preventive medicine, they believe in it for the sake of humanity, but when it comes to handing over the practice of medicine to State or National control, or transferring it to amateurs and incompetents, physicians most strongly object.

A. H. QUESSY, M. D.
Fitchburg, Mass.

1921 – Maternity Aid - Massachusetts

Published Boston Med. Surg. J. Volume 184 (1921) p. 106-107

Everett, Mass., Jan. 4,1921.

Mr. Editor --

The correction in the JOURNAL of December 30,1920, referring to the statement of the writer of the editorial on Maternity Aid of August 5, 1920, which stated that "the women of Massachusetts stand about eight times as much chance of death from childbirth, if cared for by their own physicians or midwives, as do the women in the poorer parts of Boston under the care of careful but inexperienced students properly supervised by experts," amends this statement by saying, "that eight deaths should be added to the list of out-patients who died as a result of pregnancy and labor during a fifteen year period, making a mortality rate of 14, instead of 11, per 10,000 live births, as compared with a rate for the state of 38 in 1901 and of 84 in 1918." In the issue of August 26, Dr. Bateman questioned the fairness of comparing the 11 deaths per 10,000 live births, with the excessive death rate of 84, which was apparently influenced very largely by influenza. There is reason to suppose that the death rate was also increased in 1919 by the same cause. In the same issue Dr. Mongan pointed out that the maternal death rates in many parts of the state were not wholly hopeless, while Dr. Malone, in the Issue of September 2, 1920, suggested that the robustness of some of the types of patients treated at the out-patient department of the hospital might help toward a favorable death rate. The recent correction made, whereby an addition of eight deaths improves the chances of the women of the state by 25%, leads the writer to question whether another revision might not discover more deaths which would improve the chances of life some 25% or 50% more. Lest the laity outside of Boston should entice the inexperienced students away because of their marked efficiency to the detriment of the medical schools and for the peace of mind of the prospective mothers living at a distance, and since most of your readers have neither the time nor the opportunity to see the printed reports of the Lying In Hospital for the years 1901 to 1915, inclusive, the writer suggests that you publish the record of the hospital for the ont-patient department as shown In the body of the reports, in three of five year periods, for the 15 years under consideration, giving the number of deaths and the cause of death, and whether they died at home, at the Lying-In Hospital, or at some other institution.

The writer's interpretation of the record shows 225 or more patients who needed more care than the inexperienced students could give them, who were cared for elsewhere, and that-there were about 30 deaths. This would practically double the death rate as first stated. It would require some explanation to convince the writer that deaths from this group due to septicaemia, eclampsia, post-partum shock and postpartum hemorrhage should not be legitimately a part of the record if it Is to be used as a measure of comparison with the whole state. If the writer is correct, the average death rate for the state for the period 1901 to 1915 was 47 per 10,000 live births. If this is used instead of the higher rate for 1918 of 94, in comparison with the doubled student rate of nearly 22, the students would appear to be some over twice as efficient. This seems to the writer the fairest comparison, in view of the fact that, following 1915, conditions were much modified by the war and influenza. The printed reports of the Lying-In Hospital, published for 1917, 1918, and 1919, condensed the summary of the hospital work into a space of two pages for each year, so that the data for these years are not at present easily obtainable by most physicians. If there is to be a full report of the hospital for the past three years printed soon, might not the comparison with the year 1918 be left until more is generally known, as we hope it will be, after the entire report and investigations of the Maternity Commission are printed in full? In view of the fact that the correction of December 30, 1920, is not signed, it seems fair to assume that if the editor of the JOURNAL was not the writer of the different

articles under consideration, at least he is in agreement with the implied position, that the inexperienced students are still six times as efficient, when properly supervised by experts. The JOURNAL record so far has indicated no attempt to modify the measure of efficiency by introducing any of the factors that must always enter into the chances of life and death when comparing individuals or groups. The editorial writer chose the death record alone as the measure of comparison. The hospital record seems to show that for the fifteen year period at the Lying-In Hospital proper, the average death rate was 215 per 10,000 live births. Comparing this with the 14 per 10,000 live births of the students, the inexperienced students seem to be 15 times as efficient as the experts. The students being six times as efficient as the general practitioners and midwives, it logically follows that the general practitioners are two and one-half times as efficient as the experts. The record of septicaemia is also worth considering. The outpatients are credited with five deaths from septicaemia for the entire fifteen year period, when 29,204 patients were cared for, or one death to 5,841 patients, or 1.71per 10000 live births. The hospital department, with 10,790 patients, had a record of 56 deaths from septicaemia, or 52 to 10,000 live births. Here the inexperienced students seem to be about 30 times as efficient in preventing septicaemia as the experts, and the practitioners of the whole state nearly five times as efficient as the experts. The hospital record for the five-year period 1901 to 1905, shows 3172 patients and seven deaths from septicaemia, or one death to 453 patients. For the period 1906 to 1910, 4,09S patients with 21 septicaemia deaths, one death to 195 patients. For the period 1911 to 1915, 4,219 patients and 28 deaths from septicaemia or one death to 150.7 patients.

The writer has only one report of the Massachusetts Homeopathic Hospital at hand, that of 1915. The record shows that at the Maternity Department there were 1,117 live births, with 16 deaths of mothers. Of these, two died of septicaemia. The record at the Lying-In Hospital the same year was 850 live births, 16 deaths, seven being from septicaemia. The record seems to Indicate that the Homeopathic Hospital was more efficient by 31%, but the writer is sure than any medical man of experience would admit the comparison was not a fair one after studying the cases cared for; but no such element has so far appeared to modify the dictum of August 5, 1920.

The writer entertains the hope that enough has been said to show that even such serious subjects as vital statistics need to be used as Jeff would say, with “discretion," and that however innocent the intent, statistics may work an injustice. The writer is not a statistician and, while an effort has been made to be mathematically accurate, he would not care to be condemned utterly if some slight errors might be found if looked for diligently. The experience gained by a summer course at the Boston Lying-In Hospital out-patient department In the early nineties, while an inexperienced student, as well as observation in hospital and private practice since, leads the writer to agree with Dr. Malone that many patients of foreign birth have a physical stamina that makes motherhood a much easier task and that they am often less susceptible to septic infection than many women of native stock. The number of deaths given in the state report for 1918 from puerperal fever for several of the larger mill cities, with a large proportion of foreign mothers, seems to suggest the same conclusion.

There is certainly evidence that maternal mortality has increased very markedly since the beginning of the war and the advent of the influenza in 1918. It certainly is the duty of every medical man to help investigate at least so much of the record as comes within his own field of observation or work. On general principles, it does not seem reasonable to assume that the general practitioners of the state have suddenly become only half as efficient as formerly within the past few years. The record of the Boston Lying-In Hospital showed an increase of 300% in the deaths from septicemia for the period 1911 to 1915 as compared with the period MI, to 1905. We do not recall that there was any warning editorial in the Journal, or that there was any public demand that the institution should be managed by the State Board of Health.

The writer does not wish to be understood as trying to discredit in any way the excellent record of the Lying-In Hospital in all its departments, nor to attribute any unfair intentions on the

part of the editorial writer of the Journal but he does think that the editorials referred to are a good illustration of much of the propaganda that has been used in recent years to advance legislative health measures. The data often, submitted and later quoted contain considerable fiction and the application is often unfair. The "correction" article states that the error referred to was made through misinformation, which was published August 5 and September 9, 1920, and it was accepted in good faith by most of us until December 30, 1920.

The world today is overcharged with misinformation and undoubtedly misinformation of some kind contributed toward the death of many of the 804 maternal deaths in Massachusetts in 1918.

GEO. U. WHITEHILL, M.D.

1921 – Analysis of the Potter Version – Speidel – Louisville KY

By EDWARD SPEIDEL, M.D., LOUISVILLE, KY.

*Read at the Thirty-Fourth Annual Meeting of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, St. Louis, Mo., September 20-22, 1921,

Published in Am. J. Obs. Gyn. Volume 3 (1922) p. 150-155; commentary p. 189-191

It is not necessary to explain to the members of this Association or to any one who has kept in touch with obstetric literature, what is meant by the Potter method of version. Presented for the first time five years ago, and followed up each year with an additional paper on the same method, Dr. Potter has had the gratification of seeing intense antagonism and resentment change to unqualified admiration.

Potter presented his version as a method of delivery to be used practically in all cases, with the idea of relieving the parturient woman of the discomforts and delays of the second stage of labor. He presents no indications or contraindications for the use of the version and, consequently, leaves no opening for a discussion on that point.

Having had the pleasure of a visit with Dr. Potter in Buffalo, and from a limited experience with his method in private and hospital practice, the writer would like to discuss the version from three distinct points of excellence.

First: It is such a decided improvement over all the old established procedures that it should supplant every other method of performing podalic version.

Second: The delivery of the child after the version has been performed is such a marked advance over the old methods of breech delivery that it should displace that practice at once.

Third: His effective treatment of the child at birth by gentle rational manipulations, is so superior to the many rough treatments to which the asphyxiated baby has been subjected heretofore, that it should induce every obstetrician to emulate them.

The writer wishes accordingly to discuss the method from these standpoints without endorsing the object for which the author presents it.

The Potter method of version, fortunately, is not solely a hospital procedure. It is easier than the older method and can be readily performed by any one at all competent to do a version. A person with a small hand is by nature especially qualified to do a version. It can be performed in the humblest home. In fact the ordinary kitchen table makes the most ideal operating table for any of the ordinary obstetric operations. The patient's head is at one end of the table, convenient for the anesthetist, while the hips are at the other end with the legs upon two chairs in the modified Walcher position, which is a feature of the technic. This position as is well known increases the true conjugate diameter about 1 cm. The vaginal outlet is drawn so far down that the angle formed by the long axis of the uterus with that of the vagina, is diminished and the uterovaginal canal becomes less curved, approaching more a straight line and making delivery much easier. It also relaxes the perineum and so lessens the liability to laceration of that structure. This position is superior to the lithotomy position as it relieves the patient of the intense back-ache that often follows vaginal operations when the legs have been held up, in an unnatural manner, for some time, with the lumbar spinal curve unsupported and the patient resting upon the sacrum with the weight of the two legs

superimposed. It might be worthwhile to try this Walcher position in some of our gynecologic operations.

It is very essential that the cervix be fully dilated and, in primiparae, Potter not only waits for full dilatation but seems to prefer partial descent of the presenting part before proceeding with his version. I venture to say that he avoids manual dilatation in primiparae if possible. In normal dilatation the cervix stretches and retracts with each pain so that, when full dilatation is attained, the cervix is obliterated. In manual dilatation the cervical tissues are simply stretched to the sides of the pelvis; there is no thinning out or retraction, and this is the cervix that catches the neck of the fetus at the crucial point of the delivery and nullifies the object of the version.

Potter prefers chloroform as the anesthetic. Many of us who remember the period of twenty-five years and more a0ro, when chloroform was used almost exclusively in the south, and one ounce of this drug would hold a patient in deep anesthesia for an hour or more, cannot help wondering whether an inhalation of 1.4 pint or more of ether into the lungs is not more dangerous than the use of chloroform despite the findings of the anesthesia commission, that is supposed to have settled the question.

The patient is prepared as for a surgical operation, catheterized, shaved, and the parts cleansed externally with soap and water. Potter makes no mention of vaginal cleansing. Here I would like to present my own method of preparation, which I have always used in my obstetric operations. The vagina cannot be rendered sterile by letting a thin stream of bichloride or lysol solution trickle down its walls. Instead the gloved right hand of the operator holding a piece of gauze, saturated with green soap, should be used to thoroughly scrub the vagina and cervix, and this should be followed by a copious irrigation with sterile water.

In Potter's technic the right hand is not used internallv throughout the procedure, consequently, it cannot contaminate the field after this preliminary cleansing. The left hand, covered with an elbow-length rubber glove, is well lubricated with green soap and introduced into the vagina. Green soap is an ideal lubricant for these passages as it is easily washed away by the secretions that pass out during and after the version. Vaseline, which is generally used for this purpose, clings to the tissues and forms the best kind of an embedding, material for microorganisms.

Potter then proceeds to iron out the vagina and distends it for easy delivery of the after-coming head. His method consists in pressing downward and backward on the posterior vaginal wall from the cervix to the introitus, first with one finger, then with two, three and finally four fingers, and seems to be an advance over that advocated by Edam in which the fingers are inserted into the vagina to make traction on the muscular sling of the perineum for the same purpose. The left hand is then introduced through the dilated cervix, between the unruptured membranes and the uterine wall to the fundus and gently swept around in all directions, avoiding the placental site.

This maneuver is similar to the practice in cesarean section and facilitates the delivery of the placenta. The bag of waters is so elastic and the uterus so relaxed under surgical anesthesia, that the fetal parts can be readily palpated and the location of the legs determined before rupturing the membranes. By palpating the neck of the fetus one can also determine whether it is encircled by the cord. The distinctive feature of the version proper now seems to be in no wise to disturb the relation of the fetal parts before the version is completed. In this way one avoids pressure upon and entanglements of the cord, undoubtedly the most disturbing factor in determining the favorable or unfavorable outcome of a version.

Potter performs all of his versions with his left hand. It is reasonable to suppose that others, not as dexterous, might perform the operation with either hand encased in elbow length gloves and, in performing the version, follow the old rule of using the hand so that the palmar surface of it will come in apposition to the abdomen of the child. At this juncture a towel is wrapped around the left arm of the operator to absorb the liquor amnii that gushes out with the rupture of the membranes. It seems best to break through the membranes high up near the fundus and then slide the hand down

the thighs of the fetus until the feet are reached. Gentle traction, with pressure on the head in the opposite direction, will aid in readily bringing both feet out of the vagina and completing the version.

It will be remembered that in the older methods it was always demanded that only one leg be brought through the cervix, in order that a wider surface be left to dilate the cervix. The facility with which delivery can be effected when both feet are brought down shows that the older procedure was faulty. The idea that a version is dangerous if some time has passed since the rupture of the membranes and, especially, if the head has descended into the pelvis, does not hold good. The experienced obstetrician finds the uterus so relaxed and elastic under full surgical anesthesia that the head can be readily pushed up and the band introduced for a version.

Only recently I performed a version in a head presentation bringing down both feet readily more than twenty-four hours after rupture of the bag of waters had taken place. With both feet protruding from the vagina, the final step in the procedure resolves itself into the delivery of a breech presentation. It is but fair to state that in the past, everyone has dreaded the delivery of the arms and after-coming head by the method in vogue up to recent times. The method described by Potter is so superior in every respect, that it should remove every dread of breech delivery. One need have but little trouble with the delivery of the after-coming arms, shoulders and head.

Potter makes gentle traction on the legs of the fetus, turning the back of the child up until the scapulae appear at the vulva. Then he slips a finger along the shoulder under the symphysis pubis and delivers the anterior arm. He then turns the body of the child in such a way that the posterior arm comes to rest under the symphysis pubis and delivers it in the same manner as the first shoulder. In all of my cases after delivery of the anterior arm, the posterior arm slipped out without any difficulty.

The crowning feature of the version is the delivery of the aftercoming head. It is far superior to the Smellie-Veit method and is dependent solely upon the manipulations by the operator. Potter advises against following down the fundus during the delivery; because, he claims, one creates the very condition that we seek to prevent. By pushing down on the head it sinks between the shoulders and the arms go up. Whether Potter is correct in his view, I am not prepared to say. In all of my cases the arms seemed to have been carried upward, more or less, but this made not a particle of difference in the ease of delivery.

Potter delivers the head by inserting two fingers of the left hand into the baby's mouth, the body riding astride of his left arm and then with the right hand resting upon a sterile towel, suprapubic pressure is made downward and backward until the face distends the vulva. The feet of the child are now held high up and its throat stroked to empty the trachea, and, in-many instances, the fetus will begin to breathe while in this position.

There should be no haste in forcing out the rest of the head. Instead, it may be allowed to dilate the perineum and with the ironing out of the vagina, practiced before beginning the version, many deliveries will be completed without a laceration. Potter shows no hurry in the delivery of the child for fear of having an asphyxiated infant; and after the birth of blue babies, he quietly places them on their right side on the abdomen of the mother and allows respiration to start spontaneously. This position, of course, favors the closure of the foramen ovale. The umbilical cord is not tied until pulsation stops.

It will be remembered that the venous circulation in the cord ceases very shortly after birth in consequence of the contraction of the umbilical arteries; but the arterial circulation in the umbilical vein continues for from five to fifteen minutes adding, at least, an ounce of blood to the fetal circulation and supporting the heart of the fetus until respiration is established. It may be assumed that this is an important feature in the resuscitation.

Success seems to follow this gentle method in nearly every instance that has been my experience. Potter's statistics show the same result. This goes to show that we can discard many of

the rather rough manipulations that were practiced in the resuscitation of asphyxiated babies, witbout impairing our results.

In a discussion of this mode of the delivery, with Halstead of NewYork, it was suggested that the body of the child be allowed to come down, naturally, with the shoulders descending in the left oblique diameter at the superior strait until the scapulae appear at the vulva, then to rotate the anterior shoulder under the symphysis pubis and deliver as such. In order not to disturb the relation of the fetal parts, the posterior shoulder should then be lifted over the perineum. Theoretically, this should then leave the after-coming head in the right oblique diameter of the superior strait, consequently, the easiest delivery should be, downward pressure on the fundus with the head held in this diameter until the fingers in the baby's mouth press firmly -upon the perineum, then rotation forward under the symphysis and the delivery completed as described by Potter. Potter with his enormous opportunities can quickly determine whether there is anything of value in these suggestions.

An ampule of pituitrin is injected as soon as the baby is born and serves to expedite the delivery of the placenta. 'It may be assumed that a uterus emptied by version, in ten to fifteen minutes, is more liable to sudden relaxation and postpartum hemorrhage than one that has emptied its contents by rhythmic contractions for an hour or more. Furthermore about 2.3 ounces of blood are saved the mother, as has been determined by Ryder at the Sloane Hospital for Women in one hundred cases treated with pituitrin, in the third stage of labor.

With the experience gained through the Potter version, the writer has solved the delivery of breech presentations for himself as follows:

With full dilatation in a frank or complete breech or footling presentation, full surgical anesthesia, iron out the perineum, bring, down both feet, and complete the delivery according to the Potter procedure.

Potter does not state his fetal mortality in normal cases in which he has used his version solely for the purpose of relieving the patient of the discomforts of the second stage of labor. It is surely essential that those desiring to follow that indication for the use of this version should know this.

The writer has found the version of special service in cases with apparently normal diameters but a lack of progress in labor in spite of good pains. In such instances there is generally found premature ossification and, in consequence, nonmolding of the fetal head or an overdeveloped fetal head.

Only recently the writer delivered a woman, weighing 94 pounds, of a 9.5 pound baby by the Potter version, without laceration of the soft parts, after a two hour ineffective second stage of labor.

THE FRANCIS BUILDING. (For discussion, see p. 189.)

DISCUSSION

DR. IRVING W. POTTER, BUFFALO -NEW YORK -Dr. Speidel has discussed version from three standpoints without endorsing the procedure.

I wish he had taken another course and given his own personal experience with it and either advocated or condemned it. We know it can be performed in the house or hospital. We also know that a small hand and arm are better than a large hand and arm. We know that the position of the patient is of importance and that the modified Walcher position is the ideal one to employ. As for the anesthetic, we have concluded that chloroform is the best and see no reason to change. We use it because of the rapidity with which the patients recover and because of the complete relaxation which is necessary in doing a version.

Of course the cervix must be obliterated and the os dilated. We wait until the parts are ready, it makes no difference whether it is half an hour or three days, provided the woman is comfortable. We have found green soap to be a splendid lubricant and a splendid cleansing agent for the vaginal canal. This makes the parturient tract about as sterile as it can be made in that length of time. With plenty of green soap and plenty of time to dilate the vaginal canal, the hand can be introduced into the vagina without any danger. Then the ironing out process is begun and version is started. I still maintain that the left hand is the proper one to use. In that way the right hand is left for outside work, and the doctor should school himself to use only one hand for the work in the uterus. When one hand has been introduced into the uterus it should not be withdrawn until the feet come along, in the average case.

There should be no time limit placed on this operation, The cord is not pulsating and has not since the baby has left the brim of the pelvis because there is pressure on it.

One of the effective points of this method consists in the delivery of the shoulders. As one of the shoulders rotates underneath the arch, the arm is being lifted up over the chest. The posterior shoulder is then brought forward by rotating the body. In that way you keep away from the rectum, avoid the tears which you formerly had, and, deliver both as anterior shoulders. What difference does it make whether the head rotates and comes through one or the other side of the pelvis? I think it is a mistake to deliver one shoulder posteriorly when it is the rectum we are trying to get away from. Another thing. These patients should not have an antepartum enema. If they do, you will have a liquid fecal matter distributed all over the field of operation, and that is wrong.

Now, who shall do versions? I do not believe the ordinary practitioner should rush in and do versions, but I think the men who are properly trained can do versions with benefit to the mother and child. I do not advocate, and never have, that the man who is seeing scarlet fever and diphtheria, and such things, should go and put his hand up in the vagina and uterus just as if he was putting it in his pocket. That is not fair to the man, the woman, or the method. I have done version in a great many cases and I have widened the field for the application of version, and I believe that I have avoided many complications by this procedure.

I work in Buffalo in many different institutions as there is no institution large enough to contain all of it. That makes my work scattered, which is unfortunate. Statistics are not reliable in all of those places. If there was but one large institution where the work could be done under the supervision of a certain set of individuals, it would be ideal. Last year I delivered over 1130 women and over 900 of them were version cases. This compares favorably with the preceding year, in which 1113 were delivered. My fetal mortality was 2.3 per cent.

I have tried for five years to bring before you a method that would stand up under opposition, and I submit to you these results. They are the best so far that I have been able to produce.

DR. M. PIERCE RUCKER, RICHMOND, VIRGINIA -I have the honor of being one of Dr. Potter's early disciples. I started doing version, principally, because it saved the mother pain, and I became more enthusiastic because it saved the mother's perineum, and I became more enthusiastic still when I realized that it saved the babies. Men who have inquired into the deaths of babies during the first days after birth, find that a large percentage have cerebral hemorrhage, which may or may not be the cause of the death but it is a pathologic condition. Of 481 babies, 21 have come to autopsy, only 2 have shown signs of intracranial hemorrhage. One premature baby lived a few hours and died with a large intracranial hemorrhage, which, I believe, was due to pituitrin. One case had a contracted pelvis and a prolapsed hand. I did a version but had to force the head through the pelvis by brute force; that baby had a cerebral hemorrhage. The other 19 babies came to autopsy from enlarged thymus and other conditions, not intracranial hemorrhage. I think we must take this point into consideration in choosing the method of delivery. I believe if you follow up the babies for a

year, you will find that the babies after easy births far surpass in their chances of survival those that have difficult deliveries.

DR. LEE DORSETT, ST. LOUIS, MISSOURI -I had the pleasure of spending a few days with Dr. Potter and on returning home took up his method of version in some of my cases. I have not done it as a routine method of delivery, but in certain selected cases it has worked admirably. In occipitoposterior positions I think that it is the only method of delivery. I do not think that the Scanzoni or similar procedures have any place. Unless every step in Dr. Potter's technic is followed the whole method will be a failure.

It is my opinion that chloroform is the only anesthetic to be used. Ether is much slower, more of the drug is necessary, and its elimination is much slower. In abdominal cesarean sections where the resuscitation of the child is often necessary I have always noted that there is a strong odor of ether on the child's breath for some time after its delivery.

In regard to “ironing out” the vagina, Dr. Potter does not "spring" the vagina with two fingers, as some other men have taught, but inserts the whole hand within the vagina and, usually, spends from five to ten minutes in the process of dilatation.

As to bringing down both feet during extraction of the child, it has been my experience that it is often difficult to grasp both feet at the same time, so that I have been compelled to draw one foot through the cervix, then go after the other, and bring both through the vagina and vulva together. In my work, so far, I have lost one baby in doing version. Looking back at this case now, I can readily see my mistake. The case was one of eclampsia in which labor was induced by the bag. As the patient was not doing well, having poor contractions and an alarmingly high blood pressure, I went through a partially dilated cervix and did a version; but the cervix contracted upon the after-coming head and the baby was lost.

I have been surprised when observing the perineum in the cases after delivery, to note how readily that structure "snapped" back in place. I have examined t1lese cases from one to two months after delivery and in all of them the perineum was intact.

DR. O. H. SCHWARZ, ST. LOUIS, MO -I have had the opportunity of seeing Dr. Potter at work in Buffalo, and there is no question that his method of version is admirable. If one is performing his version, it must be done in the minutest detail. I think doing it as a routine procedure is entirely wrong. One must remember that where conservative obstetrics is practiced, very admirable results are obtained.

I was very enthusiastic in employing version in cases of occipitoposterior positions, but before doing this I consulted the literature on the management of occipitoposterior cases. One of the first papers I consulted was that of Plass, published in 1916, in the Johns Hopkins Bulletin. The incidence of occipitoposterior position was 11.5%. He explains this low percentage by the fact that many cases were not examined until well in labor, and rotation had probably occurred in many instances. Operative interference was necessary in 22 per cent of 600 cases, The mortality was 4.02 %, including babies of 2500 grams and up. If we employ version in such cases, we must equal or better these figures.

We employ the Potter version in occipito posterior positions in such cases where there is no progress within a reasonable time after full dilatation of the os. We use the method in preference to Scanzoni application and to application of forceps with the occiput transverse.

DR. ARTHUR H. BILL, CLEVELAND, OH -Heretofore we have discussed the question of whether version is a proper routine procedure. This morning we are to discuss the method of delivery. It seems to me to be for the most part very commendable. One or two steps which, in the hands of the average man, give trouble have not been emphasized.

In the first place, in regard to the delivery of the shoulders, I would like to suggest a slight improvement. It has been our practice to deliver the anterior shoulder first, and I think that is the proper procedure. Instead of putting the fingers in and sweeping the hand down, it is our practice to grasp the baby by the body, with its back to the front, draw it downward and outward in a direction opposite to the shoulder to be delivered, at the same time making a rotary movement. What happens is that the arm meets the resistance of the pubic arch, and is thrown across the chest, the shoulder, and usually the entire arm, being delivered by this movement without inserting the fingers into the vagina at all. Then by the same movement downward and outward in the opposite direction, the other arm is delivered. The advantage is that you do not need to insert the fingers into the vagina, and no traction is made on the arm.

Now, about delivery of the after-coming head. It has been stated that it makes no difference through which diameter of the inlet the head passes. It certainly does make a difference. I believe that many babies are lost in version because of this mistake. When the baby is delivered with its back to the front, we are drawing the occipitofrontal diameter of the child's head through the conjugate diameter of the inlet. The occipitofrontal diameter of the child's head in some cases is greater than the conjugate diameter of the pelvis, and hence there is difficulty in the extraction of the head. Before making traction on the child's head, if it lies in the anteroposterior diameter, rotate it to an oblique position, and then make traction; and, after it is through the inlet, internal rotation. Let the child's head follow the path it would follow in normal labor.

DR. SPEIDEL (closing discussion) -I am sorry to say I am not prepared as yet to follow in Dr. Potter's footsteps, by endorsing his version for every case. In a multipara with full dilatation of the os, who will easily deliver in fifteen or twenty minutes, with nitrous oxide or chloroform so there will be no discomfort in the second stage, I cannot see why such a baby should be turned, and the woman submitted to the risk of podalic version. I do say that there are indications for this version, and I cannot see why it should not be used in all face presentations. I think the majority of occipitoposterior positions should be delivered by version, and in breech presentations, the final steps should be as in the Potter version. I mentioned in my paper that the Potter version is easier than the old podalic version. But even in the hands of an expert this version is not easy. There is a decided nervous tension in such circumstances and none of us are absolutely sure that the baby is going to be born alive. The crucial point is the delivery of the after-coming shoulders and head; and Dr. Potter should be able to improve upon that.

I am glad Dr. Bill endorsed my suggestion that if the delivery is conducted according to the proper mechanism, this will make it easier. The shoulders should come down in the left oblique diameter, the head is then in the right oblique diameter and, consequently, it should be easier to deliver the shoulder and head in those diameters.

In regard to the indications: If it can be shown by postmortems that babies die of hemorrhage of the brain in normal deliveries because of a long-continued second stage of labor, then, of course, it is an indication for using this version; but if the hemorrhages only show themselves in abnormal cases it means that the version is indicated only in abnormal cases. Until you can show that these hemorrhages occur in normal cases, I am not prepared to follow Dr. Potter in using this version in normal delivery.

1921 – Method of Delivery – Tate – Cincinnati

A METHOD OF DELIVERY IN NORMAL CASES*

By MAGNUS A. TATE, M.D., F.A.C.S., CINCINNATI, OHIO

*Read at the Thirty-Fourth Annual Meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, St. Louis, Mo., September 20-22, 1921.

Published in: AJOG Volume 3 (1922) p.61-65, 89-91 (commentary)

The average duration of a normal case of labor varies. From sixteen to twenty hours in the primipara and from ten to sixteen hours in the multilpara. If by aiding Nature's efforts, we can materially cut the time without harm to mother or child and make the labor less painful, we are benefiting womankind.

All obstetricians are familiar with the uncertain nagging pains accompanying the often drawn out first, and the intense suffering incident to the second stage of labor.

You are also familiar with the frequent statement of some women: "I have never been well since the birth of my baby," and we know that this is due not alone to unrepaired lacerations, but more frequently to the long drawn out first stage of labor, followed by an agonizing second stage, which leads to physical exhaustion and, in turn, is often followed by a peculiar syndrome of the neuroses. This is manifestly too true when we encounter those cases of badly managed malpositions in elderly primipara with a slight narrowing of pelvic diameters, who are allowed to drag through a harrowing labor; as well as in those cases of hysterical and frightened primipara and neglected dry labors. Such cases you see as consultants, or as staff members of our charitable hospitals.

Many are the remedies advocated to alleviate the pains of labor. We know that most of them have been discarded with the exception of the various anesthetics, morphia and chloral.

Advancement in the obstetric art is not so much in the selection of some method of delivery, as in the adoption of prenatal care and the observance of rigid asepsis.

We follow out methods of delivery as given to us by our forefathers, because, mechanically, their deductions were usually correct.

Skill is paramount to success, and the advent of asepsis has given us a leeway and freedom to attempt much that, in the past, was not advisable or wise.

Accouchment forcé has met with unfortunate results because of forcible dilatation of the cervix followed by the immediate and rapid delivery of the child. There is no doubt that it has been the means of saving some lives, especially when dealing with desperate conditions, such as hemorrhage, eclampsia, edema of the lungs, and noncompensating hearts.

Accouchement forcé is a major operation. The forcible dilatation of a firmly closed os and rapid delivery of the child must necessarily be followed by a high maternal and fetal mortality. The dilating of an unobliterated cervix, other than by instrumental means, is a most difficult task, Forcible dilatation is rarely practiced today, It is comparatively easy to open up a soft dilatable cervix by the Harris method.

I give much credit to Potter for demonstrating and emphasizing that a vagina can be effectively dilated without injury to vaginal and muscular structures by the ironing-out process.

CASE 1 -Mrs.__, a refined and cultured woman, multipara, aged twenty-six. Her first labor occurred at the age of twenty-two and was twenty hours in duration; normal presentation; instrumental delivery; perineal laceration requiring two stitches. The second labor, at the age of twenty-four, was eighteen hours in duration: twin birth; perineal laceration requiring two stitches. A

slow recovery occurred in both deliveries. The following year she was subjected to an appendectomy. Third labor, age twenty-six, Knowing so well of the protracted recoveries of her previous labors, and of the appendectomy one year ago, I determined to try a method of delivery that I had been contemplating for some time.

The patient entered the Good Samaritan Hospital with the os dilated to the size of a silver half dollar.She was in the best of spirits, having regular, easily bearable pains, ten minutes apart. She was prepared obstetrically and taken to the delivery room at 10:00 Ether was administered to the surgical degree; the bladder was catheterized, and the specimen sent to the laboratory. The gloved hand, anointed with sterilized vaseline, was then introduced in the vagina. one finger at a time, following the ironing-out method. The thin and easily-dilatable os and vagina were thoroughly stretched by 10:30 p.m. Anesthesia was withdrawn at 10:32 p.m. The patient was allowed to recover partially from the anesthetic by 10:40 p.-m. One-half of one c.c, of pituitrin was now given, and the membranes ruptured. Regular pains ensued shortly.The patient was in a drowsy state and did not seem to suffer much. The child was delivered at 11:10, just one hour and ten minutes after the patient's entrance into the delivery room. The child weighed eight pounds. There were no lacerations.

This patient could hardly realize, thinking of her two previous labors, that she had actually been delivered within one hour and ten minutes. The following day, after a good night's rest, she showed no signs of exhaustion, and described her condition as follows: "I feel like I had had some slight vaginal operation, and while I am sore, I have not the same feeling that I had with my other labors."

CASE 2 -The patient entered the Bethesda Hospital, giving the history of having had the membranes ruptured at 8 A.M. I saw her at 9. The os was not dilated sufficiently. The pains were easily bearable. Examination at 10.40 A.M. showed the os dilated to the size of a silver half dollar, and one hand presenting. The patient was taken to the delivery room at 11 A.M. She was anesthetized at 11:30 A.M. The hand was replaced. Dilatation of the os was complete at 11:50 A.M. The patient was partially out from under the anesthetic by 12:0.5 p.m. One-half of one c.c. of pituitrin was given. Pains were not efficient. Pituitrin was repeated at 12:25 P.M. Rapid delivery followed at 12:3.5 p.m. Perineal tear, requiring three stitches. The time between entering the room and complete delivery was one hour and thirty-five minutes. That afternoon the patient's condition was very different from one who had gone through the ordinary labor. In this case the second close of pituitrin was probably given too hurriedly; otherwise, I do not believe that there would have been a laceration. In two cases patients did not seem to be susceptible to the action of pituitrin, so forceps were applied after waiting one hour.

CASE 3-Patient's first labor lasted four days, midwife attending. She was rushed to a hospital and delivered instrumentally. The baby lived six days. It weighed nine pounds and six ounces. The mother was profoundly exhausted, ran a septic temperature for three weeks, and at no time did she have mammary secretion. The pelvic soft structures were like parchment, simply dried out and tore readily. The extensive lacerations of both cervix and perineum were repaired. This patient's second labor occurred under my care in the hospital. She was delivered in two hours and forty minutes. There was no perineal tear, but one side of the cervix tore, which was immediately repaired. No exhaustion, mammary secretion normal; baby weighed nine pounds.

Another case I have had was that of a hypersensitive, hysterical, neurasthenic patient. She was crying, tossing about, and "knew that she was going to die." She refused to obey any instructions or commands. She was delivered in two hours and forty minutes. This was one of the cases where forceps were used to lift the head over the perineum. I am sure you will agree with me, that this kind of case requires much patience, tact, and ingenuity.

Another case, that of a young negress, primipara, aged eighteen, I saw with a young physician at my solicitation. Delivery was effected in one hour and forty-five minutes. The child weighed seven pounds and four ounces.

In a later case, that of a young primipara, aged twenty-one, weighing 100 pounds, there was a very bad mitral lesion. She had been under her physician's care for a period of two years. This patient was delivered in one hour and fifty minutes. No laceration, no exhaustion, and recovery was uneventful. The child weighed six pounds and six ounces. Other cases, so far attended, were uneventful, all having been delivered with safety to mother and child.

I do not report the number of cases delivered to date. They are entirely too few to be of value from a statistical standpoint. I have had however, a sufficient number of cases to convince me that there is merit in this method of delivery, One case, a multipara (daughter of a physician), was delivered in fifty-five minutes. There were no lacerations.

SUMMARY OF METHOD

Patient must be in labor, cervix obliterated and os dilated to at least the size of a silver half dollar.
Surgical anesthesia.
Bladder catheterization.
Complete manual dilatation of the vagina and cervix.
Patient allowed to regain partial consciousness.
Pituitrin one-half c.c., to be repeated once if the pains are not efficient in half an hour.
Membranes ruptured.
Management of delivery of child as in usual case.

Remarks:

I am taking it for granted that all physical findings, i.e. the presentation and position of the viable child have been made and recorded; that the patient has been obstetrically prepared, and that postpartum findings are also recorded; otherwise no comparison can be made as to the merits of various methods of delivery. Deep anesthesia is requisite to procure proper relaxation, but the anesthesia must not be continued beyond a certain point. An anesthetic, at this time, is safer; the woman being in a happier frame of mind than if given later when she is disturbed, apprehensive as to the outcome, or frenzied with pain. Gentleness, dilating both vagina and cervix (with a clock before your eyes) is essential to good results. Do not rupture the membranes until the patient is partially rational and a hypodermic of pituitrin has been given, as the bulging of the membranes aids materially in keeping the os stretched to it fullest degree. The membranes often rupture spontaneously, after complete dilatation, with the first pain, following Nature's efforts, as they are no longer a functionating object.

I have found that the patient will have far better and more regular pains if we wait until she has partially recovered from under the anesthetic before administering pituitrin. Patients in this half drowsy state will respond to your commands and aid delivery by using the voluntary muscles. If pains become too severe, she may need a few whiffs of the anesthetic, especially when the head is approaching and passing over the perineum.

Episiotomy may be performed if necessary, but it is usually not required if proper dilatation of the vagina has been accomplished. Delivery is not always painless, but can be made almost so, judging from observation and the statements of patients. The shortening of the time of labor is very advantageous from all standpoints, and of remarkable benefit to the woman. If dilatation be complete, lacerations should not he more frequent than in ordinary cases.

It is assumed that in the giving of pituitrin obstetric judgment will be used, for its injudicious use is apt to be followed by serious injury to mother and child, Unfortunately there is not at present an exact standardization of dosage of pituitrin. Various manufacturers have given us ampules of different strength: for instance, Armour's and Burroughs Wellcome & Co. pituitrin preparations, are said to be more powerful in action than that of Parke Davis and Co. If the patient be completely under the anesthetic, it will, naturally require a larger dose to obtain the desired results. When we stop for a moment and consider the vast number of cases in which pituitrin has been used, we find very few reports of uterine rupture and death of child. If we analyze these cases, as I have tried to do, we will find one of three things. First, the case was one in which the drug should never have been used; secondly, the dosage was too large or repeated too often or given when the patient was deeply anesthetized; thirdly, the patient was in an exhausted or septic state.

Puerperal complications and delayed convalescence, usually, have a starting point -shock, incident to mental and physical suffering. What obstetrician has not had it brought home to him that an exhausted woman is a good subject for septic infection? What a different picture, and what a different history, is the physically well woman who rallies immediately after labor, to that of the worn-out and exhausted patient, who may run the typical febrile course. A long drawn out labor, accompanied by a hot, dry, swollen vagina, offers a fertile field for infection, and it only requires a study of governmental and health board statistics to verify the statement that exhausting labor is the prime factor of high and unnecessary mortality.

This method is not presented with the idea of supplanting well known means of delivery as demanded when dealing with malpositions, operative conditions, or with any form of placenta previa; but it is applicable to that type, classified under the head of normal presentations when the delivery is conducted in a hospital or in the better class of homes. I present this method to you for your earnest consideration suggestions, criticism, or approval.

19 WEST SEVENTH STREET.

(For discussion, see p. 89.)

DISCUSSION

DR. IRVING W. POTTER, BUFFALO, NEW YORK- Times have certainly changed. Who ever thought, five years ago, that Dr. Tate of Cincinnati would be giving me credit for anything; and yet, today, he gave me credit for dilating the vagina; and then he goes on and messes up a beautiful labor case. Now Dr. Tate has been to Buffalo; but he didn't stay long enough to learn anything. He reminds me very much of that story of the bull in the china shop -what he didn't spoil by breaking, he messed up, and that's the way he handled this case. Who ever heard of a patient going under an anesthetic: and then waking up, being given a dose of pituitrin, and given an anesthetic again? From the very start we have tried to keep away from dilating the cervix. We have dilated and ironed out the vaginal tract with very gratifying results, but we never dilated the cervix. And why, when he had a cervix he could put his hand in, did he not go on and complete the work quickly by version instead of taking an hour and fifteen minutes to do it?

In my experience it is very dangerous teaching to advocate the use of pituitrin while the child is in the uterus. Reports of bad results have come from all over the country, and that is what we have tried to avoid. We have dilated the vaginal tract and delivered the baby; and, after the baby has left the uterus, we have given the pituitrin. After a few years Dr. Tate will do differently. He will come around to treating his cases in a clean manner. If you dilate the vaginal tract there is no occasion for an episiotomy in any case. I have never done an episiotomy in my life and would not know how to

do one; but to allow a patient to have an anesthetic, then let her come out, then give her pituitrin, I do not see the necessity for such a procedure.

I am pleased to have heard this paper because it means that Dr. Tate is coming around to the point where he believes there is some discomfort to the woman in the second stage of labor. I think the first stage is very easy to manage, but it is the long drawn-out second stage that he is trying to get rid of and that we are trying to get rid of, and we feel that we have succeeded better without pituitrin and without the anesthetic by doing a clean version at the end of the first stage of labor.

DR. ARTHUR H. BILL, CLEVELAND, OHIO -It is very hard for me to discuss a paper when I totally disagree with what has been said. Nevertheless I am afraid that is the case in the present instance. I am in hearty sympathy with anything which tends to make labor easy, but one thing I have always contended is that we should not interfere with the first stage of labor. If the pain is relieved, patients may be allowed to go through the first stage, and in the majority of cases, the head will pass spontaneously through the os. Let the first stage of labor alone and relieve the pain, no matter how long it takes. I am sorry to have Dr. Tate put the patient on a time limit basis. I think that is wrong. Ordinarily, the length of the first stage makes little difference, if the patient is comfortable. In regard to the second stage of labor, I shall have something more to say in my paper. I wish to go on record as opposed to the use of pituitrin when the baby is in the uterus. I do not believe that all the accidents resulting from its use have been reported, including damage to the baby. We can get along without it. Whenever possible, let Nature take her course during the first stage of labor.

DR. M. PIERCE RUCKER, RICHMOND, VIRGINIA -I agree with Dr. Bill that pituitrin is a dangerous drug. We have tried it on animals and, if you get any action at all, you get an incomplete tetanus of the uterus. I have tried it on three patients and have confirmed Dr. Haskell's experiments satisfactorily. In the tetanic contraction what are you doing? You interfere with the circulation in the uterus and produce suffocation of the baby in a great many of the cases. I went over the records of the Memorial Hospital and found the infant mortality twice that in pituitrin cases to those in which it was not given, regardless of the operators. Of course, it sometimes was not used properly, but it is mighty poor comfort to explain to the mother, who has a dead baby, by saying that she was too much exhausted, or something like that. You are just inviting trouble by giving pituitrin before the baby is out of the uterus.

DR. HENRY SCHWARZ, ST. Louis, Missouri -I had no intention of participating in the discussion, but I cannot sit quiet and have men tell us that the use of pituitary preparations is as dangerous as they want to make us believe. It is true that Ten should not use pituitary preparations until you know what platform you stand on. When we, in 1912, tried all the various preparations of pituitrin in
the market, when we used Armour’s, Burroughs Wellcome & Company's and Parke Davis & Company's preparations, and others, we did find exactly what you state. Armour’s and Burroughs Wellcome's were twice as active as the others. We likewise found out that we must not use teaspoonful doses, cubic centimeter doses, but that we must be careful and approach the case slowly, with two or three minims at a time if need be. We found that we did not get tetanus of the uterus when it was used in that way and the great advantage of it is that it causes contractions of the uterus which come and go, unless it is used by men who do not know how to handle it. It was first used by us, or we were one of the first, in cesarean sections because in this operation we were always afraid of hemorrhage when we had to open the uterus at a time when the woman was not in labor. In those days we usually had to wait until the woman went into labor before we could operate. Since the

advent of the pituitary preparations we select our time for the operation and we have every assurance that we are safe. In the majority of operations, when we give the full dose of a pituitary preparation of some kind, we can be sure the uterus will contract on delivery of the child.

Again, we have proved, not on ten or twenty, but on hundreds of cases, that there is nothing more valuable than pituitary preparations before the baby is born. After the baby is born we want the tetanic contractions so that the uterus does not relapse and accumulate blood and create after-pains; but before the baby is born, we want the intermittent contractions. We have used it on untold cases; and they are all on record, and you are invited to come to Barnes Hospital and look at any of our case records. There are a few thousand of them, and you will find that, in the majority of them pituitary preparations have been used. You will find that in some emergency calls to the home of patients who have had several children, and who are of relaxed habit, babies are born without the assistance of the doctor; but quite often there is hemorrhage; at times inversion of the uterus. In cases in which one can feel the head in the pelvis with the membranes still intact and the cervix open, that the patient may go into labor almost at any moment, We ask them to come to the hospital and then at 7 o'clock in the morning we give them castor oil; that makes them very prone to go into labor; but to make sure of it we give them four to five minims of Armour’s or Burroughs Wellcome 's pituitary preparation. A doctor and a nurse remain at the bedside, and sometimes a little massage is necessary, but we keep up the pituitrin, give it every few hours in cases of relaxed habit, so as to obtain relief, avoid the danger of hemorrhage, and prevent severe after-pains which are common if the case is left to Nature. As soon as the baby is born we administer a dose of some preparation of ergot to secure tetanic contractions of the uterus.

DR. TATE, (closing)- I do not do a version on normal cases because it is wrong and I do not believe it is good obstetrics. As to the danger of pituitrin, I have written to the various manufacturers about pituitrin, have read the literature as thoroughly as possible, have had personal experience, have tried to analyze the various papers on pituitrin; and why some few physicians will not use it, calling it a dangerous drug is beyond me. . You would not say you would not use cocaine or ether because once in a while you had a death from it. I consulted Professor Jackson of the Cincinnati University as to the properties and danger of pituitrin, and he said there was no danger at all if a man understood how to use it. That is the ground which I take. The recent books on therapeutics tell you that there is no danger from pituitrin up to 1 c.c., but I never give even 1 c.c., but do give one-third to one-half of a c.c. and never repeat it but once. I have not had a death of a mother and not a death of a child so far, and cases that were from fourteen to twenty hours from the beginning of the labor pains, go three, five or six hours. The gratitude of patients is enough to make me continue this method. Within the next few years I will present my results in case report. All that I ask is, if you have a normal case, not an abnormal one, try this method and when you have tried it and have seen how beautifully it works, and how grateful the patient is, how the hours of pain are done away with, I think you will agree with me that there is merit in it.

1922 - Amended SHEPPARD-TOWNER Bill

S. 1039.

Published on Boston Med. Surg. J. Volume 186 (1922) p.53-54

This Act is one of the most important measures relating to preventive medicine and medical practice recently adopted. It has been a storm center about which contests have been waged. Much has been written and said which reflected the personal reaction of the individual in the expression of opinions, bitter feelings have been exhibited and motives have been assailed; proponents have predicted the greatest benefits to humanity through the adoption of the Act, and objectors have claimed that dire disasters would result.

One group claims that the Act is unconstitutional, another contends that there is great injustice involved in the taxation features, and others feel that the practice of medicine will be revolutionized through an insidious attempt at state control or the so-called socialization of medicine.

Out of all these conflicting contentions, many on the side-lines fail to arrive at conclusions, but since the next step is the acceptance or rejection of the Act by the State, everyone should feel some responsibility. This obligation falls on the members of the medical profession above other classes of citizens, because physicians do, or ought to, know more about the need for public health legislation than the rest of the people. Some have carefully studied the Act and still feel confused about its advantages. Some still think that the adoption of any measure involving the obligation of securing approval of details by a Federal body is open to question.

Although our State Department of Public Health, through Commissioner Dr. Eugene R. Kelley, feels that the State should accept the provisions of the Act, and the Speaker of the House, the Hon. B. Loring Young, may take the position that this Act is more workable than bills previously presented to the legislature for maternity benefits and infant welfare, the attitude of the State will be determined by the legislature.

Our president, Dr. Bartol, has repeatedly urged the physicians of the State to study legislative matters and to convey to members of the legislature information which each should have in order to act intelligently. Never before in the history of the Society has there been such a persistent effort to lead physicians of this State to use every opportunity for the dissemination of information of value to law-makers, and the future of public health measures depends, to a great extent, on the attitude of physicians.

The most appealing arguments against the Sheppard-Towner Bill will be the question of constitutionality, the fairness of the taxation burdens involved and the objection to national supervision of state activities. The question of constitutionality must be left to the courts. Taxation is a matter that concerns everybody. The arguments relating to this feature will be based on certain figures which have been published. Taking the population of Massachusetts, which is, according to the census, 3,852,356, and the revenue collected from Massachusetts in the fiscal year ended June 30, 1921, amounting to $259,865,213.85, as a foundation, the argument proceeds as follows: The allotment to be matched will be $30,982.

The gratuity will be $70,000 the first year and $5,000 for the subsequent years. The tax for the $1,000,000 Federal appropriation will be, for this State, $56,553.91. The tax on the $480,000 the first year will be $27,145.88, and each subsequent year, $13,572.94. The, total cost to Massachusetts, including the state appropriation, for the first year will be $114,681.70. The total cost in subsequent years will be $101,108.85. The money loss to Massachusetts the first year will be $42,717.79, and for each of the subsequent years, $34,144.85. These figures are not vouched for by the JOURNAL, but have been published, and very probably will be used in debate.

The following states, territories and insular possessions will be losers, and will pay to help those which are the financial gainers: New York, Pennsylvania, Illinois, Ohio, Massachusetts, Michigan, California, Missouri, New Jersey, North Carolina, District of Columbia, Hawaii, Philippine Islands and Alaska.

The following states profit: Texas. Indiana, Georgia, Wisconsin, Kentucky, Iowa, Minnesota, Alabama, Tennessee, Virginia, Oklahoma, Louisiana, Mississippi, Kansas, Arkansas, South Carolina, West Virginia, Maryland, Connecticut, Washington, Nebraska, Florida, Colorado, Oregon, Maine, North Dakota, South Dakota, Rhode Island, Montana, Utah, New Hampshire, Idaho, New Mexico, Vermont, Arizona, Delaware, Wyoming and Nevada. These figures are those which will be used by the opponents. From remarks made recently by Dr. Kelley of the State Department, it would seem that they may be inaccurate, and if so, the truth should be at hand, for if there are arguments without actual fact, the legislature may be confused and not act wisely.

The administrative features of the Act are confusing, for it is provided that a board shall be created, consisting of the Chief of the Children's Bureau, the Surgeon-General of the U. S. Public Health Service, and the U. S. Commissioner of Education. This Board shall elect its chairman and "*perform the duties provided for in this Act*," but the Children's Bureau of the Department of Labor shall be "*charged with the administration of the Act*," and further, under Section 13, the Children's Bureau shall perform the duties assigned to it under the "*supervision of the Secretary of Labor*." One may feel in doubt about the efficiency of these officials if the Chairman of the Board should happen to be the Surgeon-General of the Public Health Service, and under the law, with one other member of the Board, assume the responsibility of performing the duties provided for in the Act, and should not recognize the authority of the Secretary of Labor.

One needs to have confidence in human nature in order to expect harmony in these somewhat conflicting provisions for supervisory and executive functions. We must hope for good under the law, if accepted by the State, but our representatives should have the benefit of clear interpretation of the Act, and full understanding can come only through careful study of it. Discussion should not be postponed until the hearings before legislative committees.

1922 - THE SHEPPARD-TOWNER ACT

Published: Boston Med. Surg. J. Volume 187 (1922) P. 188

The Children's Bureau has approved the plans of thirty-six states for the administration of this law. Forty-two states have accepted the Act. Although up to July 14 the Louisiana Legislature was still in session, no action had been taken in that state. The Louisiana Senate Committee on Health and Quarantine reported unfavorably on the bill to accept the Federal Act. New York and Rhode Island have taken the same attitude as Massachusetts.

H. M. Towner, one of the authors of the original bill, has rendered an opinion on the constitutionality of the act. This seems to be a reply to the opinion given by Attorney-General Allen. Judge Towner argues that the law is constitutional under Article 1, Section 8, of the Federal Constitution, which gives to Congress the power "*to lay and collect taxes, duties, imports and excises, to pay debts and provide for the common defense and general welfare of the United States*. " His reasoning is based on the preamble and on many classic works relating to the Constitution and the interpretations set forth by various speakers and writers in dealing with the provision embodied in the words, "*general welfare*." It is his opinion that these words justify an existence of the Public Health Service and he claims that if this part of the Constitution cannot be interpreted to make legal provision for the Sheppard-Towner Act, then some other national, activities are operating without legal authority.

As types of legislation which may be construed as valuable precedents, he refers to the land grant college appropriations, the Smith-Lever Act of 1914 for instruction in agriculture, the Smith-Hughes Act of 1917 for vocational education, and the Federal grants for highway construction.

It would be futile for an unprofessional critic to attempt to make any logical argument relating to a constitutional question, but a layman may justly feel that in the presence of differences of opinion, expressed by recognized exponents of law, those states which have decided to wait for the opinion of the Supreme Court have adopted the sane course.

There are in operation throughout this country at the present time certain customs which have been adopted for the purpose of meeting the wishes of some people, about which there is the shadow of suspicion that, if the highest courts should be asked for opinions as to the legality of acts adopted by state legislatures authorizing these customs, some enacted laws may be found to be unconstitutional. It should be kept in mind that no law is really established until it has been contested and been passed upon by the Supreme Court. Massachusetts, through her Attorney-General, has assumed leadership in a movement which will determine the standing of the Sheppard-Towner Act. When the decision of the Supreme Court shall have been rendered the whole country will be under obligation to the Bay State. If constitutional, then the way is clear for those states which believe in the policy of Federal bounties to states to be applied under Federal approval, to unite with the government in carrying on state activities.

1922 - Figures on Cesarean Section – Birney – Springfield, Mass.

By John M. Birney, M.D., Springfield, Mass.

Published in BostMSJ volume 186 (1922) p. 105-108

In the *Journal of the American Medical Association* for February 24, 1917, a writer on Caesarean Section gives the mortality as over 50% in several good-sized cities near Boston, and says that he has no doubt that similar figures obtain in other parts of the country. He further says, "I believe that if we could only collect the statistics from the private hospitals of our larger cities we should be compelled to admit that there is a surprisingly high maternal mortality attendant on this operation."

Being somewhat interested in the subject of Caesarean Section, and not believing that the mortality in Springfield was "surprisingly high," I endeavored to ascertain what the actual statistics of the operation were in our community and what the pregnant women might expect from the procedure in the hands of the local operators.

The writer before mentioned, states that he has no actual figures upon which to base his assertions; and I, also, have been unable to find figures covering any geographical unit. Most of the published figures are drawn from the clinic of one man, or from the records of hospitals dealing exclusively with maternity cases. Some of the writers make even a further classification by separating their private cases from those done on hospital service.

In the present paper I have taken a period of years extending from January 1, 1909 to January 1, 1921. The year 1909 was taken as a starting point because it marked the opening of a hospital given over exclusively to obstetrical work. During the period of 12.5 years there have been in operation five hospitals in which Caesarean Sections have been performed. I have made very careful inquiry and have not been able to learn of any case done outside of a hospital; therefore these figures must very nearly represent every Caesarean Section done in Springfield during the given period. Four of the hospitals mentioned are open institutions in which any doctor of good standing may operate, and the fifth hospital was open during a part of our period. The operations were done by twenty-nine different men representing varied degrees of surgical training and experience, and including some so-called “occasional operators." Many of the histories of the cases, particularly in the first years of the period, are very meager and are wanting in certain important data so that accurate deductions cannot be made along lines which would be very interesting.

In the twelve and one-half years, 217 Caesarean Sections were performed in the five hospitals. Two of these were done by surgeons from a distance, so have been excluded from our figures, leaving a series of 215 cases. During this same period there have been, in Springfield, 39,069 deliveries, making an incident of Caesarean Section of one in one hundred and eighty cases. In 20,000 cases at the Sloan Maternity the incident was one in one hundred and thirty-three.

The maternal mortality in our series of 215 cases was 11 per cent, which on first thought might seem rather high, and yet it compares favorably with Davis' figures from the New York Lying-In Hospital, which give a maternal mortality of 10.7 per cent in a series of 571 cases. In our series the cases were not selected, and in fact many of them were contraindicated if one holds strictly to the idea that Caesarean Section should not be performed on a woman who has had frequent vaginal examinations or attempts at delivery. I am not defending some of the procedures shown in these figures, only stating the facts, but one must remember that we often operate under very unfavorable circumstances and in the presence of conditions not of our own choosing. It is extremely easy to lay down hard and fast rules of operative procedure, and still more easy to criticize the work of others, but in making such criticism one is often entirely ignorant of the conditions and circumstances under which the surgeon was forced to make his decision. In this series of cases the

maternal mortality varies widely in the different hospitals. In one hospital there were 39 sections, and in another 41, which gives a good basis for comparison. The maternal mortality in the first hospital was 20.5%, and in the second hospital 4.8%. The foetal mortality in the first was 20.5%, and in the second 17%. The mortality in the other hospitals varied between these two extremes. Later in the paper it will also be seen that one might question the indications for operation in many of these cases, as it is perfectly evident that the section was done merely as a means of emptying the uterus. Furthermore, over one-quarter of the operations were done for toxemia, an indication strongly questioned by many operators. Of our 215 cases the charts from one hospital were not available, so that 15 cases are dropped from our series in further analyzing our figures. In the 200 cases remaining the maternal mortality remained at 11%, and the foetal mortality was 20.5%.

In the 200 cases, Caesarean Section was performed for the following conditions:

Contracted or deformed pelvis	64
Toxemia	53
Placenta previa	39
Uterine inertia	22
Breech presentation	4
Cervical sear tissue	4
Previous Caesarean	4
Aged primipara	3
Transverse Presentation	2
Bicornate uterus	2
race presentation	1
Brow presentation	1
Hydrocephalus	1

The charts in our series are so incomplete that it is impossible to work out the cause of death, but the following figures will give the deaths according to the indications for which section was performed.

In analyzing our figures on the toxemias of pregnancy, I am somewhat at a loss as to procedure. Most of the textbooks devote at least a chapter to the toxemias without giving a definite classification, and stating that they may, if severe enough, lead to eclamptic convulsions. Eclampsia is given a chapter by itself, and in order to be classified as such, convulsions must be present. I am not able to determine where the toxemia ends and the eclampsia begins, unless it is with the first convulsion. Given two women with exactly the same symptoms, one will have convulsions and one will not. Are we dealing with two different diseases? In our series I have classified as toxemias all the cases having marked albuminuria, gastric disturbances, headache, etc., of severe enough nature to warrant a diagnosis of threatened eclampsia, as well as the cases in which convulsions were present. The question which arises in my mind is whether or not I am justified in comparing our figures with those published regarding eclampsia. Many writers discuss eclampsia but do not state whether or not convulsions were present.

In our series there were 53 cases of severe toxemia with a maternal mortality of 24.5%, and a foetal mortality of 21.8%. The largest number of deaths, both for mother and child, occurred in this class; over one-half of the maternal mortality having occurred in the toxic cases. If we could exclude them from our series the maternal mortality would drop to 6.1%. I know that many operators do not consider eclampsia as an indication for Caesarean Section unless possibly under a very few exceptional conditions.

If I may be allowed to consider our toxemias as eclamptic cases the mortality, although high, does not compare too unfavorably with other methods of delivery. De Lee gives the maternal mortality in eclampsia as from 20 to 45% and the foetal from 30 to 60%.

Davis, in analyzing 571 cases from the New York Lying-In Hospital, gives a maternal mortality in eclampsia of 37% and a foetal of 30%, while Cragin in 20,000 cases from the Sloan Maternity, gives the maternal mortality in eclampsia as 28.3%, and the foetal as 60.1%. In the Sloan Maternity the delivery was accomplished by dilatation with the elastic bag, followed by delivery.

Neither of these writers state whether or not convulsions were present in their cases.

In discussing placenta previa I am again at a disadvantage, for it is impossible to tell from the histories in our series whether we are dealing, in a particular case, with central or marginal placenta previa. Furthermore, it is possible that in some of our so-called previa cases we were dealing with placental separation rather than faulty attachment. I have of necessity grouped all these cases under the heading "Placenta Previa." In this group there were 39 cases treated without the loss of a single mother, and with a foetal mortality of 25.6%. This is by far a better showing than is found in any statistics that have come to my notice. I

I have not discussed the indications for Caesarean Section, but there are three classes of cases in our series concerning which there is much to be said both for and against section. I refer to cases of breech presentation, eclampsia, and placenta previa. I have some convictions concerning them, but on some points I confess that I am still very uncertain. Perhaps the discussion may help to clarify matters somewhat. I have not mentioned the time-honored debate over the point as to whether the section should be performed by the obstetrician or the surgeon. In our community there is no debate, as there is no one practising obstetrics exclusively. The cases are handled by general practitioners. This is not a criticism, for many of these men are clever obstetricians with a wide experience. Few, if any of them, attempt Caesarean Section, and it is to the surgeon that these cases fall. Believing that a similar condition of affairs exists in many of our New England towns and cities, leads me to present an obstetrical subject before a surgical meeting. With us, Caesarean Section is a surgical problem, and as such I present to you these incomplete figures which, to me, show not a “surprisingly high mortality," but an astonishingly low one.

MATERNAL	
Toxemia	13
Contracted or deformed pelvis	3
Inertia	4
Bicornate uterus	1
Aged primipara	1
FOETAL	
Toxemia	14
Placenta previa	10
Contracted or deformed pelvis	9
Inertia	3
Cervical scar tissue	2
Previous Caesarean	1
Bicornate uterus	1
Hydrocephalus	1

DISCUSSION OF DR. BIRNEY’S PAPER ON CAESAREAN SECTION

DR. WALTER G. PHIPPEN, Salem: I inferred from the synopsis of the paper that comparative statistics would he acceptable, so I looked up the statistics of the Salem Hospital for the last ten years and have found that there have been seventy-seven cases of caesarean section, with six deaths --a mortality of about seven per cent. I had no time to look up the indications for operation except In the case of the deaths. Three of the six deaths were in cases where the indication for operation was placenta praevia, two for eclampsia. Only one death occurred where the operation was done for con-

tracted pelvis. The woman had been subjected to excessive labor before entering the hospital and died of general peritonitis.
Sixteen cases have been operated on by me, with one death. This was a primipara with placenta praevia, undilated, with excessive hemorrhage.

These figures seem to show that in a small community at least the risk of operation is greater by far in placenta praevia and in eclampsia; but of course both of these conditions might have led to the deaths anyway.

I think those figures, however, do not represent all the cases of caesarean section done in Salem in the ten years, for in the first half of the period, before we had adequate private ward accommodations, many were done at home. This series of cases was operated upon by six or seven different surgeons, using approximately the same technique.

DR. SAMUEL W. GODDARD, Brockton: Not being a real obstetrician, I hesitate to discuss this paper, but I am interested in it from the point of view from which it has been presented. I have had occasion to do a few caesarean operations in connection with our private clinic in Brockton for a period of thirteen years during which I have been connected with the Goddard Hospital; and in that time there have been 2,362 obstetric cases, of which 59 were for caesarean section, making a total of 2.4 per cent of the hospital cases which have had caesarean section. That figure I think is somewhat misleading because we don't know what percentage is sent in from the outside by men who send difficult cases only and not normal cases. Of that series there were two maternal deaths, and the mortality for the babies was nil. Of these, twenty-three were for contracted pelvis, twelve for disproportion, thirteen for repeated caesarean, four for primiparous breach, two for pelvic tumor, two for placenta praevia one for eclampsia, one for transverse presentation with contraction, and one for decompensated heart.

The death in the first one was from hemorrhage and in the other from eclampsia with peritonitis. The series of cases comprising those I have tabulated under contracted pelvis require explanation. Those cases showed by pelvimetry a definite contraction, but I think it is fair to say that many of them should be included in the cases of disproportion.

There is just one point I would like to call attention to, and that is that I feel that more of these borderline cases should be subjected to a test of labor. I don't think that the size of the head or the size of the pelvis or both should necessarily be the deciding factor. I think there are many contingencies and coincidences in labor which we don't know a whole lot about or at least we fail to recognize, and many of these cases will not be subjected to caesarean if we recognize the fact; and I believe it will not materially increase the risk if later on caesarean should be decided upon. Our cases have been done, eight by my associate, Dr. Leavitt, and the rest by myself, and it is fair to say that most of the obstetric cases in our clinic are delivered by specialists, and where a case comes up for possible caesarean, we have a general consultation which I think is helpful.

DR. SELDOM B. OVERLOCK, Pomfret, Conn.: I am connected with one of the smaller hospitals and the conditions in regard to obstetrics are similar to those described in Dr. Birney’s paper. No one who limits his practice to obstetrics is connected with the staff though most of the men have had a fairly wide obstetrical experience. The decision as to whether or not a caesarean section is demanded is made in great part by the man who is in attendance on a given case. Following such decision, I have operated unless the case appeared to be an absolutely hopeless one. The hospital records show that in five years, 1916 to 1921, caesarean section has been done twenty-two times on nineteen different women. Four women have had the operation twice. On three of these I have operated both times and one had the first operation elsewhere. The operation was performed eighteen times for some contraction of the pelvis, two for toxemia, one for placenta previa, and one for fibroid tumor obstructing the birth canal. There was no maternal mortality. Three of the infants died. One infant

was a "blue baby," in one, premature birth was given as cause of death, the third was a strong and healthy child at birth and continued in good health until late in the second week, when it developed acute exfoliative dermatitis of infants and died on the seventeenth day after birth. Intra-abdominal conditions found at second operation were of interest. In two, nothing abnormal was found. Of the remaining two, one had a very thin band extending from the lower extremity of the uterine incision to the abdominal peritoneum, the other had a loop of small intestine attached to the uterus. This attachment had diminished the lumen of the gut and, no doubt, would have caused serious trouble had the loop become twisted in any way. One mother had a postoperative pneumonia and one had a postoperative hernia.

DR. JOHN M. BIRNEY, Springfield: I wish to compliment the speakers on their low mortality. I wish you to realize that these cases, to use a slang expression, were done by Tom, Dick and Harry.

One thing in regard to the postoperative findings at the second operation that is an interesting problem. Obstetricians in Boston are unanimous in saying "once a caesarean, always a caesarean." I think that is a disputed point and one on which we cannot make a final decision as yet. I have been interested in looking into the abdomen and I have seen only one in which I could find a scar in the uterus. In quite a number of cases you can find no scar in the uterus, and in a large number there are no adhesions. I have not decided once a caesarean. always a caesarean.

THE CARE OF PREGNANCY AND LABOR IN PATIENTS PREVIOUSLY DELIVERED BY CESAREAN SECTION

By John T. Williams, M.D., F.A.C.S., Boston,
Assistant Visiting Surgeon, Boston City Hospital;
Assistant in Gynecology, Harvard University.

Published: Boston Med. Surg.J. Volume 186 (1922) pages 599-602

The increasing frequency with which Cesarean section is performed for temporary indications such as eclampsia, placenta praevias, ovarian cyst blocking the pelvic canal, primiparous breech, etc., has given rise to a new obstetric problem: the care of pregnancy and labor in patients previously delivered by Caesarean section but in whom no present indication exists except the scar of the former Cesarean. With the report of cases of rupture of a Cesarean scar, the epigram "Once a Cesarean. always a Cesarean," found ready, almost hasty, acceptance by many obstetricians. The writer's experience, both with the repeated Caesarean section and with a series of ten patients safely delivered one or more times by the natural passages after a previous Cesarean has led him to believe that such a maxim is unscientific and unjustified. The future of a Caesareanized patient should be decided upon the merits of the individual ease, guided by rules based upon clinical experience and experimental evidence, rather than determined by a specious but unsound epigram.

In addition to the temporary indications above referred to, there is a distinct class of cases where Caesarean section is performed in the absence of a distinct pelvic indication because the patient, having lost her first baby after a difficult operative delivery, usually a dry labor or primiparous breech, both the obstetrician and the patient desire to take no chances in the second labor. This indication may be unsound, but three of my cases were of this class, where Caesarean in the second pregnancy (performed by another obstetrician) was followed in the third by easy, normal labor.

The experimental work of Mason and myself[1] showed that in animals a perfectly healed scar would withstand any strain which could be borne by the muscle itself. J. Whitridge Williams[2], Losee[3], and others have demonstrated that in a perfectly healed Caesarean scar regeneration of the muscle fibers takes place and the appearance of the scar is histologically equal to that of the rest of the uterus, but each reported the occurrence of defective scars in which rupture had taken place.

Holland[4] has collected 92 cases of ruptured Caesarean sear from the literature. Of these, 36 ruptured during pregnancy, and 48 during labor (the rest - not stated). The same writer collected reports of 1,605 Caesareanized women from 25 British clinics. Of these, 1,103 were followed up, among whom 487 became pregnant again. Delivery by the natural passages occurred in 78; rupture of the scar in 18; repeated Caesarean section in 352; miscarriage in 47; and the remainder undelivered at the time of the report. In other words, he found that rupture of the scar in subsequent pregnancies occurred in 4%, but that nearly as many ruptures took place during pregnancy as during labor.

The mortality of Caesarean section is variously estimated by different writers, ranging from 2 to 4% according to Newell,[5] to 10%, according to J. Whitridge Williams.[6] If the incidence of rupture of the scar is lower than the mortality of Caesarean section, it would seem logical to allow these patients, where there is no other indication for Caesarean, to go into labor and be delivered by the natural passages. It is of course important, however, that all such patients should he kept under the closest observation during pregnancy and delivered in a well-equipped hospital under the personal attendance of an obstetrician qualified to do abdominal surgery.

My personal experience has confirmed this opinion. I have performed sixteen repeated Cesarean sections, in only one of which was any considerable thinning of the scar found, and in this one instance the thin place corresponded to an area alongside the old scar where an interstitial fibroid one and one-half inches in diameter had been removed at the previous Cesarean.

I have delivered ten patients (two of them more than once) by the natural passages, following Cesarean section, without untoward result. An abstract of these cases follows.

CASE 1. Mrs. J. S. First labor terminated by Caesarean section at the hands of a general surgeon after failure of forceps by her family physician. Evidently a case of contraction ring. Pelvis normal. Second pregnancy two years later, terminated by normal delivery of child. Placenta, however, adherent to undersurface of Cesarean scar and required manual extraction. Scar felt to be slightly thinned at upper end but gave no trouble. Third and fourth labors also normal. Weights of these three babies, 7.5, 9.25 and 10.25 pounds, respectively. Again delivered normally of 10-lb.baby, January 13, 1922.

CASE 2. Mrs. I. L. First labor terminated by Caesarean section for relative indication; slightly contracted pelvis of justo-minor type, inadequate pains and exhaustion. The second labor was characterized by more effective pains, and delivery was successfully accomplished by high forceps. First and second babies each weighed 6.5 pounds. Third labor premature at six months, spontaneous. Fourth labor normal; 5-lb. Baby lived. Fifth labor premature at six months. Sixth labor normal at term; 6.5 lb. baby lived.

CASE 3. Mrs. G. F. L. First pregnancy terminated by Cesarean section by another obstetrician for dermoid cyst of ovary obstructing pelvis. Cyst removed. Measurements normal. Second labor terminated by mid forceps (Scanzoni). Baby weighed 7 lbs. 6 oz. Labor and convalescence without untoward incidence.

CASE 4. Mrs. J. E. A First labor ended in high forceps. Baby died on sixth day of intracranial hemorrhage. Second pregnancy terminated by Cesarean section at the hands of another obstetrician. In her third pregnancy patient desired to avoid Caesarean section and as the pelvis was of normal size was allowed to go into labor and was delivered normally of a 7.5 lb. baby.

The above four cases have been previously reported in part.[7]

CASE 5. Mrs. M. C. First pregnancy terminated, in Caesarean section for placenta previa at St. Margaret's Hospital. Second labor: entered Boston City Hospital, at 5 P. M., December 23, 1926. Os half dilated. Fetal head in the pelvis. , Measurements: E. C. 18.5 cm, I.S, 24 cm, I.C. 27 cm. Determined to wait until fully dilated and terminate by low forceps, which was accomplished without difficulty. Mother and baby made an excellent recovery.

CASE 6. Mrs. T. P. First pregnancy terminated by Cesarean section for placenta previa in Boston City Hospital, March 2, 1919. Measurements: E. C. 18 cm, I. S. 21.5 cm, I.C. 26.5 cm. Second pregnancy normal. Delivered May 31, 1921,after a five-hour labor, by mid forceps. Convalescence complicated by slight uterine sepsis, but recovery followed. Baby did well.

CASE 7. Mrs. B. W. First labor in 1914, difficult, ending in high forceps and stillbirth. Second pregnancy terminated by Caesarean section in the hands of another obstetrician, two years later. Consulted writer in third pregnancy. All measurements normal. July 28,1920, delivered normally of 7.25 lb. baby. Convalescence of mother and baby normal.

CASE 8. Mrs. E. S. First pregnancy terminated by Cesarean section for mitral regurgitation with decompensation. Two years later she again became pregnant but absolutely declined Cesarean section. On April 21, 1921, she entered hospital in labor, being about two weeks before term. The

head was found to be on the perineum and the patient easily delivered herself of a 5.5 lb. baby. Mother and baby made excellent recoveries.

CASE 9. Mrs. R. Y. First labor in 1915, breech, operative, stillborn. Second pregnancy terminated by Caesarean section at the hands of another obstetrician, in 1916. Pelvic measurements normal. December 26, 1920, she was delivered after an eight-hour labor of a 9 lb. 11 oz baby by Low forceps. Normal convalescence.

CASE 10. Mrs. T. T. First pregnancy terminated by Cesarean section for ovarian cyst obstructing pelvis. Cyst removed. Normal measurements. July 17, 1921, she went into labor. After about seven hours of unsatisfactory pains, the head being low and the os half dilated, labor was completed by manual dilatation and low forceps. The baby weighed 8 lbs. 8 oz. and did well. The mother's convalescence was somewhat prolonged by subinvolution, but eventually satisfactory.

To summarize briefly: In two cases the indication for the Cesarean was an ovarian tumor obstructing delivery, which was removed; in two more it was placenta praevia in a primipara; in two more it was failure of the natural forces to effect delivery. In three instances Cesarean had been done because of previous stillbirth, without any other indication. In the remaining case, the cardiac patient, some criticism may fairly be made of allowing such a patient, even at her own request, to go into labor. The easy character of her labor and the excellent recovery, however, justify the judgment in this instance.

In connection with the above ten successful cases, two others, who were given the test, of labor after a previous Cesarean but failed to accomplish delivery by the natural passages, are of interest.

CASE 1. Mrs. R. C. Pelvis slightly justo-minor. Two previous Caesareans, the first after the failure of test of labor, the second by election. At the patient's earnest request, she was allowed a test of labor in the third pregnancy, but as the head failed to pass the brim after two hours of second stage pains she was again delivered by Cesarean. The scar was found intact in spite of the strain to which it had been subjected.

CASE 2. Mrs. I. F. Caesarean section, October 25, 1918, after forceps failed to effect delivery. Measurements: E. C. 21 cm, I. S. 28 cm, I.C. 30 cm. Baby weighed 11 lbs. Dystocia believed to be due to excessive size of child, so patient was carefully dieted in second pregnancy and allowed to go into labor. On January 30, 1921, patient entered hospital in labor. Although the second baby weighed only 8 lbs., six hours of hard labor failed to engage the head, and the patient was again delivered by Caesarean section. The old scar showed no thinning whatever. Convalescence was normal.

On the other hand, where there is a permanent indication for Caesarean section persisting in subsequent pregnancies, such as contracted or deformed pelvis, there is no justification for allowing the patient to go into labor, but elective Cesarean section should be the method of choice.

CONCLUSIONS.

1. Patients previously delivered by Cesarean section must always be delivered in a well-equipped hospital and attended by an obstetrician capable of doing abdominal surgery.
2. Where the indication for Cesarean section is a permanent one, such as contracted or deformed pelvis, elective Cesarean section should be performed.
3. Where the indication for Caesarean has been a temporary one such as placenta praevia, eclampsia, primiparous breech, ovarian or other neoplasms obstructing the pelvis, which have been removed; or a doubtful one, such as a previous stillbirth without pelvic deformity, the patient may be allowed, under careful observation, to go into labor and be delivered by the natural passages.

REFERENCES

1. Mason, N. R., and Williams, J. T.: Bost. Med. Surg. J., 1910, cxlii, 65.
2. Williams, J. Whitridge: Bull. Johns Hopkins Hosp., 1917, xxviii, 335.
3. Losee: 1917, lxxvi, 1.
4. Holland: Lancet, 1920, ii, 591.
5. Newell: Caesarean Section, 1921, p. 15.
6. Williams, J. Whitridge: Obstetrics, 1920, p. 486.
7. Williams, J. T.: Amer. Jour. Obstet., 1919, lxxx, 80.

1922 - Report on Obstetrics – DeNormandie - Boston

ROBERT L. DENORMANDIE, M.D., BOSTON.

Published: Bost.M.S.J. Volume 187 (1922) p. 506-12

ABDOMINAL PREGNANCY FOLLOWING HYSTERECTOMY

McMILLAN and Dunn[1] report a case of abdominal pregnancy following a hysterectomy. In 1918 McMillan did a hysterectomy on the patient. In the following year she presented herself with an abdominal tumor, which they determined to operate upon.

Upon opening the peritoneum a thin amniotic sac filled with fluid presented. They then opened the amniotic sac and removed an eight and a half pound baby. The baby was dead and macerated. The placenta was slowly and carefully separated from the left flank under the spleen, practically incarcerated by the greater omentum. Considerable bleeding followed, but this was controlled by hot packs, and a stab drain opening over the left ilium was made. The patient went off the table in excellent condition. She made an excellent recovery in three weeks.

A year later she presented herself and she was found again to be pregnant. When she was about four to five months pregnant she had a sudden sharp pain in her left side and was found pulseless, very white, tossing in bed, knees drawn up, abdomen distended. The patient was taken at once to the hospital and immediately the abdomen was opened. Two pints of clear blood were obtained in a sterile basin and this was given back to the patient intravenously with a 2.5% solution of sodium citrate. Examination of the peritoneal cavity showed a mass which presented the appearance of a normal uterus on the right side, with a short distal end of a right tube and about half of a normal appearing ovary. At the left side of this mass was the protruding amniotic sac with a bulging mass of bleeding placental tissue which had a strong attachment to the sigmoid flexure. The amniotic, sac was ruptured and a boy baby weighing about four pounds was removed. The operator sutured all bleeding points and closed the artificial half uterus. The patient died very shortly afterwards.

In the discussion of this case, which was presented before the Chicago Gynecological Society it was shown that a complete hysterectomy had not been done, as was thought at the first operation.

OBSTETRICAL PARALYSIS OF THE PERONEAL NERVE

Whitman[2] reports a case of paralysis of the peroneal nerve from pressure upon the main trunk of the sciatic nerve in its intrapelvic portion. He says it occurs during prolonged or difficult labor, either from direct pressure of a large head in a small pelvis or from trauma by application of forceps. In. looking over the literature on the subject, Whitman finds very little about it.

He reports the following case: The patient, aged 43, complained chiefly of paralysis of the left foot. She had been married seventeen years and had seven children alive and well, and two stillbirths. The present illness dates from eleven weeks ago. Labor began on a Friday night and continued until Sunday morning, when at ten o'clock forceps were applied and child delivered with considerable difficulty, weighing ten and a half pounds. Patient at once complained after delivery of great pain in both legs, and inability to move the left foot. Pain gradually wore off, and on the eighth day postpartum she attempted to get up, but was unable to walk because of the foot giving way under her. Since then she has been doing her work, supporting herself by clinging to the furniture. About one month ago power began to return to the flexors of the toes and the calf muscles, which have steadily been growing stronger. No disturbance of sensation.

Physical examination showed on the left side there is a drop foot, resulting from complete paralysis of the extensors of the toes, the tibialis anticus and posticus and the peronei. The flexors of the toes and the calf muscles are apparently normal. No disturbance of pain or temperature sensations, superficial or deep. Motion of both hips is free and painless. No sign of injury to the sacro-iliac joints or to the pelvis.

Whitman says that the diagnosis lay between two possibilities. Injury to the main trunk of the sciatic nerve where it crossed the pelvic brim: or injury to the peroneal nerve where it winds about the head of the fibula, from compression of the strap in the leg-holder. The second injury is much the more common, but in this case Whitman thinks that it was due to the first cause, because the tibialis posticus was paralyzed.

The patient was given a brace, and with the help of baking and massage and passive motion improvement in the gait was steadily seen, but no muscular improvement whatever was noticed. Whitman states that the prognosis as to complete recovery in such cases should be extremely guarded, and he suggests that immediate orthopedic and neurological examination should be made, and suggests that in these cases proper apparatus should be immediately applied to prevent deformity.

UTERO-PLACENTAL APOPLEXY IN ACCIDENTAL HEMORRHAGE

In a most interesting paper Willson[3] goes over the history of accidental hemorrhage. He reports in his article a case which he had in his own practice and then in detail analyzes the clinical and pathological data of sixty-eight cases which he finds in the literature.

The case he reports is a typical one of accidental hemorrhage, the classical symptoms were all present. The diagnosis apparently was very easily made, and Willson performed a Caesarean section. On opening the abdomen a considerable quantity of blood-stained serum was found in the peritoneal cavity. The uterus showed a mottled ecchymotic look, the colors ranging from that of a normal uterus through blue almost to black. The discoloration was greater in the region of the left cornua. Both the anterior and posterior walls were involved. In addition to the discoloration, a peculiar fissured appearance was noted. The fissures seemed to run in the main parallel to the long axis of the uterus. The peritoneum was not torn through. The uterus contained over a quart of fluid and clotted blood. The fetus, which was dead, was removed. The uterus at first failed to contract and then acted better. It was finally closed by interrupted sutures. The patient went back to bed in poor shape and died three hours after the operation.

An autopsy was obtained and microscopic findings are of interest. Central necrosis of the lobules of the liver was present, showing especially a slight biliary pigmentation and slight fatty degeneration. The kidneys showed an acute parenchymatous degeneration of a marked degree, involving especially the convoluted tubules. The uterine musculature appeared normal with the exception of marked hemorrhagic extravasation between the bundles of muscle fibers. The placenta was apparently normal with the exception of a slight hyaline appearance of the stroma of the villi.

Willson analyzes in detail the data he has found in the sixty-eight cases, and a short summary of his findings follows. The period of gestation was mentioned in only fifty-eight cases. As far as Willson could determine, five cases occurred in the seventh month, ten in the eighth month, twenty-one in the ninth month, and twenty-two cases at term. In regard to the symptoms of toxemia, albumin was present in large amounts in forty-four cases. The blood pressure was only mentioned in nine cases, and in these nine the systolic pressure varied from 100 to 280. In seven cases there were no symptoms of toxemia, while there were definite symptoms of toxemia noted in forty-eight cases. Of the sixty-seven cases where the character of the bleeding could be determined, forty-six showed frank or combined type of bleeding. In thirty-six cases the placenta was separated completely, in twelve it was only partially separated, and in the others it was not noted.

Patients were delivered by the Porro operation twenty-one times, twenty-one times by conservative Caesarean section. Abdominal hysterectomy without opening of the uterus four times, vaginal hysterectomy twice, abdominal hysterectomy for rupture of the uterus once, extraction of the fetus by vagina, spontaneous delivery four times, abdominal hysterectomy to control postpartum hemorrhage was done three times, and three patients died undelivered. There were thirty-eight maternal deaths, and sixty-two fetal deaths. Of the children that survived, all were delivered by Caesarean section, there being no case in which the fetus survived through delivery by the vagina. Willson goes into detailed analysis and study of the pathological data. In speaking of the myometrium, he calls attention to the constant finding of a hemorrhagic process present under the peritoneum. The observations regarding the condition of the muscle fibers themselves are rather contradictory. The decidua show changes which are always more marked in the decidua basalis than in the parietal decidua. The blood vessels showed no uniformity, except the fact that they were markedly congested. In twenty-two cases out of thirty-one, it was noted that there was marked intraperitoneal effusion. The broad ligaments were involved in twenty-six, the tubes in eleven, and the ovaries in four cases. The placenta has not shown any marked pathological changes.

Willson reviews the theories regarding the causation of accidental hemorrhage, and puts forward himself the hypothesis that there is a hemorrhagic toxin, liberated by the placenta, which produces its maximum effect locally at the site of its inoculation, so to speak, and secondarily produces manifestations of a general toxemia.

TREATMENT OF PREGNANCY COMPLICATED BY VALVULAR HEART DISEASE

Heaney[4] writes of the method of managing pregnancy complicated by va1vular heart disease, from an obstetrician's point of view, and takes a very conservative attitude in regard to the way they should be delivered, bringing up the point that not only must the patient be delivered in the safest way, but that the post delivery convalescence is as important as the delivery itself. He warns of the results that come from doing Caesarean section on all heart cases, and comes to the conclusion that physicians are not justified in refusing pregnancy to women with accidental or symptomless heart murmurs, and gives a word of warning that women who have had recent broken compensation or broken compensation in a preceding pregnancy enter pregnancy greatly jeopardized and that Caesarean section is not a ready and complete solution of the delivery of a woman with a broken compensation, adding that abortion for heart disease should have sterilization added to it when this can be done with but little additional risk.

THE TWO-FLAP LOW INCISION CAESAREAN SECTION

Beck[5] brings forward a low incision for Caesarean section which he thinks is applicable after an efficient test of labor. He states that peritonitis was the cause of over ten per cent of deaths of patients operated upon at the Long Island College Hospital after a test of labor, and in order to avoid this high mortality he has developed his so-called "two-flap incision." The uterus is exposed through a mid-line incision below the umbilicus. The peritoneum is incised transversely about two centimeters above the bladder. A lower flap is obtained by stripping the bladder off from the anterior surface of the uterus. The upper flap is made by gently passing a pair of scissors under the peritoneum. The uterus is incised in the mid-line after exposing the denuded area by retracting the two flaps. The extraction of the child is accomplished by the hand with downward pressure on the fundus. If necessary, forceps may be used to facilitate the delivery. Before separating and removing the placenta, a catgut suture is passed through the lower angle of the uterine wound, in order to prevent the uterus from sinking into the pelvis. A similar suture is placed in the upper angle of the incision. Traction on these two sutures brings the entire wound into view and protects the peritoneal

cavity while the placenta and membranes are being removed. In certain cases the placenta and membranes may be forced down through the cervix into the vagina. The incision in the uterus is closed by two series of interrupted sutures. The upper peritoneal flap is brought down over the superior portion of the closed uterine incision, and secured by several interrupted sutures. The remainder of the denuded surface is covered by bringing up the lower flap above the original incision. In this manner the peritoneal flaps thoroughly seal the wound in the uterus.

Beck shows the charts of the twenty-nine cases operated upon according to this technique. Fourteen cases, Beck states from the chart, were probably not infected at the time of operation. Other charts show cases which had been in labor from ten to twenty-four hours or more, some with membranes ruptured and a number with vaginal examinations made. All the patients recovered, and in only eight did infection appear.

Beck's conclusions are that this technique will eliminate the consideration of elective Caesarean section in border-line cases of dystocia., and by permitting the use of an efficient test of labor, most of these patients will be delivered through the natural passages. The few that fail may, with some slight added risk, be delivered by the use of the technique he describes. He recalls that potentially infected cases frequently are not infected, and that whenever our opinion in this respect is erroneous, this technique does not sacrifice the non-infected uterus, but preserves the functions of menstruation and reproduction.

He finally concludes that his mortality from this operation will be less than 10 % and claims that the two-flap low incision Caesarean section should be given preference.

ACTION OF THE ECBOLICS IN THE FIRST STAGE OF LABOR

Rucker[6] has utilized the Voorhees bag placed within the uterus in order to study the variations in pressure that take place within the uterus in the first stage of labor, as the result of giving the drugs commonly used at this time. He records his observations graphically, but he does not go into the details of the technique used. His article contains several graphic records of the results following the use of various drugs.

He concludes that by this means there is presented an excellent opportunity to observe the action upon the uterus of the drugs commonly used in obstetrics. From his limited observations it would appear that hyoscine has a moderate but rather constant ecbolic action in the first stage of labor. The action of quinine is more variable. His observations upon the action of strychnine, castor oil, ergotol and the fluid extract of ergot are too limited to warrant even a tentative conclusion. In the cases in which pituitrin was used even in minute doses, there was a continued contraction of the uterus that varied from nine to thirty-five minutes in duration, and Rucker feels that this is probably the explanation of the many disasters that have followed its use.

PITUITARY EXTRACT AT THE BEGINNING OF THE THIRD STAGE OF LABOR

Brodhead and Langrock[7] gave to one hundred consecutive patients, immediately after the birth of the child, one c.c. of infundin, hypodermically, in order to ascertain its effect upon the delivery of the placenta. In 19 cases the placenta was expelled spontaneously. The minimum time in one case was four minutes, and the maximum time was eighteen minutes. In 78 cases Crede's method of expression was used. In three cases the placentae were manually extracted. In 26 cases the amount of blood lost did not exceed 30 c.c. The maximum lost in a primipara was 525 c.c., in a multipara, 1,230 c.c. The average amount of blood lost in all the cases was 135 c.c. In 77 cases the blood lost after the third stage was completed did not exceed 30 c.c. for a period of one hour following the delivery of the placenta. The maximum amount of blood lost in primiparae was 750 c.c., and in multiparae 850 c.c.

The authors feel that in the vast majority of cases the method as outlined is safe and valuable in minimizing the loss of blood. They also feel that the uterus must be observed just as carefully as when pituitrin is not given. The only drawback to the method is the possibility of irregular or hour-glass contractions of the uterus. The authors recognize the fact, however, that this complication occurs independently of the use of pituitrin, and they say that further investigation will be necessary to show whether this complication, is directly attributable to pituitrin or not.

LOW CERVICAL CESAREAN SECTION

De Lee and Connell[8] report 145 cases of low cervical Caesarean section with much the same technique as Beck describes in his paper. These authors state that this technique was used several years before Beck published his article. The main difference between the two techniques is that De Lee and Connell use a special knife. to make the uterine incision and that they "reunite the fascia over the lower uterine segment with a special row of catgut sutures." They further use a vacuum pump in order to suck out the blood and liquor amnii from the operator's field.

From this paper one gathers that they would perform this operation in the great majority of cases where a Caesarean is indicated, reserving the old classical Caesarean section for special indications. They give to this operation the name laparotrachelotomy and claim the following advantages for it.

1. The cervix stands infection better than the fundus.
2. The lower portion of the abdomen is more resistant to infection.
3. The cervical wound is at rest and can heal in peace.
4. The healing of the cervix is better than that of the fundus.
5. There is relatively little danger of leakage of the lochia.
6. The incidence of adhesion is reduced almost to zero.
7. The possibility of rupture of the scar in subsequent pregnancy is reduced to the minimum.
8. By this technique the patient is given a real test of labor.
9. Abdominal hernia has not occurred.

THE END-RESULTS OF ABDOMINAL CAESAREAN SECTION

King[9] analyzes 117 Caesarean sections done at the Charity Hospital in New Orleans by twenty-five operators, and 33 private cases done by five operators. In these cases there occurred six ruptured scars. Two of these patients died, the others recovered, one having to have a supravaginal hysterectomy. King's article contains some interesting tables which are too complicated to abstract. King comes to the conclusion that we should restrict rather than broaden our indications for Cesarean Section.

HEART IN PREGNANCY

Smith[10] reports a series of clinical observations which were supplemented by electrocardiographic studies, in order to determine what changes, if any, were induced in the heart by pregnancy. His article contains several electrocardiograms illustrating his investigations. His conclusions are as follows:

1. Pregnancy in itself does not cause cardiac enlargement.
2. Such evidences of cardiac enlargement as may appear under certain circumstances disappear under other circumstances.

3. Cardiac enlargement, in the latter half of pregnancy, can be simulated by the upward pressure of the gravid uterus.
4. There are no heart affections which are characteristic of, or incident to, pregnancy.
5. While pregnancy throws a load on the heart it is fully capable of adapting itself to this demand.
6. A definite history of previous infections requires that the expectant mother be closely observed for symptoms of masked heart disease.
7. Focal infections may cause symptoms of heart embarrassment in pregnant patients which might erroneously be attributed to pregnancy.
8. Definite cardiac indications for the interruption of pregnancy are rare. Even frankly diseased hearts will exhibit a surprising adaptability to the physiologic demands of pregnancy.

INTRAVENOUS INJECTIONS OF GLUCOSE IN TOXEMIA OF PREGNANCY

Titus and Givens[11], following their success in treating the toxemias of early pregnancy by the intravenous injections of glucose, decided to try this treatment in cases of eclampsia.

The solution used contained usually 75 gm. of glucose dissolved in 500 c.c. of distilled water, and sterilized at 15 pounds pressure for thirty minutes. The rate the solution was given was controlled to a certain extent; the entire volume was introduced in thirty minutes, but the authors state that there was no indication of harm to a patient if a more rapid flow occurred. They prefer to give single doses, repeated as requited, rather than to attempt a continuous flow for any considerable period of time,

Recognizing that the liver is the carbohydrate storage organ of the body and that, in fatal toxemias of pregnancy, it undergoes degeneration and necrosis, the authors endeavored to devise a test which would indicate the degree or extent of liver impairment. The test is as follows: A specimen of blood is taken for blood sugar determination and then a given amount of glucose is injected intravenously, taking a definite length of time for the injection, after which another specimen is taken for blood sugar. Blood sugars are then done at stated intervals and from them a glycemia curve is plotted.

The writers conclude:

1. That the usefulness of glucose and other carbohydrates seems to be based on the fact that in toxemia of pregnancy there is a carbohydrate deficiency in the maternal organism.
2. That disturbances in kidney function are probably secondary to the hepatic changes.
3. That as a result of intravenous administration of glucose, in cases that this was used, there was, in individual patients, immediate clinical improvement and a general lowering of the mortality rate.
4. That the usual autopsy findings in the liver of patients dying from any toxemia of pregnancy are distinctly altered if this treatment is used. Those portions of the liver lobules, which are ordinarily necrotic, are restored to a marked degree and, in most cases, A diagnosis of eclampsia could not be made from an examination of the liver sections alone.
5. That the regeneration of the liver cells after injection of glucose, at least partially, restores the normal functions of the liver, especially in respect to its action as the detoxicating organ of the body.
6. That from these investigations it is thought that the rate of absorption and storage of the injected sugar is an index of the condition of the liver.

STUDY OF THE SCAR IN REPEATED CESAREAN SECTIONS

Gamble[12] analyzes the cases of repeated Caesarean sections which have been done at the Johns Hopkins Hospital, with special reference to the healing of the scar, and the occurrence of rupture through it.

Gamble studies the cases under the following headings: infection, suture technique, suture material, situation of the incision, incision into the placenta over the old scar. He gives most interesting detailed descriptions of twenty uteri that were removed, and his article is illustrated by photographs of some of the specimens obtained. Gamble states that at Johns Hopkins, patients are sterilized after the third Caesarean section, for it is felt that when a patient has been subjected to the risk of three major operations she should be relieved of the added danger of a ruptured scar which must inevitably become increased after each subsequent operation.

Gamble's conclusions are: A weak Caesarean scar may be due to a combination of factors, the most important of which is infection. A febrile puerperium does not give an absolute assurance of perfect wound healing. The uterine wound should not be closed, if possible, until firm contraction of the musculature has occurred. Usually fetal elements do not invade the uterine scar. The dictum "Once a Caesarean, always a Caesarean" can not be accepted without considerable observation. A patient, who has once been subjected to a Caesarean section, should enter the hospital several weeks prior to the expected date of confinement so that she may have the benefit of immediate operation should rupture occur.

TUBERCULOSIS IN A STILLBORN FETUS

Whitman and Greene[13] report of case of miliary tuberculosis in a still-born fetus. Autopsy showed tubercular lesions in the lungs, with many calcareous nodules. Microscopic lesions were also found in the adrenals, kidneys, ovary, and brain. The placenta also showed numerous caseous nodules. The writers were able to find 113 authentic cases of prenatal tuberculosis, and their conclusions are:

1. Prenatal tuberculosis has ceased to be a mere curiosity of the laboratory, and has become a pressing problem of the sanitarian.
2. The facts at hand are significant enough to command the active employment of every agency by which further facts may be elicited.
3. To the extent that the spread of the disease is due to prenatal, rather than postnatal infection present methods of control must be revised and amended, even at the expense of those sentiments of compassion and tolerant forbearance by which our present efforts are so notably handicapped.

CHEMICAL OBSERVATIONS ON THE TOXAEMIAS OF PREGNANCY

In a most interesting, though highly technical paper, de Wesselow[14] reports his studies of an attempt to estimate the value of chemical methods of investigation in the toxemias of pregnancy. Because the brunt of the damage, in these conditions, falls on the liver and kidneys, de Wesselow has tried by chemical examination of the functions of these organs during life to determine the extent and progress of the lesions. He reviews the work that has been done on estimating renal efficiency, which he feels is satisfactory. In dealing with the hepatic function he says that at present there is no simple and accurate method that is available. In his studies he made use of the following methods: in the blood, he studied the urea, the, non-protein nitrogen, the fibrinogen and the plasma lipase; in the urine, the total nitrogen urea and the ammonia. The blood pressure was taken and the

urea test, as shown by the concentration, estimated for three consecutive hours after a dose of 15 grammes. He discusses fully his findings of normal pregnancy, mild toxaemias, and eclamptics, not only in the light of his own studies but in conjunction with other investigators of the same subjects. His findings are all carefully tabulated.

He concludes that there appears to be no definite evidence that we can detect the presence of a liver lesion in these cases of toxemia. In the limited number of cases studied there was no evidence obtained, but the methods employed, of a differentiation into groups, or were there any definite differences detected between those complicated by convulsions and those in which no convulsions occurred.

There was no evidence of the existence of an hepatic as distinct from a nephritic toxaemia of pregnancy. He further concludes that a definitely raised urea content of the blood, that is to say, under the conditions obtaining in pregnancy, a blood urea above 40 mg per 100 c.c. is proof that the kidney is severely damaged, and is an indication for induction of labor. If the blood urea is not raised, the urea concentration test gives valuable evidence of the condition of the renal function; and when the figure obtained is below 2 per cent, termination of the pregnancy should be considered. In cases in which a low diastatic is present, chronic disease and a less complete recovery are suggested. de Wesselow says that by estimations of the renal efficiency, in the absence of any satisfactory hepatic function tests, by the methods suggested we may be able to arrive at definite criteria for interrupting the pregnancy and thereby favorably influence both the immediate and ultimate results of the toxaemias of pregnancy.

PREGNANCY AND HEART DISEASE

Pardee[15] in his studies of the fitness for pregnancy of patients with heart disease, has grouped these patients according to their reaction to exercise. He studies the. patient's symptoms, when housecleaning and climbing stairs, to find out how much she is restricted in her activities by the appearance of shortness of breath or palpitation. She then is put through a test exercise which consists of standing with feet separated and swinging a ten-pound dumbbell, in both hands, from over her head to as near the floor as she can conveniently reach, repeating the movement about once every two seconds. Pardee says this test can be repeated twenty times without difficulty, but all cases must be carefully watched for any possible distress. By his observations he says a normal pregnant woman can do this test without distress and with only a slight sense of breathlessness. The pulse will quicken to 120 a minute, counting for the first ten seconds only, but at the end of one minute the respiration will be normal and the pulse nearly so. Patients who were not troubled by what they considered unusual dyspnoea or palpitation on exertion before pregnancy, and who did not develop this during the present pregnancy, provided they showed a normal reaction to the test exercise, were placed in Group 1. Those patients who were not bothered by unusual dyspnoea or palpitation before pregnancy, but who had complained of this during a previous or the present pregnancy, ~ and who showed either a normal or moderate reaction to the test exercise were placed in Group 2. If these patients showed a markedly increased reaction they were placed in Group 3.

All patients who had unusual dyspnoea or palpitation on ordinary exertion, before pregnancy, and showed added symptoms during pregnancy, were put into Group 3. These patients, showed a moderately increased reaction to the test exercise, but if the reaction was markedly increased they were put in Group 4.

Group 4 consisted of patients who had been troubled by unusual dyspnoea before pregnancy, land whose symptoms had been markedly accentuated during a previous or the present pregnancy, so that the patient had to remain in bed for a time. These patients all showed markedly increased reactions to the test exercise.

Under this grouping Pardee studied thirty-four patients. There were seventeen cases in Groups 1 and 2, and none showed serious signs of cardiac overstrain during labor. Two patients in Group 3 died, but neither was in labor, and the two that died in Group 4 were during or immediately after labor.

Pardee feels that this grouping is very useful in prognosis, and also of great help in the management of those pregnancies which fall into Groups 3 and 4. He feels that women who fall into these two groups should be allowed to undertake pregnancy only when there is some very special reason, or when they are ready to keep themselves under the constant supervision of a physician who is accustomed to handling such cases.

REFERENCES

1. McMillan, W. A., and Dunn, R. H.: Surg., Gyn., and Obst. Vol. xxxiii, No. 2, Page 199, 1921.
2. Whitman, Armitage: Surg., Gyn. and Obst., Vol. xxxiv, No. 1, Page 32, 1922.
3. Willson, Prentiss: Surg., Gyn. and Obst., Vol. xxxiv, No. 1, Page 57, 1922.
4. Heaney, N. Sproat: Surg. Gyn. and Obst., Vol. xxxiv, No. 2, Page 272, 1922.
5. Beck, Alfred O.: Surg., Gyn. and Obst., Vol. xxxiii, No. 3, Page 290, 1921.
6. Rucker, M. Pierce: Am. J. Obst. and Gyn., Vol. iii, No. 2, Page 134.
7. Brodhead, George L., and Langrock, Edwin G.: Am. J. Obst. and Gyn. Vol. iii, No. 2, Page 170.
8. De Lee, J. B., and Connell, E. L.: J.A.M.A., Vol. lxxix, No. 2, Page 109.
9. King, E. A.: J.A.M.A., Vol. lxxix, No. 2, Page 112.
10. Smith, S. Calvin: J.A.M.A., Vol. lxxix, No. 1, Page 3.
11. Titus, Paul, and Givens, M. H.,: J.A.M.A., Vol. lxxviii., No. 2, Page 92.
12. Gamble, Thomas O.: Johns Hopkins Hospital Bulletin. Vol. xxxiii, March, 1922, Page 93.
13. Whitman, R. C., and Greaves, L. W.: Archives of Internal Medicine. Vol. xxix, 1922, Page 261.
14. de Wesselow, O. L. V.: J.Obst. and Gyn. Brit.Emp. Vol. xxix, No. 1, Page 21.
15. Pardee, Harold, E. B.: J.A.M.A., Vol. lxxviii, No. 16, Page 1188.

1922 - The Place of Version in Obstetrics – Potter Book Review

By IRVING W. POTTER, M.D., F.A.C.S. With 42 illustrations. C. V. Mosby Co., St. Louis, Mo.

Review published in BostMSJ Volume 187 (1922) p.797

In this book of 130-odd pages, Dr. Potter has written a review of the early history of version, bringing it up to the present time. The main interest in the book and the real importance it has to the medical profession is his account of his so-called method of version.

Chapter four contains the author's technique of version. This chapter is to all intents and purposes a reprint of his article which appeared in the American Journal of Obstetrics and Gynecology for March, 1921. It contains the same photographs, with a few drawings added.

The reviewer will admit at the outset that Dr. Potter does the best version he has ever seen. His technique is interesting to see and in many instances physicians will profit by following it in doing a version. That the technique which he has developed is alone his, the reviewer can not agree with. It has been taught before that both feet should be brought down, it has been taught that the anterior arm should be delivered first, and more than one physician has elected to end labor by an elective version. But the reviewer knows of no physician who has taken the stand that every woman, if the physician can get to her before she delivers herself, should have a version performed upon her. Dr. Potter subjects every woman that he can to a version. Those that he can not deliver by version he does a Caesarean section on, with the result that in the last year, out of 1130 women that he delivered, 938 were delivered by version, and 100 by Caesarean section. Dr. Potter states that the procedure in competent hands should be attended with no maternal and a very small fetal mortality. Further on he says that the operation must at all times be done *only in properly selected cases* (his italics), and he quotes " The Potter version can be taught to students. It is easier to teach than the use of forceps." This last quotation is from an article by Rucker on "The Potter Version," published in the American Journal of Obstetrics and Gynecology for March, 1921, and the fetal mortality in this series of cases ran from twelve to eighteen per cent.

This is what the reviewer feels will happen if the Potter method of delivery becomes wide-spread throughout the country. The mortality rate will rise and serious damage will be done to the children and to the mothers. Dr. Potter's only indication for performing a version is that he gets to the patient before she delivers herself. It is a dangerous teaching to put broadcast throughout the country, and it is in order to try to stop this wave of operating enthusiasm that the reviewer writes as he does.

IS INTERFERENCE JUSTIFIABLE AFTER TWENTY-FOUR HOURS OF LABOR WHEN NO OTHER INDICATION IS PRESENT?

A study based upon a series of prolonged labors conservatively treated

By ALFRED C. BECK, M.D. Brooklyn, N.Y.

Published TAGS Volume 47 (1922) p.303-307

The sense of security which is obtained by the use of the two flap, low incision cesarean section after a test of labor, has led us to resort more frequently to a thorough test of labor whenever relative disproportion exists. By this routine we mean one that has allowed sufficient time for complete dilatation and several hours of second stage pains, as we have learned that accurate conclusions concerning the need for suprapubic delivery can be obtained only after the patient has been permitted to completely dilate her cervix and have several hours of second stage pains with ruptured membranes. While the majority of the patients so treated have been delivered either spontaneously or by some relatively simple procedure, a number of them have been many hours in labor. The end results in these instances of prolonged labor were so satisfactory that we were led to question the value of many of the procedures which have been advised as a prophylaxis against prolonged and difficult labor. In order that we might test out this hypothesis we decided to abandon these measures and accordingly conducted a series of cases in which we paid no attention to the size of the child or the so-called danger of allowing the pregnancy to continue beyond the expected date of confinement. Occipitoposteriors were managed expectantly and no attempt was made to favor dilatation in dry labors. In this series we did not interfere in any way until the patient had at least two hours of good second stage pains unless a definite fetal or maternal indication arose. The use of this routine gave us a considerable number of prolonged labors. While such labors were trying to the patient and required no little courage on our part the results amply rewarded us for the many hours of worry that might have been avoided had we resorted more frequently to operative interference.

INCIDENCE OF PROLONGED LABORS

Since the beginning of this study 1753 women have been confined in the Long Island College Hospital and by our out-patient department. Of these labors 146 lasted over 24 hours. Of this number 43.1 per cent terminated in from 24 to 30 hours and 56.9 per cent continued for more than 30 hours. The frequency of this condition in private and service cases is shown in Table 1. Table II presents a more detailed account of the duration of these long labors. The various conditions that might influence the length of labor were considered individually and collectively. In this analysis the outpatient cases were omitted. Of the 556 primiparae in the hospital series 108, or 19.2 per cent, were in labor more than 24 hours. Slightly over one-fourth of the 266 dry labors were prolonged (see Tables III and IV).

TABLE I

INCIDENCE OF LONG LABORS

Service cases	1138	Long labors	79
Private cases	615	Long labors	67
Total cases	1753	Long labors	146

TABLE II

DURATION OF LONG LABORS

24 to 30 hours	63 cases		or 43.1%
30 to 36 hours	30 cases		
36 to 42 hours	15 cases	83	or 56.9%
42 to 48 hours	7 cases		
Over 48 hours	31 cases		

TABLE III

INCIDENCE OF LONG LABORS IN VARIOUS CONDITIONS

PROLONGED LABOR OCCURRED IN					THIS WAS
62	or 27.7%	of the	266	dry labors	42.4% of all long labors
108	" 19.2%	" "	556	primiparae	74 % " " " "
22	" 35.4%	" "	60	funnel pelves	15 % " " " "
15	" 24.9%	" "	61	inlet contract.	10.2% " " " "
80	" 9.7%	" "	825	occip. ant.	54.8% " " " "
47	" 21.4%	" "	219	occip. post.	32.1% " " " "
9	" 13.2%	" "	68	breech	6.1% " " " "
1	" 7.1%	" "	14	twin	1.2% " " " "
1	" 11.1%	" "	9	fibroid ut.	1.2% " " " "
13	" 10.2%	" "	127	4000 gm. child	16.4% " " " "
2	" 20 %	" "	5	bicornate ut.	2.5% " " " "

TABLE IV

INCIDENCE OF LONG LABORS IN VARIOUS CONDITIONS, DRY LABORS EXCLUDED

PROLONGED LABOR OCCURRED IN					
8	or 15 %	of the	53	funnel pelves	10.1% of all long labors
4	" 7 %	" "	54	inlet contractions	5 % " " " "
53	" 7.7%	" "	798	occip. ant.	64 % " " " "
22	" 11.3%	" "	194	occip. post.	26.1% " " " "
8	" 6.5%	" "	122	4000 gm. child	10.1% " " " "
2	" 20 %	" "	5	bicornate uterus	2.5% " " " "

ETIOLOGY

Early rupture of the membranes seems to be the most frequent of the tangible etiological factors. About one-fourth of the dry labors were prolonged. It is difficult to account for the exact cause of the remainder of the long labors in this series. From a study of the individual cases we must conclude that the chief difficulty is one of faulty uterine contractions.

CONDUCT OF LABOR

In the conduct of all of our labors we aim to have the patient secure as much rest as possible. A senior student is required to remain in the delivery room throughout the entire labor. He keeps a record of the frequency, strength and duration of the uterine contractions. The mother's pulse and temperature as well as the fetal heart rate are carefully observed. Nourishment is given not as often

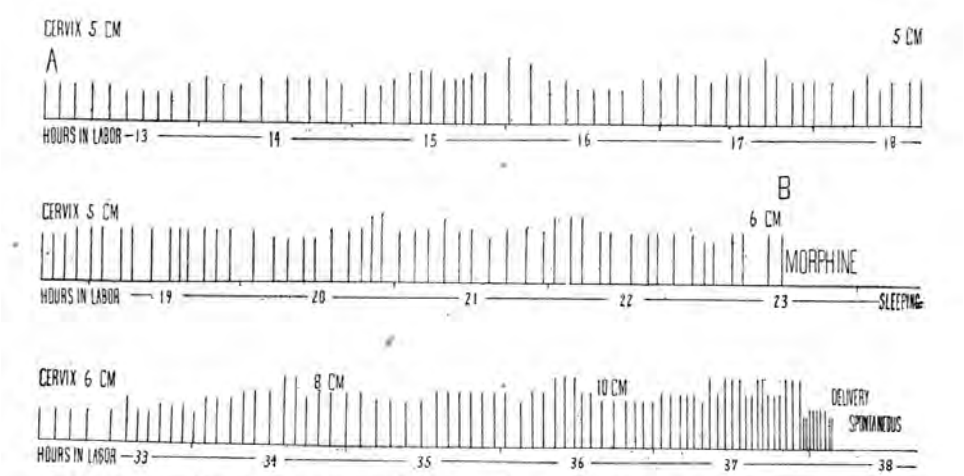


Chart I.—Graphic representation of the uterine contractions during the last 26 hours of a prolonged labor. Each perpendicular line represents a contraction. The height of the line shows the duration of the contraction. The spaces between the lines show the intervals between the contractions. From (*A*) to (*B*) the contractions were irregular in frequency and duration, i.e., those of a fatigued uterus and in the 11 hours represented by this part of the chart the cervical dilatation increased only one cm. Sufficient morphine was given at (*B*) to allow the patient to sleep. Following the resumption of labor the contractions progressively increased in frequency and intensity and the cervix was completely dilated in four hours and spontaneous delivery occurred.

as the patient wishes it but as often as we can force her to take it. In the intervals between contractions she is urged to rest and, if possible, sleep. As soon as the membranes rupture, if the cervix is fully or almost fully dilated, a snug abdominal binder is adjusted and the voluntary efforts are encouraged. This routine which is followed in all of our cases is an excellent one for those that have long labors since it aims to conserve the patient's strength for the second stage. The only additional measure employed in a prolonged labor is the use of liberal doses of morphine. Whenever the character of the contractions shows that the uterus is fatigued, sufficient morphine is given to stop the labor and allow the patient to sleep. Chart I shows the duration and frequency of the contractions in a prolonged labor. Each perpendicular line represents a uterine contraction. The height of the lines shows graphically the duration of each labor pain and the space between each line represents the interval between contractions. From A to B the pains were weak and did not progressively increase in frequency. We believe that this is the picture of a fatigued uterus and our experience has taught us that very little dilatation is accomplished by such contractions. The patient received an injection of morphine at B and went to sleep. Complete dilatation followed soon after the resumption of labor and delivery was spontaneous. Maternal exhaustion seldom occurred when these long labors were handled in this manner and aside from the anxiety experienced by the attending obstetrician very little added difficulty was observed.

END RESULTS

As the private patients were treated by a number of different men and no definite plan was followed in the care of the prolonged labors in this group, the service cases only were considered from the standpoint of the end results. There were 79 long labors in the 1138 general service cases. All but 13 of these delivered spontaneously. Forceps were used in six either because of a marked change in the fetal heart rate or a prolonged second stage. Two breech extractions were done for the same reasons and five labors were terminated by cesarean section. The sections were employed in cases of relative disproportion that failed to engage after a thorough test of labor. Three stillbirths and three infant deaths on the first, fourth, and fifth days, respectively, gave us an infant mortality of 7.6 per cent. One mother died on the third day after a cesarean section. When we consider the fact

that these 79 cases (Table V) were the difficult ones of the entire service series of 1138 cases, the end results speak well for

TABLE V

END RESULTS IN 79 SERVICE CASES

Prolonged labors	79
Stillbirths	3
Deaths under 14 days	3
Total infant deaths	6 or 7.6%
Maternal death	1 or 1 to 79 cases
Entire series in which these prolonged labors occurred	
Service cases	1138
Stillbirths	21
Deaths under 14 days	14
Total infant deaths	35 or 3%
Maternal deaths	2 or 1 to 568 cases

the routine which has been followed. Additional proof of the value of conservatism is shown by the end results in the entire series. Of the 1138 deliveries in which this group of 79 prolonged labors occurred, 21 resulted in stillbirths and 14 infants died within the first two weeks, a total infant mortality of 35 or 3 per cent. Two mothers died, a maternal mortality of 1 to 569 cases.

Should we have resorted to the use of manual dilatation or incision of the cervix and forceps delivery in these instances of prolonged labor? From the fact that in many of these cases the head was not engaged after twenty-four or even thirty hours of labor we doubt very much whether our end results would have been as good had these procedures been used.

Should we have used bags or vaginal packs in our dry labor cases? As there were 138 cases in which the membranes ruptured early this type of interference would have been required that number of times.

Should we have induced labor prematurely in our cases of pelvic contractions? We believe that all but a few of the patients that show relative disproportion will deliver spontaneously if they are permitted to have a thorough test of labor. We therefore feel that a larger number t)f living infants will be born and that they will have a better chance to survive if we allow these patients to go to term and have a test of labor. We admit, however, that this routine occasionally subjects the mother to the risk of a cesarean section.

Should we have induced labor because of the fear of a large child? As 74 of the infants in the series weighed over 4000 grams, 74 inductions for this indication would have been necessary.

Should more cesarean sections have been done? The large number of spontaneous deliveries that occurred after a test of labor together with our low infant and maternal mortality proved that we were not negligent in the matter of cesarean section.

We doubt very much whether our end results would have been better had we interfered more frequently. Our only conclusion therefore against the routine advocated in this paper is that it calls for considerable courage and is accompanied by considerable worry on the part of the attending obstetrician.

THE TEST OF LABOR IN RELATION TO CESAREAN SECTION COMPARATIVE RESULTS OBTAINED BY ELECTIVE AND SECONDARY OPERATIONS BASED UPON A PERSONAL EXPERIENCE OF 92 CASES

By RUDOLPH W. HOLMES, M.D., AND ALLISON L. BURDICK, M.D.,
Chicago, Illinois.

Published TAGS Volume 47 (1922) p.303-307

Since Edward Reynolds[1] presented a thesis on "The Superiority of Primary Over Secondary Cesarean Sections, etc.," before this Society, in 1907, there has been a massive accumulation of literature covering the subject. In the fifteen years since it was written it has had a profound influence in developing the principles governing the safe performance of cesarean section. This paper has also been a guiding lesson to the senior writer these many years in his endeavor to formulate rules for a safe conduct of women who would have potential difficulties in labor which might necessitate suprapubic delivery. With increasing experience he has amplified, from time to time, his general rules so that now he believes it is possible to lay down concrete directions which will vouchsafe to the woman essentially the same security after the labor has been in full force for a period, as when the section is done before contractions have begun. In fact, that the purport of this paper may be fully appreciated, contrary to the generally accepted views -and which the senior writer has likewise always corroborated in the main until a careful analysis of his cases these late years convinced him to the contrary- there is comparatively little difference in the safety of the operation when performed in advanced labor, before the advent of exhaustion, over those operations performed in the last days of pregnancy. There are certain fundamental facts which stand out very clearly in making this statement valid: first, the dangers fall or rise directly as the woman has been managed properly or improperly before and in the hours of labor; secondly, the surgical judgment, the obstetric conscience in carrying out an aseptic technic, character of the personnel of the operating room, influence the outcome as much as any adventitious circumstances incident to the labor. *Per se,* the length of labor within the safe limits is of comparatively small significance, but vaginal examinations, or attempts at delivery from below are fraught with a high proportion of disaster; likewise, procrastinating until the vital forces are at the lowest ebb places the woman in jeopardy; *again, prolonged rupture of the membranes offers a serious menace to the welfare of the woman during the postoperative period*. We may place it as a definite criterion that the woman who has a truly elective operation will run a more placid, an infinitely more comfortable convalescence than she who has been subjected to hours of a distressing labor. It is essentially true that those given the test of labor practically will run the same thermal elevation as those who have had the elective section, but the former will have a continuance of that thermal course longer than the latter -an expression of lack of resistance incident to tiredness. The longer the woman is in labor, with membranes ruptured, more characteristically will the pulse have a higher rate with a more prolonged elevation of temperature over those not in labor, or with membranes intact. Further, it is clearly evident from our study of these 92 cases that some 10 to 20 per cent of women operated upon in labor, more glaringly evident if the membranes have ruptured, will run a more stormy course with a somewhat prolonged thermal elevation, a true, though mild septic course; the clinical picture of these is distinctly worse than any of those operated electively. We will put this in concrete form in the' statistical part of this paper.

While preparing this contribution we have speculated much on what constitutes the danger in a delayed cesarean section; we feel that we have much to learn of the vital forces which are compromised by hours of labor. How much is due to impairment of immunity to bacterial invasion sequential to the fatigue of labor? How much is due to the setting free of protein bodies; or by-products from forced metabolism? How much is incident to the bacterial flora so commonly the habitants of the vagina, ordinarily relatively innocuous, yet, at times, offering a serious menace to their host? Does the reparative process in the uterine incision determine cross currents, reversal of currents in the blood stream and lymphatics which carry the bacteria to the wound! Two things stand out very clearly: one, that modern science demands that there shall be a ready clinical test which determines the patient's immunizing power, not only in this connection but for all preoperative investigation; again, a reliable test which shall determine the innocuousness or danger lying in the vaginal flora. There may be no question that with membranes ruptured a large element of risk is determined by the exposure of the presenting part to the bacterial content of the vagina, innocent on the mucosa, but dangerous when rubbed off onto the uterine or abdominal wounds. Certain it is that vaginal examinations or unwise attempts at delivery mechanically spread the inherent risk.

The opportune time for a cesarean section necessitated by gross cephalopelvic disproportion is at a designated hour, a truly elective procedure; likewise we believe that the dangers from rupture of a previous cesarean scar, the scar of an early hysterotomy or the scar of a myomectomy which demanded an incision quite through all the muscularis, are so great that a timely elective section should be the rule in such cases. The absolute indication is not germane to the topic under discussion and is herewith dismissed. The danger of rupture of the uterine scar is one which may not be lightly decried; it is of small consequence when the section was dictated by absolute deformity for, perforce, the section must be repeated at the end of each succeeding pregnancy. In the presence of relative indications, or the many adventitious circumstances which prompted the sections, subsequent pregnancies may not necessarily have to be terminated by laparotomy were it not for the consideration of the scar. This danger is so acutely appreciated in our minds that we fully and unequivocally subscribe to the dictum, "a cesarean once, a cesarean always." Case 32 was a woman who lost her first baby in an instrumental labor; her second labor terminated spontaneously, but an able gynecologist was called to remove the placenta which had escaped into the abdominal cavity through a transverse fundal rent; he sutured the rent. She came to us in her third pregnancy, six weeks before term. In view of the scar we planned to anticipate labor by cesarean section; unfortunately labor started before this designated time. Seven hours after the onset of labor the abdomen was opened; the scar had failed to unite through one-half its extent and the peritoneum alone held. Fortunately rupture bad not occurred.

Is the danger of rupture real or imagined? Those who deny the probability of the rupture argue from the cases which passed through a spontaneous labor happily; the others base their contention on the calamities which have occurred, on the incidence of rupture. Harrar[2] found in 50 repeated sections, 42 scars had healed perfectly; 4 were attenuated; 2 had partial rupture; 2 had complete loss of integrity --in other words, the liability of rupture according to his figures is 16 per cent. Asa B. Davis[3] reported 33 repeated sections; 23 had perfect scars; 3 were thinned; 2 had partial rupture, and 1 had a complete rupture -that is, his incidence of vulnerable scars was 18.1 per cent. v. Leuwen[4] found the scar thinned, or worse, in 20 of 117 repeated sections, 17 per cent had dangerous scars. More recently, Holland[5] collected 92 cases of uterine scar rupture in England; 48 ruptured in labor and 34 before contractions began. He states the danger of rupture in relation to spontaneous labor is 1: 4. Certainly these figures should arouse our interest. Though this topic is pertinent to the subject of relative indications, neither time nor space will permit an academic discussion of the production of vulnerable scars; they may occur in the most expert of hands.

In contrast to the absolute indication, the relative necessity offers a problem which does not exist under the imperative demand, the woman in the former class always will require the section; in the latter, later labors may not offer an indication for the operation. Are we to set the time for the performance of an ideal, elective section on a woman who may readily have a spontaneous birth, or are we to heed Schroeder's aphorism, "watchful expectancy," judiciously awaiting her to prove or disprove her functional ability? We know that fully 60 to 80 per cent of women with pelvic contractures of 8.5 to 9.5 cm. will have spontaneous labors, or at most aided by not difficult instrumentation. Are we to subject such arbitrarily to the risks of a cesarean, when normal labor so largely is probable, merely that the few who properly should have such aid may be saved a reasonable test of labor, which, withal, does not increase their hazard greatly? We do not believe such radicalism is justifiable.

Whatever may be said, a cesarean section, for the mother, does not have the security of life and health in comparison to normal parturition; neither is the sum total of discomfort or pain less for the section than a normal delivery, even with a forceps delivery of not inconsiderable difficulty. Error of obstetric judgment is too finite; how often we hear of women who have been told they had, insuperable difficulty facing them, only to disprove the allegation by a labor of surprising ease; a delphic prognosis were better than such positive assertion.

There has been much incidental mention of giving a woman a test of labor in more or less elastic phraseology, but the literature is sadly lacking, in concrete detail of what that test implies. As the senior writer has for many years had his formulated rules in relative disproportion and has had his meed of success, we believe a summary of his results will not be without interest, and certainly will give opportunity for a timely discussion as to what constitutes a test of labor, and to what extent we justifiably may go in that test. We believe the first great development in laying down these rules was the abstinence from vaginal examinations; in the first 32 cases, up to the close of April, 1912, 16 cases of cesarean section were without vaginal examinations in relation to labor, i.e., 50 per cent; the second great stride was in the routine employment of rectal touch in 1913. Our rules comprise the following:

1. Internal mensuration in pregnancy determines the certainty of pelvic deformity, and its degree. We believe the general teaching that external pelvimetry is invaluable in determining pelvic capacity has done irreparable harm, for it is only by internal palpation and mensuration that any fact of worth is elicited.
2. As definitely as possible the probable date of confinement is determined.
3. Two or three weeks before this date the presentation and position are determined: the cephalopelvic relationship is fixed as clearly as possible. At this time the pelvic capacity, determined in pregnancy, is verified. The patient and husband are warned of the dangers of coitus during the last months of pregnancy, an admonition that goes to all patients.
4. Labor is awaited, or at times, the contractions are started, if possible, by castor oil and quinine.
5. The usual external preparation is made, which comprises shaving, sponge bath, enema, local cleansing, but the vagina is not entered.
6. During the early hours of labor the woman is encouraged to partake of simple liquid or semisolid food, for commonly the weak, irregular pains, so characteristic of cephalopelvic disproportion, may endure for many hours, even some days.
7. If rest is materially disturbed by a protracted nagging labor, temporary relief is given, when needed, by chloral bromides, by mouth or rectum. Also, those with tumultuous labors are given occasional relief by the same means; morphia rarely is exhibited; scopolamine has not been employed for years.

8. Control of the pulse and temperature at frequent intervals, every two hours generally, but more frequently if there be an irregularity or increment in the pulse rate. The pulse is the valuable index of the fatigue of the woman, the general facies of distress is valuable. When the pulse rises to 90 or 100 the patient is actually reaching a stage which if allowed to continue much longer may mean true exhaustion. The resistance to pain and the stress of labor vary so enormously, one may require an earlier intervention even though she has not had an adequate test, another may safely go many hours without untoward symptoms. To continue the watchful expectancy beyond the safe limit jeopardizes the safety in a section, or makes the eventual high forceps or craniotomy imperative.
9. Control of the fetal heart.
10. If possible the time should be awaited until the os is dilated, and the membranes have ruptured; when the membranes rupture prematurely, and the head does not descend to fill the cervix, dilatation will be arrested; premature evacuation of the amniotic sac with little or no dilatation warrants a more prompt determination for the section; it is only by the opportune rupture of the fetal sac that a positive test is given.
11. During the whole course of the test of labor, control should be kept by periodic abdominal palpation and rectal touch. Rectal examinations as a routine procedure in labor were first advocated by Kroenig[6] and Ries[7] in 1893. Practically no further contributions were made until the senior writer, in 1915,[8] reiterated the great advantages of routine rectal over vaginal examinations in labor. For the conduct of a case which may require a section after a test of labor, it is the most valuable adjunct contributed to the cesarean question these last ten years. From it, every fact relevant to the correct interpretation of all phenomena of labor may be accurately determined, except the pelvic deformity and the nicety of adjustment of the head to the brim; as the former is generally determined in pregnancy, this is of no moment, the latter may offer a problem. My associates have been taught not to make vaginal examinations unless specifically advised.

THE OPERATION

We have firmly adhered to the principles of the classic section with some minor deviations, for in our hands the method has proved of signal worth. Therefore, the uterus is always eventrated, unless conditions dictate otherwise, through as small an abdominal cut as possible; we see the only objection in the unseemly long wound. The uterus is promptly clothed with moist compresses; at the same time the abdominal wound is closed back of the uterus with a bullet forceps-at times, if there be intestinal distention with tendency for their protrusion, a pad is inserted before the forceps is applied. The field is then closely encompassed with towels. As the incision is being outlined, the assistant injects one, sometimes two, ampules of pituitrin in the uterine muscle. After outlining the opening in the uterus with the scalpel, the wall is punctured carefully at the midpoint, the index fingers introduced within the wound and the wall is torn, a method which has been followed with few exceptions since the second section. The tearing has the great advantage of never bleeding unduly in our hands, is easy of repair, is more quickly done, and expedites the delivery of the child if the placenta be anteriorly placed, for the one act opens the uterus, separates the placenta, and opens the membranes. Suturing has always been done with catgut with the exception of the first two cases where silk was used; the chromic gut is tied with every other suture. We feel that the safety of the woman lies in the close obliteration of all dead spaces; a continuous suture will loosen under the influence of retraction, and from imbibition of moisture. Few will agree with Kerr[6] that silkworm gut is the ideal uterine suture material or that the cervix and vagina should be sponged out. We have adhered to the old method of eventration as we believe there is an inevitable spill of blood and liquor amnii in all methods of cesarean, and by eventration this danger is minimized. In our experience

blood is almost never seen within the abdominal cavity and the amniotic fluid likewise is kept away. We have often thought that adhesions were produced more by amniotic fluid than blood or careful handling with gloves.

We have been strongly influenced by the belief the lessened hazards of cesarean section, in safe bands, lie more strongly in the adoption of sound surgical principles, rather than in the many deviations of technical detail suggested during recent years. Twenty years ago there was a fervid discussion on the relative merits of various types of incisions, from the posterior median of Cohnstein, the transverse fundal of Fritsch, the typical Saenger, and finally the transverse cut through the lower segment of Kehrer. At this period Kerr summed up the situation by declaring Fritsch's incision had the greatest advantage in being farthest from the cervix. Is this still valid? We wonder whether the procedures of Sellheim, of Frank, etc., are not an expression of novelty rather than permanent value. All will agree that the peritoneum of the upper abdomen has not the same resistance to infection as the pelvic, but we await the proof that the cervical peritoneum is less vulnerable than the corporeal.

STATISTICAL DEDUCTIONS

There were 92 cesarean sections, of which 29 (2 eclamptics) were done before labor; 61 were in labor and in two, data were not available covering the point. Of the women in labor, 22 were operated upon with intact membranes; the range of labor in these was from 2 to 104 hours, an average of 26 hours. Membranes were ruptured for a definitely stated period in 25 women, a range of from 1 to 84 hours, an average of 22.2; the labors varied from 7 to 84 hours, an average of 30 hours. The period the membranes had ruptured is an actuality but we must take with reservation the duration of some of the abnormally long labors. For example: Case 56 (1916) was a repeated section; she did not come to the hospital until weak, irregular, nagging contractions had persisted for 102 hours; the section was done two hours after her admission. Again, Cases 39 (1913) and 49 (1915) were of similar character. We doubt the endurance of any woman to be in good condition after having strong, tumultuous labor for 48, 72 or 104 (!!) hours. The very fact that the patients in Charts 3 and 4 (membranes ruptured for 24 to 84 hours) had a better composite temperature curve than the other divisions is *prima facie* evidence that they did not have exhausting labors.
There were 52 primiparae and 37 multiparae, respectively 56.5 and 40.2 per cent, the youngest being 17 and the oldest 44 years of age.

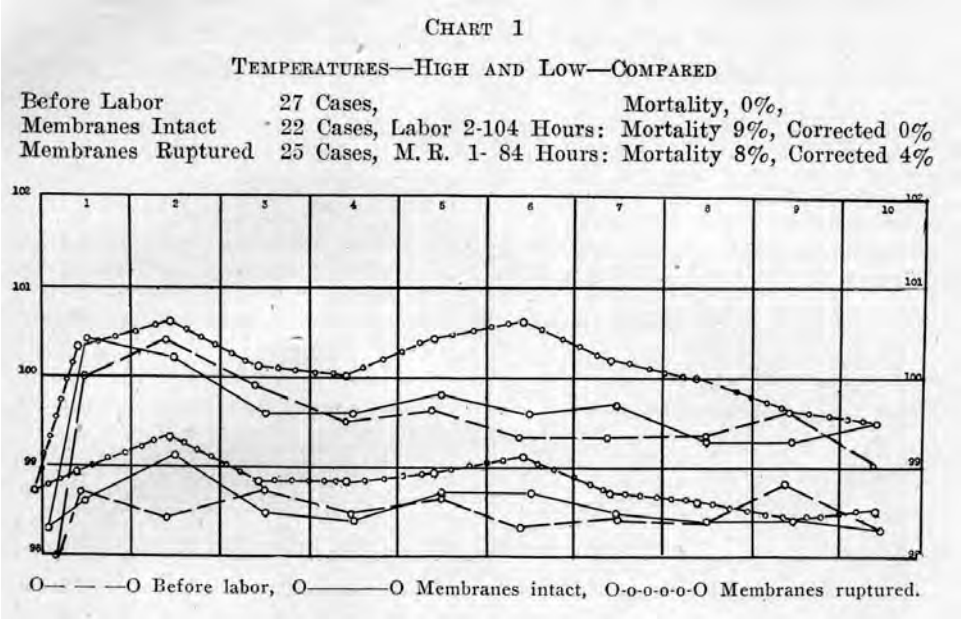
INDICATIONS

Of the 92 cases the pelvis was below 9 cm., i.e., 8.5 or lower, in 34 instances; in this number one had such a pelvic deformity that complete coitus was impossible; she had repeated sections; 20 had a conjugata vera of 9 cm. Eleven (11) women bad repeated sections, two of which had three sections each. In twelve the pelvic contracture was not stated or the record was missing. Placenta previa dictated the section five times in the presence of minor deformity, one had placenta previa centralis with fibroids; eclampsia twice (once with a c. v. of 8 cm.). Albuminuria (toxemia) four cases; heart disease four; two had congenital dislocations of hips. Ventral fixation and adhesions from repeated laparotomies, two cases. These were the principal indications which may be enumerated.

MORTALITY

During the period covering this report, from 1900 to the present time, six mothers died. Two died of eclampsia, [Nos. 29 (1911), and 90 (1922)]. The first was doing well when she had a recurrence of

convulsions on the second day, five in an hour, and died; the second section was done to save the baby, believing the woman was to die,



as after a phlebotomy and 4 to 5 hours of expectant treatment the blood pressure was 255-130; she died after the thirteenth convulsion. Both babies lived.

Cases 1 (1900) and 4 (1905) died respectively of peritonitis and general sepsis; No. 5 (1906) was diagnosed as gastric dilatation, but the fact that she ran a mild febrile course suggests peritonitis as responsible for the projectile vomiting. No. 82 (1921) had had a severe cold for days, 10-24 days before labor set in; at the time of entering the hospital she still had some laryngeal irritation, and a temperature of 102.3º F within 20 hours of the operation which remained high until death. She promptly developed a right pleurisy with effusion, the left pleura later became involved; the day of her death the wound showed no redness, though there was some slight serous discharge. The membranes had ruptured 24 hours before the onset of labor, the latter lasting 21 hours; the baby was born with an offensive, putrid odor, but lived. Had she a focal infection, the atrium being her throat? This was the concurrence of opinion.

The eclamptic deaths should not be considered in connection with the mortality incident to non-toxic conditions, leaving four deaths following cesareans for pelvic indications, or other anomalies. Are we permitted to consider that the first five patients were operated upon in the period of learning, and may we segregate them from consideration of the modern mortality? We believe it is seemly. Therefore, our gross mortality was 4.4, -per cent, corrected it is 1.17 per cent.

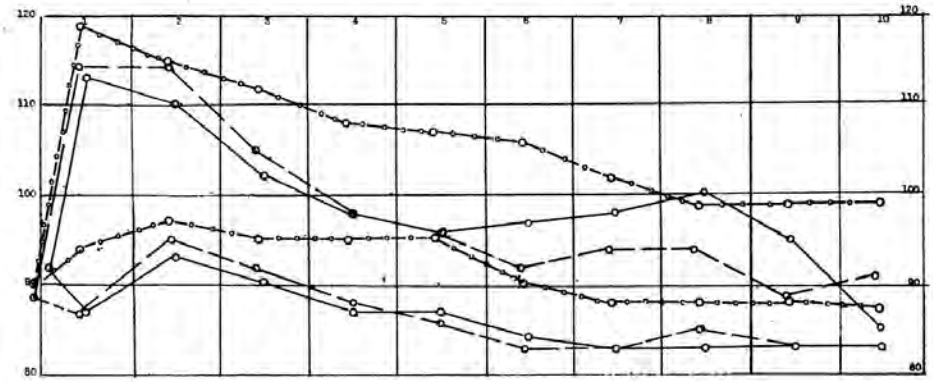
INFANT MORTALITY

Eight (8) babies succumbed either in labor or within fifteen days, Two infants were born dead after prolonged labor: in No. 8 (1906) there was a large dermoid of the ovary blocking the brim; No. 11 (1908)

CHART 2

PULSE RATES—HIGH AND LOW—COMPARED

Before Labor	27 Cases,	Mortality, 0%,
Membranes Intact	22 Cases, Labor 2-104 Hours:	Mortality 9%, Corrected 0%
Membranes Ruptured	25 Cases, M. R. 1- 84 Hours:	Mortality 8%, Corrected 4%



O— — —O Before labor, O————O Membranes intact, O-o-o-o-o-O Membranes ruptured.

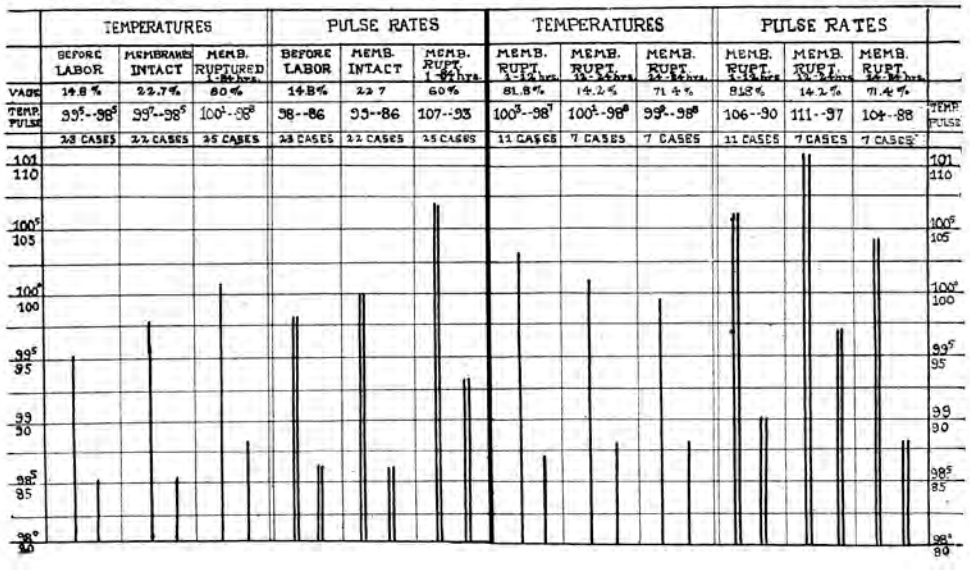
had the pelvis filled by a massive cervical fibroid. One, Case 3 (1905) succumbed to a toxemia of the mother which developed into a postpartum eclampsia., One, Case 17 (1909) died on the tenth day after many convulsions, the pediatrician diagnosing the condition as meningitis; was it not more probably a brain hemorrhage, produced by prolonged labor? One, Case 15, died on the fifth day from melena and a high grade pemphigus neonatorum. Two, Cases No. 21 (1910) and No. 86 (1921) had hydrocephalus, the flr9t also had an extensive dorsolumbar spina bifida; the mother of No. 21 was also Case No. 10, operated two years previously. Case 86 (1921) was a woman who had lost five children, was intensely anxious to have a living child; she was enormously distended, which precluded accurate palpation. The heart sounds pointed to a breech presentation which was proved at operation. To have hydrocephalus, or other gross fetal abnormality of structure is a lamentable catastrophe, and especially in a cesarean section; the one redemption in the latter instance was that the parents, as in the former case, on account of religious tenets, precluded craniotomy. One, Case 88 (1922) died on the fourteenth day from enteritis.

Therefore, there were six fetal deaths in the first 21 cases up to 1910, four of which were accidents of birth; two, after 1910, which had no connection with the birth. There was a gross loss of eight children (8.68 per cent); incident to birth, four children (4.34 per cent). In the last 75 case~ there was no infant mortality due to birth.

CHART 3

DIAGRAMMATIC PRESENTATION

AVERAGE OF ALL HIGH AND LOW TEMPERATURES AND PULSE RATES FOR 10 DAYS



MORBIDITY

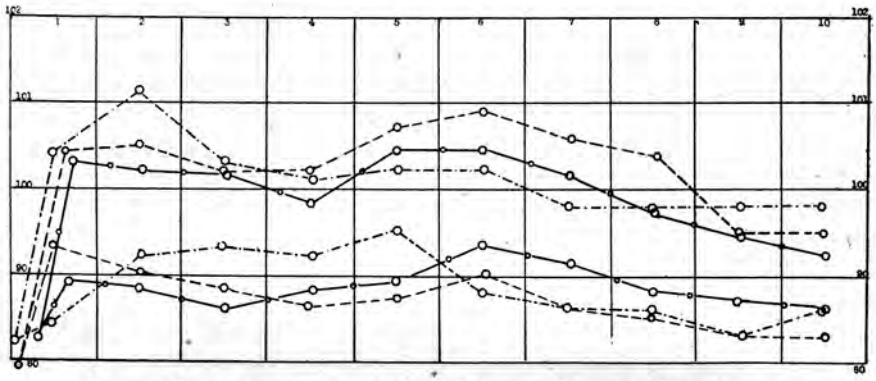
Various plans were devised for the purpose of showing graphically the incidence of morbidity in the various possible classifications of our cases; the one finally adopted was to segregate the cases into those operated upon before labor, those, in labor with membranes intact, those with membranes ruptured up to 12 hours, 12-24 hours, and 24-84 hours. In this way we obtained 27 cases in the first, 22 in the second, 11 in the third and 7 each in the final two groups. There were insufficient cases to attempt a classification on the concurrent duration of the labor and rupture of the membranes.

In our plan the observation of pulse and temperature last made before operation was the initial point. Next the high and low pulse rates and temperatures for each day, irrespective of the time of day of their occurrence, were tabulated for ten days. Morning and evening temperatures were hardly comparable as only too often the high points were reached in the early morning hours. After arranging our cases in the above divisions, the high and low temperatures and pulse rates were averaged for the purpose of obtaining composite curves for the respective divisions. In obtaining the data for graphic presentation (Chart 3) for the high and low points of pulse and temperature, the averages of each for the entire ten days were obtained.

CHART 4

TEMPERATURES—HIGH AND LOW—COMPARED

Membranes Ruptured— 1-12 Hours, Labor 7-57 Hours, 11 Cases
Membranes Ruptured—12-24 Hours, Labor 12-24 Hours, 7 Cases
Membranes Ruptured—24-84 Hours, Labor 13-84 Hours, 7 Cases



O— — —O 1-12 hours, O—.—.—O 12-24 hours, O——o——O 24-84 hours.

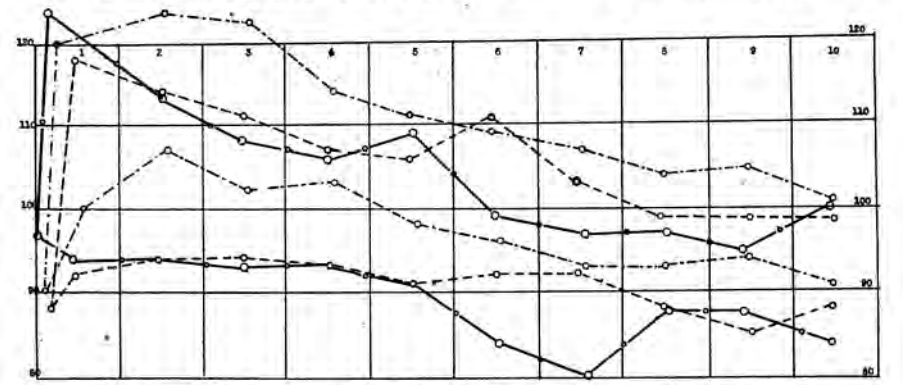
From the fact that 15 (65.2 per cent) of the 23 patients operated upon before contractions occurred had a temperature of 1000 or below permanently after three days, we took this as the index of the duration of febrility, normal or postoperative reaction. Taking the list as a whole we find that of 82 cases, 42 (51.2 per cent) were 100º or below by the third day. Therefore, we may state that three days is normal for the postoperative thermal elevation to endure. The ideal would be not to have one febrile day over 100º no, not to have one above 98.6º one case approximated this perfection, No. 28, 24 hours in labor with membranes ruptured a like period.

On this basis, women operated upon before labor will reach the postoperative normal on the average in 2.7 days (Chart 8); in labor with membranes intact in 4.6 days; membranes ruptured 1 to 12 hours in six days; membranes ruptured 12 to 24 hours the postoperative febrile course will be over in 7.28 days; most anomalous of all, seven patients with membranes ruptured from 24 to 84 hours, and labor lasting from 24 to 84 hours, the normal was reached in 3.8 days. As a whole, membranes ruptured from 1 to 84 hours will show convalescence in 5.7 days. The evidence of this is further manifested in the composite temperature curves (Chart 1). Again, we believe a short, intensely tumultuous labor, say up to 24 hours, menaces a woman more who has a section than she who has a very protracted period of aberrant contractions of no great intensity, even though her membranes have been long ruptured; leaving all other considerations aside we feel there is justification in the belief that forced metabolism from violent physical endeavor produces by-products which are intensely inimical to a woman in labor, especially if she have a section; very probably this vital deterioration produces an arrest of immunity.

CHART 5

PULSE RATES—HIGH AND LOW—COMPARED

Membranes Ruptured— 1-12 Hours, Labor 7-57 Hours, 11 Cases
Membranes Ruptured—12-24 Hours, Labor 12-24 Hours, 7 Cases
Membranes Ruptured—24-84 Hours, Labor 13-84 Hours, 7 Cases



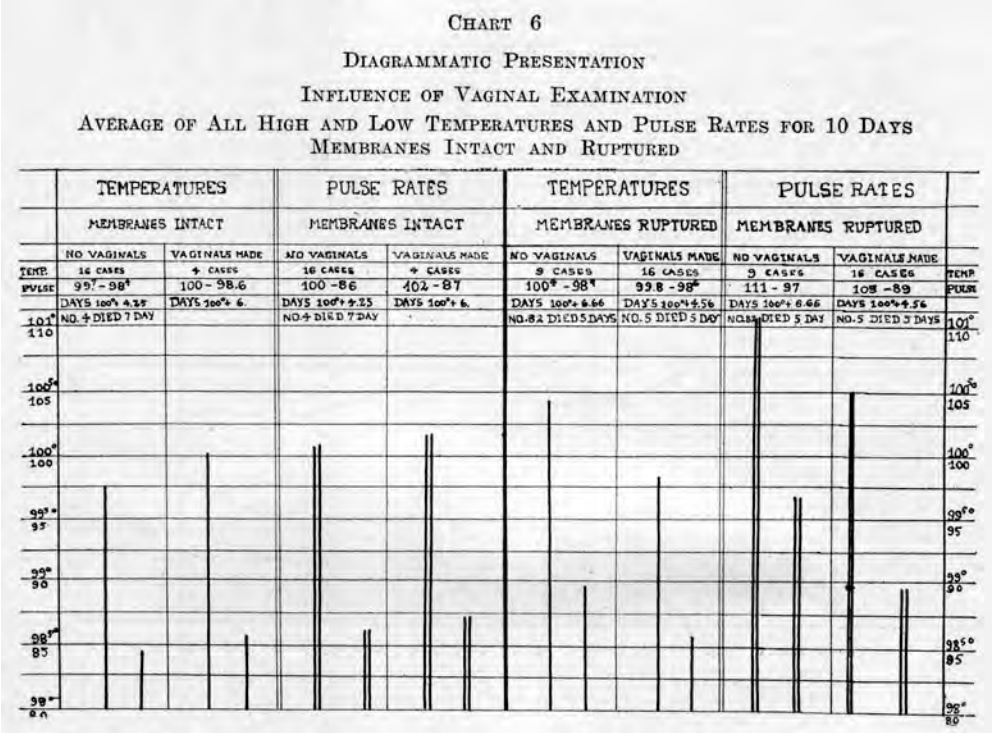
O— — —O 1-12 hours, O—.—.—O 12-24 hours, O——o——O 24-84 hours.

TEMPERATURE BEFORE OPERATION

The temperature before operation was 99º to 99.4º in 14 patients, all the rest were below 99º at this time, with two exceptions, Cases 77 and 90, the latter an eclamptic, and the former, the one who had catheterization of the uterus the day before. These two had 101º. Roughly the incidence of postoperative reaction in women operated upon before labor on the first day for temperatures 100º or below, and 100º to 101º will be respectively, 49.2 and 33.9 per cent; further on the second day these temperatures will be respectively 26.4 and 52.8. Thereafter, if convalescence is assured the high temperature will drop to below 100º and will there remain. This is well shown in Chart 1; while the temperature has descended to a point below 100 on the third day, the pulse only descends to a rate below 100 on the fourth day, and remains about 90 to the tenth day. (Chart 2.)

The composite curve for the 22 patients who were operated with membranes intact, in labor from 2 to 104 hours, shows an initial rise the first day about a half degree higher than those operated before labor, falls slightly below the latter on the second day, but then continues slightly higher until the eighth day. The pulse rate is lower to the fourth day; on the fifth day it continues somewhat more elevated to the eighth day, when it drops to a point below 90.

The composite temperature curve for those with membranes ruptured from 1 to 84 hours,



labor from 7 to 84 hours, has an initial rise to 100.2º, then rises higher than that for the other two groups, and continues over 100º for eight days (Chart 1). The pulse rate takes a comparable course, and is materially higher than either the groups operated before labor, and with membranes intact; the pulse only descends so that only by the eighth day is it below 100 (Chart 2). Chart 3 presents graphically the average of all high and low temperatures and pulse rates for 10 days. This chart clearly shows the malign influence of protracted periods of membranes ruptured upon the convalescence from cesarean sections.

Charts 4 and 5 show the average temperature and pulse curves in different periods of ruptured membranes. The initial rise of temperature the first day for the three groups, membranes ruptured from 1 to 12 hours, 12 to 24 hours, and 24 to 84 hours, is practically identical. The temperature of the first group, from 1 to 12 hours, runs an even course until the fourth day, when it rises and persists higher until the eighth day, when it rapidly recedes. The second group, membranes ruptured from 12 to 24 hours, takes a sharp rise to 101.2º on the second day, declines by the fourth, and essentially has a more normal run the remainder of the time. The third group, membranes ruptured 24 to 84 hours, runs a more placid course than the first of this series. Chart 3 graphically presents these findings in the average of all high and low temperatures and pulse rates for

CHART 7

PART I

TEMPERATURE COMPARISONS

OPERATIONS BEFORE LABOR. LABOR WITH MEMBRANES INTACT AND RUPTURED

	TOTAL CASES	100° OR LESS			100°--101°			101°--102°			102°--103°			103°--104°			104°--105°			TOTAL
		NO	%	DAYS 100°+	NO	%	DAYS 100°+	NO	%	DAYS 100°+	NO	%	DAYS 100°+	NO	%	DAYS 100°+	NO	%	DAYS 100°+	DAYS 100°+
BEFORE LABOR	23				10	43.4	1.6	11	47.7	3.16				2	8.6	5				2.7
MEMBRANES INTACT	20	3	15.	0	6	30.	3	8	40.	5.8	*2	10.	4				1	5	16	4.6
MEMB. RUPT. 1-84 hrs.	25	1	4	0	9	36.	4	7	28.	3.8	‡4	16.	7.5	*2	8	6.5	2	8	15.5	5.7
MEMB. RUPT. 1-12 hrs.	11				3	27.2	7	3	27.2	3	2	18.1	9	*2	18.1	6.5	1	9.09	4	6
MEMB. RUPT. 12-24 hrs.	7	1	14.2	0	2	285	3.5	3	42.8	5.6							1	14.2	27	7.28
MEMB. RUPT. 24-84 hrs.	7				4	57.1	2	1	14.2	7	‡2	28.5	6.3							3.8

OF THOSE IN BEFORE LABOR, 1 HAD TEMP. OVER 100, 6 DAYS. HIGH 103.² *case 4 Died: ‡case 82 Died: ‡case 5 Died.
OF THOSE IN MEMB. INTACT 3 HAD TEMPS, 14 (1), 16 (2) DAYS OVER 100--HIGH TEMP: 102.
OF THOSE IN MEMB. RUPT. 1-12 hrs. 4 HAD TEMPS. 11 (2) DAYS. 9 (1) DAYS, 7 (1) DAYS TEMP. OVER 100 HIGH TEMPS. RESP. 101-102⁴. 101. 101⁴
OF THOSE IN M.R. 12-24 hrs. 1 HAD TEMP OVER 100. 27 DAYS--HIGH TEMP. 104²--- M.R. 24-84 hrs. 2 HAD TEMPS. OVER 100: HIGH TEMPS. 101³-101⁴

PART 2.

CAESAREAN SECTIONS WITH APPENDECTOMIES. COMPARED WITH PART I.

BEFORE LABOR	23				10	43.4	1.6	11	47.7	3.16				2	8.6	5				2.7
MEMBRANES INTACT	20	3	15.	0	6	30	3	8	40.	5.8	2	10.	4				1	5	16	4.6
MEMBRANES RUPT. 1-84 hrs.	25	1	4.	0	9	36.	4	7	28	3.8	4	16	7.5	2	8	6.5	2	8	15.5	5.7
TOTAL APPENDECTOMIES with CAESAREANS	20	*2	10.	0	6	30.	3.1	6	30	‡‡4.8	3	15.	6.3	1	5	4				3.8
APPENDECTOMIES CLASSIFIED BEFORE L.	6				2	333	1.5	3	50	2.3				1	166	4				2.5
MEMBRANES INTACT	5				2	40.	2	2	40	8.5	1	20.	4							5
MEMB. RUPT. 1-84 hrs.	9	2	22.2	0	2	22.2	6	3	33.3	4.6	2	22.2	7.5							4.5

* CASE 39 LABOR !! 96 hrs., M.R.? HIGH TEMP 99⁴ ++2 HAD 2 VAGINALS, each
CASE 54 LABOR 39 hrs: M R 80 HOURS. HIGH TEMP. 100

10 days. *A priori*, we should expect a more stormy convalescence for the third group than the others; we believe this anomaly is explainable on the ground that their labors averaged a. less intensity of contractions; as a result, the by-products of forced metabolism were not so actively produced. In consonance with this we find that in the second group, the pulse rate averages high, the sequence of hard labor.

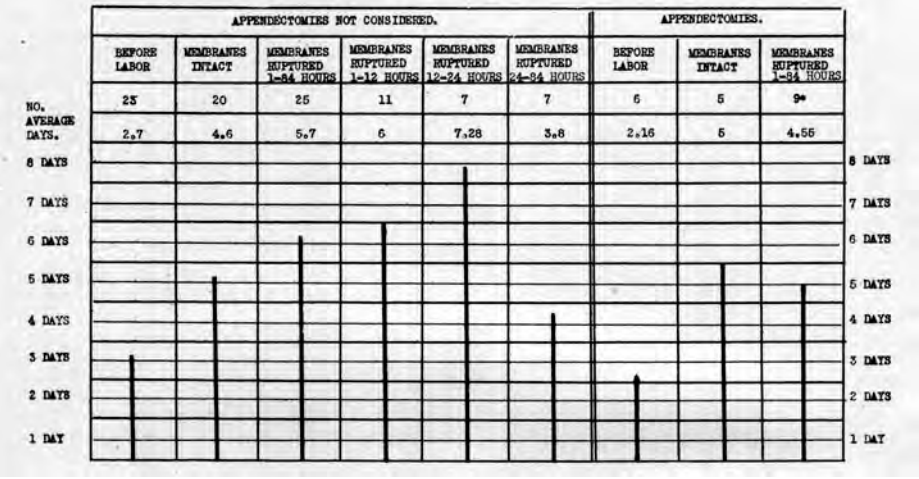
Further, these charts, Nos. 4 and 5 show in Groups 1 and 3 (membranes ruptured 1 to 12 hours, and 24 to 84 hours) the marked influence of the terminal temperatures of the patients who died; in Group 1, Case 5 died on the fifth day with a temperature of 1040 which affected the average; then to continue the elevated rate four patients, Nos. 24, 50, 58, and 81 had a sharp transitory rise, even to 105°. In the third group, the terminal temperature of 82° brought the curve up and was continued elevated by the fact that four patients on the sixth day had a temporary rise; the curves for the pulse rates showed a comparable course.

Do vaginal examinations increase the jeopardy of a woman who is about to have a cesarean section? It is manifestly impossible to eliminate all other factors which may unfavorably influence the welfare of the patient, and picture clearly the effects of vaginal examinations. Of our 92 cases, 58, i.e., 63 per cent, had no vaginal examinations in relation to the labor; examinations were made on

CHART 8

DIAGRAMMATIC PRESENTATION

DOES APPENDECTOMY INFLUENCE THE CONVALESCENCE IN CESAREAN SECTION? DAYS OF MORBIDITY. TEMPERATURES OVER 100.



29 patients, (33.7 per cent). Five records contained no statement pertinent to this point. In the first thirty-two cases (up to April, 1912) 50 per cent of the patients had vaginal examinations. In the last 10 years, out of 60 patients, 42 had no examinations (70 per cent). In eight patients there were two to five examinations in each, an average of 3+ for each. In every instance these repeated examinations were made before my entry on the case; eight had one examination each, in most instances done by myself, as the women were not seen before labor. We believe one of the factors which contributed a higher temperature in the diagrammatic presentation, Chart 3, for cases with membranes ruptured 1 to 12 hours than f or 12 to 24 hours is, that among the former there' were 81.8 per cent subjected to vaginal examinations against 14.2 per cent in the second period. The fact that the third period (24 to 84 hours) showed a reduction in temperature elevation in spite of 71.4 per cent of women having such examinations makes it probable their types of labors did not break down their bodily resistance to bacterial invasion.

The fact that those patients subjected to vaginal examinations whose membranes were ruptured had a lesser temperature reaction and a better pulse rate than those who were not subjected to this examination must be explained only on the assumption that other factors influenced the convalescence data which are not available. However, we cannot too strongly urge the fact that repeated vaginal examinations do have their evil influence (Chart 4).

CONCURRENT OPERATIONS

In the course of these cesarean sections salpingectomy was done in seven instances to secure sterility; one woman had a single oophorectomy for a small cyst; one woman had a double ovariotomy for ovarian cysts. One woman came to the section with the statement that at a previous operation, both tubes and ovaries were sacrificed, yet no evidence of any operation on the adnexa was found.

Two patients had myomectomies. In consenting to the operation, the woman, Case 11, with the fibroid, absolutely refused to permit the hysterectomy, so the tumor was left; she stated that if she conceived once with the tumor she could again.

In 1912, Case 30 came to operation after four hours of labor, membranes intact, with no vaginal examinations. During my absence from town she developed a stormy period -at first symptoms were indefinite, but finally my colleague, Dr. N. M. Percy, convinced himself she had an acute appendicitis. After the delay in diagnosis it was deemed wiser not to operate. On the tenth day

a sinus opened in the incision discharging a foul looking fluid, with fecal odor. She recovered without operation. About a year later a patient, No. 35 (1913) came for her second section, and asked that her appendix be removed as she was loath to return for another laparotomy. It was done; she had a temperature of 100.2º once on the following day and was in no wise disturbed by the additional procedure. In 57 cesarean sections the appendix has been incidentally removed 20 times (35.9 per cent). There has not been one demonstrable evidence of complication incident to the removal of the appendix. In the second patient, Case 37, where the appendix was removed, there was a febrile course flor 14 days; she was in labor 50 hours, membranes unruptured, and had two vaginal examinations. We felt certain the clinical course was not compromised in any manner by the appendectomy. Appendectomies have not been done on women whom we felt should be placed in bed as quickly as possible, and where for any reason the prolongation of the operation was inadvisable. Under given circumstances, we feel there is the same justification, and the same safety, in the removal of the appendix as in the course of any laparotomy. The average duration of febrility in the above 20 patients was 4.12 days; for those not in labor, the patients with appendectomies had roughly one-half day less elevation of temperature than those where it was not done; to offset this, appendectomies done in labor with membranes intact increased the febrility 0.4 of a day over the average; and was one and two-tenths of a day less than the average of those where the membranes were ruptured 1 to 84 hours. (Chart 7, part 2, and Chart 8.)

DELAYED CONVALESCENCE

\In the first 37 cases the protracted thermal elevation continued for a period of 10 days or more (to 27 days) in 5 of the women -13.5 per cent. Since Case 37 (1913) four women had a delayed convalescence continuing 10 to 27 days, 7.2 per cent. Phlebitis occurred in one patient, No. 18, with one vaginal examination. An hemolytic streptococcic infection (Case No. 84) caused a most violent and alarming postoperative course for 16 days, excessively high, irregular temperature, chills, uterine hemorrhages, necessitating blood transfusions. At operation the placenta was found very firmly adherent -its removal exemplified the extreme difficulty which might be encountered in the manual removal of a placenta *per vaginam*. Also, there was a marked deciduitis, one plaque as large as the palm of the hand was loose and removed.

Stitch abscesses necessitating wet dressings were present in two cases; one other (No. 30) had a sinus which discharged a fetid, fecal fluid.

Postpartum hemorrhage occurred in two women.

The uterus was adherent to the abdominal scar in three instances; in one, after an automobile accident, the adhesion stretched into a long dense string; on account of repeated ileus the abdomen was opened. Of the repeated sections, one had no vestige of the uterine sear; in another the sear was hardly visible. Five had a number of small adhesions to the uterus or abdominal sear or both. In three the adhesions were very dense and diffuse.

CONCLUSIONS

1. The adoption of modern surgical principles has been the greatest means of reducing the risks of a cesarean section to the present minimal point.
2. The second great factor in lowering maternal mortality is the abstinence from vaginal examinations.
3. One of the most important contributions to the improvement in the safety of sections is the routine employment of rectal touch.

4. The eventual possibility of a section should be clearly and definitely determined in pregnancy. Every step in the subsequent conduct of labor should be subservient to this knowledge of potential difficulty.
5. An absolute pelvic deformity demands that the woman should have her section before labor sets in and at a set hour.
6. Conversely, unless there be imperative necessity, the woman with relative disproportion should be given an adequate test of labor.
7. The test should be so reasonably prolonged that there is neither the facies of exhaustion, nor an abnormally high pulse rise or temperature elevation.
8. The prolonged rupture of the membranes certainly has a very deleterious effect upon a woman in labor; if labor be unduly prolonged after the rupture a stormy convalescence is probable in 10 or more per cent, and the lethal outcome for the occasional woman is certain to occur.
9. A slow, long labor with weak, irregular, aberrant contractions, is not so dangerous if a section be performed as a shorter, but violent type of labor.
10. A hard labor in all probability liberates protein bodies, or other by-products of forced metabolism which are inimical to the convalescence of the woman subjected to cesarean section, possibly with the destruction of her immunity.
11. A cesarean section performed before labor spells almost certain success in skilled hands with a minimum of physical distress.
12. Labor increases the physical distress, and may jeopardize the convalescence.
13. Above all things, prolonged labor, with prolonged rupture of the membranes, with vaginal examinations, or futile attempts at delivery from below, spells disaster.
14. Cesarean section is far more dangerous for the woman than spontaneous labor-even an operative delivery of some difficulty.
15. The sum total of discomfort, distress, malaise associated with cesarean section is as great or greater than the inconveniences and pain of labor; one certainly offsets the other.
16. The above facts, joined to the increased mortality demand that sections shall be done only for clear indications.

REFERENCES

(1) Trans. Am. Gyn. Sec., 1907.
(2) Bull. New York Lying-in Hosp., June, 1912, 89.
(3) Cleveland Med. Jour., February, 1914.
(4) Ann. de Gynec., 1904, 577.
(5) Brit. Med. Jour., Oct. 1, 1921, No. .3170.
(6) Zentrabl. f. Gynäk., March 10, 1894.
(7) Zentralbl. f. Gynäk., April 28, 1894.
(8) Jour. Med. Assn., Dec. 25, 1915, lxv, 2229.

DISCUSSION

DR. REUBEN PETERSON, ANN ARBOR, MICHIGAN. -With regard to Dr. Beck's paper, it is the kind we ought to have more frequently, for the reason that it deals with a large number of cases treated conservatively. During the past twenty- two years we have been very conservative in the University of Michigan Maternity, in spite of the fact that I have been credited with being a radical in regard to eclampsia. I will say that in our clinic we find by actual experience that the morbidity and sometimes mortality is increased by early rupture of the membranes consequently we were

between two fires. We still went on with our conservative work, but the higher temperatures and morbidity persisted, consequently I welcomed with a great deal of pleasure Dr. Beck's low cesarean section operation, which I think is a great advance in obstetrics, in spite of the fact that Dr. Holmes has never done one and says he never will do one. Here is an operation where, if the test of labor fails, you can open the uterus low down with a minimum amount of trauma. Because of our conservatism, I have only done this operation five or six times. Technically, it is an easy operation to perform, and it is the kind indicated in the particular class of cases Dr. Beck has pointed out, where the woman has been in labor for a long time and is unable to give birth to the child. We do not use vaginal examinations in our clinic cases; consequently in cases where we do have to perform cesarean section we have not contaminated the vagina. I have no criticism to offer in regard to Dr. Holmes' work with such an array of figures as he presents. We should have more time to study these figures. However, I cannot conceive of removing the appendix at a cesarean section. That is diametrically opposed to all good surgery, unless the woman has an acute appendicitis. Why should you contaminate the field with removal of the appendix in a cesarean section? It seems to me, the pendulum is swinging back to conservatism. It is necessary to go through this period of radical methods in order to swing back to sane methods, but surely that day is coming, and from now on we are going to give women in labor a chance, being ever ready to help them surgically, when necessary.

DR. RALPH H. POMEROY, BROOKLYN, NEW YORK -As Dr. Beck's confrère in the Borough of Brooklyn, it would be unfair for me not to express myself in regard to this matter. So far as publication is concerned, I suppose I am considered to be a reckless radical with dilating bags and perineotomies and rotation of posterior positions, instead of letting them alone, but I am not. I am ultraconservative and only want to apply my practice to the absolutely indicated selected situations, and I hope ultimately my apparent radicalism will simplify a few of the cases in which radicalism is indicated.

DR. N. SPROAT HEANEY, CHICAGO, ILL. -I want to congratulate Dr. Beck on the work shown, because if the spread of radicalism continues, there will be no place for the physiology of labor and the future obstetrician will have no experience on which to base the indications for his operations. I wonder at Dr. Beck's temerity in coming before the Society with such a study as the physiology of labor, in view of the radical tendency of the times. I wish for the sake of his statistics, in order that they might stand out more clearly, that Dr. Holmes had omitted the appendectomy. Though I, myself, have not removed the appendix during the course of a cesarean section, I cannot see any particular objection to it. It is largely a matter of viewpoint and much depends upon the individual case. Dr. Peterson advises that all gallstone pathology should be attended to when met during operations for gynecological difficulties. I do not do this and I wonder at Dr. Peterson's objections to the removal of the appendix while doing a cesarean section in view of his radical advice regarding the gall bladder during gynecological operations. The conditions are, briefly, analogous. I am not saying that Dr. Holmes is right or wrong, but I can see no difference between the two recommendations.

DR. KADERNATH DAS, CALCUTTA, INDIA. -I desire to offer a few remarks on the question of prolonged labor and to draw attention to the fact that the first stage of labor may be prolonged with a low implantation of the placenta with intact membranes. These patients can be allowed to go on for more than twenty-four hours and then, if you make a vaginal examination and feel a soft cervix but the membranes do not bulge, in those cases after twenty-four or thirty hours the simple procedure of rupturing the membranes will quickly expedite labor. I should like to draw attention to that little point, although I do not know whether it is often done or not.

DR. FRANK W. LYNCH, SAN FRANCISCO, CALIF. -The results presented are checked by controls and without control checks our work will never be of a high scientific character. I am not able to discuss properly either paper, since I have not reviewed our material carefully, and I have long since learned that a discussion of a carefully prepared paper is not of much value, if you have not reviewed your own cases. We are too apt to be unduly influenced by the single cases which we keep in mind. We see very few contracted pelves in the far west which warrant cesarean section. Most of our dystocias are due to poor labor pains and bad flexions of the head rather than pelvic contractions.

Unfortunately, however, we have a comparatively large series of secondary cesarean sections, since in our part of the country there are many men who do cesarean section on very scant indication. Some do the operation once in every seventeen or eighteen labors. Many of these patients come to us in subsequent pregnancies. We treat them by cesarean since we feel that one cesarean warrants similar treatment subsequently.

Technic seems worth discussing since the cases that die usually succumb from infection. Although we do not make vaginal examinations as a routine even in normal labor, we do not believe that rectal examinations are invariably without danger of infection. Nearly 8 per cent of our cases have some slight fever following labors which have been conducted only by rectal examinations. There is no doubt, but that vaginal secretion from the posterior vaginal wall may be shoved into the cervix during rectal examination. Usually this is not of importance since streptococci are not often found in the pregnant vagina. Not all vaginae, however, have bactericidal secretions. We, therefore, scrub out the vagina before the operation.

Personally, I do not feel that from the facts in hand we are yet able to advocate either the high or low cesarean. We know much about the high cesarean, and comparatively little about the low. Each man must be governed at present by the results of individual series of cases. Since it is our aim to avoid or at least beat the infection, it seems that the choice of route is closely related to technic. Much depends upon the firm closure of the uterine incision. I do not feel that sufficient emphasis has been made of the fact that the uterine peritoneal membrane agglutinates in a few hours and, therefore, may limit a uterine infection. Therefore, proper peritonealization must be a basic consideration in any type of cesarean.

DR. BECK (closing on his part).-At the end of this study I had so many figures that they were very confusing. To avoid this confusion and make my points clear 1, therefore, considered only the fetal deaths and maternal deaths in studying the end results. As Dr. Peterson suggested, in these long labors, particularly the dry ones, the temperature curve shows an increased morbidity. This is another argument against interference. If this increased morbidity is due to infection, operative interference no doubt would have increased the risk to the mothers by spreading that infection.
I have had considerable experience with the low incision cesarean section technic, and my results together with those of my friends were published a short time ago. Even though the series was small, I feel that we can say that the results are more favorable than would have been obtained had the classical high operation been used. We believe that the low incision properly peritonealized offers considerable protection against the extension of the infection to the peritoneal cavity.

With regard to Dr. Williams' work, I do not think that his observations on the uteri removed at operation proved conclusively that these uteri should be removed. Many of our patients undoubtedly had infected uteri and the great majority not only survive, but fail to have a serious infection. We, therefore, hope that with our technic we can gain the same result without adding the unpleasant symptoms which follow hysterectomy in young women.

For some time, we have been making cultures of the amniotic fluid and placenta at the time of operation. We have been surprised to find streptococci present in not a few of these cultures. In spite of these findings the patients lived and did not have peritonitis.

DR. HOLMES (closing). -I thoroughly believe that Dr. Beck's paper by preaching conservatism is more important than mine. Yet, my experience and practice is based, on a conscientious attempt to limit cesareans to the cases which demanded intervention at a time when high forceps, eventually craniotomy would surely have destroyed many babies. The whole basis of my paper is on personal experience, and I believe is more important than statistics computed on the results obtained by a questionnaire.

With reference to the removal of the appendix in connection with cesarean section, I cannot see the difference in the incidental removal of an appendix in this connection and its removal as an incidental step in ordinary gynecologic work.

My results speak for themselves. There were no deaths, and the composite temperature curves were just as favorable to the women subjected to it as incomparable cases where it was not done.

We may all agree with Dr. Lynch that rectal examinations may rub the vaginal mucosa with its normal bacterial content within the cervical ring, but it is infinitely less risky than the hazards of a vaginal examination, especially if the examiner does it in a slovenly manner.

1922 – Obstetrics Reflexions – Little -Montreal

THE LEAST COMMON MULTIPLE IN OBSTETRICS*

By HERBERT M. LITTLE, M.D., MONTREAL, QUEBEC

*Read at a stated meeting of the New York Academy of Medicine, January 20, 1921.

A.J.O.G. Volume 4 pages 65-76 1922

To the obstetrician and the practitioner interested in obstetrics nothing is more surprising than the attention paid by the general public to anything which tends to the abnormal in the management of what should be a natural process. Extensive advertisement, for example, of twilight sleep or other painless methods of childbirth go together with the remarkable attention attracted by labor as conducted in Rochester or Chicago. Yet the reason for this is not especially remarkable when we consider that the childbearing population, particularly that portion of it which by leisure is enabled to take interest in various social duties and indulge the common fondness for current fiction, may view these incidents as depicted by that friend of idle hours -the modern novelist. A later generation than readers of Tolstoi and Zola may take up the works of such novelists as Stephen McKenna, W. L. George, or John Galsworthy, and be struck by the peculiar ideas of these men regarding childbirth or perhaps by their ignorance of the work of the average obstetrician. For example, in "Sonia," O'Rane starts with a special halo of romance because his mother died giving him birth. In "Caliban" the whole life history of the hero is to a certain extent altered and his domestic arrangements completely upset because the long awaited child died during or just after its birth. True, these are more or less minor instances, but in "In Chancery," Galsworthy's latest book, we have the same old story of the husband tortured by the necessity for decision as to whether the mother or the child shall be saved -the same old dictum that another child would kill the mother: "If I don't operate, the baby will be born alive. It's a great risk for the mother." If these are not sufficiently classic, it may be well to remember the death of Mrs. Farfrae in Thomas Hardy's "Mayor of Castorbridge"-a fright, premature labor, and sudden death. If you object that these are English views, one may refer to Lewis' "Main Street", that much discussed American novel, in which the process of having children is depicted in a way anything but cheerful.

Now, if we take these views as those ordinarily accepted by the laity, it may be suggested that the average woman enters upon pregnancy not only with a dread of the outcome for herself and baby, but with the practical assurance that, even should both survive, the ordeal will be a terrible one. Is this point of view justifiable? At this very minute I have before me pamphlets of the Metropolitan Life Insurance Society of this city, noting the remarkable increase in maternal death during labor and asking for comment thereon.

Is it not time that we should take counsel together, with a view to improving our work, if at all possible, and placing before the public the results of the proper handling of maternity cases, the infrequency of maternal death, and the relative unimportance of childbirth as a cause of maternal death, when there has been sufficient prenatal care?

My warrant for bringing this matter before this Academy is not only the satisfactory record of the Montreal Maternity in these matters, but the debt that we feel we owe to the obstetricians of New York in placing in the hands of the profession methods tending to greater simplicity in treatment, which have resulted in a remarkable improvement in our results.

The lengthy participation in war has accounted for a marked decrease in the amount of constructive work in the various departments of medicine, but at the same time has resulted in an almost complete readjustment of methods in some departments, for two reasons: (1) the exaggerated

cost of many medicines and chemicals, notably alcohol; and (2) the appreciation of the fact that, during the war, success in treatment depended upon simplicity and immediate employment, rather than on undue complication. The methods in use in the Montreal Maternity today are simpler than at any time since that institution was opened, and the results are, so far as I can classify them, better than at any period since that date.

That this should be so in the department of obstetrics is very gratifying for the reason that, though trained in a school which prided itself on giving students instruction which would make them competent obstetricians wherever that specialty was called into play, I heard during my postgraduate days nothing but the plea that there was house obstetrics as opposed to hospital obstetrics, and that a man might be a competent hospital obstetrician only if qualified to undertake treatment which would not be adapted to household use. It is obvious that this point of view militated greatly against the satisfactory training of students in one of the most important branches of the profession, and it is gratifying to note that any changes made in the direction of simplicity have been measures adapted to everyday use by the general practitioner.

To a consideration of a simple routine the smallest possible combination of all that is best, the least common multiple of methods; I would ask your indulgence for a few moments. While dealing especially with factors involved in the conduct of labor and in the puerperium it will perhaps be more satisfactory to consider as well the management of pregnancy.

Maternity is a test of function, and pregnancy should be a perfectly normal state for a normal woman. Beyond the injunction to drink plenty of water, to be sure that there is a daily evacuation of the bowel, and to massage the nipples in order to facilitate nursing, little advice is necessary. Apart from the relatively frequent examination of the urine, in which the two most important factors are the presence of albumin and the appearance of pus cells, we believe that the best thing to do is to let the patient alone as much as possible until within the last month. Why they should not ride, golf, or swim, I have never been able to understand, and, apart from being told to be careful at such times as menstruation would take place, were they not pregnant, they are allowed every freedom.

The three chief complications of pregnancy from the practitioner's point of view, are, of course, vomiting, toxemia, and pyelitis.

VOMITING

Following the experimental work of Dr. Whitridge Williams and of Ewing and Stone, a great deal was written about the pernicious vomiting of pregnancy. My own belief is that clinically there is no such entity. That to severe vomiting early in pregnancy there are sometimes added the toxic results of acute starvation is not remarkable, but in twenty years I have seen no more than five cases where the emptying of the uterus was necessary or justifiable, and, though the most recent is now some years gone by, I am not certain that even this, had it been treated from the start of the pregnancy, would have required the termination of the pregnancy.

Two recent theories regarding morning sickness are (1) a possible ovarian insufficiency; and (2) an alteration in the circulation of the brain when the patient assumes an upright position. As said before, the onset of toxic symptoms with the vomiting implies starvation. The prevention of starvation is therefore the object of any treatment. We have found that, even where vomiting had assumed rather serious proportions, it has always been possible to prevent starvation by the administration of such foods as are not easily vomited; and a great many patients have found early relief when placed on a diet of nuts, raisins, and milk chocolate, substances which can be carried easily in the pocket and taken in place of regular meals.

Years ago a sailor suggested to me as preventive treatment for seasickness the wearing of a tight band about the neck and eating dry stuffs which were not easily rejected. Both of these suggestions I have had occasion to put into practice with the most satisfactory effect, and only

recently, after hearing a dissertation on the postural factor in morning sickness, the sound nature of the physiology of the treatment impressed itself upon me, notably the passive congestion induced by a band about the neck before the patient left her bed. Both of these measures have given remarkably good results. It may be objected that they are simply methods of suggestion. Perhaps so. The addition of hypodermic injections of corpus luteum extract can do no harm and has a therapeutic basis.

PYELITIS

Among the complications of pregnancy pyelitis has become much more prominent than formerly. Whether from being more readily recognized or not, the fact remains that we have had in the hospital in the past year as many of these cases as would formerly have been admitted in five years. The surprising thing is that so few are recognized outside the hospital. One reason for this would appear to be the frequent absence of pus from the urine at the time of maximum severity of symptoms. An irregular typhoid-like temperature with indeed few definite symptoms apart from malaise and practically no signs other than the characteristic pain elicited by pressure in the right costovertebral angle and possibly a few pus cells in the urine, may be associated with a very extensive infection of the upper urinary tract. In a number of these cases, in which the ureters were catheterized, the obstruction to the ureter was found very slightly above its opening into the bladder, and was apparently due to the well recognized torsion of the uterus. The occasional appearance of blood in the urine after even the most careful catheterization has led us to avoid catheterization wherever possible, and by posture of the patient and large doses of urotropin, together with forced fluids, to carry her through to term, or, if in spite of treatment the condition becomes aggravated and there are recurring chills, to have no hesitation in emptying the uterus, preferably by vaginal section.

We have been able to do very little with nephritic toxemia. Personally I do not believe that eclampsia often occurs without definite prodromal symptoms, but those cases of pregnancy in a patient with a latent nephritis, often the result of scarlet fever, offer great difficulty, and my own impression is that the first pregnancy is usually the only one which offers any possibility of successful termination. By careful watching, it should be possible to determine time for induction of labor before the destruction of the placenta by infarction, but sudden death of the child by an accidental hemorrhage, another complication of such toxemias, is almost impossible to foretell. There can be no doubt that the effect of a pregnancy on a damaged kidney is to damage that organ still further, and, while I have seen repeated attempts to secure a live child, I have never yet seen one that was successful. In neither of these cases, however, is it a question of immediate life or death for the mother.

LABOR

In discussing the management of labor, the pelvis is, of course, a most important factor, but the present division of pelves into normal and contracted leads, I believe, to many unnecessary difficulties. Might I suggest that pelves, even when normal, may be disproportionate, and that so-called contracted pelves are only an obstruction to labor if disproportionate to the size and shape of the child which is to pass through the canal. Exact pelvimetry is not a substitute for antepartum examination of presentation and position and careful watching of the patient in the second stage. This has been brought home to us very forcibly in certain instances, where the pelvic meas-urements-were apparently absolutely normal and yet there was extreme difficulty in birth, owing to the large size of the child, which had evidently gone beyond term. So too in pelves with contracted outlets. I have seen a number of pelves where a cesarean section was done on account of the close

approximation of the tuberosities of the ischium, but I have seen but one case where the contraction of the pelvic outlet offered resistance to the passage of the head when a test of labor was given. It is perfectly true that, when the bi-ischial diameter falls below 8.5 cm., the birth will be abnormal. Here, the biparietal diameter of an average head must lie behind the bi-ischial line; and, if a forceps is applied, the entire instrument must lie posterior to the attachments of the transversus perineii muscle. A realization of the danger of extensive damage to the soft parts, together with the relative certainty that the head can pass the pelvis, indicates either deep episiotomy as a preliminary to a spontaneous birth of the head or the application of forceps, with the distinct understanding that a laceration involving the rectum is almost inevitable. The ability to repair satisfactorily such laceration, however extensive, is, I believe, the hallmark of a competent obstetrician.

The question of operative interference during labor is a very broad one and may be viewed from many angles. My own belief is that the obstetric history of any woman depends directly upon the management of the first labor, and that in cases of moderate disproportion, overstretching, of the abdominal muscles in a prolonged second stage is an extremely important factor in the production of dystocia in later labors. I do not believe that version, -admirable operation that it is,- is desirable in a primipara, and in a multipara I believe it is always attended with the grave risk of extensive laceration of the cervix. On the other hand, when the head is arrested in the pelvis and the force exerted by the abdominal muscles seems insufficient to cause the head to advance, my suggestion would be that operation should be performed when it is believed that the moment has arrived when the reparable damage that may result from the operation is less than that which will result from allowing the labor to proceed normally. And would again insist that the gravest danger in the labor of any primipara is an overstretching of the recti muscles with resultant increased dystocia in subsequent labors.

To consider now the more important features in connection with the management of labor, it may be remembered that the causes of death are most closely associated with two complications, infection and hemorrhage. The frequency of puerperal infection can only be gauged by general morbidity statistics, and it is because, as I have previously said, our morbidity statistics have improved so markedly in the last few years, that I wish to bring before you tonight three factors in the management of labor: (1) rectal examination; (2) median episiotomy; and (3) absolute discontinuance of any medication after the delivery of the child. Rectal examination you know; median episiotomy Pomeroy has made known to you; and the discontinuance of purgation has been advocated by Ross McPherson and others, but to this we have added a further simplification -the discontinuance of such an old stand-by as ergot. These three measures are not important in themselves alone, but in their effect upon the general conduct of labor. For example, a patient who is not to have a purgative during the puerperium, receives on admission to hospital a dose of castor oil and an enema. The enema is not given to facilitate the passage of the head into the pelvis, as was the old idea, but to empty the bowel more or less completely. The median episiotomy allows an easy repair, and the repair can be done while waiting for the separation of the placenta. The nonmassage of the uterus allows a more regular and uniform contraction than where it is held or massaged. As a result the placenta separates more easily and there is no tendency, by forcing the organ with the membranes protruding from the cervix into the vagina, to smear the organisms from the posterior fornix and vagina over the cervix when the placenta eventually separates. The tying of the sutures of the episiotomy is an extremely easy matter. The placenta is allowed only time to separate, the patient regaining consciousness and expelling it by her own efforts. The sutures are then tied and the fundus watched. It is true that a certain amount of clot may form. in the cavity, but at the end of half an hour this is expressed, and, as by that time the formation of thrombi at the placental site has taken place, the patient is secured from further danger from this variety of concealed hemorrhage.

In the instruction of students nothing is more satisfactory than the unusual facility that men gain in making obstetric diagnoses, when started properly and allowed a certain amount of latitude in

making examinations. So far as the conduct of labor is concerned, this, I believe, is the most important of all teaching, for a knowledge of the presentation and position of the child's head, gained by external examination, implies the relation of the head to the pelvis, and the only other element in the estimation of the course of labor is the amount of dilatation obtained by the patient's pains. For ten years I personally have made no vaginal examinations except in operative cases , and, save for the practice of gaining familiarity with a cervix previously palpated through the rectum, none of the internes in the hospital make vaginal examinations. The student makes first an external examination and palpates the cervix per rectum. He then scrubs up and makes a vaginal examination, and lastly checks up these two examinations by a further rectal examination. It is surprising how quickly the men learn to determine (1) the amount of dilatation of the cervix; and (2) the position of the head in the pelvis.

It is obvious that in this way the number of contact infections must be materially diminished, but even with rectal examinations we have had occasional trouble with perineums which have not healed properly and mild infections which have appeared in the second week. The patients most free from these mild complications have been those who have undergone severe operations, for example the repair of complete tears in the rectum, in which event they are kept absolutely at rest and no purgative given. Whether or not purgation has an effect on the normal course of such cases, it is difficult to say, but there is no doubt that these cases did better than others which were handled less. In my own work median episiotomy has been a practice for some ten years. I have, however, to thank Dr. Pomeroy's advocacy of the measure for the ability to teach it as well as practice it. With the introduction of this measure by Dr. Pomeroy, more and more cases have come into the afebrile and uncomplicated class. For this I think there are two reasons: (1) the tissues about the perineum. are far less damaged; and (2) since the introduction of this method there is less anesthesia and better control of the uterus, and less tendency to interfere with the uterus during the third stage. After the birth of the child, when a median episiotomy has been done, the anesthesia which is sufficient for the passage of the child through the vulva is usually sufficient for the introduction of a continuous submucous stitch in the vagina and a subcutaneous suture in the midline of the perineum, and one or two deep silkworm gut sutures to hold the deeper tissues together. If the uterus is let absolutely alone after the birth of the child, these sutures may be laid with the greatest possible ease. Even where the introduction is a matter of ten or fifteen minutes there are those fifteen minutes when it is absolutely certain that there will be no manipulation of the fundus of the uterus, when the patient is gradually gaining consciousness, and with the first few pains after coming out of the anesthetic the placenta separates spontaneously and can be readily expressed. The tying of the sutures is then a matter of a moment.

For the past few months I have been watching carefully those cases in which there has been a typical so-called sapremia -a mild grade infection manifesting itself often only after the patient has been examined for discharge, thirteen or fourteen days after confinement. I have found invariably that such cases were those in which the placenta did not come away spontaneously, where more or less massage of the uterus had been done, and where naturally membranes trailing in the vagina had swept up into the uterine cavity the debris from the posterior fornix. Not only are the membranes accountable for this, but, where there has been undue prolongation of the second stage, the perineum being allowed to distend slowly and the muscles to rupture subcutaneously, the relaxation of the uterine muscles allows the collection within the uterus of large clots, which invariably give trouble. Our procedure, therefore, is to leave the uterus absolutely alone until after the placenta has separated, then to watch it carefully, giving no ergot, and at the expiration of from half to three-quarters of an hour to express from the uterus such clots as may have formed within the cavity, with the assurance that their re-formation is most unlikely.

A further feature is the relation of the bladder to the third stage. If the labor has been at all prolonged, the bladder will probably be distended. A distended bladder prevents proper contraction

of the uterus and has, I believe, a mechanical effect in preventing the proper closing of the larger sinuses, mechanically favoring the extension of thrombi in the lower broad ligament. If then the emptying of the bladder is made a matter of routine with the laying of the sutures, not only will there be better contraction of the uterus, but the possibility of later catheterization is greatly minimized. So far as the clinical management of routine cases is concerned, nothing has given us more satisfaction than the application of that method of treatment advocated by Dr. Ross McPherson. Even before the war I had collected a large number of cases showing the apparent beneficial results so far as temperature was concerned of the non-administration of drastic purgatives during the puerperium. The results obtained were so similar to those detailed by Dr. McPherson that recently the routine order of castor oil has been discontinued, and patients are given a purgative only when they request it themselves. There have been many discussions over the cause of irregularity in temperature when purgatives are administered, but no definite solution has been offered. The fact remains that patients who do not have purgatives run a much smoother clinical course. To those in charge of clinics I would say, try this method if for no other reason than the lessening of the amount of care required by the normal case and the resulting increased time of the nurses for the care of those patients who are seriously ill.

Much anxiety would be relieved if we could impress upon obstetricians that postpartum hemorrhage is not a condition but merely a physical sign, either of serious damage to some portion of the birth canal, usually the cervix, or of improper closure of the uterine sinuses. The question of damage to the cervix is to my mind negligible, except in certain cases of version, where there is always danger in the reduction. of the arms. The factors preventing proper closure of the uterine sinuses are not numerous. The importance of the bladder as a preventive of proper contraction is usually much underestimated, while the failure of the uterus itself to contract is usually the result of over distention, overwork, prolonged anesthesia, or incomplete expulsion of its content. The tendency to hemorrhage after hydramnios, twins, or protracted pregnancy is well known, and should be specially discounted in the management of the third stage. Two other factors -retention of portions of the placenta and bleeding from improper or partial separation of the placenta, both I believe associated with a too active management of the third stage, have been more or less eliminated for us in primiparas since the introduction of the Pomeroy treatment of the perineum. The facility of repair of incised wounds without additional anesthesia, the importance of laying the sutures during the second stage in a clear field, undisturbed by hemorrhage from the uterus, has increased the necessity for caution against manipulation of the uterus as soon as the child was born, and resulted in spontaneous expulsion of the placenta on recovery from the usually short and light anesthesia, and there has been markedly less tendency to hemorrhage.

In the last five years, in some thousands of cases passing through the Montreal Maternity, we have had not more than five breast abscesses, and none of these were in the public service. For this satisfactory condition of affairs I believe two factors are responsible: (1) the abolition of breast pumps; and (2) the discontinuance of any special treatment of the nipples other than care for cleanliness. In every instance where I have seen a definite purulent mastitis in consultation, I have made a point of investigating the previous history, and have been struck by the number of instances in which the breasts had been pumped in a previous pregnancy. To the mushrooming of the nipple, caused by the excessive suction of the pump, with a consequent opening of the ducts to extraneous material such as epithelium or dust, may be attributed a large percentage of blocked ducts, while the careless application of ointments for nipple protection acts very much in the same way. I do not deny that fissuring of the nipples is a comparatively frequent occurrence, but for this condition the application of the ordinary silver nitrate used for babies' eyes is almost specific. Occasionally too there may be definite collections of fluid in the breast, which for the surgeon have all the earmarks of distinct abscess but massage toward the nipple will almost invariably free the duct, and putting the affected breast at rest for 24 hours will effectively prevent the breaking of the capsule surrounding

the breast tissue and the involvement of the fatty tissue of the breast. Not infrequently patients complain of pain in the breast, and there is a fluctuating mass and often a high temperature. In these cases a piece of white absorbent is the indicator. The ordinary milk will not stain the cotton, but the content of the distended sac invariably shows as a dirty greenish yellow. That this abnormal content contains bacteria is known, and those interested are referred to a very complete résumé of the subject by John F. Gardner of Toledo.

For the furthering of involution, hot vaginal douches of formalin are given on the ninth day. I have never known these to do harm. Intrauterine douches, on the contrary, I believe, do harm. In my own experience I have never had occasion to give an intrauterine douche immediately after labor, but I have used them not infrequently on the 14th day. The surprising thing about these late douches is the evidence they give of the rapidity of absorption from the uterus. Where there has been mild infection and rather profuse lochia, and a boggy uterus at the examination for discharge, irrigation will frequently be accompanied by a chill and rise in both temperature and pulse, but this is only temporary. On the other hand, where there has been no temperature and where the delayed involution has been due to retained membranes, which I believe may be retained without becoming infected, the irrigation of such a cavity gives rise to a rapidity of the pulse without any marked rise in temperature. This, too, is transitory.

TREATMENT OF THE CORD

The treatment of the cord is emphatically to let it alone. In the pre-prohibition days, we like many others applied alcohol for the purpose of dehydration. Recently the difficulty in securing alcohol led us to experiment with a plain dry dressing, and the results have been more than satisfactory-in fact better than when alcohol was used.

285 STANLEY STREET.
(For discussion see page 84.)

1922 – Conservative Obstetrics – Danforth – Evanston, Illinois

IS CONSERVATIVE OBSTETRICS TO BE ABANDONED?

By W. C. DANFORTH, B.S., M.D., F.A.C.S., EVANSTON, ILL.

Published in AJOG Volume 3 (1922) pages 609- 616

The past three or four years have brought forth a number of new ideas in the way of routine delivery of normal or approximately normal cases. The parturient woman is entitled to and should receive all amelioration of suffering which may safely be given her, that is, without endangering her or her child. Efforts to diminish the duration and suffering of labor are commendable, provided they genuinely accomplish the objects sought for, and provided, also, that operative measures which are made use of in the effort to accomplish this end, are carried out by men of sufficient technical skill and of Judgment sufficiently mature that the operation itself does not become a menace.

It may well be questioned whether the routine teaching of operative measures which are to be employed generally to classes of students is wise. Indeed it is a grave question whether the teaching of such methods to the profession as a whole is justified. In such teaching must be included the description of methods in widely circulated periodicals. Such publication must necessarily indicate the recommendation of the author for the procedure and the caution, often added, that certain operative procedures are for the experienced operator only, does but little good, for there are not wanting in every community of any size, men who do not hesitate to attempt any operative maneuver, obstetric or otherwise, with a minimum of preparation or with none whatever.

At a recent meeting, the able director of a well-known clinic in an eastern city presented some interesting statistics pertaining to a series of 1000 ward cases delivered in that clinic, demonstrating very well the results of an expectant plan of treatment, seconded, when definite indications existed, by expert operative intervention. The results, as indicated by fetal mortality, maternal mortality and morbidity, and showing a low incidence of operative intervention were excellent. The essayist, however, stated that in dealing with his private work the operative incidence ran higher. This, of course, is the experience of every obstetric specialist, as his practice tends to include a greater number of cases in which intervention of some sort is unavoidable.

It is with the desire of showing that, in a series of cases which includes a considerable number of private patients, expectant methods not only are possible, but will yield good results, that this series is reported.

It includes first my own private work composed of cases largely coming from a district containing probably as large a proportion of people of comfortable means as any residential section anywhere, and a very fair number of families, the female members of which have been accustomed to every luxury that ample means may procure, in short, the class of women amongst whom it is said that revolt against the normal processes of labor exists. Among the number, too, are a considerable number of cases who come, as they come to all men who specialize, because of trouble in a previous labor, or who are sent by their physicians because of anticipated pathology. A number of these had come long distances for some of the reasons named. It includes the cases of the junior attending man and also of a number of other members of the hospital staff who all follow our definitely established technic and who are usually prompt to call assistance in case of grave pathology. It includes also a modest number of ward cases which were delivered by internes under the supervision of the junior attending man, These were less than 20 per cent of the whole number.

The cases number 500, -multiparae 283 and primiparae 217. Our cases are drawn as indicated above from a neighborhood in which malnutrition is rare and the women are largely of native

extraction, hence pelvic deformity is uncommon. There was one case of generally contracted and five of simple flat pelvis.

Cephalic presentation occurred as follows: **LOA 330** -66 %; **ROP 65** -13 %; **ROA 40** -8 %; **LOP 5** - 1.7 %; and **Face 1** -0.2 %.

Posterior positions were treated expectantly and the greater number of them rotated anteriorly without interference. The remainder were delivered by operative means.

Abnormal presentations included the following: Breech 28; Prolapse of arm 1; and Prolapse of cord 4.

The incidence of operative intervention included 12 high, 25 mid and 61 low forceps, a total of 98, or 19.6 per cent.

Version was done 9 times, breech extraction 18, cesarean section 8, induction of labor by bag 19; and the uterus packed 9 times.

The incidence of operation in this series is larger than in the report alluded to above, but a series containing a large proportion of private patients must contain more cases needing intervention of some sort than one composed purely of clinic cases. What I desire to bring out is, that private patients will go through normal labor without a demand for routine shortening of the normal processes of parturition by operative methods. The low forceps deliveries were done after a reasonable delay on the perineum, and in estimating what is reasonable, we are accustomed to give the mother the benefit of the doubt and to interfere after a short time if progress is not continuing. We auscultate the heart tones frequently as the head nears the perineum, using the head stethoscope of Hillis, interfering at once if notable slowing in the fetal heart rate is apparent. Cragin reported a series of 500 private cases in which the frequency of forceps was 22.6 per cent. This is about the same frequency as we note in this series. Cragin also reported an incidence of forceps of 12.3 per cent in 20,000 cases in the Sloane Hospital.

I am strongly in favor of episiotomy in primiparae, should laceration appear likely, and believe that spontaneous delivery will occur if it is used in some cases which without it would require application of forceps. I believe, also, that if this is done, it should be done before the perineum is greatly stretched in order to avoid damage to the perineal structures. It has seemed to me that a better ultimate result is obtained when one repairs a clean incision through structures, the integrity of which has not been impaired by too great stretching and possible submucous separation than by allowing either a laceration or submucous injury to occur. Inspection of a large number of these, six to eight weeks after labor has shown that satisfactory results are obtained.

Version has been used only on definite indication, in this series for prolapsed cord three times, placenta previa twice, and for a compound presentation, with one arm prolapsed, once. While admitting the skill in the performance of version which is possessed by the foremost advocate of its elective use and admitting also the elaboration of its technic which has resulted from his work, we cannot agree with the indications for which he does this operation. Our own corrected fetal mortality in labor of 1.4 per cent with expectant methods supplemented by operative intervention when indicated, as compared with a rate of 7.5 per cent with routine elective version will speak for the correctness of this view. One of the followers of the originator of the method of elective version publishes fetal mortality rates of 8 per cent to 17.5 per cent. Surely this is too high a price to pay for a little shortening of the normal course of labor, particularly when the pain of the second stage can be so greatly mitigated as is possible today. Some of the cases in the report last referred to were delivered by beginners. A high degree of operative skill cannot be expected when that is the case. However, one may not unreasonably argue from that fact that operative work should be taught only to those who have attained proficiency in normal work.

Our use of the bag practically is limited to induction of labor for toxemia and for placenta previa. For induction of labor in cases other than these, castor oil and quinine with digital loosening of the membranes is used, and even in the milder degrees of toxemia, where need for haste is not so

apparent, it is first tried. It is very rarely used for the treatment of contracted pelvis, and in this year's work, has not been so used at all.

My experience with the bag corresponds with that of some other observers. I have not found that it will always accomplish the result we desire. Many of us have introduced bags, only to find that after the expulsion of the bag labor ceases. I saw in consultation one case this year, a para 3, in which three bags had been used in a mild case of toxemia, labor ceasing on the expulsion of each bag. It was advised to let the woman alone as the toxemia was not alarming. Two days later she delivered herself precipitately. It must, of course, be admitted, that in reserving the bag for those cases which have proved refractory to less vigorous measures, causes it to be applied in those which are hardest to bring into labor, hence we have a larger proportion of unsatisfactory results than in services in which it is more routinely used. We cannot fail to recognize the danger of infection which accompanies the use of hydrostatic bags. Even though this, in well-run institutions and with a proper technic, may be greatly reduced, still the introduction and retention of the bag within the uterus must carry with it some slight risk of infection. I have been asked to see two cases in which intrapartum rise of temperature had followed the introduction of in one case two, and in another, three bags. Cesarean section was done more frequently than would be the case in a series composed of clinic cases exclusively. This is because of the number of women coming, in with the history of a former disastrous labor, or who were sent by their physicians because of fear of possible complications. The indications shown in Table I were present in our series.

TABLE I

Flat pelvis, -previous child lost- test of labor	2
Primiparity at 43 with toxemia -rigid cervix	2
Flat pelvis, (prior section in Europe)	1
Flat pelvis, --primiparaj--test of labor	1
Flat pelvis, -transverse position,-primipara-no test of labor	1
Generally contracted pelvis,-previous pubiotomy	1

We have tried to limit abdominal section to those cases in which reasonable indication existed. It was adopted in the cases of the elderly primiparae because it seemed likely that labor would be difficult, and because the mothers were extremely desirous of saving the babies, as they represented probably their only chances for children. The indication is, of course, relative, but, I believe, fair. The constantly widening indications which are being invoked for the employment of this operation should be carefully scrutinized, even though we admit the great value of the operation in properly selected cases. In the lesser degrees of pelvic contraction, the high percentage of cases in which spontaneous delivery occurs, or in which delivery may finally be accomplished by simple low forceps, has caused us to be slow to adopt this mode of delivery without a preliminary trial of labor, which often demonstrates the lack of need of section.

In addition to the cases of flat pelvis shown in Table I as sectioned after a trial of labor there were a larger number in whom the possibility of operation was considered, but which delivered either spontaneously or with the aid of forceps. In one case, in which the possibility of section was considered, labor was allowed to proceed with the idea of terminating if necessary after a thorough trial of labor by a low section. The head however after some time engaged and the labor was ended by forceps. The child did not do well and died in 48 hours. Autopsy showed no cranial injury whatever but that atelectasis was the cause of death. It is a question whether, had early section been done, the child would not have been lost from the same cause. We employ section but rarely in placenta previa and have not treated a case by section in the past four or five years. It is not excluded

and would be considered in a perfectly clean case, with undilated cervix, with a central previa and preferably in a primipara. Such cases are, however, rare.

Complications of pregnancy included: toxemia 11; cardiac disease 1; placenta previa 5; placenta ablata 2; hydramnion 8; and prolapse of cord 6.

Excluding 5 premature babies and considering those delivered at or near term the fetal mortality is as follows: dead at delivery 10; dead after delivery 8; hemorrhage 2; malformation 3 including one each of anencephalus, spina bifida, and cleft palate harelip.

The smallest child which we were successful in saving weighed just over three pounds at birth, the weight declining to two pounds, fourteen ounces. For co-operation in cases of this sort, in case of hemorrhage of the newborn, and in fact in all matters pertaining to the babies, I am under obligation to the attending pediatrician and his associates, who assume entire charge of them.

The difference in mortality rate between that which I have just given and those obtained by elective version are sufficiently striking. Let me emphasize again that immediate intervention in the second stage is done when auscultation indicates any fetal danger. Furthermore, the mother is never allowed indefinitely to exhaust herself at this time in the absence of definite progress.

Complications affecting the mothers. Rupture of uterus, 1; postpartum hemorrhage, 11; suppurative mastitis, 1; infection, 1; embolism, 1; deaths, 2.

Of the two deaths, that charged to embolism was unavoidable. The woman bled moderately severely, the uterus was packed at once by the junior attending man who was her attendant, but she became promptly cyanotic although the pulse rate did not go over 100. She died in an hour. In reviewing this case later I could not see that anything had been overlooked which should have been done. There was no autopsy. The other death followed a version done in a case of placenta previa by an interne before the arrival of the junior attending man. The rupture was not detected by an intrauterine re-vision of the field after the operation and its presence was not suspected until too late. Autopsy showed a tear upward on the right side in the region of the broad ligament with retroperitoneal bleeding. It is fair to ask ourselves whether this case should not have been saved.

Our mortality from all causes up to the end of labor was 2 per cent. Of children born dead at term there were 10. Of these one was a case of toxemia in which the child was dead at the onset of labor and one was the child of a woman with a flat pelvis, admitted after many hours of labor, with the cord and one arm prolapsed and the child already dead. This case was treated by craniotomy. Eight, therefore, were living at the onset of labor and died during or immediately after labor. One of these was an anencephalus; one died immediately after delivery in a case of placenta previa treated by metreurysis and version, one of asphyxiation caused by the cord being around the neck and one arm, one following a high forceps delivery and three were breech cases, two complicated by prolapse of the cord. Two of these were service cases and three were patients of physicians not especially interested in obstetrics. Concerning three of these cases, the high forceps and the breech cases not complicated by cord prolapse and the baby lost by asphyxiation due to the cord being around the neck and arm, we may inquire whether better obstetrics might not have saved one or two of the babies.

There were eleven premature babies, reckoning all born before the beginning of the ninth mouth as premature. Of these four were saved and the remainder lost. Five of the seven which were lost were less than seven months.

Of babies born alive but dying before the mother's discharge, there were eight. One of those was the smaller one of a pair of twins, the other twin surviving. One was a child referred to above which died of atelectasis as shown by autopsy. Another died of atelectasis two days after delivery, no autopsy. One was a spina bifida which lived one day. Another was a child which lived thirty-six hours after a normal delivery, but was constantly cyanotic. Autopsy showed an unusually large opening in the interventricular septum which had failed to close. Another was a child delivered by breech extraction

in a primiparous labor. This child lived 24 hours and died, probably of cerebral injury. No autopsy was obtained.

The total number of deaths, therefore, was 18. This includes all deaths up to the time of the mother's discharge and gives a total infant mortality of 3.06 per cent. Obviously we cannot be charged with the loss of the child which was dead at the time its parturient mother was admitted nor with the loss of the anencephalic child as neither of these was lost as a result of our obstetric errors. Allowing for these gives a corrected fetal mortality in labor of 1.4 per cent. We may ask ourselves whether some of these could not have been saved.

Of those dying before the mother's discharge, it seems fair to assume that neither the spina bifida nor the loss of the tiny twin could be ascribed to technical errors. The loss of the child with the patent ductus botalli could also not be ascribed to lack of skill on the part of the physician. The corrected mortality for this group would be 1 per cent, or a total corrected mortality previous to discharge of 2.4 per cent. In estimating these mortalities I have not included premature babies, as the loss of these infants is as a rule not fairly chargeable against obstetric errors.

The results of a series of 167 cases under my own care, almost all of which form part of the large series discussed already, are as follows: **LOA**, 122; **ROP**, 28; **ODA**, 2; **LOP**, 4; breech, 3. Operative incidence in this series is as follows: Low forceps, 33; mid forceps, 7; high forceps, 5; version, 1; cesarean section, 6.

There were four premature deliveries counting those prior to the end of the eighth month as premature. Of these three were less than seven months and were lost. Two of these were dead on admission, one on account of a severe toxemia and another following a separation of the placenta in a woman who had a chronic nephritis. The fourth one was a baby of a little over seven months which lived.

There were no maternal deaths. Of fetal deaths during or immediately following labor at term there were two, one due to asphyxia caused by the cord being around the neck and one arm, and one case in which the child died about half an hour after delivery in a case of placenta previa treated by version. This was a referred case, considerable bleeding having occurred before the case arrived in the hospital.

One death occurred forty-eight hours after labor, this being the one alluded to before in which death was the result of atelectasis as shown by autopsy, the child having been delivered by forceps in a case of flat pelvis.

The total fetal mortality at term from all causes in this series is 3, a percentage of 1.79 per cent from all causes up to the time of discharge. This of course represents results attained by rigid prenatal observation with immediate meeting of any indication disclosed by observation and immediate admission to the hospital and constant observation after the onset of labor. Forceps incidence in this series is 26.9 per cent, considerably higher than the percentage for the entire year's work in the maternity, but this smaller series contains a very much larger number of women who had had previous difficult labors or who were referred because of complications present or feared.

It has been interesting to note, as indicating the comparative results of hospital obstetrics as compared with that carried out in homes, the difference in the fetal mortality in the large series reported in this paper and that reported for the Municipality of Evanston. The latter was almost 50 per cent greater. When one considers that this district contains only a very small number of midwives, that the general average of the medical. practitioners is above that found in most areas of Chicago or indeed any large city which would correspond in size to the district considered here, and finally that the figures above considered as well as all deaths reported from a neighboring hospital within the town are reckoned into the report of mortality from the whole town, it would seem a striking argument in favor of the safety of carefully conducted institutional work.

This comparison becomes more striking if one considers that our hospital series contains many cases from the northern part of Chicago and elsewhere, a considerable portion of which had come because of former abnormality or fear of complications.

The safety of institutional methods, however, it seems fair to conclude, depends very largely upon the judgment and skill of those who determine them. We believe that a watchful conservatism, allowing the forces of Nature to accomplish delivery if possible, with careful operative interference at once upon proper indication, still remains the safest standard of obstetric practice.

800 DAVIS STREET.

1922 - Birth Statistics - USA

Published in Bost. MSJ Volume 186 (1922) p. 892

The latest United States government statistics are for 1920. In 1915 there were only ten states in the birth registration area. In 1920 there were 23 states and the District of Columbia -estimated to contain 59.8% of the population of the United States.

In 1920 there were 1,508,874 live births, which is a birth rate of 23.7 per 1000 population. This is an increase of 1.4 over 1919.

There is a marked excess of births over deaths in the area, Vermont showing the lowest. The mortality rate of infants under one year of age in this area per 1000 is 86. The births by months from 1916 through 1920 are more frequent in March. Then there is a gradual decline until June, when the number rises through September. In 1919 the lowest number of births was in July and was supposed to be accounted for by the epidemic of 1918 and war conditions.

Among white mothers those native of the United States contributed the greatest number of cases of the first child, but this preeminence gradually declines until it is found that native-born women who have given birth to five children fall below native-born women of 13 other countries, representatives of Poland heading the list in this group; and when the record reaches the tenth child, native-born white women of this country are at the bottom of the list.

So far as industry is a factor, fathers classified as foremen, overseers and inspectors in works connected with the extraction of minerals have the highest average number of children, as shown by the figures 4.6, while the foremen and overseers on steam and street railroads come next with 4.2. Farmers are well up with a record of 3.8. Soldiers, sailors and marines seem to be the lowest on the list, with a rating of 1.8.

Among professional men clergymen head the list, with a record of 3.3; lawyers and judges with 2.4; while physicians are credited 2.3.

In 1920 there were 33,209 live births from 17,229 twins, 529 live births from 184 cases of triplets, and 23 live births from six cases of quadruplets. In 1920 the greatest number of children were born to fathers between the ages of 25 and 29 years and to mothers between the ages of 20 and 24 years. A verification of maternal ages shows that eight mothers were tabulated in the age period of 55 or over.

The statistics relating to illegitimacy are not very satisfactory, because accurate information is not always given on birth certificates in this country. Some states do not require any statement relating to this feature. So far as statistics go, the urban illegitimate rate is 21.3 and the rural 24. No report is published of Massachusetts' illegitimate conditions.

The infant mortality under one year of age is lowest for children of mothers born in Denmark, Norway and Sweden. This rate is 72 per 1000 male births and 61 for females, while children of mothers born in the United States have a rate of 84 per 1000 births. This difference, in infant mortality does not seem to be accidental for it persists year after year. The explanation given is that mothers from Denmark, Norway and Sweden more generally suckle their babies.

These statistics are of great interest and will become more valuable with greater uniformity in the reporting of births and deaths. It is generally conceded that our death returns especially are misleading, and the contention is repeatedly made that a revision of the forms in use is needed in order that correct information may be acquired. The present methods have led to bitter controversy. Statistics should be more than a compilation of figures; they should give facts in simple and available form so that students may obtain accurate information and profit thereby.

THE TREND OF MODERN OBSTETRICS: WHAT IS THE DANGER? HOW CAN IT BE CHANGED?

By Brooke M. Anspach, m.d.
Philadelphia

TAGS Vol 48 (1923) p. 96-108

At the present day, nature no longer dominates the practice of obstetrics. The modern obstetrician no longer patiently awaits her pleasure, assisting only when it becomes evident that help is necessary. Today, on the slightest provocation and often on decidedly uncertain grounds, he takes matters into his own bands. He is not content even to await the onset of labor but takes steps to induce it at the time when he believes the process should occur. After the cervix has become dilated, or when it is easily dilatable, he turns the child in-utero and delivers it feet first, or if the head of the child has reached the perineal floor, he completes delivery at once by means of episiotomy and the aid of forceps. If a case promises to be difficult, he ignores the natural channel of expulsion and delivers the child through an abdominal incision.

What excuse does he give for thus interfering with the normal process of labor? He aims to alleviate the agony of labor, to shorten for the expectant mother the tedious hours of suffering and incidentally to end the suspense and uncertainty as to when labor will begin. Such methods have become so prevalent that it has become necessary that we insist upon knowing whether the claims of their advocates are well founded.

Unfortunately, the average laywoman accepts the situation with eagerness. She sees only the promised relief from pain and never considers whether there is increased danger to herself or to her offspring, taking it for granted that such is not the case.

To a certain type of woman, fortunately rare, the fate of the child is a secondary matter so long as she herself is released from suffering. The overwhelming majority of expectant mothers, however, would at once reject any procedure that increased the risk to the infant. How quickly they would appreciate the futility of shortening the second stage of labor did they but know that the most severe pains of labor and those most difficult to control occur during the first stage, when version and forceps are of no avail; and that in the second stage, with the constant and efficient aid of the accoucheur, anesthetics may be so administered as to almost nullify the distress of labor. Indeed, she may well inquire whether these various practices do more than merely bring on labor at a convenient time and shorten its duration by an operative procedure for which full and complete anesthetization is necessary.

Let us suppose that the laywoman now definitely asks the cost. How do these methods of procedure influence the subsequent condition of the mother and affect the fate of the child? What have the chief exponents of these " labor-saving " plans reported in the way of maternal and fetal mortality?

Reed, who induces labor at the estimated term by means of a tube or a bag in order to prevent oversize and disproportion between the child and the pelvis, reported a maternal mortality of 1 per cent and a fetal mortality of 6 per cent in 200 cases. Watson, who induces labor by administering castor oil and pituitrin, in 195 cases had no maternal mortality, but had a fetal mortality of 6 per cent.

It is not always easy to induce the uterine muscle to expel the fetus before the allotted time. All methods of inducing labor are accompanied with certain dangers from which they cannot be dis-associated --no matter how careful the technic or how skilful the obstetrician, infection, separation of the placenta, prolapse of the cord and death of the child from the injection of pituitary substance loom large as grave dangers.

The method of shortening the second stage of labor as a routine procedure by the performance of version is an astonishing proposition, to say the least, especially when no abnormalities are present and nature gives promise to deliver the patient in due time. For years breech presentations have been regarded as increasing the risk to both child and mother. At first thought it would seem that such a plan as routine version would be rejected as preposterous, and nothing but the skill and dexterity of the inventor of this method, who has been able, by virtue of his unusual gifts, to impress his onlookers, would tend to lead the medical profession to consider seriously so remarkable a plan of treatment. It is not surprising, though, that, even in the hands of the originator of routine version, the fetal mortality should be high.

Potter's first report for the year ending august 31, 1920, gave a fetal mortality of 6.7 per cent. A striking fact in this report is that 12 children who were born alive died with convulsions during the first thirty-six to seventy-two hours. The following year's report, ending august 31, 1921, given in his book (VERSION, Mosby, 1922), is not entirely clear, but he admits for version as an obstetric procedure a fetal mortality of 2.3 per cent. In addition, it may be noted that in 1130 cases he had 4 craniotomies and 100 cesarean sections. The unkind critic might add that in difficult or abnormal cases, when possible, be had elected to employ the abdominal route.

When we consider the proposition of DeLee we are impressed, from the beginning, with the fact that here there is actually debatable ground and that we must not, even for a moment, compare the prophylactic use of forceps after an episiotomy with either Reed's or Potter's proposals. Indeed, there is some justification in the advocacy of forceps used prophylactically, and yet, after weighing the matter carefully, even here one must decide that interference in a normal case as a routine measure is unwise and that both the mother and the child will do better if nature is permitted to take its course. DeLee, at present, furnishes no statistics, so far as we know. His last report gave a gross fetal mortality of 3.6 per cent in 9258 cases, but assuredly these cases were not all treated prophylactically with forceps.

As compared to a difficult forceps or version operation, cesarean section is a simple operative procedure, but we agree with Holmes that it is a grave mistake to believe that cesarean section is accompanied with less danger than is attendant on what may be termed a tolerably difficult forceps or version delivery. No one will deny that in difficult cases a larger proportion of living babies are secured by this method, but there often follows a certain morbidity that remains with the woman throughout her life.

If a young woman were asked to decide between a cesarean section and a living child, and a difficult labor with the risk of losing the infant, she would be wise to choose the latter method. A young woman may lose her first baby and yet may later bear numerous other living children. In fact, in the writer's experience, difficult first labors are not uncommon in healthy young women due to rigidity of the soft parts alone, and while the first labor may be prolonged and tedious, and in exceptional cases the infants may perish, subsequent pregnancies may terminate normally and easily. Being assured of this fact, how much more complacently would the woman look forward to a natural birth than to a second abdominal operation? There is considerable truth in the epigram, "once a cesarean, always a cesarean."

What about the dangers of interference with the natural processes of labor? Is not the risk to both mother and child increased materially? Holmes, three years ago, declared that in spite of the introduction of aseptic methods the mortality rate in obstetrics had not been lowered, whereas in all other branches of surgery, antiseptics and anesthetics had markedly reduced the mortality. As a reason for this, he pointed to the unjustifiable interference with nature's process of delivery.

Ehrenfest has called our attention to the fact that in at least 40 per cent of all properly performed autopsies on stillborn infants and those dying within the first few days after birth, intracranial traumatic lesions of some kind are discovered. Although it is true that such traumatisms have been known to follow spontaneous labor, in by far the larger number of instances severe

traumata are observed to follow delivery by artificial means or by the use of instruments. "However," says Ehrenfest, "careful consideration of the various mechanical factors directly responsible for the traumatization of the child would seem to lead to the inevitable deduction that a higher incidence of injuries must be looked for if the teachings of some of our ultramodern obstetricians should prevail. No amount of personal technical skill, unavoidably acquired at the cost of many fetal lives, in my belief, could neutralize the augmented risks to the child of a routine version, followed by immediate extraction, of forceps extractions seriously recommended even on the high head for the sole purpose of shortening the suffering of the parturient woman or made necessary by the elimination of important accessory expulsive force in twilight sleep. No personal effort of the accoucheur could obviate the dangers of a sudden and excessive compression of the fetal head quickly forced through an unyielding birth channel by a large dose of pituitrin."

"Most clearly," this observer declares, "it has become the duty of those who advocate the artificial termination of labor under general anesthesia, in order to overcome the unquestionably slower and more painful process of spontaneous delivery, to prove that such methods do not imply a greater immediate and later risk to the life and health of the infant."

Eden also declares himself against routine interference, and asserts that "one of the first principles in the conduct of labor is non-interference. We are passing now," he says, "through a phase of meddlesome midwifery which should be viewed with great concern. Operative delivery should not be resorted to unless absolutely necessary."

What, then, may we expect the fetal mortality to be in conservatively conducted labor, and How does it compare with the results of the routine methods employed at present. If we read the report on the midwife by Nicholson, we find that in 51,693 certified deliveries in the city of Philadelphia there was a fetal mortality of 2.5 per cent and a maternal mortality of 0.125%. From this it might appear that the modern obstetrician is a distinct menace to the community. The truth of the matter, however, is that the obstetrician is able to beat these figures, which look better than they really are, for obvious reasons, when he adheres strictly to asepsis and pursues a rational policy. This is shown by the excellent report of Polak, whose fetal mortality in 1000 consecutive cases was 2.5 per cent, and by the admirable work of Beck, who wrote on the subject, "is interference justifiable after twenty-four hours of labor when no other indication is present?" In the latter's series there were 138 prolonged labors; spontaneous deliveries were effected in 1125, and the total infant mortality up to two weeks was 3 per cent. We would recommend a careful perusal of Beck's paper by all those who routinely interfere with labor on the plea of lowering mortality and morbidity for both mother and child. Let us draw particular attention to his closing words: "our only conclusion, therefore, against the routine advocated in this paper is that it calls for considerable courage and is accompanied with considerable worry on the part of the attending obstetrician."

Statistics must, of course, be carefully scrutinized before we accept them at their face value, and in the determination of the fetal mortality as influenced by the methods employed in delivery, we should exclude the fetal deaths that, beyond any reasonable doubt, are due to causes other than the methods employed. Potter, in his book (*Version*, Mosby, 1922), evidently has attempted to do this, for he states definitely that version has a mortality of 2.3 per cent. In arriving at that conclusion it appears that he has excluded all those fetal deaths that may be designed as unavoidable and as entirely independent of the method of delivery employed. As illustrative of this, the same purpose is evident in the statement of Danforth, an advocate of conservative treatment; he reports 500 clinic and private cases, showing a gross infant mortality of 3.6 per cent and a corrected fetal mortality of 1.14 per cent. The importance of making this distinction is shown in a series of 400 consecutive private cases of our own. Every private case from the very beginning of practice down to the present time has been included, the last of the 400 being delivered May 4, 1923. These cases, be it clearly understood, were cared for from the beginning to the end of pregnancy, and were not those seen in consultation after labor bad begun; nor those seen for the first time within the last three weeks of

pregnancy, none were clinic cases; and none were delivered prematurely, that is, more than three weeks from estimated term. In this series of 400 cases there were 9 fetal deaths --a fetal mortality of 2.25 per cent-- and no maternal deaths.

Six of the deaths could not be attributed to the method of delivery -they would have occurred regardless of the technic employed, and should, therefore, be excluded, since they were unavoidable. The reader is requested to review them critically:

Case 1. -Small, undersized twin-other one living and well; no difficulty in delivery; born alive but died of inanition within twelve hours.

Case 2.-Child was dead before labor started; placental apoplexy; eclampsia; accidental hemorrhage; vaginal pack; pains began within an hour; spontaneous delivery in four hours.

Case 3.-Child died just before or early in labor; mother missed movement; no heart sounds, although heard plainly the day before; labor was normal and lasted fourteen hours; membranes ruptured after head was on the perineum and the amniotic sac was distending the vulvar outlet; child normal in appearance; autopsy and Wassermann negative. Only explanation was accidental compression of the cord.

Case 4.-Child died within twenty-four hours of birth; congenital heart disease (autopsy); normal labor.

Case 5.-Child died within twenty-four hours; hydrocephalus and infant idiotic in appearance; normal labor.

Case 6.-Child died on fifth day from pneumonia; multipara; normal spontaneous labor, six hours. Autopsy and Wassermann negative, except for pneumonia.

In the judgment of the reader, should not these cases be classed as unavoidable deaths independent of any method of delivery?

There were 3 deaths that we may consider as avoidable and directly concerned with the method of delivery:

Case 1.-Central placenta previa; young woman; first baby; version; this was done deliberately to save the mother, but a cesarean section would probably have saved both mother and child.

Case 2.-Death within twenty-four hours of labor; multipara, forty-two years old; high forceps; occipitoposterior position; cervix not completely dilated but dilatable; interference here was premature; further delay or the use of a Voorhees bag or version might have avoided this fatality.

Case 3.-Death from pneumonia on eighth day; an occiput posterior position in a thirty-year-old primipara; the child was resuscitated with difficulty; the same criticism as in case 2 might be made of the conduct of this case. 1,

If the methods of delivery alone are considered, in all there were 3 deaths in 394 cases, or a fetal mortality of 0.76 of 1 per cent. There were 215 primiparæ and 185 multiparæ. There were 36 high and mid-forceps; 44 low forceps; 1 version for placenta previa; 3 induced labors for toxemia; 4 pairs of twins; 16 breech presentations. Cesarean section was done in 10 for the following indications:

Case 1.-Distortion of the uterus following ventrofixation; no progress after eight hours of labor.

Case 2.-Increasing blood-pressure and pre6clamptic toxemia ten days before term; short, stocky primipara.

Case 3. -Funnel pelvis; history of previous difficult labor, and dead child.

Case 4.-Cicatricial contraction of vagina and cervix; history of previous difficult delivery, and dead child.

Case 5.-small pelvis (internal conjugate, 8); large child, 10 pounds 5 ounces; no progress after test of labor; cervix edematous.

Case 6.-previous cesarean section, and multiple myomectomy incisions in fundus early in married life, before conception (Porro operation).

Case 7.-multipara, aged forty-one years; dystocia from rigid cervix following cervical repair; no progress after twelve hours and use of Voorhees bag.

Case 8.-pregnancy in right horn of a uterus bicornis; malpresentation and history of two stillbirths.

Case 9.-pregnancy in the left horn of the uterus bicornis of the same patient two years later (Porro operation).

Case 10.-Precllamptic 'toxemia, placenta previa and transverse position of infant. .

We are aware that this is a small series of cases and attach value to the lessons it teaches only because it includes every case, and, so far as we can see, gives an adequate estimate of unavoidable and avoidable fetal mortality in private practice.

Moreover, it has afforded us ample opportunity to observe the value of patient waiting in the practice of obstetrics. Harrar has aptly expressed it: "patience in obstetrics is next to asepsis, but it must be the active patience of close observation; not the passive patience of ignorance, allowing the mother to become totally exhausted or the baby in imminent period of death before determining a line of action."

Perhaps the most trying cases are the dry labors, with ineffective pains and very slow dilatation of the cervix. Here the Voorhees bag has been of the greatest help, for by its use alone delivery has often been effected.

In the entire series careful antenatal treatment was maintained throughout pregnancy, and we are firmly convinced that in this way the size of the child can be considerably influenced. During labor the expectant plan was adopted and interference was never undertaken unless danger threatened the mother or the child.

The point we wish to make is that practiced in this way, obstetrics is a difficult proposition and that some babies are likely to be lost because the obstetrician is unfit at the time he is called upon to act. The most frequent error of commission is to attempt delivery before the os is completely dilated, and to this cause we attribute 2 fetal deaths in our series. Not infrequently the importunities of the family and of the patient prevail, and although the obstetrical attendant may be successful in spite of this handicap, in the long run he will do better if he uses a bag or waits until the cervix is fully dilated.

Granting that conservative obstetrics give the best results, we should endeavor to surround the patient and the attending obstetrician with the most ideal conditions, so that whenever labor

begins the patient will have adequate and skilled attention throughout, no matter how long it lasts. But to practise obstetrics in this way --patiently to wait, taking no thought of one's convenience, forcing one's self to the limit of endurance-- is so laborious a task that it seems almost impossible for a man to continue it indefinitely. How often the obstetrician has struggled wearily through the night, only to be confronted in the morning by some grave obstetrical problem that he had to meet promptly and effectually if be was not to lose both patients. Dare we hesitate to ask whether many of the methods for the conduct of obstetrics that have arisen in later years have, wittingly or unwittingly, been originated primarily for the benefit of the harassed obstetrician, and thus, secondarily, of course, for the benefit of the patient? Furthermore, has not the drudgery of this work kept many physicians and nurses from practising obstetrics or induced them to abandon it just when they have had enough experience to render them really valuable?

At a meeting of this society two years ago, we suggested, as a remedy, the formation of obstetrical partnerships in maternity hospitals. There seemed to be considerable doubt as to whether such a plan would be feasible. There is a conviction in the minds of many that the pregnant woman pins her faith to one man and would be disinclined to employ as accoucheurs a partnership of two or three, any one of whom she might happen to get as her immediate attendant. The objection has been raised that a case started with one man could not be turned over to another without resulting disadvantage to the patient. Personally, we believe that the disadvantages are more fancied than real, and that the woman would soon realize what it meant to her and would give her enthusiastic support. If such a plan did come to pass, fetal and maternal mortality and morbidity statistics would improve, and the pernicious practices now in vogue would disappear, since they would no longer be attractive.

In closing this paper, we wish to pay tribute to Potter and to DeLee for their contributions to the art of obstetrics. Potter has certainly demonstrated how version and breech extraction should be done, and we have no doubt that in many posterior positions of the occiput his plan will take the place of axis-traction forceps and of Scanzoni's maneuver and give better results. His work marks a distinct and valuable advance in the development of the technic of version. It is to be deplored, however, that he does version routinely. On two occasions we have seen DeLlee perform his prophylactic forceps operation; it was a masterly exhibition, and we wish to compliment him on his achievement. When the head is delayed in the second Stage, and immediate delivery is indicated, the method of DeLee cannot be surpassed. The obvious criticism of these methods of starting or terminating labor artificially is that we have not yet shown that in this way we can improve on the normal process.

Conclusions

1. Routine induction, routine version and routine prophylactic forceps increase the danger of childbirth to both mother and child.
2. There is an unavoidable fetal mortality in labor of between 1.5 to 2 per cent-in other words, that proportion of infants at term will be born dead, irrespective of the methods employed. In reporting a series, the details of every fetal death should be given. The fetal mortality in conservative obstetrics at present may be estimated at about 1 per cent.
3. The woman in labor should have constant and continuous attendance of a competent obstetrician throughout labor, no matter when it starts or how long it lasts.
4. Labor should not be started or ended routinely. Induction forceps and version should not be employed unless they are definitely indicated in the individual case for the sake of either the mother or the child.
5. The practice of obstetrics should be carried on by obstetrical partnerships. When this practice comes into vogue, objectionable routine methods will be abandoned and maternal and fetal mortality statistics will improve.

References

1. Beck: Is interference justifiable after twenty-four hours of labor when no, other indication is present? Am. Jour. Obst., december, 1922, p. 623.
2. Danforth: Is conservative obstetrics to be abandoned? Internat. Survey, august, 1922, obstetrical section (3b-131).
3. Eden: Maternal mortalitv of childbearing: its causes and how to deal with them, Internat. Surg. And obst., january 23, v, 53.
4. Ehrenfest: Birth injuries of the child, Appleton & co., 1922, p. vii of preface.
5. Harrar: Functional dystocia in normal pelvis: recognition and management, Am. Jour. Obst. and Gynec., march, 1923, no. 3, v.
6. Holmes: The test of labor in relation to cesarean section; comparative results obtained by elective and secondary operations based upon a personal experience of 92 cases, Am. Jour. Obst., december, 1922, p. 579.
7. Holmes: the fads and fancies of obstetrics: a comment on the pseudoscientific trend of modern obstetrics, trans. Am. Gynec. Soc., xlvi, 12.
8. Nicholson: an anachronism of the twentieth century: the midwife, trans. Coll. Phys. Of Philadelphia, 1921, 3d series, x1iii, 495.
9. Polak: forced labor: its status in obstetric teachings, trans. Am. Gynec. Soc., xlvi, 24.
10. Potter: Version, mosby, st. Louis, 1922.
11. Reed: Induction of labor at term, trans. Am. Gynec. Soc., 1920, xlv, 40.
12. Watson: further experience with pituitary extract in the induction of labor, am. Jour. Obst., december, 1922, p. 603.

Discussion

Dr. George W. Dobbin, Baltimore, md. -I want to thank the society for this opportunity to discuss the paper just read by Dr. Anspach. It is a subject in which I am intensely interested, and for the past several years have conducted my practice along lines similar to those laid down by Dr. Anspach. 1 have nothing to say in criticism of the paper, because i am entirely in accord with everything he has said.

I feel that the aggressive methods of urgent obstetrics that have come up in the last few years have been developed, as he says, more for the benefit of the accoucheur than for the woman herself, and I cannot but feel quite strongly that the promise of relief from the pains of labor is used by the advocates of these procedures to increase the material gains of their practice. Version can be an extremely difficult operation, and no obstetrician can do many without realizing that under the best conditions a certain number of children will inevitably be lost. I have never had the privilege of seeing Dr. Potter operate, and am told by those who have that his skill is very great. However, I feel very strongly that it is very dangerous advice to give to those who have less experience.

The conclusion of Dr. Anspach's paper has particularly interested me, because it is this part of the work that I have done more or less of myself.

In 1915 1 found that a rapidly increasing obstetric practice, which had to be kept up because it was necessary for me to make my living, was getting too much for me. I could not get away from my work at all, I could get no holiday or vacation, and two patients falling in labor at the same time was a very serious calamity. I thought the matter over very carefully and am free to say that the development of more aggressive obstetrics did not suggest itself to me as a means of solving the problem. What I did, however, is just what Dr. Anspach has suggested, in forming a partnership with

a well-trained obstetrician. That was in 1915, and up to the present the alliance has been highly successful.

What Dr. Anspach suggests concerning the difficulty of having a patient satisfied when getting the services of an obstetrician she did not directly engage, is much more fanciful than real when one is dealing with a partnership. We have little or no difficulty in educating our patients to this effect; in fact, many of our patients realize we are working together and ask that both of us be present at the time of delivery.

Whenever possible the physician to whom the patient has originally applied conducts the delivery; but in the care during pregnancy, which frequently covers six or seven months, every effort is made to explain to her the workings of our partnership, so when she actually falls in labor we have rarely experienced any difficulty whatsoever.

I have no hesitancy in stating that our efficiency has very materially increased as the result of the partnership. Two trained men working together can handle any case far better than one working alone, and in the event of complications the advice and moral support of a co-worker is most comforting.

Dr. Anspach's results are certainly remarkably good. Before leaving Baltimore, I looked up our records and find that his are somewhat better than ours, he presents an actual fetal mortality, I think, of 0.76 per cent. Our mortality is larger than that. In the last three years we have delivered 817 women with a total loss of 48 children; total mortality, about 9 per cent. This, however, includes all macerated babies and death that can no way be attributed to the obstetric management of the case. When these are eliminated we have only 10 deaths, a corrected fetal mortality of 1.22. 1 must also note that I have been a little more liberal in calculating this obstetric fetal mortality, as I have considered one case where death was due to compression of the umbilical cord, a condition which I think Dr. Anspach eliminated in his statistics.

As I remarked at the outset, i am particularly interested in this subject and desire to congratulate Dr. Anspach for the able manner in which he has presented it.

Dr. William C. Danforth, EvanstonIll.-in order to indicate what results may be attained by Intelligent application of conservative methods, I have brought with me a brief résumé of 1029 cases, comprising the work of our maternity for the years 1921 and 1922. Of these 447 were primiparæ and 582 multiparæ. Of these 886 were various cephalic presentations, 665 of them being L. O. A. There were 48 breech, the remainder being various less common presentations. In this series there was a forceps incidence of 19.2 per cent. There were 23 cesarean sections, 41 breech extractions, including 22 versions. Our maternal mortality in this series was 0.39 per cent. In this series the total number of infants delivered was 1046. Of these 49 died and at some time prior to the discharge of the mother, usually on the twelfth day. The total mortality, including all cases up to the time of discharge, was 4.6 per cent. Excluding premature babies, and including all deaths occurring in labor and subsequent to delivery, gives a mortality of 3.5 per cent.

In the first three months' work in this same maternity 144 cases were delivered --61 primiparæ and 83 multiparæ. In this series we find a forceps incidence of 25.2 per cent. With I cesarean section and 9 breech extractions, including 2 versions, there was no maternal mortality.

To compare with the 400 private cases which Dr. Anspach has given in his paper, I have data upon a series of my own of 400 consecutive cases --160 were primiparæ and 240 multiparæ. Of these 265 delivered spontaneously. There were 109 forceps deliveries, of which 85 were low forceps; 13 breech extractions, including version; and 13 cesarean sections. Excluding premature babies, this series gives a fetal mortality of 1.75 per cent. Including all premature babies for the entire series and all deaths up to the time of the mother's discharge, the total mortality was 3.5 per cent.

Among the fetal deaths of babies at or near term we find that 3 died of abruptio placentae, 1 of asphyxia from cord compression, 2 of anemia (these children having been delivered in cases of placenta previa), and 1 which died after a difficult high forceps.
When one considers the figures which Dr. Anspach has just given us of the results in a series of cases conservatively managed, and if one in addition considers the figures contained in the report of Dr. Polak of about a year ago and those which I have given in a former report of 500 consecutive cases, it seems to me that the burden of proof rests upon the shoulders of those who advocate routine operative interference. These reports all show too clearly the value of intelligent conservatism. It is not a debatable question that the application of forceps in many cases is a beneficent thing, and any man of experience knows that the lives of some infants are saved by interference. It seems, however, that the best results are still to be expected from a watchful conservatism supplemented by the proper carrying out of operative interference upon clear indication.

Dr. Hugo Ehrenfest, St. Louis, Mo.-All I wish to say in discussing this paper is that no discussion of what modern operative obstetrics does to the child should be limited to the mortality of the fetus. In my monograph, to which Dr. Anspach alluded, I tried to make the point that we must include into our consideration all injuries; also those not fatal. Many of them may be only temporary in their effect, others permanently invaliding the child physically and mentally. I am of the opinion that there are various conditions still being considered as congenital defects which, as a matter of fact, are results of birth injuries.
We should certainly not consider the dangers of obstetric procedures to the child solely from the standpoint of fetal mortality.

Dr. Harold C. Bailey, New York City.-May I ask a question? Why should these stillbirth figures be revised? Is it proper for us to be excused from delivering premature infants and macerated fetuses? Does not the entire subject of toxemia come in under that heading? I think it is a great mistake to have a presentation of mortality statistics along the line the author has taken. Mortality statistics of premature dead fetuses, stillbirths and neonatal deaths, I believe, should take all such deaths from the seventh month of pregnancy on to thirty days' postpartum.

Dr. Carl Henry Davis, Milwaukee, Wis. -May I add a word to Dr. Bailey's remarks as to the character of the statistics? They need correction and standardization. We should take in everything from seven months on, count it all in, and then may consider the operative deliveries separately .
I, too, have checked up on a series of 405 deliveries for a paper which Dr. Danforth and I are preparing together. Taking all cases from seven months I had a total fetal mortality of 3.9 per cent. There were only three deaths which could in any way be attributed to the delivery. Two of those were cases of occipitoposterior position in primiparæ with flat pelves, with premature rupture of the membranes, the fetal heart going bad when the cervix was not completely dilated. In each case it was completed manually and the woman delivered finally by version and extraction with the dead baby. One woman had the old-fashioned easy labor pains two minutes, apart, where I let fifteen minutes go by without listening to the fetal heart, and there was a concealed prolapsed cord, with easy delivery, but a dead baby. We should individualize every case. Having interns or nurses hold back the head when we are trying to reach the hospital is bad practice. One should listen to the fetal heart after every contraction during the perineal stage and deliver quickly when the change in the fetal heart indicates danger.

Dr. Anspach (closing).-As the hour is late I will only say that if you do not exclude premature births you cannot show the difference between conservative methods and routine operative methods of

delivery of women in labor at term. If you do not exclude the fetal deaths that are entirely independent of the methods employed there can be no accurate comparison.

In reply to Dr. Danforth, I did not refer to Dr. Potter as the inventor of version but as the originator of routine version.

I wish to thank the gentlemen who took part in the discussion.

PRELIMINARY REPORT OF THE COMMITTEE ON MATERNAL WELFARE

(Appointed at St. Louis, 1921)
Published Am. J. Obs. Gyn. Volume 5 (1923) p.664-665

Statistics of morbidity and mortality, gathered in the United States during the last twenty years, 1901 to 1921, show that in toxemia and septic infection the curve of incidence is upward, in spite of the improvement shown by the records of our maternity hospitals in that period. This striking contrast demonstrates how easily the general condition may be ameliorated.

The fact that the large majority of the mothers of America are delivered in the home, and will continue to be managed by the general practitioner, explains the difficulty. It is the surgical operation in unsurgical environment.

It is desired to solicit the cooperation of the Fellows in the elaboration of a complete scheme of maternal welfare, emphasizing the most important points in the development of a plan, with the view of educating the profession and the public, as to the necessity of such work; and to serve as a basis for governmental activity, to be later inaugurated, cooperating with our individual efforts.

The following outline is presented as a suggestion of the needs which are paramount:

1. Preservation of the life and health of the mother.

A. Decrease in the number of infections following abortion and childbirth.

a. By providing better trained attendants.

b. By educating the laity as to the necessity of proper preparation of the patient, and her proper supervision during pregnancy.

c. By medical inspection and control of institutions caring for maternity cases.

B. Prophylaxis of Pregnancy.

a. Control of toxemias, by educating the laity to regard the importance of pregnant women placing themselves under competent medical care, and to be advised as to diet, and mode of living; and also as to the recognition of any symptoms which may arise.

b. Prevention of venereal disease in association with pregnancy and treatment of such cases which develop.

2. Encouragement of the number of fruitful pregnancies.

A. By lessening sterility.

a. By prevention of infections following childbirth and abortion.

b. By diminution of venereal disease, especially of Neisserian infection.

B. Lessening the frightful prevalence of abortions.

a. By decreasing the number of spontaneous abortions by educating young married women, who are pregnant, as to proper care when threatening symptoms develop.

b. By lessening the number of induced abortions.
a. Self-induced.
b. Criminal operations.
c. Therapeutic abortions.

N. B.

A. It is recommended that hospitals require the written sanction of at least two reputable medical men, before permission to perform an abortion is granted.
B. The desirability of having declared that abortions are reportable to the health authorities, should be discussed.

3. Diminution of the number of deaths of prematurely born infants.
A. By education of profession and parents, and supervision of these cases.
B. By provision for the better care of premature infants generally.
C. By recognition and treatment of syphilis.

4. Diminution in the number of stillbirths.

A. Improvement of statistics and methods of reporting stillbirths, with causes.
B. By education of both profession and laity.
C. By provision of better antepartum and intraparturn care.
D. By better care of syphilitics.

5. Diminution in the number of neonatal deaths.
A. By recognition of the importance of these deaths.
B. By methods of prevention.
C. By education of the profession and laity.
D. By provision of better antenatal, intrapartum and postpartum care.

N. B.

More careful scientific study of both stillbirths and neonatal deaths, together with causes of abortion, miscarriage and premature births is of vital importance.

6. Better facilities for the care of the unmarried mother, for her own protection and that of her offspring.

A. A clear understanding of the relationship of this work to other health and welfare activities, such as infant and child welfare, venereal disease campaigns, Red Cross and nursing activities and to certain eugenic problems.

B. Recognition of this need on the part of Boards of Health, and social agencies.

N. B.

This problem is so often overlooked in many communities, the result is pathetic, indeed tragic.

7. Proposing some responsible agency of representative and well qualified men to advise with the governmental agencies on the problems of maternal welfare, which will consolidate the efforts of those interested in the welfare of mothers. This organization may be enlarged to become a part of an effective institution which could well be an advisory body on matters pertaining to public health and welfare.

8. To work out problems of maternal and child welfare in cooperation with the pediatrists, by means of a joint committee representative of the leading national societies.

It is recommended that this committee act in cooperation with the similar committees of the American Gynecological Society, and the Child Hygiene Society, and that, therefore, the cooperation of similar committees representing these organizations and also the American Pediatric Society to elaborated maternal and infant welfare programs be secured.

N. B.

Since the teaching of obstetrics covers so vast a field, and since the crying need for the immediate emergency may be met by the program here outlined, it is not deemed advisable to suggest any reform in the undergraduate teaching of obstetrics until a later occasion.

GEORGE CLARK MOSHER, M.D.

Chairman GEORGE W. KOSMAK, M.D. HENRY SCHWARZ, M.D.

"ONCE A CESAREAN SECTION, ALWAYS A CESAREAN SECTION," AN UNTRUTH

By J. P. GREENHILL, B.S., M.D., CHICAGO, ILL.

From the Chicago Lying-in Hospital and Dispensary

Published: Am. J. Obst. Gyn. Volume 5 (1923) p. 86-88

For the sake of statistical information, I should like to place on record very brief case reports of three patients delivered during the past year at the Chicago Lying-in Hospital, per *vias naturales*, who had in previous labors been delivered by cesarean section.

CASE REPORTS

CASE 1 -Mrs. E. M., No. 10754, a primipara aged twenty, was admitted to the Chicago Lying-In Hospital, in labor, Feb. 17, 1920. The general examination was negative and the pelvis showed the following measurements: Intersp. 22, Intercr. 25, Intertroch. 29, Baudeloque 18, and Conj. Diag. 11.5. The antenatal record mentioned that there was a false promontory, that the lateral sacral curve was convex and that there were exostoses on the sacrum. The child was in O. L. P., the fetal heart tones were regular, the cervix was dilated 3 cm. and the head was not engaged. After twenty hours of strong pains with very little progress, a laparotrachelotomy (low cervical cesarean section) was performed, and a child weighing 3,231 gm. (7 lb. 2 oz.) was delivered. The convalescence was entirely uneventful and the patient left the hospital on the twelfth day after operation.

On May 28, 1921, this patient (No. 17376) returned to the hospital again in labor. It was decided to give her a test of labor under strict supervision. Labor progressed uneventfully and after 14.5 hours there was complete dilatation and the head was on the perineum. Prophylactic forceps were applied to save the patient the strain of the second stage and a live child weighing 3,355 gm. (7 1b. 6 oz.) was delivered. After delivery the uterine cavity was carefully examined for evidences of the cesarean section scar but no trace was found. The patient made an excellent recovery and went home on the eleventh day postpartum.

CASE 2 -Mrs. G. P., No. 22417, a secundipara, was admitted in labor to The Chicago Lying-In Hospital, April 30, 1922. She had had a classic cesarean section performed in August, 1920, in a local hospital, after having been in labor for twenty four hours. The indication for the operation, according to the patient, was malposition of the baby. The latter weighed 3,855 gm. (8.5 lb.). At the end of fourteen days the patient left the hospital.

At the time of the present admission, the general examination was negative. The pelvic measurements were normal, the cervix was dilated 4 cm. and the head was floating. After a labor lasting more than thirty-five hours, during most of which time the pains were strong, a baby weighing 4,025 gm. (8 lb. 14 oz.) was delivered spontaneously. No intrauterine examination was made. The puerperium was uneventful and the patient left the hospital on the tenth day.

CASE 3 -Mrs. F. S., No. 11666, a primipara aged twenty-four, was admitted to The Chicago Lying-In Hospital on April 19, 1920, because she had a profuse hemorrhage from the uterus. On admission the general examination was negative. The external measurements of the pelvis were as

follows: Intersp. 25, Interer. 29, Intertroch. 29, Baudeloque 20. The patient was at term but the head was floating. The position was O. L. P. and the fetal heart tones were regular. Vaginal examination revealed the cervix to be dilated 2 cm. and a portion of the placenta was found covering the cervical orifice. Pains began soon after admission and continued but with irregularity for thirty-eight hours. During this period there was slight bleeding. Because of this and because the head still remained above the pelvic brim, a classic cesarean section was performed. A live baby weighing 2,860 gm. (6 lb. 5 oz.) was delivered. The patient made an uneventful recovery and was discharged on the twelfth day.

On Feb. 23, 1922, the patient returned to the prenatal clinic, pregnant 26 weeks. She was advised to enter the hospital on June 2, ten days before the expected date of confinement in order to be watched. On June 9, at 2 A. m., labor began. It was decided to deliver the patient through the vagina if possible. Exactly five hours after the onset of labor, there was complete dilatation and the head was engaged. It was decided to eliminate the bearing-down pains of the second stage by applying forceps; but 20 minutes after dilatation was complete, the patient delivered spontaneously a live baby weighing 2,975 gm. (6 lb. 9 oz.). The uterus was then felt abdominally and the scar of the cesarean section was distinctly palpable. The Placenta was delivered by the Schultze mechanism, by early expression, that is, by pressure on the fundus uteri after the placenta had separated and was lying in the vagina. There was no bleeding from the vagina, but examination of the placenta revealed the fact that a portion was missing. The hand was inserted into the uterus and the missing piece of placenta was found attached to the uterine sear. This piece of placenta was gently removed and the scar palpated. The thickness of the scar for most of the distance was approximately 1 cm. but in one portion it was not more than 0.5 cm. in thickness. Pituitrin and ergot were given, the former after the delivery of the baby and the latter after the expulsion of the placenta. The patient made an uneventful recovery and went home on the tenth day.

CASE 4 -Mrs. M. B., No. 24698, aged twenty-six, a tertipara, with normal pelvic measurements was delivered April 17, 1920, by a classic cesarean section in an army hospital. The baby weighed 3430 gm. (7 lb. 9oz.) and the indication for the operation was a breech presentation. Recovery was uneventful. On July 3, 1921, the patient again went into labor. She had very strong pains and according to the husband, the child's head was visible for a number of hours. Despite this, the attending physician refused to apply forceps and the patient delivered the baby spontaneously after 15 hours of hard labor. This child weighed 3628 gm. (8 lb.). For her third delivery (Sept. 21, 1922, the patient came to Dr. DeLee. She gave a history of abdominal pain suggestive of adhesions and on abdominal examination definite bands could be felt connecting the uterus with the abdominal wall. Furthermore the uterine scar was easily felt and this was considerably depressed for a distance of about 6 cm. Because of these findings and because the patient feared further pregnancies, it was decided to perform a classic cesarean section. On opening the peritoneal cavity thick connective tissue bands were found stretching from the uterus to the abdominal wall. The uterus was rotated so markedly to the left that the right cornua was located in the midline. The bands were ligated and cut, thereby releasing the torsion of the uterus. A low fundal incision was made and a live child weighing 3600 (7 lb. 15 oz.) was delivered. The old scar was found to be very thin, abdominal examination had revealed. After suturing the uterine incision, wedges from the uterine cornua were removed, the raw edges covered with peritoneum and the proximal ends of the fallopian tubes buried in the folds of the broad ligaments. The patient made an excellent recovery and went home on the fourteenth day.

COMMENT

It will be noted that in all four cases, the babies born through the vaginal route, weighed more than the children delivered by cesarean section. One patient was delivered by forceps (prophylactic) and

three gave birth spontaneously. In three cases the uterine cavity was explored. In the cases where the classic cesarean section had been done, a relatively thin scar -was found, whereas in the patient on whom the low cervical operation had been performed, no trace of a scar was palpable. In the three cesarean sections performed at the Chicago Lying-in Hospital catgut only was used in closing the uterus.

It appears from this report that the dictum, "Once a cesarean section, always a cesarean section," is untenable in the light of the modern way of performing cesarean section.

426 EAST FIFTY-FIRST STREET.

A CONSIDERATION OF TWENTY YEARS' PROGRESS IN THE TEACHING OF OBSTETRICS AND GYNECOLOGY

REUBEN PETERSON, M.D.
Professor of Obstetrics and Gynecology, University of Michigan
ANN ARBOR, MICH.

From the Proceedings, Congress on Medical Education, Licensure, Public Health and Hospitals, Chicago, March 9-12, 1925, A.M.A.

CONDITIONS AGAINST WHICH TEACHERS WERE CONTENDING TWENTY-FIVE OR MORE YEARS AGO

Teachers of obstetrics, a quarter of a century ago were handicapped in many ways. From 1815 to 1875 they flourished, as it were, because this period may be labeled the didactic age in medical education. It was the period of the professor raised to the nth power. The student was talked to, thundered at, but not taught by actual contact with the patient. There were a few bold pioneers like Prof. J. P. White of Buffalo who dared, in spite of the criticism of colleagues and the laity, to allow the students to see the head of the child emerge from the vulva. Yet these were rare and exceptional teachers. Today, we can hardly realize that only seventy-five or even fifty years ago, vaginal inspection and examination were unknown and that the obstetric forceps were applied under the sheet by the sense of touch alone.

The quarter of a century from 1875 to 1900 was the age of the laboratory development in medical education. The fundamental sciences, chemistry, anatomy and physiology were developed and students were taught systematically through laboratory methods. The medical course was lengthened to three years and toward the latter part of this period, from 1890 to 1900, the clinical subjects began to receive attention. The literature of this time reveals much discussion of the relative merits in clinical teaching of the didactic lecture, the quiz, the amphitheater clinic and the ward walk.

From 1900 to 1925 has been the era of the development of the clinical side of medical teaching. Once the public was shown the safety and economy of hospital treatment of disease, the number of hospital beds increased by leaps and bounds. This furnished the clinical teacher with abundant material in some departments for the demonstration of all varieties of disease. Others, however, will take up this phase of the subject. The above has been set forth simply to secure a starting point for the discussion of the different parts of the outline so far as they have to do with the teaching of obstetrics and gynecology.

From the teaching standpoint, at least, it is essential that obstetrics and gynecology be considered together. In reality, it is one subject with two divisions, obstetrics, including the study of normal and abnormal human reproduction, and gynecology which has to do, in the greater part, with the results of poor obstetrics, or the failures of obstetrics, in over 60 per cent of the disabilities the gynecologist is called on to treat. Thus gynecology ought never to be regarded merely as a surgical specialty, unconnected with obstetrics. It is perfectly possible to practice one to the exclusion of the other, but they must be taught in conjunction and the teacher must be thoroughly grounded in both, or this instruction will be lacking.

Obstetrics from the pedagogical standpoint was in a deplorable condition in 1900. Not that the teachers of obstetrics did not realize what was necessary for good instruction along modern lines, but their teaching material was sadly inadequate. This was owing to a number of causes. During the decade from 1890 to 1900, the energy of those interested in the generative tract of women was devoted to the treatment of the diseases of women by surgery. This was the decade of surgical gynecology and abdominal surgery, a period fraught with accomplishments of which the profession may well be proud. It gave rise, however, to conditions profoundly affecting obstetrics. The gynecologic surgeon although well grounded in obstetrics either neglected the latter, taught it in a perfunctory manner or gave it up altogether. The young men of this period, who were to take the places of the older obstetric teachers, openly scorned obstetrics and took any short cut to enter the field of operative gynecology. Chairs in medical schools were divided into obstetrics and diseases of women. Sometimes to the latter professorship was added the title of abdominal surgery, since, divorced from obstetrics, and centered in surgery alone, the operating gynecologist soon became dissatisfied with a restricted pelvic field.

The ambitious men, then, following the trend of the times, scorned obstetrics and left these chairs to be filled by the surgically timid or by those who were obliged to be satisfied with inferior positions in the medical faculties. To be sure, hours were assigned the professor of obstetrics in the medical curriculum, but mostly they were for didactic teaching, for in the majority of schools in 1900 there were few if any teaching obstetric beds. In my opinion, this was the main reason why the obstetric teacher developed the out-patient clinic in his endeavors to give the students actual experience with patients. Not that he would not have preferred hospital beds for his obstetric teaching, but because he would have been laughed to scorn had he demanded, as a right,.the number of hospital beds for his department equal to those at the disposal of the two other major departments, medicine and surgery.

It so happens that I went to Michigan in 1901, a year later than the beginning of the period we are asked to review. The conditions I found in my department were quite typical of those existing in other schools at that time. Once, and for all, let me say in not all schools for in some because of favorable circumstances clinical opportunities in obstetrics were better than I am about to portray. Yet, even in large centers clinical obstetrics was very backward. In 1896, in New York City, attendance on a few cases of labor was demanded of a student prior to graduation but the country over this was an exception. In 1912, midway in the period under discussion, in a very illuminating paper to which I shall refer later, J. Whitridge Williams, through a questionnaire directed to the professors of obstetrics throughout the country, showed the real state of obstetric medical education. It was a true but rather sad picture, was thought pessimistic and aroused considerable criticism.

In 1901 at Michigan there was no clinical obstetric teaching. Six or seven women were delivered yearly, before sections of the class by the demonstrator of obstetrics, but as far as I could learn no student had an opportunity to examine the pregnant woman, much less deliver her. Yet there was an excellent service of some twenty-five beds for instruction in surgical gynecology. I was expected to operate twice a week from three to six or seven in the afternoon for the benefit of the students on the amphitheater seats and it was not considered good form jor the student to go elsewhere to sleep while the professor was operating. My struggle from the beginning was for obstetric teaching material and for hospital accommodations for this class of patients. The difficulty was not the building up of an obstetric department in a medical school in a small town for immediately the necessary accommodations were forthcoming and patients applied for entrance to the clinic from all parts of the state. The real difficulty was in securing hospital beds for the obstetric

patients. For many years I have had to be contented with frame buildings outside the hospital proper for waiting and active obstetric patients. I acknowledge that surroundings and palatial hospitals are not absolutely essential to good teaching and research work. Yet I think my point is well taken, that in comparison with the rest of the chairs in the medical school obstetrics is cared for last of all. At least, I can hardly imagine medicine or surgery being taught in frame buildings for twenty years without a vigorous protest from every one with knowledge of the facts.

My contention is that through all these years a part of the battle for better obstetric teaching facilities should have been assumed by the authorities responsible for the training of medical students. This is not said in criticism now that the conflict is practically over and the fight for adequate obstetric teaching facilities won, but simply as an illustration of the relative unpopularitj of obstetrics in comparison with other departments. It would seem as if the absolute necessity of undergraduate obstetric instruction would be recognized, and proper facilities be provided for the teacher of obstetrics; unless our graduates from now on are to be specialists, all practice in the cities and not any of them deliver women after graduation.

PROGRESS DURING THE LAST TWENTY-FIVE YFARS

I realize that education of the public along any line is a slow process. Thirty-five years ago it was difficult to persuade patients to enter hospitals for major operations and only dire necessity compelled women to be confined in hospitals. This has all been changed by education of the public. Therefore, there is no fundamental reason why the necessity of abundant facilities for the teaching of obstetrics should not be gradually recognized by tht profession and laity. There is no need for discouragement. My successor in the chair of obstetrics will not be obliged to argue with one high in university authority, as I did, over the statement that all expense for clinical obstetrics was foolishness and that one woman delivered before the class was enough to demonstrate the way a baby is born.

In other words, more and more it is becoming recognized and taught that human reproduction is a physiologic process and is Gradually the relative importance of obstetrics and gynecology from the teaching standpoint is becoming recognized. Obstetrics after a period of twenty or more years of retirement is coming into its own. Didactic teaching in obstetrics is becoming more and more supplementary and is providing an opportunity for the instructor to lecture on selected topics rather than attempt to cover the whole field of normal and abnormal obstetrics. The absolute necessity is being recognized of a thorough drilling of the student in methods of abdominal palpation of the pregnant woman, of ascertaining the size and shape of the pelvis by pelvimetry, and in fact all the details of examination whereby the nature of the expected labor can be predicted. The interest developed and the great increase of prenatal work throughout the country are indicative of the progress made in obstetric teaching during the last twenty-five years. Prenatal work of thirty-five years ago consisted largely of an occasional examination of the urine, but real systematic prenatal work whereby the student is taught how to form a correct estimation of the prospective mother's condition, and to take such steps as shall insure the greatest safety for her and her child is real progress and along the lines of modern preventive medicine. In the study of such a complication of obstetrics as syphilis we see illustrated the trend toward appropriating for obstetrics the work in other fields perfected during the last quarter of a century. The wise teacher of obstetrics is reviewing all new researches in every department of scientific medicine to see what is of value and can be utilized in his special obstetric field. Roentgenography in usually normal. A certain proportion of cases in pregnancy, labor and the puerperium are abnormal, the abnormality being due in quite a proportion of cases not to any inherent fault of the reproductive mechanism, but to derangements arising from disturbances elsewhere in the body. Narrow specialism has no place in medical

teaching. Every special field, obstetrics and gynecology included, is taught from a much broader point of view than was the case twenty-five years ago.

The recognition that labor can be made free only from the dangers of septic infection by applying the same surgical principles of antisepsis and asepsis, responsible for surgical triumphs in other fields during the last quarter of a century, has been responsible for much progress in obstetrics. One often sees the statement that puerperal sepsis is more common today than twenty-five years ago. I question the truth of this statement because the figures and methods by which they are obtained are open to serious doubt. At least it seems strange that the undergraduate, taught surgical principles as applied to obstetrics, the use of rubber gloves, rectal examinations and the desirability of no examination of the genital tract in normal cases, cannot lower the mortality and morbidity from puerperal sepsis. Of one thing I am sure, in all obstetric clinics the student is taught aseptic technic more thoroughly and conscientiously than was the case twenty-five years ago.

Gynecology from the standpoint of teaching is gradually being forced into its proper place, a necessary adjunct to obstetrics but far less important. In fact, if we are to progress in the next century, obstetrics must become more and more preventive in character and this means a decline in surgical gynecology, which in the past has flourished on poor obstetrics. However, owing to anomalies of development, neoplasms and infections there will always be a field for gynecology, so there is no need for the surgically inclined to worry.

In 1912, Williams, in the article already referred to, ascertained through his questionnaire that the chairs of obstetrics and gynecology were combined in eight out of forty-two schools, or practically in one-fifth of the schools from which answers were received. I find through a search of the catalogs of 1923-1924, seventy Class A medical schools in which there is a professor of the combined chairs of obstetrics and gynecology in thirty-one or almost one-half. In only six is gynecology combined with surgery. This is a great gain in twelve years and shows that the pendulum is beginning to swing in the opposite direction and that the proper relationship between obstetrics and gynecology is well on its way to being realized in teaching institutions. The advantages to medical education of this movement will be far reaching in the next twenty-five years. Especially will this be so in postgraduate teaching, since in the no distant future the ranks of teachers in obstetrics and gynecology will be recruited from those well and broadly trained in both divisions of the subject. The future obstetric teacher will no longer be a man midwife untrained in surgical methods, who waits for the birth of the child because he distrusts his own surgical skill. On the other hand, gynecologic surgery will became less erratic because guided by a thorough ground work and knowledge of obstetric science.

Decided progress has been made in the methods of teaching obstetrics and gynecology. The old days of the amphitheater operating clinic has had its day and is fast passing away. No longer do listless students watch without really seeing operations from the amphitheater seats. The amphitheater clinic of the present is largely given over to the study of diagnosis with an occasional operation to determine the correctness of the diagnostic conclusion. Even where operations are performed before small sections emphasis is laid more on diagnosis and principles of operative technic. Small sections, individual teaching, emphasis on principles and not superfluous technical details. are the watchwords of today's teaching, a decided improvement over the methods in vogue twenty-five or thirty-five years ago.

DIFFICULTIES IN TEACHING AND SUGGESTIONS FOR FURTHER CHANGES

With no intention of starting an argument over the much debated question of full-time teaching I still must point out under this heading, that we are expecting too much of the part-time teacher of obstetrics and gynecology. It is nonsense to talk glibly of the head of the department of obstetrics and gynecology directing such a department with all the executive work this entails in the care of the patients, the keeping up of the records, the oversight and direction of research work expected of such a department besides doing the necessary teaching of the undergraduate students, and having in addition a large active and consulting obstetric and gynecologic practice on the outside. Such a schedule looks well on paper, but those of us who know realize that either the departmental work, including teaching, suffers or the outside work is gradually cut down. No man can serve two such masters and be loyal to them both. Why should we expect the best results in medical education under such circumstances? The answer is that to expect the best results under such a system is not sensible and may explain why medical educators are not considered very highly by those who make pedagogy a specialty.

I am not making a plea for the full-time clinical teacher, nor am I suggesting a plan whereby he can be secured if that be thought desirable. I am simply stating what every one with experience knows, that you cannot eat your cake and have it too, that you cannot have a large private and consultation practice with all this entails and find time for the proper kind of medical teaching. For financial reasons it may be better for the medical school to oblige or allow the teacher to pay his own salary by his outside practice. However, if this plan be adopted do not blame him if he sees to it that this salary is adequate even if he has to sacrifice his departmental work to secure the money. To be a good teacher requires native ability, knowledge, study and devotion to the work. Private and consultation practice require the same qualities. Do not compel the clinical teacher to make the choice between the two, since it is human nature, in this day and age especially, not to neglect the financial side of one's profession unless recompense can be found in securing time for scientific work including thorough systematic teaching.

Perhaps this will be worked out satisfactorily for clinical teaching as was the case with the preclinical teachers. With all the latter have to do in their departments, it is difficult to look back to the time when they earned their salaries by private practice. We would not go back to the former system of part-time preclinical medical teaching. Possibly twenty-five years from now we would not go back to the system of clinical teaching in vogue at the present time. If some plan, I do not say what its nature shall be, can be devised whereby the clinical teacher can have more time for his work, so that teaching shall be of primary and not secondary importance, we shall have better medical teaching and the turned out product will show the results of this improvement.

All this leads us to the inevitable conclusion that medical schools must either own or have access to women's clinics in which obstetrics and gynecology can be satisfactorily taught under one roof. The professor of obstetrics and gynecology should be director of such a clinic and give his whole time to the directing of the clinic, care of the patients, teaching and research work, his salary to be paid by the medical school or supplemented by a limited amount of private work performed at the clinic.

The size of such a clinic would depend on the number of medical students in the junior and senior classes. Necessarily it must be a large clinic since the student must be taught the methods of normal delivery, as well as how to care for abnormalities in which prophylactic measures have failed. Possessed of such a clinic with in and out patients in abundance, it would be possible to do away with the outside obstetric clinic, which is a relic of the past when the medical student had to deliver women in their homes because there were no hospital beds for such cases.

It is realized that this plan is not a new one. In fact, it is one toward which medical schools have been tending for many years and which some more fortunate schools have about accomplished. It is the only plan whereby adequate graduate training in obstetrics and gynecology can be secured; and without facilities for such training, the supply of teachers of obstetrics and gynecology, real teachers in every sense of the word, will fall short of the demand. Medical schools, then, will not have to depend on teachers trained in the haphazard manner which so often proved unsatisfactory in the past.

This is not the occasion for discussing whether Dr. Pusey is right or wrong in his plan to secure more adequate professional service for the rural districts, yet I cannot close without applauding what he has had the courage to say about simplifying the medical course. For quite a few years some of us have had the same opinion but have not put it in print. The most difficult task confronting the medical teacher today is to compel the student to make use of his five senses as aids to diagnosis. He would much rather depend on the results of laboratory tests. What the older physician saw and drew conclusions from the student today is blind to and asks details of blood counting and of a half dozen other tests, all good in their way but of secondary rather than primary importance. By all means eliminate the unessentials all down the line in medical education and having determined what is essential teach fundamental principles, so that they can be applied in the intern year and after graduation. If we can make the students reason and think for themselves, and time for this would be forthcoming if only essentials were taught, they will graduate well qualified for general practice. And in the particular field under consideration, they will not start every woman in labor on a certain fixed day, or usher every baby into the world either feet first or through an abdominal incision.

1925 – Teaching of Obstetrics – Davis - Philadelphia

BY EDWARD P. DAVIS, A. M., M. D., F. A. C. S.
Emeritus Professor of Obstetrics, Jefferson Medical College, Philadelphia

*Read at the 600th meeting of the Boston Obstetrical Society. Boston, April 21, 1925.
Published BostMSJ Volume 192 (1925) p. 1003-1007

In beginning our consideration of this subject it is well to question the scope of modern obstetrics. Shall this include the anatomy and physiology of the un-impregnated patient? The teacher of obstetrics would be spared needed time if the professor of anatomy and the professor of physiology taught the anatomy and physiology of the non-pregnant patient, but in many instances they do not do so, believing this to be the function of the teacher of obstetrics.

If modern obstetrics is to have its full development it should include everything which happens to the pregnant woman and her off-spring from the time of conception until her complete anatomical and physiological recovery from pregnancy and parturition. Pregnant patients, however, are not infrequently attacked by dis. ease of organs other than the generative organs. Pregnant women are often found in medical wards suffering from pneumonia and typhoid and in surgical wards the victims of appendicitis. Is this fair to the pregnant patient and how should such complications be met? We believe that pregnant and parturient patients should be in obstetric wards, but that in cases where the disease is not in the organs of reproduction, that an appropriate consultant should be called by the obstetrician.

Pregnancy certainly so alters the physical conditions present that the judgment of the obstetrician is necessary in the care of such cases, while he may consult to advantage with his colleagues.

Pregnancy complicated by ovarian and fibroid tumors and other abnormal conditions of the generative tract, belongs to the obstetrician and is best cared for by him, with consultation if necessary. The complications which gradually develop after labor, the result of lacerations and stretching of the tissues, are best treated by the obstetrician. The custom of giving the new born infant to the care of the pediatrician is comparatively recent, and the statement has been made that the pediatrician should order the diet and hygiene of the nursing mother. This we believe to be a mistake, and that the best interests of mother and child will be served if both are under the care of the obstetrician while the infant is nursing; should the necessity arise for artificial feeding, this may best be done by the pediatrician.

There is a tendency among some to consider pregnancy as a natural condition which very little disturbs the balance of economy in the patient; this would be true were all pregnant patients invariably healthy, but as they are not, the obstetrician who studies pregnancy and its complications is the wisest guardian of the interests of the pregnant and parturient woman.

Those who have had experience in agriculture know that it is difficult to construct a pig tight fence, one through which an ambitious and energetic pig cannot make his way. Those who have had experience in hospital management know that it is very difficult to frame rules or regulations which shall assign patients with invariable propriety to those who should have them, and some porcine colleague may take those cases which do not belong to him.

In what portion of a five year course, which includes a year as resident physician, should obstetric study begin? This will depend somewhat upon the abundance of clinical material available, and also the facilities for giving competent clinical instruction. The theory of obstetrics may well be taught in the second year and the ground work carefully laid by thorough study of normal pregnancy, pelvimetry, palpation, auscultation and above all the diagnosis of

position, presentation and engagement. A good test of the knowledge and intelligence of the student will be found in his ability to recognize engagement and descent of the presenting part or their absence, and this may well serve as a test for the success of the teaching in this year. With this ground work, should clinical material be available, with competent instructors, the student may observe spontaneous parturition and under careful instruction may deliver some normal cases. He should regularly attend pre-natal clinics, not only to study diagnosis, but the complications of pregnancy, and should also avail
himself of follow-up clinics that he may learn to recognize a good recovery from parturition or a failure to secure a good result. Often the clinical work can best be done during the usual vacation including a thorough drill in asepsis and
antisepsis. In the pre-natal clinic, examination of the urine and the taking of blood pressure would naturally be part of his work.

In the junior year the management of spontaneous parturition should be taught in detail, with review of the diagnosis of pregnancy, position, presentation and engagement and descent. The junior student should receive especial instruction in hemorrhage complicating pregnancy and causing abortion, in placenta previa, accidental placental separation and ectopic pregnancy, and while he may not share in the treatment of these conditions, their diagnosis should be thoroughly taught. The diagnosis of the toxemia of pregnancy in its various stages, the principles of treatment in toxemia and the diagnosis and treatment of focal infections complicating pregnancy should also engage his attention. In the pre-natal and follow-up clinics he should constantly review his study in diagnosis. In accordance with his ability and desire to work and the ability of his teachers to give him clinic work, part at least of his vacation may profitably be spent in clinical obstetric study.

In the Senior year students should be assigned for duty for definite periods as clinical assistants in residence; they should lodge in the hospital or immediately adjacent, where they are available for clinical work at any time. They should act as clinical clerks in the preparation of histories and the taking and keeping of notes, and as clinical assistants in the actual treatment of patients. In pre-natal and follow-up clinics the scope of their work should depend largely upon their intelligence and fidelity. These students should personally deliver, under competent instruction, cases of spontaneous labor, and should be taught the immediate repair of the ordinary injuries following parturition. They should constantly review the diagnosis of position, presentation, engagement and descent and also the mechanism of spontaneous labor, and they may act as assistants in obstetric surgical operations. The important point in the instruction in the senior year is the definite assignment of the student for obstetric work only, for a definite period. It is hoped that this period will be sufficiently long to satisfy his teachers, and such intensive study is usually appreciated by the student and is of great benefit.

In the fifth year the student becomes house officer; here he should not only treat patients, but should begin to teach; he should deliver patients in spontaneous labor and practice immediate repair of lacerations, and while so doing he should demonstrate to students who may be present, including the nursing staff. The house officer should be thoroughly conversant with the treatment of hemorrhage both preceding labor and postpartum. While he may not be competent to operate for ruptured ectopic pregnancy, he should be sufficiently skilled in diagnosis to recognize grave conditions and very frequently to make correct diagnoses of intra-abdominal complications. In proportion to his ability and application he should perform low forceps operations, should administer the non-operative treatment of toxemic and eclamptic cases, and should be skilled in such manipulation as bleeding, intravenous transfusion, lavage of the stomach, the intrauterine use of the tampon under definite indications, and should be thoroughly conversant with the use of the most important drugs employed in obstetric practice; for example, he should know the dangers of pituitrin and how to avoid them. He will frequently act as the chief of the pre-natal and follow-up clinics. The

pathology of the newborn and its diseases should interest him and he should be competent to recognize and treat them.

It is impossible to define any absolute rules as to the work of the student in each year of the obstetric course. There should always be a considerable, latitude for the encouragement of those students who show unusual intelligence and application, and it is the observation of the writer that such latitude is greatly appreciated.

Shall students of medicine attend patients in labor outside the hospital? The arguments for such attendance have been that by the management of these cases they are introduced to what they must encounter when they begin their individual practice; that a student thrown upon his resources in a tenement house will learn more than in the wards of a well equipped maternity. The writer is not convinced that this is the best method. If the profession is to be indefinitely content with obstetric practice done in a slip-shod manner under worse conditions than those used in teaching students obstetrics, then this is sufficient; but if we hope to improver obstetric practice so that each case shall receive the same care the practitioner gives to surgical patients, then this method of out patient service, as often conducted at present, is far from ideal. Why should not the medical student in his Senior year or Junior year be sent to the houses of patients to learn to diagnosticate pleurisy, or intercostal neuralgia; abdominal colic or appendicitis; tonsillitis or diphtheria, and other medical conditions, and why should not the student in surgery be sent into the houses of patients to make a differential diagnosis of fracture or sprain, serious injury to the cranium, or infected or non-infected wound, and yet my medical and surgical colleagues have never approved of such a proposition. Again it is stated that many patients cannot come to the hospital for confinement; that number is considerably lessened by an efficient social service, so that cases are rare where, if the patient is really willing to go to a hospital, she cannot do so.

The most important difficulty in the question of out-patient obstetric practice by students lies in securing sufficient money to pay competent instructors to attend these cases with the student, and also to compensate visiting nurses and furnish the necessary apparatus required to do this work thoroughly and well. The writer has never had sufficient means at his disposal to carry on such service to his satisfaction.

Granted that such service is to go on, the students who are to engage in this work should be definitely assigned to residence at the out-patient dispensary, daily clinics should be held at the dispensary by paid instructors, and visiting nurses should bring pregnant women for examination, and the student should be drilled in diagnosis and made acquainted with the cases. which he is to deliver. A competent ambulance service should be available and complicated cases should be promptly transferred to hospital. The students previously assigned to these eases should accompany the patient to the hospital and follow her case in the wards of the maternity. In such out-patient work students should be encouraged to report what they believe are abnormalities, and their mistakes should not be ridiculed lest through fear of ridicule they do not report promptly some serious condition.

What is the effect upon the poor of such outpatient practice by students? In the experience of the writer many who could pay have taken advantage of this service when they knew that it was supervised by competent instructors; occasionally students have met difficulties from ignorant and sometimes drunken persons, and on the other hand, in cases of genuine poverty and suffering, students who could ill afford it have bought food for needy patients: on the whole, the opinion of intelligent students has been that they could benefit more by delivering the patient in a maternity with proper appliances under competent instruction than by delivering patients in their homes, oftentimes without the service of an instructor and without the service of a nurse. Ideal obstetric practice would have all patients go to a hospital and toward this end the profession is working and with considerable success.

Of especial importance in securing successful obstetric teaching are paid instructors whose time is at the disposal of the student. How to regulate fixed appointments for teaching with the uncertainty and difficulty of private obstetric practice is beyond the comprehension of the writer; but unless the instructor is paid, one can hardly expect him to give up a part of his livelihood, especially if he be beginning his practice, to keep teaching appointments.

The definite assignment of medical students for obstetric work is also of very great importance and yet it is often difficult to persuade a medical faculty that such is necessary. Shall we in the future apply this same method to other branches of medicine, and if this is so valuable and important in obstetrics, why should not the same thing be done in medicine and surgery and other important branches? This would call for radical changes in the curriculum of many institutions.

Students should be encouraged to maintain obstetric societies among themselves; such are useful in reviewing the teaching which the students receive and developing their powers of writing and speaking and in affording opportunity for the staff to meet students informally. A maternity hospital will have a library to which students and residents will have access, and they should be encouraged to look up cases, compare notes and discuss them together.

With proper precautions, there is no reason why students on obstetric duty should not attend autopsies upon obstetric cases; they should not handle specimens or assist at autopsies, but under proper precautions their presence need not be a source of danger.

The personal element in the teacher and his personal ability to interest students is of especial importance in obstetric teaching. Like obstetric practice such teaching is difficult, the uncertainty of time, the tedious progress of slow parturition, the interruption with meal hours and other desired engagements, render the subject often less attractive than other branches of medicine; but the teacher who has a gift for teaching can make interesting any subject and such are needed in obstetric instruction.

An interesting question arises as to whether obstetrics and gynecology shall be included in one department or maintained separately. If the medical institutions of the United States be canvassed upon this point, there seems to be a tendency in Eastern institutions to keep these two departments separate, while in the mid-west and especially in medical schools which are branches of State Universities, the two are usually included in one department. Among the advantages claimed for this are the cognate character of these subjects and the fact that in some of the serious complications of parturition, the technical skill of the gynecologist is in demand. Among the important disadvantages of placing these subjects in one department is the fact that it is physically exceedingly difficult for one man to do justice to both. As head of the department he must depend to a considerable extent upon assistants for much of the clinical work, and this results in practically two departments. If the modern idea that obstetrics includes the secondary repair of injuries in parturition and the complications of pregnancy prevails then the need for the technical skill of the gynecologist is not a pressing one. The writer has no brief for either view, but perhaps the ideal condition would be that the two departments were to be in charge of men personally friendly, and each willing to cooperate in the work of the other for the good of the student; such a state of affairs rarely pertains.

The Staff of the Department of Obstetrics must have its chief and he will do well to meet the entire class in the Senior and Junior years at least once each week in clinical and didactic instruction. The one hour usually assigned for the obstetric clinic is too short for a satisfactory clinic, two hours is none too much. Of this time the teacher may begin his clinic by a didactic explanation of the case upon which an operation is to be done or a didactic treatment of cases which are to be exhibited only; the purely clinical part, whether operative or demonstrative, would naturally follow. Pre-natal and follow-up work should be included in the instruction by the chief of the department. He should also, have ward classes and be accompanied in his rounds by students and residents as well as the house officers; the more he can come into personal contact with students the better for both. In any considerable service, several general assistants are needed, each of whom is competent to perform

emergency obstetric surgery at any time. The opportunity of teaching afforded by obstetric emergencies is exceedingly valuable, and yet it may be impossible for the chief of the department to do all of this work, hence the important function of the chief assistants. It is needless to say that adequate compensation is necessary. The chief assistants should pay especial attention to obstetric surgery and should instruct house officers in the performance of operations; they may also to advantage instruct students in the pathology of the new born. Demonstrators are also needed and demonstrations should be didactic and clinical.

In the Sophomore year valuable instruction can be given by models, lantern pictures and the exhibition of specimens. So far as moving pictures are concerned in obstetric demonstration, those originating in Vienna were shown in a private view to the writer and his staff, and the vote of the staff was unanimous against them. The most valuable pictures were those of eclamptic convulsions. It was observed that in some of the pictures, dead bodies were used instead of living. There may be other moving pictures which are valuable. The didactic demonstrative class may be made of very great value and should not be omitted.

Clinical demonstrators may to advantage be in charge of out-patient dispensary, pre-natal and follow-up clinics, they should also demonstrate spontaneous parturition when they are available, and should teach house officers how to demonstrate their cases successfully. The clinical demonstrators should pay especial attention to the placenta and its abnormalities, and make the students familiar with the appearance of the placenta in health and disease. They should not omit the newborn infant from their demonstrations. The function of house officers as teachers is practically that of assistant demonstrator, and the question of his value will depend entirely upon the intelligence and interest and general ability of each individual house officer. They can be of very great service or they can seriously impede obstetric teaching.

A very important portion of the staff of obstetric teaching forces is the visiting nurse and the social service worker; the visiting nurses especially, if students maintain an out-patient practice, can help them very greatly by calling
their attention to conditions of which they should have knowledge, and by endeavoring to maintain in the family of the patient appreciation of the work of the staff. The influence for good of such a nurse may be very considerable.

But we may state our theories and what we desire, and what we believe would benefit obstetric teaching, and we can make little or no improvement until there comes about an essential change in the attitude of the profession and the public toward the question of obstetric practice. Certain economic conditions are here of great importance; what the human race considers valuable it will give largely for, both in money and in attention; the cheapest things in these United States at present are law and life. With the former we have nothing to do, but it is the purpose and the function of the obstetrician to save the lives of not only mothers, but new born children; but the conditions necessary for lessening infant mortality and the mortality and morbidity of parturient women will not be secured unless these lives are considered intrinsically valuable, and unless parturition be regarded as important an event as the performance of a major surgical operation, important not in the sense that interference must be practiced, but that the parturient woman should receive the same care and attention which is given to a surgical patient. A man will pay to have an ovarian tumor removed from his wife, valuing her life and health and with the hope that the tumor will not be reproduced; but he would not think of placing in the same class the difficult delivery of his child by forceps, nor would he compensate his physician equally for the two cases.

Our civilization at present is essentially sordid, and the value of human life is its wage earning capacity, and a young child is a source of expense and not of income and therefore is of little financial value, and hence the delivery of the child is not a matter of essential importance.

On the side of the profession obstetrics has long been a pot-boiler for the general practitioner, he has taken the obstetric work to get the general practice of the family; the obstetric work is

distasteful to him and a disagreeable necessity, he has not the knowledge, skill, experience or the ability to do it well, but because his competitors do it, he is obliged to do it to gain practice. This condition is essentially wrong, a mismanaged obstetric case can do a general practitioner very great harm, and it is unjust to him to undertake to manage successfully a complicated parturition without especial training, competent assistants and proper surroundings. Gradually there are developing obstetric specialists, maternity wards are increasing in number throughout the country, and improved roads and motor vehicles make it possible to transfer patients in labor to hospitals for delivery. These conditions all tend toward an improvement in obstetric practice.

The public are wrongly informed regarding what constitutes a major obstetric operation; they hear of Cesarean section and look upon that as the only important operation of obstetrics. Obstetricians realize that a difficult forceps delivery, a difficult version, the repair of extensive lacerations in patients not in good condition, and the management of placenta previa are of equal importance and sometimes far more difficult than Cesarean section. The profession must realize and acknowledge this, and the public be educated to the true conception as to what constitutes an important obstetric case.

When human life becomes more valuable, when the public realize that injuries in birth may cause defective or abnormal mentality and moral development in children, when the public can be taught that the first parturition of a woman often decides her health for the remainder of her life, it may then be possible to secure adequate endowment for maternity hospitals and especially for those who teach obstetrics. It is questionable whether full time teaching is most successful; but teachers must be supported and adequately paid if proper obstetric teaching is to be secured; and with proper teaching of students will develop men competent to do good obstetric practice. The general practitioner will then not be placed in circumstances likely to bring disaster upon his patient and himself, and he will find it a far better policy to refer a complicated parturition promptly to a maternity hospital and its staff than to have a fatality develop under his individual care.

The writer has no dogmatic opinions upon the teaching of obstetrics, his statements are made as suggestions, because he realizes that obstetric teachers are placed under very different circumstances in different institutions. None of us can do all that he desires, and the question has been how to make the most of the facilities, often limited, which we have at hand. A great improvement in obstetric teaching is going on, and there is room for much more.

1925 – Relief Measures during Labor – Schoeneck – Syracuse, NY

*Read at the Annual meeting of the Medical Society of the State of New York at Rochester, N. Y., April 23, 1924.

Published: NYSJM Volume 25 (1925) p, 254-257

By H. W. SCHOENECK, M.D.,
SYRACUSE, N. Y.

There is no more commendable effort put forth by the obstetrician to-day than that which aims to ease the suffering of childbirth --unless it is the conservation of human life.

To accomplish these results to a far greater extent than ever before realized is no small task. But to incorporate in this endeavor, a desire to secure to these lives saved a bodily fitness ample to function to its best advantage, places upon the obstetrician a responsibility which is ponderous indeed.

Progressive obstetrics cannot countenance ease of delivery, however humane it may be, if it places either human life or bodily fitness in jeopardy.

The public, it is true, is clamoring for anything which makes for a painless birth. It stipulates, however, that the procedure must be without danger to mother and babe.

The press and popular magazines, within the past few years, have given much space to so-called painless child-birth.

Their exposition is made colorful and attractive, the disadvantages and dangers made to appear infinitesimal and not worthy of consideration. During the same period of time, medical literature has been copiously supplied with contributions on the subject of making labor easy and less painful. To the medical man, painless child-birth through the birth canal is something to be hoped for, but as yet unattainable.

The painless child-birth of the lay press has had its day, it has taken its toll --and the public, pretty generally, is satisfied that it entertained a fancy, not a reality.

Will the claims made by the advocates of prophylactic version --prophylactic forceps-- modified twilight sleep, as to safety and nearness of approach to a painless birth, stand the test of time and unbiased examination?

It is not fair to the men who employ these various methods to accuse them of bad faith, even though some of these measures in part or as a whole, throw into the discard some of our most cherished and long established rules of procedure for the care of the woman in labor-they may be in the right- if so, the failure to reduce the maternal and infant mortality and morbidity must be laid at the door of conservatism- if wrong, the burden of labors end results is upon them.

The results obtained by many operators, from experience with all three methods, should help to clear away the uncertainty which overshadows the question of their safety and effectiveness.

It would seem that the merits of any one of these over the other, when compared with spontaneous labor, should be reflected by a comparative analysis of their maternal morbidity, fetal and maternal mortality-incidence of lacerations and anatomical end results.

Such an analysis is made and presented for your consideration.

The records of 435 consecutive births in the hospital are used for this purpose. They were private patients; the majority had been seen early in pregnancy and had received prenatal supervision; the others were patients referred because of some unusual condition complicating pregnancy or labor.

MORBIDITY

36 versions were performed, 30 in multipara, 6 in primipara.
The technic of Potter with which you are familiar, was followed.
The result sought in 16 multipara was solely to avoid the second stage of labor.
There was no disproportion in any of these cases---heads were well engaged and delivery would have eventually terminated spontaneously.
These 16 cases included:
3 flat pelves with moderate degree of contraction

The second baby in five twin births.
5 R.O.P. - 3 L.O.A.
Of the remaining versions in multipara, 14 in number, the indications were as follows:

1. To correct a presentation impossible of delivery:
    1 chin posterior - 1 shoulder presentation.

2. To avoid dissipation of the vital strength of mother or child:
    2 cases of heart disease - 1 thyroid - 2 eclamptics - 1 pre-eclamptic -1 accidental hemorrhage -1 placenta previa-1 cord presentation.
There were also
    3 cases in which head failed to engage because of a pendulous abdomen.

Version in primipara numbered 6:

1 transverse - 2 marginal placenta previas – 1 eclamptic -1 second baby in a twin pregnancy – 1 occiput posterior which rotated into the hollow of the sacrum.

Bag insertion preceded version in the first four cases.

Most men will concede the justification for version in labors complicated by an abruptio placenta -placenta previa- presentation of cord or prolapsus-pendulous abdomen not due to an insuperable disproportion.

For in these cases version offers the safest method of delivery as well as the least painful.
The justification for version in the cases complicated by diseases of heart- thyroid-preeclamptic or eclamptic toxemia and the 16 cases mentioned before is subject, it would seem, to the determination of its relative safety compared with other methods of procedure.
It will be noted that version was not done in primipara as often as in multipara. In explanation of this it is necessary to remark that my experience with breech extraction in primipara has impressed me with the difficulty frequently met in resuscitating babes born in this way. This was attributed to the prolonged interference with the fetal circulation, resulting from an endeavor to accomplish a slow expulsion through a pelvis, the soft parts of which were not easily relaxed.

The futility of overcoming this bad feature by rapid extraction manifested itself early, for this alternative is prone to result in the development of extended arms - nuchal hitch and deep laceration of the perineum, complications which increase rather than decrease risks.

Preliminary ironing out of the perineum, a procedure which is supposed to eradicate the danger of an inelastic pelvic floor, did not seem to wholly overcome it.

This reluctance to do version in primipara was furthered, in that the dangers to the babe were out of proportion to the relief obtained by the mother-as version is only a second stage procedure and little relief is afforded her in the first stage.

I was not adversely influenced by the fear of tears, for I believed in a properly performed version these would be no greater than in a spontaneous delivery.

It was in multipara that I believed version afforded a safe labor as well as the easiest labor possible.

For in multipara we find the soft tissues offering little resistance and if the necessity arises, a rapid extraction can be done.

Then too, the relief obtained by the mother in version in some multipara is far superior to that offered by the general anesthetic. Scopolamine and morphine administration is contra-indicated in the great majority of multipara because of the rapidity of labor.

The fear of infection I never could quite be rid of, despite favorable statistics, so that a meticulous technic was scrupulously adhered to.

Despite these precautions, the morbidity rate for multiparous version was 18 % -a rise in temperature of 100 or more on 2 days between the 2-14 was considered morbid.

Two well-defined cases of puerperal endornetritis developed--convalescence was very much retarded. The reason for temperature in the other cases could not be determined.

The morbidity of the six primiparous versions was 80 per cent -this tremendously high figure is explained by the use of bags and other manipulations antecedent to version in these complicated cases.

The 18 per cent morbidity is relatively high when compared with the rate for spontaneous deliveries in primipara which was 5 per cent and in multipara 3.7 per cent. This latter figure included a phlebitis in a bag case, and 2 cases in which a rise of temperature of 100 occurred for 3 days without clinical evidence of infection. These 2 cases had been packed for post-partum hemorrhage.

Excluding these three complicated cases, the

The first death occurred under these circumstances, a large baby-when version was completed, the cord prolapsed-no pulsation-no effort on part of patient to deliver baby was successful-traction was made-some difficulty with after-coming head-stillbirth.

Second case showed cord tightly stripped between thighs, the approximation of gluteal folds interefered with its detection in utero-the cord was cut when at vulva, babe inspired several times, patient was exhorted to bear down but the depth of anesthesia was such that no assistance from was forth-coming. Traction was made with pressure on fundus, a nuchal hitch and extraction of the other arm resulted. The time necessary to overcome this complication was evidently sufficient to cause death of babe.

In the third case, a large baby-no progress from half-hearted efforts of the mother-traction equally inefficient-pressure made on fundus at time umbilicus was in sight-extraction of arms and fetal head resulted, efforts to correct complications exceeded time limit-fracture of clavicle and still-birth resulted.

MATERNAL MORTALITY

The maternal mortality was .68 per cent.

One patient died during the puerperium of broncho-pneumonia following a caesarian section. One of influenza-pneumonia at the time of delivery. One following caesarian section for liver type of toxemia.

SUMMARY

It is evident in summarizing these findings, that:

Normal labor unattended by unmistakable signs of maternal exhaustion or interference with fetal circulation, if allowed to progress to completion of second stage, is the least hazardous of the measures under consideration.
The Maternal morbidity is less than prophylactic forceps or version. Lacerations of birth canal are lessened in incidence and degree. The maternal and fetal mortality is nil.
It must be emphasized that this favorable outcome in spontaneous labors is only possible when the failures incident to a delivery left to nature are understood and overcome by preventive measures. To mention only a few of these preventive measures:

1. Rigid asepsis both ante and post-partum.
2. Regulation of expulsive efforts in precipitate labors -to guard against deep laceration of birth canal.
3. Protection of perineum and vaginal outlet by deep anesthesia and ritgens maneuver when head is emerging.
4. An occasional episiotomy to guard against undue injury and permanent loss of integrity of pelvic supporting tissues.
5. Repair of all lacerations, cervical and perineal, immediately after labor.
6. Nature must be assisted here in these cases most favorable for her as well as under circumstances when her powers are unquestionably impotent.

The procedure standing second to spontaneous labor is prophylactic forceps or low forceps.
It takes this position because of its absence of fetal mortality and its low maternal morbidity.
The procedure which gave the highest fetal mortality and maternal morbidity was prophylactic version.

Discussion

Does this depreciation of routine prophylactic version and forceps necessarily consign the woman in normal labor to an ordeal of suffering and a subsequent abnormal convalescence-I do not believe it does.

For the administration of anesthetics, at the time of uterine contractions, early in the second stage of labor, gives much relief.

The anesthetic of choice is gas oxygen:

1. Its administration is more agreeable to the patient as is also its after effects.
2. Nausea and vomiting is extremely rare.
3. It is superior to chloroform, ether or anesthol, in that analgesia is obtained with greater rapidity and without interference with the force of uterine contractions.

Therefore a greater degree of relief is obtained with less risk of prolonging labor or interfering with nature's method of avoiding post-partum hemorrhage. Combined with ethylene or ether when head is emerging, it curbs undue expulsive force. The one striking disadvantage in this method is the necessity for having, for hours at a time, an anesthetist of experience in attendance. This is prohibitive for financial reasons to the great mass of the public.

Self -administration, a make-shift tried early in practice, was not without its failures and complications and the same may be said of the practice of allowing the inexperienced interne or doctor to give this type of anesthesia.

Given, however, by an expert, the results are ideal in that while labor is not shortened nor made as free from pain as in the other two procedures, the relief is enough to make labor more comfortable and convalescence more rapid than where the anesthetic is only used at a time when the caput is in sight.

In some multipara even before complete dilation of cervix has taken place, if membranes are ruptured, labor is completed with such rapidity under anesthesia that in order to avoid delivering in bed, this procedure is done only in the labor room.

Surely there is no call for prophylactic version or forceps here.

We hear much of the suffering attendant upon posterior positions. In multipara, in the great majority of instances, rotation is not retarded.

Occasionally delivery is prolonged by slow rotation or the occiput rotates into the hollow of the sacrum.

In the former case analgesia during contractions and a bit of patience is necessary, in the latter event version or manual correction and forceps is indicated.

Interference in all cases in multipara either to prevent abnormal rotation or prolongation of labor with consequent suffering is unwarranted as well as dangerous.

Thirty-four per cent of the cases in this report were occiput posterior positions-94 per cent of them rotated spontaneously-six needed manual correction and forceps.

Why subject 100 individuals to operative measures for the sake of avoiding abnormal rotation which is likely to occur but six times out of a hundred.

The relief of the primipara is not so easy of attainment with anesthetics, as with version or scopolamine and morphine administration followed by forceps.

Scopolamine and morphine administration in the first stage of labor with morphine .25 gr. and scop. 1-150 as an initial dose in primipara, is far superior, to all other procedures in the relief it gives, not only during this stage, but in the second stage also. As the head is emerging it must be supplemented by other anesthetics.

The advantages of scopolamine and morphine used as a first stage procedure other than its safety and marked relief is the gentleness and rapidity with which the cervical tissues are thinned out and complete dilation effected.

It curbs also the forceful expulsive efforts of patient where head is on the perineum making unnecessary the early perineotomy practised as a preventive measure against stretching-distrac-tion and laceration of pelvic soft parts.

Its disadvantages are these:

1. Asphyxia or obligopnea in the new-born occurs in about 15 per cent of cases-it is not troublesome however, and babes-respond readily to oxygen and intermittent compression of the chest wall.
2. The attendance of the obstetrician is necessary from the start of the administration to the birth of the child-if the maximum effectiveness of its use is desired.
3. Repeated dosage cannot be given according to rule. This will depend upon rapidity of prog-ress of first stage and the response of patient to drugs. Very occasionally errors in judgment as to how long an interval will elapse from the first dosage to delivery occur. This should be at least four hours. Two things will happen, labor is stopped or unduly prolonged or babe is born before the drugs have been eliminated. In neither instance is any particular harm done -the first is disturbing to one's equanimity—the second sometimes gives an asphyxiated baby which always responds well to treatment and suffers no ill effects afterwards. One must, in order to avoid these errors be willing to spend the time necessary to determine by frequent rectal examination, progression in thinning out of cervical tissues---in dilation of external os and in depth of descent and from this determine when morphine and scopolamine should be started and when scopolamine should be repeated if at all.
4. A fourth disadvantage is prolongation of second stage of labor. This does not occur as a rule if one starts dosage only when labor is well under way and discontinues scopolamine when cervical dilation is completed.

CONCLUSIONS

In concluding this paper, I am not unmindful or unappreciative of the personal benefits received from the work of Potter and De Lee. Version and breech extraction, from the teaching of the former, has been simplified and made less productive of untoward results than formerly.
The early perineotomy of De Lee with the application of low forceps in individuals under modified twilight sleep administration undoubtedly saves many fetal lives and avoids maternal birth canal injuries.

But at the same time one cannot, in the light of this analysis of results obtained, subscribe to the routine use of either the one or the other.

Nor can one honestly state that the hazards of these procedures should be treated lightly, for in so doing, men less experienced in matters obstetrical, would feel warranted in employing these measures indiscriminately, to the end that in version a tremendous fetal mortality and maternal morbidity would follow-in forceps and perineotomy, many pelvic floors would be destroyed.
This is certain-for the general practitioner their routine use would spell disaster.
For my own guidance, I am convinced that for these procedures to be effective in reducing the deaths and injuries incident to child-birth there must be:
First: Discrimination in their application so as to meet the needs of the individual case.
Second: The procedure must be performed under a rigid aseptic technic in hospital surroundings where conveniences and facilities are such that any emergency which may arise can be met, with promptness and precision.

1925 – Prenatal Care – Polak –Brooklyn NY

By JOHN O. POLAK, M.D, BROOKLYN, N. Y.

Abstract ofthe fourth clinical lecture in the course on Practical Pediatrics, given in the South Side Hospital, Bay Shore, April 1, 1925, under the auspices of the Suffolk County Medical Society.

Published NYSJM Volume 25 (1925) p. 735-37

The justification for the prenatal care of the pregnant woman is what it will do for both mother and child. We made a study of 3,000 cases of pregnancy and labor that were attended by senior students of the Long island College Hospital Medic-al School. All of the toxemias and anomalies were sent into the Hospital. The first 1,000 had regular prenatal care by physicians at the clinic, and 19 babies were stillborn, and 6 died within two weeks after delivery. The next 1,000 cases were seen regularly by visiting nurses who took their blood pressures and examined their urines and probably looked after them with greater detail than the average physician gives to his cases. In this group 47 babies were born dead.

The next 1,000 cases had no prenatal care, and in them 80 babies were born dead. The less prenatal care the mothers get, the higher the infant mortality among the babies.

In a demonstration of supervised midwives in Newark, there were 17 dead babies among 1,000 births.

Prenatal care will bring the death rate of newborn babies down to two and a half or three per cent.

What points are to be developed in prenatal care? The history is of great importance. Many have had one, two, or three babies born dead. Some were due to extra large babies, and some to contracted pelves. One woman had had eleven consecutive breech deliveries of dead babies, and on this fact alone the doctor made a diagnosis of uterine fibroid, which caused the fetus to adjust itself as a breech position.

The toxemias are often causes of the loss of babies at birth or soon afterward. There is a tendency for abortion to occur at an earlier and earlier stage. This is the opposite to the history of abortion in syphilis, in which the miscarriages occur at later and later stages until a living child is born.

Congenital syphilis is not so common in the pregnant as was generally supposed. From three and a half to six per cent is about the usual incidence in our hospital clinics.

Do not consider the uterus of a pregnant woman apart from the rest of the body. Every pregnant woman has the right to demand a full physical examination by her doctor. Her teeth, tonsils, heart, lungs, and thyroid are of special importance. The better care of teeth and tonsils in early life has lessened the incidence of heart disease as a factor in obstetrics.

Dr. Polak says he has not seen a case of eclampsia in a woman who has an enlarged thyroid. An enlargement of the thyroid is normal in pregnancy. In Spain it is the custom of mothers to measure the girth of the necks of their daughters after marriage to see if they are pregnant.
The kidney function is important in pregnancy, for the mother's kidneys have to bear the extra strain of excretion for the fetus. A woman who has had pyelitis or scarlet fever is likely to have a, lessened kidney reserve.

There are four conditions to be especially considered in toxemias:

1. Blood pressure.
2. The kidney function, especially the presence of albumin.
3. The body weight.

4. The thyroid gland.

A reduced blood pressure is normal in pregnancy. The normal systolic pressure is from 95 to 110. If it goes to 125 and increases to 130 or 140, look out for trouble and examine the urine. If the blood pressure is 110 or less, the urine is likely to be normal. Increased blood pressure antedates albuminuria by days, and weeks.

A gain in weight of 20 pounds during pregnancy is normal. A gain of more than that is suggestive of edema and the retention of fluids in the body. Most of the gain develops during the second half of pregnancy.

What are some of the significant signs of trouble in pregnancy?

Headache is a late sign of toxemia. A frontal headache is characteristic. If prenatal care is given, the headaches will be prevented.

Changes in the retina are also late signs of toxemia. They will not develop unless there is a nephritic toxemia or a glomerular nephritis. Albumin, low specific gravity, and other evident kidney signs will precede the eye signs.

Vaginal bleedings are significant. If they occur early in pregnancy, they suggest threatened abortion, or ectopic gestation or hydatidiform moles. In the later months they suggest placenta previa, accidental hemorrhage, or premature labor.

Heart disease is no longer considered with the fear of former days. Think of the condition of the heart muscle rather than of the valvular lesion. A woman with damaged valves can go through labor safely if she is spared the efforts of straining. Suppose a heart case is in labor. She will go through the first stage without trouble if she is spared a nervous excitement from causes outside her body, by the employment of morphine and scopolamine.

In the second stage when the desire to strain is present, give an anesthetic, preferably ether.

In the third stage, when the uterus is contracted and an extra amount of blood is forced back into the circulation, permit some bleeding to take place from the venous side of her circulation in order to relieve the engorgement of the pulmonary circulation.

Use the functional test of the heart in order to determine the condition of the heart muscle. A standard test is to have the woman walk upstairs and down again, and note the pulse before, immediately after, and again three minutes after the effort. A return of the pulse rate to normal in three minutes indicates a good heart muscle.

How shall the breasts be prepared for nursing? The woman should wear a proper brassiere to support the breasts.

Previous to labor, wash the nipples daily with soap and water, and apply lanolin ointment. After labor, wash the nipples after each nursing and apply the following mixture: Boroglyceride, one part, and saturated solution of boric acid, seven parts.

Pelvic measurements have a great value in suggesting preparation for possible difficult delivery. If the pelvis is abnormally small, a baby's head can come through it if the head also is small. There were two slim little women who each had a small pelvis. One had two babies by normal deliveries, but the babies weighed only six pounds. The other woman had two babies by Caesarian section, but each baby weighed over eight pounds. The difference was in the babies rather than in the mothers.

There are two external signs which suggest the size of the pelvic outlet; 1, the length of the forearm, and 2, the shape of the lumbosacral rhomboid.

A short forearm goes with the general body build in which the pelvis is small. A rough measurement is that in which the doctor uses his thumb and middle finger to span the distance from the patient's wrist to her elbow. If he can span the distance, the arm is short and the pelvis is likely to be small.

Another point is the length of the middle finger. Normally it is much longer than the others. If it is nearly the same length as the others, and the ends of the fingers form a straight line instead of a pointed angle, an abnormal shape of the pelvis may be suspected.

The lumbo-sacral rhomboid or diamond, is easily observed, especially when the woman stands. The lateral points of the diamond are indicated by dimples which cover the posterior superior spines of the ilium. The upper angle is a dimple just below the third lumbar spine. The lower angle is the upper end of the furrow between the nates.

A line connecting the lateral points will cross over the sacro-lumbar joint, and a point just above the center of this line corresponds to the posterior landmark of the external conjugate.

Normally the angles of the diamond are equal. If the pelvis is flattened, the lateral measurement of the diamond is increased and the vertical is diminished. The result is not only a decrease in the antero-posterior diameter of the inlet of the pelvis, but also an increased prominence of the promontory which disturbs the inclination of the pelvic bone and still further lessens the pelvic inlet.

While examining the diamond, place a ruler along the spine touching the sacrurn and the upper lumbar vertebrae. The forward curve of the back will leave a space between the ruler and the body. If the space is over 3 cm, lordosis and excessive tilting of the pelvis are present.

The poise of the body when the patient stands or walks has a suggestive diagnostic value. If a woman has a protuberant abdomen, she must bend the upper part of her body backward in order to balance the abdomen. The lordosis of the spinal column raises the pelvis posteriorly and lowers it anteriorly, and thus tilts it forward; and when the pelvis is tilted forward, the expulsive forces of labor are- directed backward rather than downward.

When the pelvis is tilted, and labor pains begin, place the woman on her side with her thighs flexed strongly on her abdomen. This reduces the tilting and increases the size of the pelvis at least one centimeter, or enough to permit a head to engage. The position may determine whether a woman shall be delivered normally or instrumentally.

It is desirable that pregnant women wear corsets. They support the protruberant abdomen, and hold the baby in proper alignment for ready entry into the pelvis. .

The fundus of the uterus rises three and one-half centimeters for each lunar month of pregnancy. Its average height at term is 35 cm, which, divided by 3.5, gives 10 lunar months, or the duration of the pregnancy.

The linea nigra, or black median line, reaches the height of the fundus. When the fundus falls at term, the black line is left higher than the fundus. This is a point of some value in determining the probable date of labor.

The distance between the anterior superior spines of the ilia is normally about two centimeters less than the distance between the crests of the ilia. This relation of size will be preserved if the pelvis is of normal shape, no matter what its size. But compressing the pelvis from before backward flares out the ilia and makes the inter-spinous distance equal to or greater than the inter-crestal.

The external measurement from the lumbosacral joint to the symphysis pubis is important. A measurement of 16.5 cm or less always indicates a flattened pelvis.

The position of the fetal heart may give important information regarding the progress of labor. It shows the descent of the body and its rotation, for as the presenting part descends, the heart comes nearer to the median line and descends toward the pubis. The important time to follow the fetal heart is while the baby's head is on the pelvic floor. During that period observation of the fetal heart will show the condition of the child. If the cord is short, or is compressed, or is twisted, the fetal heart, which normally beats 120-140 times per minute, will drop to 80 or less; but in the interval between pains it will gradually come back to its normal rate. If there is an obstruction in the pelvis, the fetal heart will become slower and slower. Also if the cord is tightened while the child is driven downward, a souffle will be heard with each beat. If the fetal heart is weakening, its beats will not go back to 120 between pains. A progressive slowing of the fetal heart is a sign of danger to the child.

A stethoscope may be worn attached to the forehead by head clips. This will enable the doctor to examine the fetal heart almost continuously while his hands are free.
If the uterine souffle is heard just over the symphysis before labor, a presumptive diagnosis of placenta previa may be made.
The physician can follow the progress of normal labor without making a vaginal examination. The position of the fetal heart indicates the descent and the rotation. A rectal examination shows the condition of the cervix and the position of the fetal head.

1925 – Modern Application of Version – McDowell – Buffalo, NY

By HUGH C. McDOWELL, M.D., BUFFALO. N. Y.

*Read at the Annual Meeting of the Medical Society of the State of New York, Rochester, April 22, 1924.

Published in NYSJM Volume 25 (1925) p. 362-365

The operative practice of the obstetrics has been limited in the past to certain routine operative procedures. The foremost being the use of forceps, the advantages and disadvantages of which are well known; secondly, the major operation of Caeserian section which has its limited field.

Within the last ten years there has been brought forth by Dr. Potter and placed in prominence an operative procedure previously known but not generally applied, and that is the obstetrical operation of version. The technique which he has developed and uses as his armamentarium is the one that is being followed by many who routinely or occasionally make use of this operative procedure. In this series of cases this method was employed, a short description of which will be made at this time.

The patient should be prepared in the following manner: After the first stage of labor is completed the perineum is shaved and washed off with sterile water. This may be followed with a one to five thousand Lysol solution. The patient should not be given an enema within an hour before delivery, because frequently the contents of the lower bowel will be expelled during delivery. A quart of warm water may be allowed to run into the vagina, washing out any mucous or blood which may be there. The patient after preparation is anesthetized to the surgical degree and the perineum is ironed out manually until the vagina admits the hand" readily, the patient having previously been catheterized. The bladder must be empty before any attempt is made at delivery. The perineum and the vagina having been dilated manually, the left hand is introduced into the uterus. The uterine cavity is now explored, the position of the child is noted, the location of placenta is ascertained, the position of' the feet and hands should be noted, and if the arms are not folded across the chest they should be placed in that position before going further. That will prevent in elective cases the complication of the extended arm.

Note the position of the cord. Ascertain whether it is around the neck or any one of the extremities. The hand is now further introduced into the uterus between the uterine wall and membrane, care being taken not to rupture the ammiotic sac if rupture has not already taken place. As the hand approaches the fundus it comes into contact with one or more of the lower extremities of the child. Care must be taken at this time to prevent the premature rupture of the ammiotic sac. Ascertain the position of the feet. When this is done, the sac may be ruptured high up in order to maintain sufficient amount of ammiotic fluid to facilitate the turning of the child. Both feet are brought down together if possible by a grasping of the ankles between the first and second fingers of the operator. Slight traction is made downward and the head is pushed upward from the outside with the right hand. The downward traction is continued until the knees appear at the vulva when the version is completed. At this stage the anesthetic should be lessened somewhat so that the uterine contractions may assist in the continued rotation of the child's body, thus avoiding too much traction. The buttocks of the child rotates to the hollow of the sacrum, the buttocks being delivered by lifting the feet upward over the symphysis, after which the tension on the anterior foot is increased with a view of bringing the back of the child transversely across the outlet of the mother in contradistinction to the old method of delivering the hips anterior-posterior. Gentle traction is now made until the scapula and posterior axillary fold appear and the scapula is free from under the

symphysis pubis. With the index finger of left hand pressure is applied upward on the spine of the scapula or the posterior auxiliary fold with a resulting rotation of the shoulder under the symphysis pubis and the delivery of the child's arm and forearm are accomplished. The body is now rotated until the other shoulder appears under the pubic arch. No traction is made upon the arms themselves and there will be necessity in grasping them in order to effect the delivery. With the arms free it is now necessary to see that the head is fully flexed and this flexion should be maintained by following the head downward with gentle pressure over the occiput, through the abdominal wall with the free right hand. The abdomen and chest of the child are now resting on the operator’s left forearm. The index finger of the left hand is now inserted into the mouth of child and pressure exerted above upon the occiput, bringing down the flexed head to perineum, with the neck of the child under the symphysis and the mouth delivered. One may ordinarily take as much time as necessary to deliver the after-coming head. With the mouth of the child delivered the child can now breathe and by stroking the trachea gently the mucous and ammiotic fluid which may have gathered in its mouth is removed. Slowly deliver the nose and brow until the head is completely over the perineum. During this time the patient is in the modified Walcher position and deeply asleep. Care should be taken at this stage to deliver the child in the direction of the birth canal and not up over the mother's abdomen as that position will break the child's neck.

After the baby is delivered it is placed upon the mother's abdomen, care being taken to keep the baby on its right side. It should not be spanked or held up by its feet or shaken in order to hasten the establishment of respiration. So long as the heart beat is strong and the child has a good blue or red color there is no cause for anxiety (Perlman, of St. Louis, says chest breathing). If, however, the breathing of the child is delayed resuscitation may be necessary. Our method is the use of a small soft rubber catheter introduced directly into the larynx and blowing air into the lungs and expelling it by pressure upon the child's chest.

The cord is severed after pulsation has ceased and the patient given one cc of obstetrical pituitin to aid in the completion of the third stage of labor. The pituitin is given after the child leaves the uterus. It is never given when the child is in the uterus. In applying this operation one must not be in too great a haste. At no stage should the operator hasten delivery unless the child's condition is serious. Twenty-four minutes have been taken to deliver the baby after the umbilicus has appeared. Secondly: The patient should be completely anesthetized. This is necessary until the version is completed; in other words, until the knees appear at the vulva. The choice of anesthetics may be left to the operator. In our experience we have obtained the best results with chloroform. Thirdly: The cervix must be completely effaced and the os dilated or easily dilatable before version is attempted. The failure of this operation in many respects is due to the fact that these precautions are not observed. Fourthly: The birth canal should be thoroughly dilated, and this is accomplished by first obtaining the relaxation of the perineum through a gradual increase of the number of fingers of the hand employed. After the perineum is dilated the vagina is prepared in the same manner. This dilation is essential and should not be started until the patient is asleep. The best lubricant to use upon the hand is sterile green soap.

Keeping these essential points in mind one will be able to facilitate his work in the employment of this operation. In order that the indications and the applications of this operation may be more definitely defined I have selected one hundred cases which I have delivered by version that reveal the different obstetrical complications. The larger number of the cases in this group comprise those of malposition. The left occiput posterior was the one most frequently encountered. Sixty of these cases on examination proved to be of this type, four of which were complicated with prolapsed hand, five associated with pendulous abdomens, two had had a previous Gilliam operation.
The next position most frequently encountered was the right occiput posterior. Twenty of the cases come under this classification. The left occiput anterior was encountered in eight cases, and the right occiput anterior occurred in seven cases.

A face presentation was seen in two cases, while there are three cases on the transverse type. Maternal complications associated with these positions were four cases of cardiac disorder in the mother. Three cases of mitral regurgitation and one case of mitral stenosis. Five of these cases had eclampsia and placenta previa was encountered in six cases, two of which were the central placenta previa and four were marginal, with the os easily dilatable.

Oedema of the cervix, due to long labor without any progress, one case. Inertia, due to fibroid, one case. Inertia, due to pendulous abdomen, and inertia due to previous operative procedures on the uterus, such as the shortening of the ligaments, two cases. Prolapse of the cord occurred in four cases and we divide these cases into the concealed and non concealed types. Premature rupture of the membranes occurred in twenty cases without engagement of the head. One should always expect a malposition when this occurs.

Contraction of the pelvis was encountered in ten cases; three were primpara with an external conjugate of seventeen centimeters or less. Hydrammios was encountered in three cases. The membranes were ruptured high up in an attempt to allow the fluid to escape slowly. One of the babies of this group was accrania, the other a hydrocephalus in which it was necessary to perforate the after-coming head in order to deliver. The third case was one of spina-bifida.

I have grouped these cases to show the field of the application of version in the different obstetrical complications. In cases of malposition there is a considerable saving of labor for the mother when this procedure is used. It is the operation of choice where there is a prolapse of the hand or where the hand is encountered alongside the head. In delivering there cases one should be sure to replace the hand upward and fold it across the chest before an attempt at version is made, thus avoiding an extension of one or both arms.

In face presentations the majority of the cases are extremely difficult to convert into an occiput. One can more readily push the head out of the pelvis and do a version. In transverse presentation the better method is in bringing down the feet. A procedure which I have tried recently in several cases where the back was anterior was to place the hand along the back of the neck and push the child upward into the fundus until the feet presented the inlet. The hand is then released from the occiput and brought down until it encounters the feet and extraction is performed in the usual manner. With the back of the child posterior the procedure of obtaining the feet is much less difficult.

Cardiac Cases -Where compensation is not broken cardiac lesions occurring in pregnant women should not be a counter-indication to this procedure. These patients tolerate an anesthetic with a short delivery more readily than they do a long labor without an anesthetic. Three of these cases were given a chloroform anesthetic, one case being that of a mitral-stenosis. I have one case which had a complete heart block which was given an anesthetic at the time of delivery, although she was not delivered by version. (How was she delivered?)

Pendulous abdomen is occasionally encountered in the primiparae. But more frequently we see it in those women who have borne a large number of children. In the latter type there is usually a history of increasing difficulty at each childbirth. We find that these cases have a long first stage without any engagement. They are particularly the type of case that is helped by a version.

In the placenta previa cases delivery should not be attempted until the cervix is completely dilated, the reason being that a tear of the cervix in these cases is more or less serious. The method of dilation may be either by the use of the champederives balloon or by packing the cervix with gauze. After the complete dilation the hand is introduced between the placenta and the lower uterine segment gently peeling the placenta from its attachment, until it is completely freed. It is then delivered and the hand is re-introduced into the uterus and the version and the extraction of the child performed. I believe that with the stripping off of the placenta first and the subsequent delivery of the child, that there is less blood lost and the birth canal is not obstructed by the placenta. A live child may be delivered with the placental circulation shut off for a considerable time.

I have left the discussion of the contracted pelvis for the last because this type of case usually gives us our greatest trouble. Often we have an early rupture of the membranes with escape of the ammiotic fluid. The rupture of the membranes should not be a counter-indication in doing a version. The only advantage that the retained fluid has is in facilitating the turning of the child. In the contracted pelvis, version is indicated except in the extreme flat or funnel type. The generally contracted pelvis affords a delivery more readily with an after-coming head than an on-coming head providing the disproportion is not too great. Three of the cases of contracted pelvise were primparae with an external conjugate of seventeen centimeters or in one case where it was necessary to apply less. They afforded no difficulties excepting the forceps on the after-coming head. It is reasonable to suppose that the POTTER VERSION has a distinct advantage in this group and particularly in those of the borderline type. In certain types of rachitic pelvis one may more readily bring the after-coming head through the diagonal conjugate than the on-coming head.

For every procedure there must be some contra-indications, and in the case of version the following are noted:

(1) A generally contracted and a flat pelvis with a large child.

(2) Uterus in the stage of tetany tightly contracted around the child with the membranes ruptured and fluid drained away.

(3) Bandl's ring present which is tightly contracted and does not relax under surgical anesthesia. This rarely occurs in the elective version.

(4) A long cervix which encircles the head and does not thin out during labor.

It is highly important that every operator have his own assistant for administering the anesthetic.

Conclusions -In this series of cases there was no maternal mortality and the maternal morbidity was less than twelve per cent. The lacerations of the maternal soft parts consisted of two cases of second degree tear that were repaired and three cases with abrasions which did not need suturing. There were no cases of third degree laceration.

One case showed surgical shock, for which treatment was necessary. The uterus was packed in six cases. These were all placenta previa. This is done as a routine in these type of cases. The period of involution was considerably shortened, as shown by the lessening of the vaginal discharge. The eeal mortality consisted of two still-born monsters and three cases known to be alive before delivery, the cause of death in the latter being due to a torn tentorium as revealed by Post-mortem. One case of spina bifida, which lived five days and died from sepsis. None of these cases had any fractures of the extremities or fracture of the skulls.

In this series of cases twenty were seen in consultation either on hospital services or outside and had been previously examined or attempts made at delivery.

It has been my privilege to briefly outline my conception of the Potter version and its various indications in the hope that you may extend the application of this procedure.

1925 – Low Cervical Cesarean – Quigley – Rochester, NY

LOW CERVICAL CESAREAN SECTION -ITS ADVANTAGES*

By J. K. QUIGLEY, M.D., F.A.C.S., ROCHESTER, N. Y.

*Presented at the Annual Meeting of the Medical Society of the State of New York, at Rochester, April 22, 1924.

Published in NYSJM Volume 25 (1925) p. 48-53

The performance of the classical Cesarean section upon patients in labor who have been subjected to vaginal examinations through an unclean field (unshaven pubes, sometimes unscrubbed) by an attendant of questionable or unquestionable aseptic technic, sometimes hours after rupture of the membranes has been attended high morbidity and relatively high mortality.

These cases are potentially infected and while many patients so handled do after a spontaneous delivery exhibit little or no evidence of puerperal sepsis nevertheless they are not good risks for abdominal delivery.

This left the choice of operation in cases of disproportion, between a Cesarean section followed by hysterectomy, the Porro operation, pubiotomy or symphysiotomy and craniotomy on the living child. The first of these is often safe but sacrifices the uterus, the second is not free from mortality in infected cases to say nothing of the objections to division of the pelvic girdle such as operative hemorrhage, injury to the bladder and difficult locomotion afterward. The third or last mentioned is too horrible to contemplate unless other avenues are closed.

To overcome this shortcoming of abdominal delivery Frank of Cologne in 1907 proposed the extra-peritonea] operation of which the Kuestner is a type. By this operation the uterus is reached by its lower segment laterally over Poupart's ligament and opened without invasion of the general - peritoneal cavity. In the type of case under discussion good results have been obtained by this method in several series of cases. Kuestner reported 200 cases with only two deaths, 56 of these were so-called doubtful or infected cases. Markoe and McPherson of the New York Lying-In hospital described their operation a Kuestner technic plus Carrel-Dakin after-treatment; their results were good.

However this procedure has several objections. First its technical difficulty. Troublesome hemorrhage has been encountered in opening the uterus low and laterally, difficulty has been experienced in extraction of the child resulting in foetal death, Döderlein and Kuestner reported ten foetal deaths in 279 extra peritoneal operations, while in 274 transperitoneal sections performed by Franz, Bausch, Hofmeier and Fehling only two children were lost -a foetal mortality one-fifth as high. Because of adhesions its repetition is difficult or impossible, in addition there is danger of injury to the bladder or ureter. In 200 cases of extraperitoneal operations in Kuestner's clinic there were two ureteral and one vesicocervical fistula. There is the possibility of opening into the peri-toneal cavity thus defeating the object sought and according to Rohrbach six to eight per cent of these patients develop hernia.

At the last meeting of the American Association of Obstetricians and Gynecologists Dr. Asa B. Davis of New York presented a paper on extraperitoneal Cesarean section on supposedly infected cases all of which ran a high temperature post operative, his results were two deaths in twenty-eight cases operated, general peritonitis being responsible for one and pneumonia for the second. There were three still births, though the foetal heart was heard in all immediately before operation, and four neonatal deaths. I wish to quote from Dr. Davis' paper: "All of these cases had high temperatures after operation. In no case was it possible to secure primary union of the abdominal wound. In

twenty-one cases part or the whole length of the wound separated down to the aponeurosis, in four cases the whole depth of the wound broke down with considerable sloughing. The operation is physically and technically a very difficult one to perform. In early cases I spent something over two hours." There was one urinary fistula and in several of Dr. Davis' early operations the uterine artery was torn across by an extension of the wound. My object in quoting so extensively from Dr. Davis is not to disparage his mortality rate which for this class of case is low, but to emphasize the objections to the extraperitoneal operation; technically difficult, unnecessarily long and beset with many dangers such as severe hemorrhage, vesical fistula, sloughing of the wound and high infant mortality.

McGlinn in a paper published in 1920 said: "Theoretically in clean cases the extra peritoneal operation is the ideal operation, but its disadvantages overshadow its advantages. The transperitoneal operation is superior to the classical Cesarean section for the reason that the resulting adhesions are in a situation less likely to give trouble. The Beck operation is superior to the transperitoneal operation, as it has all the advantages of the former and none of its difficulties.

"My own feeling is that the Beck operation with thorough protection of the peritoneal cavity and perfect peritonealization of the uterine incision is superior to the transperitoneal operation as a routine procedure. While theoretically it is not as efficient as the extraperitoneal method, practically, on account of the many disadvantages of the latter, it is the better operation."

In the American Journal of Obstetrics for February, 1919, Dr. Alfred C. Beck of Brooklyn published a paper entitled, "Observations on a series of cases of Cesarean section done at the Long Island College Hospital during the past six years" in which Dr. Beck described his modification of the Kroenig operation.

In 1919 DeLee published a paper, "The newer methods of Cesarean section, Report of Forty Cases." This is a transperitoneal or low cervical operation; a modification of the operation done by Kroenig since 1912. He was closely followed by Barton Cooke Hirst in 1920 who reported thirty infected cases operated by his modification of the Veit-Fromme technic, there were no deaths in this series. In 1921 and 1922 Beck and Polak of Brooklyn, Phaneuf and Hegarty of Boston, DeLee and Cornell of Chicago and Vogt of Berlin reported 397 low cervical operations with a slight variation in technic all on patients in labor and not considered good risks for the classical operation, with a surprisingly low mortality. Last year DeLee published his results in a total of 233 laparotrachelotomies with only one maternal and three foetal deaths. Still later John C. Hirst and W. W. Van Dolsen this year report 107 cases in advanced labor operated by the Kroenig Beck method with two deaths, one from gangrene of the colon from mesenteric embolism and the other from acute dilatation of the heart on the eighteenth day in a patient with chronic myocarditis. At present this operation is known by several more or less descriptive names:

Transperitoneal Cesarean Section.
Laparotrachelotomy, DeLee's title.
Suprasymphyseal Cesarean Section, used by the Germans.
Low Cervical Cesarean section, favored by Polak.
There are also four variations in technic.

First-The Kroenig.

The abdomen is opened by a longitudinal incision below the umbilicus, the visceral peritoneum above the bladder reflection, incised and stripped down the bladder is now held back by a suprapubic retractor and the cervix opened longitudinally by a knife and enlarged with blunt scissors for three and a half to four inches, the child is delivered by forceps, the placenta removed and the cervico-uterine incision closed by interrupted chromic catgut. After this the flap of

peritoneum attached to the bladder is brought up overlapping the incision in the visceral peritoneum and sutured here with a continuous chromic suture. The abdomen is closed as usual.

Second- The Beck or two flap operation is a modification of the Kroenig and differs in this respect. After transversely incising the visceral peritoneum one-half to one inch from the bladder the peritoneum is stripped up and down thus forming two flaps and exposing the lower uterine segment and cervix for three and a half to four inches. After the uterus is emptied and sutured the upper flap is tacked down to the uterus by three or four interrupted fine chromic sutures and the lower flap carrying the bladder brought up to overlap the upper by an inch and similarly tacked down, care being taken that none of these interrupted transverse sutures coincides with those closing the vertical sutures in the cervix and lower segment to obviate a possibility of infection from within traveling outward through a suture line.

Third- DeLee's modification of the Kroenig operation. Here the fascia over the lower uterine segment is sutured burying the cervical incision.

Fourth- Hirst modification of the Veit Fromme operation. Sometimes called the transperitoneal method. The abdomen is opened below the umbilicus by a vertical incision, the peritoneum over the uterus is incised vertically and stripped back laterally forming two lateral flaps; the edge of each united to the edges of the parietal peritoneum interrupted catgut sutures (some use clamps) this exposes an area of the lower uterine segment and cervix through which a vertical incision made and the child delivered. After closure of the uterine wound the united parieto-visceral layers of peritoneum are brought together by fine continuous chromic catgut --this leaves the uteri incision at the end of twenty-four hours practically sealed off from the general peritoneal cavity.

The danger of peritonitis in infected cases in the classical section comes not from the amniotic spill at the time of operation but from the escape of infective lochia through the incision. The site of operation is through the thick contractile portion of the uterus and the sutures are necessarily tight to secure hemostasis thus raising the possibility of necrosis; in addition the incision is subjected to the alternate contraction and relaxation of the uterus during the first few days of its healing process. In the low cervical site the sutures need not be as tight and are in a relatively immobile field. The chief advantage in the Kroenig Beck operation comes from the sealing off from the general peritoneal cavity the cervico uterine incision, for, a few hours after the operation the two overlapping layers of peritoneum are united and should intra-uterine infection spread it would localize itself under this flap posterior to the bladder and drain either through the cervix, point towards the skin or be easily opened by an anterior colpotomy while seepage of bacteria-laden lochia between the sutures of a fundal incision infects the general peritoneal cavity.

Again the post operative discomfort is reduced to a minimum probably due largely to the absence of exposure or handling of bowel and other viscera, the condition of these patients for the first few days after operation compared to the classical section is often surprising. There is less vomiting, many times none, distention is slight and relieved by the first high enema, shock is notable by its absence and the general picture is usually better than that following a difficult forceps delivery. In addition the fundus can be palpated above the line of incision, watched and stimulated if necessary for bleeding. DeLee has called attention to the advantage in the site of the incision in the cervix which stands infection better than the body of the uterus because it is used to it, also the lower abdomen is more resistant to infection.

There are few or no adhesions which may follow so-called clean classical sections. Abdominal hernia is less liable to occur. There is less operative hemorrhage.

What of the liability to uterine rupture? Does a scar in this location possess a greater or less liability to rupture during a subsequent pregnancy labor than one through the fundus where it is well established that the chance is one in twenty-five or 4 per cent? Little has been written upon this important phase of the subject and it is this lack of knowledge as to future pregnancies that deters me

from choosing this type of operation for the elective section. What data there is available is favorable to the low operation. There are only two cases on record of the rupture of a scar in this location during a later pregnancy. Phaneuf gives his results in six secondary operations and in "none of these cases were there any weak points in the scar and it was almost impossible to distinguish a scar as such."

Gaifami, a French operator, repeated the section in eleven cases and the cicatrix was firm in all. Four of DeLee's first 145 cases were delivered by a second low cervical section and the "scar could hardly be found." DeLee is doing most of his Cesarean section through this route today, and Vogt of Berlin believes it makes the classical operation obsolete.

A comparison of mortality rates for the classical section and the newer procedure shows a distinct advantage for the low operation. De Lee's 233 cases with one death, or less than one-half of 1 per cent as against 100 cases of the classical section done by the same operator with a mortality of 6 per cent and Holmes' series-of ninety-two classical sections with six deaths. King, of New Orleans with admirable frankness reported 117 classical Cesarean sections. Seventy-six women recovered, twenty-five died from the disease for which the operation was performed, such as eclampsia, bad heart lesions, etc., and twelve died from peritonitis, two from sepsis and two from other operative causes, a total of sixteen operative deaths (13.6%). It is from the improper selection of cases unsuitable for Cesarean section that the operation is injured and will fall into disrepute. It seems almost certain that several of the fourteen in this series dying from peritonitis or sepsis would have recovered had the low two flap cervical section been done. To be sure there have been several series of 100 cases or thereabouts of classical section on well selected cases with no maternal mortality but no operator will always report a zero mortality for this or any other abdominal operation and the mortality for classical section even under the best of circumstances will run between 3 and 5 per cent, while the rate in general on all classes of cases is given between 2.9 and 14 per cent, depending upon the length of labor, number of vaginal examinations and whether the membranes have ruptured and if so how long since; these figures are the result of a compilation by Polak and Beck of 2,200 cases operated in various American clinics.

Holland and Munro Kerr in the British Medical journal reported 4,000 collected cases operated between 1911 and 1920 and the analysis of this large number of operations confirmed that which has long been believed.

The mortality of those cases:

First- Not in labor was	1.6%
Second- Early in labor	1.8%
Third- Late in labor	10.7%
Fourth-After induction of labor	14.0%
Fifth-After attempts at forceps delivery	27.0 %

An interesting study was made by J. W. Harris of Johns Hopkins upon sixty-four uteri removed in doing 223 Cesarean sections, these were Porro operations done either to effect sterilization or because of frank or suspected infection at the time of operation. Sixty of these were subjected to histo-pathological study. Of these sixty cases the uterus was removed from twenty-eight late in the first stage or during the second stage of labor and eighteen showed definite evidence of ascending infection in the form of leucocytic infiltration in the mucosa and in some bacteria were demonstrated. In the twenty-seven uteri removed from patients at an elected time or within six hours after the onset of labor signs of infection were found in only one.

Contra indications to the low cervical Cesarean section.

If local anesthesia is desirable or necessary the upper incision is preferable. Placenta praevia has been given as a contra indication though some operators do not make it an exception. In the very obese the technical difficulties in the clean case will probably outweigh the advantages.
If great haste were necessary as in cardiac decompensation in the mother, premature separation of the placenta or threatened foetal asphyxia the classical operation offers the best chance.

During the past three years I have done fifteen low cervical Cesarean sections all by the Beck modification of the Kroenig technic. There were ten primiparae, five multipara. Seven of these cases were seen in consultation, four ward cases treated in the course of a service at the Rochester General Hospital and the remaining four were private cases. Only one patient was not in labor and could be considered an elective clean case. Fourteen were in labor from five hours to four days, in six, labor had been in progress over twenty-four hours, seven had had from one, to five vaginal examinations, some of them by the ungloved hand through an unprepared vulva, in five the membranes had ruptured. In short fourteen cases because either of duration of labor, rupture of the membranes, vaginal examinations or a combination of these factors were far from good risks for the classical operation.

The indications were as follows:

Flat pelvis 9
Justo minor pelvis 3
Face posterior presentation, post mature child allowed test of labor 1
Elderly primpara, large baby, test of labor 1
Disproportion, ten pound fourteen ounce baby, test of labor (lost first baby from difficult delivery) 1

Two had bad a previous classical section for flat and justo minor pelves respectively (cases four and ten).

The operation presented no particular difficulty, hemorrhage was severe in none and below the usual amount encountered in the classical section in all. Some difficulty in the first few cases was experienced in extraction of the head with the forceps and in two or three the children were delivered by the feet, in the later operations the head was delivered manually passing one hand over the pubes beneath the head, elevating it and at the same time employing pressure upon the fundus. The post operative course in two patients (cases one and seven) was somewhat stormy, there was no vomiting, little pain and only moderate distention but the lochia was foul and the temperature as high as 103 for two days. Neither of these patients developed any infection outside the uterus. Two patients vomited once each, four had moderate distention, four little and seven none at all. Three had moderate pain postoperative and in twelve it was absent or slight. One patient had a slight infection of the skin incision. All the patients were discharged in good condition and all the babies, except one, a monstrosity, which died.

The routine post operative care:

1. Tap water per rectum, eight ounces every four hours till she is retaining water by mouth.
2. Morphine if needed for pain.
3. Fowler position at the end of twenty-four hours.
4. For bleeding post operative ice bag to fundus, pituitrin and ergot. These two drugs are given only on indication and not as a routine.
5. High gas enema on the second day, if this is followed by a result, liquid food is allowed.
6. No douches either as a routine or for -foul lochia.
7. No cathartics as a routine.

8. No dressing of wound routinely until ninth or tenth day when sutures are removed and patient is allowed to sit out of bed on the twelfth day, they are discharged fourteen to eighteen days post operative.

Conclusions.

The low cervical Cesarean section has two fields of usefulness:

First, for the case where because of length of labor, frequent examinations, ruptured membranes or induction of labor, one would hesitate to do a classical section.

Second, it permits of a test of labor in the borderline pelvis and because of this many cases can be safely delivered per vaginam which otherwise might be subjected to a classical Cesarean section early in labor.

It is not claimed that by the employment of this technic all infection is obviated, it will not prevent intrauterine infection, bacteremia, extension through lymphatic channels or embolic processes but it does in the vast majority of cases prevent the development of general peritonitis which is by far the most frequent cause of death following Cesarean section done by the classical method.

BIBLIOGRAPHY

1. Frank: Monatschr. für Geburtsh. u. Gynäk., 1910, p. 680.
2. Kuestner, O.: Der abdominale Kaiserschnitt, Weisbaden, 1915.
3. Markoe, J. W., and McPherson, Ross: Surg., Gyn. and Obs., 1918, pp. 209-219.
4. Doderlein and Kuestner:
5. McGlinn, John A.: Amer. Jour. Obstetrics, vol. 1, no. 1.
6. Beck, A. C.: Amer. Jour. Obstetrics, Feb. 1919.
7. Walton, Thurston S.: Amer. Jour. Obstetrics, Jan. 1921, p. 351.
8. DeLee, J. B.: Jour. Amer. Med. Assn., 1919, pp. 91-95.
9. Hirst, Barton Cooke: Atlas of Operative Gynecology, 1919, pp. 234-246.
10. Phaneuf, L. E. and Hegarty, J. G.: Boston Med. and Surg. Jour., 1922, pp. 733-738.
11. DeLee, J. B. and Cornell, E. L.: Jour. Amer. Med Assn., 1922, pp. 109-115.
12. Vogt, E.: Monograph, pub. by S. Karger, Berlin, 1921.
13. DeLee, J. B.: EditGrial note, Prac. Med. Series, Obstetrics, 1923, p. 334.
14. Kroenig:
15. Phaneuf, Louis E.: Surg. Gyn. and Obstet., Dec. 1923, p. 765.
16. Gaifami, P.: Rev. franc de gynec. et d'obst., 1923, xvii, p. 33.
17. Holmes, R. W. and Burdick, A. L.: Amer. Jour. Obstet., Dec., 1922.
18. King, E.L.: Jour. Amer. Med. Assn., July 8, 1922.
19. Polak, J. O. and Beck, A. C.: Surg. Gyn. and Obstet., May, 1922.
20. Holland, E. and Kerr, Munro:.Brit. Med. Jour., Oct. 21, 1921.
21. Harris, J. W.: Bull. Johns Hopkins, Sept., 1922.
22. Hirst, J. C. and Van Dolsen, W. W.: Jour. Amer. Med. Assn., Dec. 16, 1922.
23. Hirst, J. C. and Van Dolsen, W. W.: Ibid., Jan. 12, 1924.
24. Davis, Asa B.: Amer. Jour. Obstetrics, April, 1924, p. 373.

No.	Age	Para.	Status	Indication	Hours in Labor	Hours Membr. rupt.	Number vag. exams.	Vomiting	Distention	Pain	Fever	Day of Discharge	Baby
1	26	I	consultation	Flat pelvis, Bandl's ring	51	29	5	none	moderate	little	102-3	20	O.K.
2	25	I	private case	Face, L. M. P. test labor	5	7	0	none	slight	little	101-2 2 days	27	O.K.
3	25	I	consultation	Flat pelvis, C. V. 7.5 cm.	30	0	0	none	moderate	moderate	103 8th day pyelitis	21	O.K.
4	34	II	consultation, previous classical section	Flat pelvis C. V. 8.5	5	9	0	once	little	after-p.	99⅘	20	O.K.
5	32	II	private	Disproportion baby 10′ 14″ lost first at delivery	9	0	0	once	little	consid.	99-100	19	O.K.
6	20	I	ward	Justo-minor C. V. 6.5 cm.	14	0	2	none	none	none	100^{5}	22	Died monstrous
7	37	I	consultation	Elderly primipara test	36	0	3	none	moderate	slight	103 sapremia	26	O.K.
8	26	I	consultation	Flat pelvis C. V. 7.5 cm.	24	0.5	0	none	none	none	101 infec. incis.	15	O.K.
9	37	VII	ward	Flat pelvis C. V. 6.5 cm.	17	0	3 no gloves	none	none	slight	none	16	O.K.
10	26	III	ward	Justo-minor elective	0	0	none	none	slight	99^{5}	16	O.K.
11	26	I	ward	Justo-minor 4 days	0	3	none	moderate	moderate	100	13	O.K.
12	25	I	private	Flat pelvis C. V. 7.5 cm. test Flat pelvis C. V. 8.5 cm.	24		1	none	none	none	100^{3}	13	O.K.
13	29	I	consultation	Spinal deform. tilted pelv.	8	0	1	none	none	none	100^{3} 3 days	14	O.K.
14	31	II	private	Flat pelvis	13	7	0	none	little	after-p.	99-100 twice	19	O.K.
15	27	I	consultation	Flat pelvis C. V. 8.0 cm.	10	0	0	none	none	none	99^{2} 5 days	14	O.K.

1925 – Maternal Mortality Analysis – Eichel – New York

RESULTS OF INVESTIGATIONS OF CAUSES OF DEATH AT CHILDBIRTH*

By OTTO R. EICHEL, M.D. ALBANY, N. Y.

*Read at the Annual Meeting of the Medical Society of the State of New York at Rochester, N. Y., April 22, 1924.

Published: NYSMJ Volume 25 (1925) p. 555-560

A Further Preliminary Note on Studies Being Made in the Vital Statistics Division, New York State Department of Health

In this paper we shall present some general provisional statistics from studies of puerperal mortality which have been in progress in our office during the past year. I am pleased to acknowledge the help I have received from my Research Assistant, Miss Carolyn A. Bonds, in preparing this paper. I am indebted to her for most of the arduous labor involved in compiling and analyzing the primary data upon which my comment is based. In the brief time at our disposal it will be impossible to do more than merely indicate some of the more interesting features of these data from a descriptive standpoint.

The death rate from causes connected with childbirth has been relatively high in New York State for many years. During the seven years, 1915-1921, the death rate from all puerperal causes combined in the city of Birmingham, England, was below 35 per 10,000 births and stillbirths combined; in New York City during those years it ranged between 44 and 70; and in New York State, outside of New York City, it varied from 53 to 83. There occurred in the entire State of New York during the five years, 1918-1922, exactly 7,000 deaths from all puerperal causes, of which 3,461 were registered in New York City and 3,539 in the rest of the State. Puerperal sepsis comprised 27 per cent of these deaths in the entire State, 25 per cent in New York City, and 30 per cent in the rest of the State.

Although the trend of the death rate from all puerperal causes combined was generally downward from 1910 to 1916 in New York State, it rose sharply in 1917 and reached a high peak in 1918. Since then it has declined, but the mortality has remained at a higher level than during the years 1912-1916. The rate fell from 65.1 in 1910 for the entire State, to 49.1 in 1916, rising -sharply to 75.3 in 1918, and dropping to 51.7 in 1923. The death rate from puerperal sepsis declined from 22.3 per 10,000 births and stillbirths combined for the entire State in 1910, to 12.5 in 1923. (Chart I shows the trend of the death rate for New York City and for the State. exclusive of New York City.)

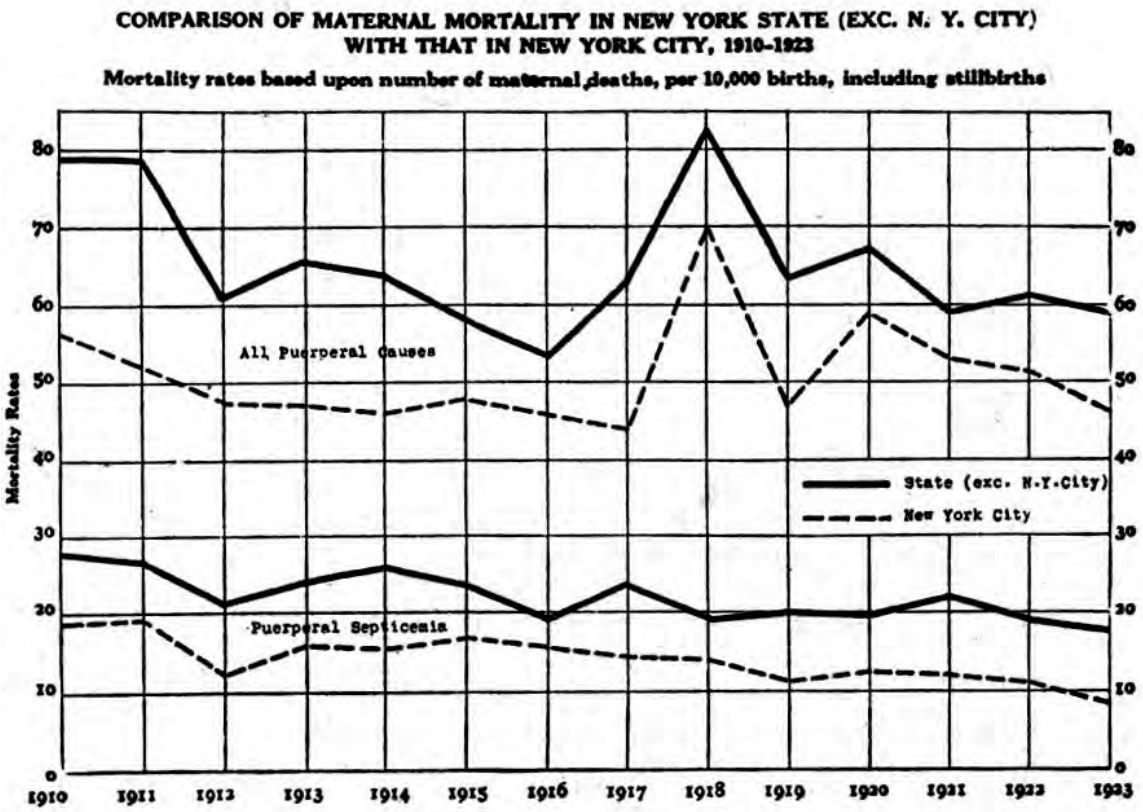


CHART I

There is a very regular seasonal variation in maternal mortality in New York State. The average monthly death rate from all puerperal causes combined is highest in March and then declines gradually to a low point in September, after which it again rises gradually to the highest rate in March. The average March rate during a recent seven-year period, 1914-1920, was 65.5, and the lowest average monthly rate, in September, was 41.2, or about two-thirds the March rate. There is a similar marked seasonal variation in the death rate from puerperal septicemia and from all puerperal causes, exclusive of septicemia (see Chart II) This seasonal variation may possibly be

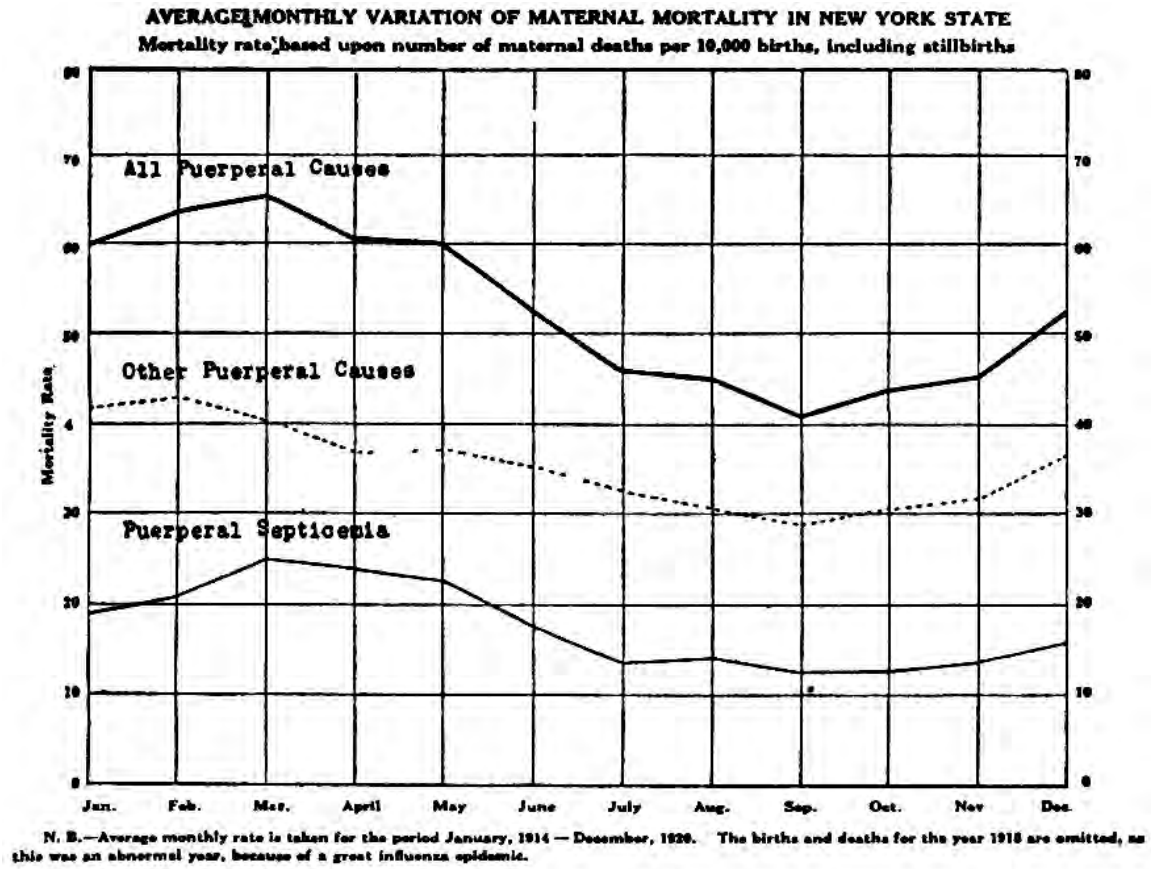


CHART II

attributed to the greater prevalence of respiratory and renal diseases in the colder months; our final analysis may show definitely whether or not this will account for it.

The average annual number of live births in the entire State of New York is 238,364 and of stillbirths, 10,110; the average annual number of deaths for mothers from all causes connected with childbirth is 1,364. During the five years, 1916-1920, stillbirths in this State comprised 4.07 per cent of the total births. During the same period the maternal death rate was 54.S per 10,000 births, including stillbirths; the septicemia rate, 16.44; and that from all other puerperal causes, 38.46. The deaths from puerperal septicemia comprised just 30 per cent of the total deaths from puerperal causes.

During the five years, 1916-1920, the death rate from all *puerperal causes* was 46.72 per 10,000 births and stillbirths combined in New York City, and 65.87 in the rest of the State nearly 20 points higher in the latter area. Dividing the rest of the State into urban and rural, the rate for places *under* 2,500 population was 58.51; that for cities *over* 2,500, 69.42; and that for villages *over* 2,500, 71.07. In other words, the death rate is lowest in the very *rural* area of the State.

The death rate from puerperal *septicemia* for the entire State for the five years, 1916-1920, was 16.44; for New York City, only 13.58; and for the rest of the State, 20.29. In the rest of the State the rural septicemia rate was 15.58, and for all cities *over* 2,500 population it was 23.04.

For the entire period of thirteen years, 1910-1922 inclusive, the mortality from all puerperal causes combined was higher for Upstate (The terms "Upstate" and "Rest of State" are synonymous) than for New York City, the same being true for the death rate from septicemia.

Our publication on the geographical distribution of maternal mortality and stillbirths in New York State shows very great differences in the rates of mortality from causes connected with childbirth in the various counties, cities, and villages of the State. This local variation in rates cannot be accounted for by chance alone, nor are there any outstanding conditions which afford a ready explanation. The presence of many nonresident patients in hospitals is not a factor of great importance in most instances and the practice of arbitrarily excluding non-resident deaths from the rates is not warranted. If this were done, then births to non-resident mothers should likewise be excluded to make the adjustment honest. Moreover, various large cities which contain institutions receiving many non-resident patients, have very low rates, e.g., the average death rate from all puerperal causes in Buffalo, Rochester, Syracuse, Utica, Albany, Binghamton, Schenectady, etc., is below 74 while the rate runs as high as 166 in Watertown, Ogdensburg, Plattsburgh, Middletown, Batavia, etc. Likewise, the average mortality from puerperal septicemia is 20 or below in such large cities as: Buffalo, Schenectady, Rochester, and over 40 in Little Falls, Middletown, Plattsburgh, Watertown, Ogdensburg, etc.

Of the many factors to be considered in studying these conditions, not the least important is perhaps the fact that the larger cities have more hospitals, skilled nurses and midwives, and more obstetrical specialists, including physicians who limit their practice entirely to their field. Also, in the large cities a high percentage of births occurs in institutions and the average maternity case probably receives better prenatal and postnatal care. A condition which is perhaps inconsistent with this speculation is the low rural rates, especially from septicemia. I think in this instance the non-resident factor is doubtless important, as many critically ill patients are removed from rural districts to city hospitals.

In this connection it is unfortunate that puerperal septicemia is not better reported as a disease. During the three years, 1920-1922, there were registered in the entire State of New York 1,148 deaths from sepsis and only 877 cases. As during this period there were reported in New York City more cases than deaths, it is obvious that failure to report sepsis must be very extensive among Upstate physicians, or else the infection is more promptly or effectively treated in New York City.

As the suspicion might reasonably exist that the septicemia deaths occur chiefly in the practice of a relatively few physicians and midwives, an attempt was made to determine the facts. Hence we analyzed the distribution of sepsis deaths in the cities to ascertain their prevalence in the practice of individual physicians. The result showed that they were not at all limited significantly to the practice of any one or any group of physicians in any city; indeed, they were more or less uniformly distributed among many physicians, including men of high reputation as to character and skill. In the city of Troy, during a recent five-year period, there occurred 26 septicemia deaths in the practice of 21 physicians, only one man having as many as three.

Perhaps the commonest explanation offered of our high maternal death rate is that midwives are chiefly to blame. The truth of this also was susceptible of rather close determination, by making direct inquiries of the physicians who registered puerperal deaths during the twelve months preceding July 1, 1923. There were recorded Upstate 687 deaths from causes connected with childbirth; replies to our inquiries, satisfactory for analysis, were received from physicians for 485, or 71 per cent of these deaths. In these replies we are confronted by the bald fact that only 18, or 3.7 per cent, of the patients had been under the care of a midwife at some period before a physician was called. This in itself shows at once that the midwife is by no means the important factor she is accused of being. It must also be remembered that the term "midwife" can be loosely used. The same careful distinction should be drawn between the irregular unlicensed "midwife" and the bona fide trained woman, licensed by the State to practice midwifery on the basis of her qualifications, as between the regular physician with an "M.D." degree and the chiropractor and other irregular practitioner. The professional midwife should not be blamed for the misdeeds of alleged midwives.

Careful reading of the physicians' reports on these 18 patients previously attended by midwives shows that 7 of them died of septicemia and 11 from other puerperal causes. These reports fail to show how many of the so-called midwives were licensed or qualified to practice midwifery. Of these 11 deaths there were only two in which it seemed definitely clear that the midwife may have been to blame, viz., deaths from hemorrhage due to placenta previa. Of the remaining 9 cases, one died of tuberculosis the physician believed overwork and her large family were contributory causes and fails to blame the midwife. Another died of nephritis and profound anemia; although she had been attended by a midwife, the doctor's description of her general health shows it was so poor for two years preceding that pregnancy itself was inadvisable and dangerous; he exonerates the midwife by saying "her death was indirectly self-induced." Three other died of eclampsia; one complicated with broncho-pneumonia and one with acute nephritis. All three are blamed on lack of prenatal care, for which, obviously the midwife is not responsible. In another case the patient died suddenly from pulmonary embolism following difficult labor, and the physician believes there was only a "very faint possibility of saving her had she been delivered earlier" and, therefore, does not seem to blame the midwife. Another died from postpartum hemorrhage, which the physician states was not recognized early enough, although he also states that he was called by the midwife. One patient, very anaemic, died from rupture of the uterus, the physician believing she might have been saved if a Caesarian section, had been performed; it appears that he was called by the midwife when the patient's serious condition was discovered hence she probably was not to blame and certainly not for the abnormal condition which existed. Another patient died following Caesarian section done for malposition and some very obscure obstacle to delivery, which three physicians were unable to positively diagnose. Detailed history of the case shows the midwife called a physician after the patient had been in labor about 12 hours -she had given birth to 12 children with no great difficulty. The physicians themselves attempted version, forceps, etc., without success, eventually delivering a child which died soon afterward. The report states it is possible that the patient might have been saved if a physician had been called earlier, but their clear history of the case shows her condition was extremely grave from the beginning. Finally, there are two cases in which it is, highly probable that the midwives, both licensed, may have been at fault; both patients died from hemorrhage due to placenta previa and in both instances it seems probable that the seriousness of the condition was not recognized early enough or the physicians not called soon enough. Therefore, out of the entire 11 deaths from causes other than sepsis in which midwives, licensed or otherwise, preceded the physician, there are only two, or less than one-half of one per cent of the total classified deaths, in which the midwives' responsibility can be assumed with reasonable certainty.

During the 12 months preceding last July 1, 1923, 205 deaths from puerperal sepsis were registered in Upstate New York (this cause being given alone or associated with other causes). Inquiries sent to the reporting- physicians resulted in 138 replies satisfactory for tabulation, or 67 per cent of the total 205 deaths. As we have just noted, only seven cases had a midwife in attendance before a physician was called. In only two of these does the physician directly blame the alleged midwife and in one, some other physician was in attendance after the midwife delivered the woman; in the other the criminal abortion was performed by an alleged midwife in New Jersey. Of the other five sepsis cases, in one the physician states the infection resulted from a previous pelvic disease and that the patient had adequate care preceding and during confinement; in another, the physician exonerates the midwife and states he "knows of no circumstances under which the patient might have been saved." In the remaining three cases, the midwife is not blamed and either the patients were seriously ill before she was called, other physicians followed the midwife, or for other reasons she can be absolved from suspicion.

Hence, to sum up, out of the total 18 cases in which the midwives were involved, critical examination of the physicians' own reports reveal that in only, 4 cases, or less than 1 per cent, were

they able to definitely implicate the midwife. In addition, in most of the 18 cases the question must be raised as to whether or not the so-called midwife who preceded the physicians was a bona fide licensed midwife or an irregular practitioner. Without elaborating further on the question I think these facts obtained from the Upstate medical profession may be accepted as showing definitely that the midwife is an almost negligible factor in the causation of puerperal mortality. This conclusion is consistent with many facts and conditions which there is insufficient time at our disposal to discuss.

An interesting and striking fact disclosed by our preliminary data is that where the fetus has developed to the fifth month or over of uterogestation, the fetal mortality is 53 per cent among those born to mothers who died from causes connected with childbirth. Out of 1,885 deaths of mothers from maternal causes for which a corresponding birth was reported, 617 of the infants were stillborn and 1,268 live born. Of the live born, 374 died before they completed the first year of life, thus the mortality of the children born to these 1,885 mothers was 991, or 53 per cent. But, during this period there were, in addition to these 1,885 deaths, 1,048 other deaths of mothers in childbirth for whom no birth certificates were found. As the reasons for not finding them in many or most cases were that no child was born or that the fetus was under five months utero-gestation, it is plain that the fetal mortality is very much higher than 53 per cent.

The notes we have already published show that in Upstate New York the death rate of women from all puerperal causes, from puerperal septicemia, and from all other puerperal causes, in each five-year age group at from 15 to 50 years, in proportion to every 10,000 confinements of mothers of corresponding age groups, shows a striking regularity of increase at each successive age from 20 to 50 years, with a rate at the age 15 to 19 slightly above that at 20 to 24. The rate of stillbirths by ages of the mothers shows the same regular distribution upward (see Chart III).

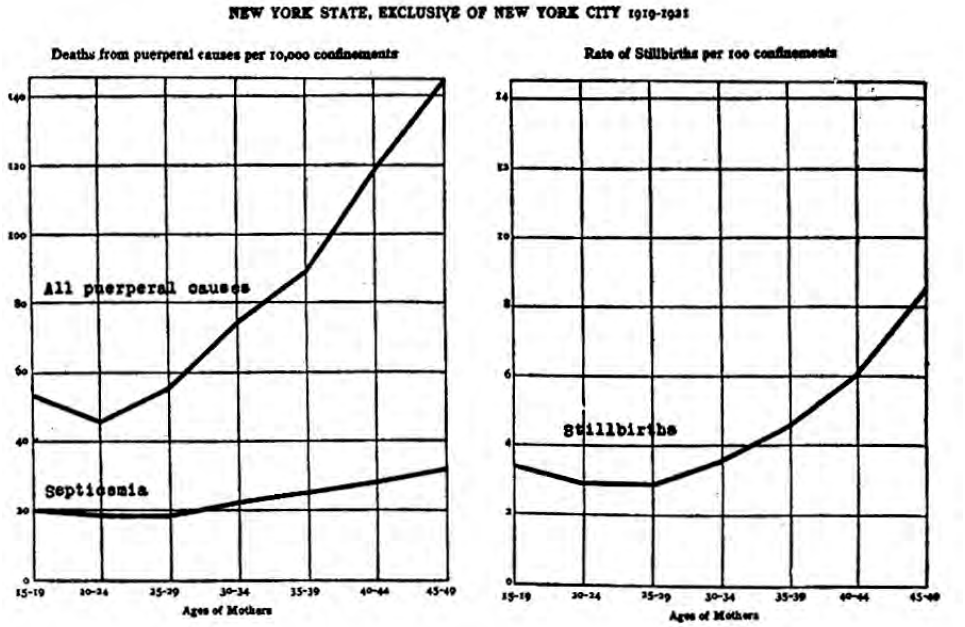


CHART III.

When the mortality among married mothers is shown separately, the general distribution is similar, viz., the death rate increasing with the ages of the mothers. The death rate from all puerperal causes combined in proportion to 10,000 births and stillbirths increases steadily according to the number of children the mother has had. The mortality shows a high point for primiparae -being 60.6 per 10,000; for mothers who have had from two to seven children the mortality varies between 38 and 45; for each child the mother has beyond seven the mortality increases, reaching the very high

point of 155.6 per 10,000 for mothers who have had 14 children. The curve showing the distribution of these death rates resembles that of mortality of mothers by their age described above. These data seem to be highly significant as showing that the risk of death to the mother increases with each child born beyond the number of seven. In fact, the rate shows a slight increase for each child born beyond the number of two but rises rapidly after the seventh child is born.

Our data on the frequency of maternal mortality, according to the nativity of mothers, shows the mortality is higher among the native born white mothers than among the foreign born white. Of the foreign born, it is higher among Germans, Canadians, and Scandinavians, and lowest among the Russians (including Russian Hebrews), and next lowest among Austrians, Hungarians and Poles. The mortality among the colored is very high -nearly twice as high as the native white.

Our preliminary data indicate the frequency of abortion, miscarriage, and premature birth, including criminal and self-induced abortion, as the cause of puerperal sepsis. Out of 477 sepsis deaths which we are studying, 299, or 62.7 percent, were from these causes. Criminal and self induced abortion preceded septic infection in 82, or 17.2 per cent of the total 477 deaths; in other words, a little less than one-fifth of the septicemia deaths followed criminal interference, and over one-half followed abortion, miscarriage, premature birth, whether criminal or otherwise.

As to diseases associated with important puerperal causes of death, it may be of interest to mention that out of 2,933 puerperal deaths, we are studying, there were 1,347, or about one-half, in which the death was attributed by the physician to a single cause; and 1,337, or almost an equal number, in which the cause of death was associated with one contributory condition, either puerperal or other illness. There were only 243 deaths in which the primary cause of death was associated with two contributory causes. For example, out of 2,933 deaths the primary cause in 670, or 23 per cent, was due to toxemia of pregnancy; this toxemia of pregnancy occurred without any contributory cause in 420 cases, or 63 per cent of all the toxemias; 215, or 32 percent of the toxemias had one contributory cause; and 33 cases had two contributory causes. Of the total 2,933 puerperal deaths, 370, or 13 percent, were caused by abortion, miscarriage, and premature. labor, including criminal and selfinduced abortions. Ectopic gestation was the primary cause of death in 100 cases, or 3 per cent of the total. Acute and chronic infectious disease, such as typhoid, influenza, pneumonia, tuberculosis, etc., were the primary causes of death in 369, or 13 per cent of the cases. Puerperal hemorrhage, including placenta previa, was the primary cause of death in 240, or 8 per cent of the cases., Puerperal infection was the primary cause in 346, or 12 per cent of the cases.

Our final results will, of course, show all the causes in detail and also associated with other contributory causes. In order to discover, if possible, some of the basic conditions under which the deaths from puerperal causes occur in this State, certain questions were submitted, during a period of twelve months preceding last July 1, 1923, to each physician who reported a death from any cause connected with childbirth. Inquiries were made concerning 687 puerperal deaths and replies suitable for tabulation were received for 485 cases, or 71 per cent. Of the 485 deaths, 58 per cent occurred in hospitals. Puerperal sepsis as a cause of death in these cases has already been described in detail above, likewise the factor of the midwife. Other facts of importance found were that 30 per cent of the sepsis deaths were reported by physicians as having been *previously under the care of some other physician*, and only 2 per cent under the care of the same physician until death occurred. Of the 485 deaths, 72 percent were reported as having had a trained nurse or other competent attendant during the puerperium,and 28 per cent were attended by friends, members of the family, neighbors, etc. Hospital care was advised by the physicians in 69 percent of the cases and was not advised in 22 per cent; 4 per cent of the patients were unable to go to hospitals as they were too ill to go, or hospitals were too far distant. Of those who were not advised to go, many were believed by physicians to be dying or too ill to be moved any distance. Of those who were advised to enter hospitals, 75 per cent consented and 17 per cent refused; 7 per cent of the patients consented to go to the hospital only after their condition became extremely serious. The reporting physicians stated they

believed that the patients had received adequate medical care before confinement in 54 per cent of the cases; that they had not received adequate care in 37 per cent; and that the type of care was unknown for 9 per cent. Of those who had not received adequate medical care before confinement, the physician stated in many instances that it was due to ignorance, neglect, or poverty. Only 2 per cent of the patients refused consultation when it was advised by the attendant. In 9 per cent of the cases, the physician did not advise consultation -possibly because competent advice was not available or the patient was already dying when the physician was called. Obstetricians were available for consultation in the communities of 77 per cent of the decedents, were not available in only 12 per cent, and for only 3 per cent of the cases did the physicians report that obstetricians were many miles distant. This would indicate that for not less than one case out of ten there was no obstetrician available for consultation.

Obstetrical operations, such as version, Caesarian section, high and low forceps, traction, craniotomy, laparotomy, etc., were performed in just 50 per cent of the cases. *The physicians reported that in 42 per cent of the entire 485 puerperal deaths the patient had been previously suffering from an illness which endangered her life when she became pregnant.* Many of these illnesses were such chronic conditions as tuberculosis, heart disease, etc. In only 35 per cent of the cases did the physicians report that there were circumstances or conditions under which the patient's life might have been saved, and in 25 per cent that there were no conditions under which the patient could have been saved. In the remaining cases, on this point the physicians were doubtful or uncertain.

CONCLUSIONS

It is a fact, shown by our inquiries and well known to all physicians, that some patients, in spite of the most thorough and competent medical care from the time of conception, and under the most favorable circumstances, will develop abnormal puerperal conditions resulting in death, and that even fatal septic infection will occur from no cause which the physician can determine. The prevention of death in the remainder of the cases would seem to depend upon the following:

1. Education of the public as to the necessity for competent medical prenatal care, and as to the very grave dangers of criminal or self-induced abortion.
2. Education of the public as to the undesirability of confinement of the mother by any one except a person licensed to practice obstetrics or midwifery.
3. Suppression of the criminal abortionist,
4. Immediate and competent care of the patient suffering from spontaneous or accidental abortion.
5. Education of the public as to the need for prompt medical care of any abdominal condition connected with pregnancy, or any other illness occurring, during pregnancy.
6. Adequate clinical and hospital facilities for the care of the poor and those of moderate means.
7. Measures to make available, if possible, expert obstetrical advice for physicians in remote rural districts, or facilities for early removal of abnormal cases to the obstetrical expert.
8. Elevation of the standards of obstetrical training and practice for physicians. N. B. -This conclusion is warranted by the reports of the physicians themselves on puerperal deaths, which show that in many cases delay or lack of skill on the part of the first physician called seriously endangered the patient's life or actually began the chain of events ending in her death.

9. Extreme aseptic precautions in the care of the patient, especially during and after delivery, and particularly if the patient is suffering from a serious illness not connected with the puerperal condition.

10. Clinical, pathological, and statistical research to discover facts at present unknown, and to determine the routes of puerperal infection.

Finally, in conclusion, it may be added that it would be wrong to convey the impression to the public that pregnancy in itself is a dangerous condition. On the contrary, during a recent five-year period in New York State there were 1,242,374 live births and stillbirths combined, and 6,821 deaths from causes connected with childbirth, therefore, only one-half of one per cent of the mothers died.

THE AMERICAN GYNECOLOGICAL SOCIETY: A RETROSPECT AND A PROSPECT

By GEO. W. KOSMAK, M.D.
New York, N. Y.

T.A.G.S. Volume 51 (1926) p. 278-285

ON JUNE 3, 1876, there, came together in the hall of the New York Academy of Medicine a number of gynecologists and obstetricians from various parts of the United States in response to a summons issued on May 24 of that year. They met for the purpose of forming a society for the advancement of the department of medicine in which they were chiefly interested. There were but few organizations devoted to this special field and the only ones that antedate the American Gynecological Society in this country are the Boston Obstetrical Society, founded in 1861, the New York Obstetrical Society, in 1863, and the Philadelphia Society in 1868. The founders of the Society were all members of these local bodies. The meeting at New York was called to order by Dr. J. R. Chadwick of Boston. The organization was perfected by electing the latter as "clerk," with Dr.E. R. Peaslee as Chairman. After stating the objects of the meeting, Dr. Chadwick referred to the present organization as a nucleus around which the gynecologists of the country should cluster. The celebration of the centennial of the nation's founding was deemed an appropriate time to recognize the claim to preeminence which America could make with justice in this particular department of medicine. At this first meeting it was conceded that it would be well for the Society to maintain a restricted membership and require high qualifications in the candidates for admission, so that "the membership would be coveted and the discussions be more profitable."

A committee to draw up a constitution and by-laws consisted of Drs. Thomas of New York, Byrne of Brooklyn, Parvin of Indianapolis. Nineteen gentlemen responded to the roll call at this meeting and letters from sixteen others were read heartily endorsing the projected society and promising their cooperation. These with a few others who were proposed, contributed to a total of thirty-nine original Fellows. The nominating committee then reported on a list of officers who were unanimously elected and included Dr. Fordyce Barker as president, Drs. Atlee and Byford as vice-presidents, with Dr. Chadwick as secretary, and Dr. Mundé as treasurer. Then the newly organized society adjourned to its first annual meeting scheduled to be held in New York on September 13 to 15, 1876. The two topics which were voted as suitable for special discussion at this first meeting were: Incision of the cervix uteri and the after treatment of ovariotomy. A volume of transactions was likewise provided for and Dr. Billings of the Surgeon-General's Library, Washington was commissioned to obtain for each volume a complete index of the current gynecologic and obstetric literature for the twelve preceding months.

I have had the privilege of consulting a complete series of the transactions of this Society and from its pages have gained an insight into the work of the organization during its half century of existence. There is contained in this record a history of the development of American gynecology and obstetrics since 1876 and its participation in the great work of making this an integral part of American medicine. We find as contributors to the programs of the annual meetings the names of those who have achieved fame in the specialty, men whose names should be familiar to all students of medicine. Some of them survived in the appellations given to various operative procedures and instruments. Many unfortunately have been forgotten, but we find that in a cumulative sense the labors of all taken together have contributed to place American gynecology and obstetrics on the high plane which we trust it will continue to occupy in the future as in the past.

In reviewing the history of our Society during the last half century there are two lines of thought open to us. In the first place we may scan its purely scientific attainments as evidenced in the formal papers read at the meetings, and on the other hand, we may gain a more personal insight into its life by reviewing the annual addresses of its presidents. These were all men selected for their attainments, not only as clinicians, investigators, or other workers in their special fields, but also as men, men who distinguished themselves among their fellows by the graces of person and personality. The array of presidents marks a gathering, the character of which stands in the forefront of American medical achievement. They were men with a vision, who outlined in their annual addresses the hopes and aspirations of the future. How far these were, or may be realized, remains to be seen. The first annual address was by Dr. Fordyce Barker of New York, a man of genial character and high attainments, who stated in the beginning of his remarks, delivered on September 14, 1876, "that he hoped that at the annual gathering of each coming year the work of the Society may be done so well that when another hundred years have passed the centennial anniversary may be well worthy of commemoration by those who are to succeed us. " Perhaps we are endeavoring to anticipate Dr. Barker's wish in that we have waited a briefer period of but fifty years to record what our Society has contributed to the progress of science and to our national reputation in this branch of our profession. Dr. Barker was convinced even at that time that an organization developed along the lines laid down by our founders would make enrollment in its membership a signal honor and that the status of this society in the scientific world would be largely determined by the character and value of the papers published in its transactions. The injunctions which Dr. Barker read before the Society as to the character of the contributions to its annual programs might well be referred to again at this point. He believed that these papers would necessarily be of two classes: "Those which would be useful and interesting for reading and discussion at the meetings and thus would include subjects relative to questions in pathology and practice which have not yet been settled by the general sentiment of the profession. Such papers would become the subject of much searching and thorough examination, especially if the novelty of things advocated and the methods of practice proposed were exclusively a matter of individual experience." He believed that some papers of this class would be either mischievous and their effect for evil thus effectually exposed, or they might possess positive value which should lead to prompt acceptance and adoption. It was also his opinion that "one of the most useful results which would flow from the formation of such organizations would be a tendency to retain an independent research rather than a blind reverence for authority. Personal controversies must be subordinated to truth and writers of scientific subjects frequently fail to appreciate how indifferent the world is to the same and how it regards with aversion and contempt, abuse punctured with acrimony and bitterness which unfortunately so often mars the discussion of questions of science."

A second class of papers is described by Dr. Barker as of such a character that no one could listen to their reading with interest and advantage. He included here all questions involving statistical research, analysis and deductions based on original physiologic, anatomic and pathologic studies. Such contributions could be published in the annual volume of transactions with greater appropriateness and would be more suitable for general reading outside of the meetings than for profitable discussion at these times.

Dr. Barker presents in his address an interesting review of the progress of obstetrics and gynecology in the one hundred years previous to the organization of this Society, which he states is greater than the whole advance made during the previous ten centuries. It is interesting to note in a review of what had been accomplished prior to 1776, that Dr. Barker considered the work of William Hunter on the anatomy of the gravid uterus a greater contribution than any previously made and that it laid a solid foundation on which to build up obstetrics as a science. With this knowledge of the uterus, that of the anatomy and function of the ovaries was most crude and the diagnosis of pregnancy, particularly in obscure cases, the various diseases of pregnancy, including albuminuria

and the pathology of the decidua and ovum, had received but little attention. He also states "that any physician a century ago who would have ventured to produce abortion on account of prolonged vomiting would undoubtedly have been regarded both by the profession and the public as reckless, unscrupulous and unprincipled." While we of the present day would hardly venture to regard our colleagues in this light, it would seem that the advances in the treatment of hyperemesis will in time afford as little excuse in an opposite direction. Dr. Barker also compares the knowledge of the mechanism of labor acquired during the century of which he speaks with that of a previous age. The philosophic study of the mechanism of delivery resulted in an approximation to definite rules of practice in every variety of presentation and position which is in remarkable contrast with the blind groping of his predecessors. To overcome the many varieties of dystocia, the obstetric art must needs be developed to the highest degree, and, as Dr. Barker well states, in no one point has the advance been more striking, more positive and more important than in respect to the use of the forceps. At the time when Dr. Barker made his address the use of anesthetics in obstetric practice was still regarded as the most wonderful of all discoveries and he presents a glowing account of the relief from dread and horror which women could look forward to and which he enumerated in his address with telling and pictorial effect. There is one paragraph near his conclusions that impressed me very much and which might be written in large letters for prominent display in our medical schools. "Conceive," he says, "the helplessness of one ignorant in a great measure of the anatomy and physiology of the organs involved in the phenomena that he is to watch and assist to a safe termination. Knowing nothing of the mechanism by which the process is normally accomplished and but little of our present resources for overcoming dystocia, looking upon the forceps as an instrument of terror, only to be resorted to when it has been demonstrated that delivery can never be otherwise accomplished, powerless to relieve agony by an anesthetic which still permits the essential phenomena to go safely on, having but an imperfect conception of the diagnosis and danger to mother and child from placenta previa, and no acquaintance with our greatly improved methods of managing such cases, with no knowledge of the real pathology of convulsions or of the treatment by which the fatality of this fearful complication has been reduced at least 75 per cent, with only a general, crude notion of the puerperal affections as thrombosis, embolism, pyemia and septicemia, we can only compare him, trite as the comparison is, with the mariner tossed on the open sea, without chart or compass."

As science is cosmopolitan Dr. Barker felt it would be offensive to good taste to allude to what the founders of the society had individually achieved. He believed that the members of the profession in all its departments must become broader and more eclectic, not blind followers of local or commonly supposed authorities, and for this reason such phrases as: "the Irish," “the English," or "the Continental" school of obstetrics must inevitably become obsolete, just as would an American school of gynecologists.

The second annual meeting, of the Society was held, by invitation, in Boston and it is interesting to note that among the guests on this occasion was Dr. Oliver Wendell Holmes. Perhaps the most noteworthy paper on this occasion was that read by Professor Dalton, the physiologist, on the corpus luteum, which was published with excellent color plates done in the chromolithographic method of the day. At a previous meeting Dr. Dalton had asked to be favored with fresh ovaries removed at autopsy, so that he could be in position to obtain the needed material for this important study. He records having received thirty-two specimens in a year, in which the date of the last menstruation was known. [At that meeting the death of a founder, the first in the history of the society, was noted, namely, Dr. Charles E. Buckingham of New York.]

And so the record goes on, year after year, with the gradual additions to its Fellowship of all the noted men of the country and many from abroad. Within the limits of this necessarily brief address, it is not possible, however, to more than refer to the continuous success of the venture so firmly established by our founders.

One of the noteworthy meetings of this Society was held in 1909 in New York City, to commemorate the one hundredth anniversary of Ephraim McDowell's first ovariotomy. On this occasion Professor Pozzi of Paris and Professor Hofmeier of Wurzburg, together with Dr. Herbert Spencer of London, were present as invited guests. An interesting incident on this occasion was the presentation by Dr. T. A. Ashby of Baltimore of a gavel made of the door knobs from the office of Dr. McDowell in Danville, Kentucky. In addition to the scientific session a banquet was held on the evening of April 22nd given by the New York and Brooklyn Fellows, at which Dr. J. Riddle Goffe acted as toastmaster. On this occasion a bronze memorial medal, designed by Dr. Robert L. Dickinson, was distributed to the Fellows and guests. Drs. Louis McMurtry, Samuel L. Brickner, Howard A. Kelly, E. C. Dudley, Herbert Spencer, Professors Pozzi and Hofmeier, and finally Dr. E. P. Davis responded to toasts in honor of McDowell and his epoch-making procedure.

In estimating the accomplishments of our organization one may study the record of the formal proceedings as published in the transactions so ably and conscientiously edited by our successive secretaries. The addresses of our noted presidents also afford in many instances reviews of the accomplishments of the Fellows. I have taken advantage of this opportunity. These proceedings mirror the progress of our specialty, although one is struck by the comparative paucity in the total number of Fellows who thus participated, only about one-fifth of the entire list contributed more than once to the programs of the meetings. Nevertheless one may be permitted to grasp this opportunity to express such good wishes with more definite hopes as to what our Society should aim to accomplish in the second half century of its existence. An organization which includes in its membership the foremost representatives of the specialty in this country must recognize a fundamental responsibility to extend the knowledge thus gained and to train those indirectly affiliated with its Fellows in the ideals of service and to stimulate them to further effort.

This will mean more than an occasional casuistic case report or an essay on the advantages of certain minor operative procedures. Certain features in the system of medical education in vogue in this country may perhaps be regarded as the principal factor in a lack of productivity and, as emphasized by our President this morning, attention has often been directed to the insufficient clinical material for the instruction of students available in most medical schools and to its insufficient employment. It is only within comparatively recent years that a student's practical knowledge of obstetrics, for example, was gained after graduation, and even today courses offered by separate lying-in hospitals to undergraduates of those schools not directly provided with maternity hospital affiliations, are of doubtful value because of that necessary absence of cooperation between didactic teacher and practical instructor, so essential to a proper appreciation of this important subject in the medical curriculum. This applies with equal force to gynecology. It is a satisfaction to record, however, the improvements that have taken place in recent decades in the facilities for teaching obstetrics and gynecology, and it is a happy augury for our Society that its Fellows individually have identified themselves so closely with this progress.

And finally there is needed a still much closer association in this country between the chairs of obstetrics and gynecology in our teaching centers and also of greater interest among our Fellows in each other's problems, with the obliteration of that unnecessary dividing line between the two branches of this important field of medicine. Who would deny at this day the intimate etiologic connection between those lesions handled by the gynecologist, which have arisen in the domain of the obstetrician, and vice versa? It is only by the admission of this fact that appropriate preventive measures may be devised. One of the signal aims of our Society should be to develop this closer bond of union and at our centenary celebration in 1976 there may be some one in a similarly embarrassing position to mine, who will find it a pleasure to record that during the second half century of its existence, the American Gynecological Society has brought about this elsewhere generally prevalent union of obstetricians and gynecologists under one general professorial head. This will

moreover afford our Committee on Nomenclature an opportunity to devise a suitable term which shall appropriately designate the equivalent of the German "Frauenarzt or the Frauenklinik."

Perhaps I have failed to meet the task allotted to me to present the accomplishments of our Fellows during the first half century of its existence and have inexcusably digressed in presenting the more or less glittering generalities of the foregoing paragraphs. But this digression is not because of any lack of appreciation of what has been done by the contributions of our Fellows to American medical literature. Those who follow me on this evening's program will undoubtedly sound a more agreeable note to offset what serious thoughts I may have brought forward but which I trust will not mar this otherwise happy occasion. I have done so because I believe that this Society has an important function to perform aside from that of providing an annual meeting place for the resumption of those pleasant personal relations interrupted by a sojourn in widely scattered communities. Medicine is no longer that narrow art practiced by A& devotees with knowledge gained by hearsay, surrounding itself with a mantle of secrecy, and holding itself aloof from contact with the world at large. Medicine has become a science rather than an art, and has entered intimately into the life around us -it is, in fact, a part of the same. While medical practice remains essentially individualistic in its best type of application, the community and social interest must be admitted and it is a pleasant duty to record the prominent positions assumed by many of our Fellows in various community problems, in the institution of the Joint Committee of Maternal Welfare, which originated by resolution in this Society, the Committee on Maternal Health, and others. The wider field to which our organization should also commit itself is made in the presidential address of Dr. Howard Taylor for a "Committee on Policy" to initiate and develop plans to increase the activities of the Society, among which as a beginning he referred to the necessity for definite statistics in regard to cancer of the female sexual organs. A special committee on Research Work in Obstetrics and Gynecology, consisting of Dr. Arthur H. Curtis and the speaker, reported at our meeting held in 1920, numerous suggestions for future activities, including " referats, " noncompetitive prizes for original American contributions in our specialty, and a list of unsolved obstetric problems, which a recent re-reading has shown to be still in that category. Dr. Robert L. Dickinson in 1920 presented an inspiring program of endeavor for the Society which likewise reposes in our archives without any further signs of life.

I might quote from many other presidential addresses to show that the leaders of our organization have been fully aware of the problems before us but unfortunately their words of counsel are promptly -forgotten after the adjournment of our annual meeting. In other words, there is no suitable functioning machinery to carry on the work during the intervals. May the hope be possibly expressed that in the future a more permanently active body from the Society be brought into existence to carry out a definite program of a constantly active, living organism, which shall assume among other things the sponsorship of a liaison between the profession, the university, the people, and perhaps the community government, so that my successor at a similar function in 1976, may be in a position to record such progress in words more worthy than my own humble effort.

In closing I want to give expression to the hope that the high aims and principles of those who have guided the destinies of our beloved Society in the past will eventually bear fruit and that with renewed inspiration and effort, the American Gynecological Society will continue to meet the esteem of the medical profession, so that inclusion in its Fellowship will spell the highest honor in the realm of American ,obstetrics and gynecology.

23 EAST NINETY-THIRD STREET.

1926 – Address – Am. Gyn. Soc. – Davis - Philadelphia

By EDWARD P. DAVIS, M.D.

Philadelphia, Pa.

T.A.G.S. Volume 51 (1926) p. 286-294

It is a trite remark that we do not appreciate our blessings while we possess them. That is true regarding the officers of this Society. The treasurer frequently makes us acquainted with his existence, taking great pains to do this, and sometimes causing us pain as a result. Our honored president has made this meeting a most successful one, and his kindly presence has given us all a feeling of comradeship; we are indebted to him for an admirable address upon an important topic. He might, without exaggeration, be called the St. Peter of the occasion.

All captains must have a first mate, an executive officer. St. Peter had his recording angel or secretary. Angels are beings largely in our future, and it is natural that this recording angel should live in the great American future, the city of Chicago. He has projected, his activities into the future in an original and entertaining manner. About two years ago he very quietly removed one of our number from this earth, notified the council of his demise, published his portrait with, I believe, a halo, and composed a very appropriate obituary notice of the late lamented. Perhaps this letter which he allows me to read, may throw light upon this circumstance.

Los Angeles, California, May 2nd, 1926. Dear Dr. Curtis:

I cannot imagine how the report of my death originated. I have been for many years, in excellent health, with no intention of dying. I am almost stone deaf and possibly the fact that I do not hear what goes on about me may have had something to do with this report.

Very sincerely yours,
E. A. KIRKELY.

May I suggest, as a practical hint from this occurrence, that at the next meeting of this Society those who do not wish to be reported as dead or missing, should bring with them their ear trumpets. Our recording angel has done me the honor of bringing me within his activities, and according to published data from him, I am now ninety years of age. "You scarce expect one of my age, to speak in public on the stage." This leaves me in a confused condition of mind resembling that of Mr. George Washington White, a young negro who wished to enter the ministry. He came up before the committee of examination, and he was asked to narrate a historical incident from the Old Testament. Said Mr. George Washington White:

"Gentlemen, dar was among the Jews a great leader named Moses, and in de town near where Moses lived dar was a no account ornery woman called Jazzy Belle, and she had a house dar; and one day Moses was walkin down de street past Jazzy Belle's house, and she done put her head out de second story window, to pass the time of day with Moses; and she said, 'Moses, dar is a frien of yours here in de house.' Moses, he say, 'tell dat frien to come to the window' and he came, and Moses he say, 'take dat woman Jazzy Bell and trow her out de second story window,' and he trow her out and she got up and went back into de house. Moses, he say, 'trow her out again,' and he did, and she got up and went back in to de house. Den he asks Moses, 'how many time shall I trow her out de window,' and Moses he say, 'until sebenty times seben' and den de frien he ask, 'and whose wife will she be in de resurrection?' " Mr. White was declined by the Committee.

So, Mr. Recording Angel, I ask you, Moses, whose wife shall I be in the resurrection? We have heard with great interest the account given by Dr. Kosmak of the beginning of the Society and the delightful reminiscences of Dr. Dudley. May I refer to some experiences of this Society from a different point of view.

Its mother was bad obstetrics, its father dire necessity. Its life so far may be divided into three periods: the proseptic, the antiseptic and the present.

In the proseptic period obstetric practice did not merit the title of scientific. Without antisepsis, infection was frequent. In the presence of sudden and alarming postpartum hemorrhage, infected material was often used to pack the uterus. Lacerations were not uncommon and were indifferently repaired. In some cases no attempt was made at suture, but the patient's limbs were bandaged together in the hope a primary union would result.

The proceedings of medical societies and journal articles were largely occupied in the discussion regarding the relative merits of version and forceps when the fetal head did not engage in labor. Our treatment of puerperal septic infection consisted in giving large doses of sodium salicylate, quinine or antipyrin to depress the patient's temperature. Our reasoning, concerning eclampsia was original, simple and conclusive: eclampsia pertained only to pregnancy, end pregnancy and you ended the eclampsia. We therefore delivered eclamptic patients as rapidly as possible, often with serious injury, and in many cases the eclampsia ended, and in not a few, the patient ended also. The grandmothers of the period sat by the fireside because they suffered so severely from prolapse of the pelvic organs that they moved about with great inconvenience.

The gynecologists of this proseptic day were occupied with anatomic and pathologic research upon the living patient. The anatomic studies consisted in elaborate dissections and plastic operations to repair the injuries of labor. It is almost incredible to read the number of operations performed upon one patient for the closure of an inaccessible fistula. The silver wire suture employed, accurately placed, carefully shouldered and clamped with perforated shot, was the ideal material. The anatomic result was so perfect that lacerations often occurred in subsequent labor requiring further operation. Prudent gynecologists allowed this silver wire entanglement to remain until the bill had been paid.

The pathologic researches consisted in the production and study of pelvic infection. We were without psychoanalysis and we did not realize the fact that woman's vagaries of fashion extended not only to the wearing of her external clothing, but also in some cases to her pelvic organs as well. Some patients had the uterus bent strongly forward, others sharply backward. In neither case was it of importance unless impregnation occurred. The circumstances of the time favored the forcing down of the pelvic viscera. The clothing worn was heavier than that of the present; around the waist of the patient were several layers of heavy waistband, tightly fastened, the corset was long and firm. Constipation was not uncommon. Uncle John Rockefeller had not yet embarked upon his philanthropic enterprise of lubricating the bowels of the inhabitants of these United States with a product of the Standard Oil Company.

The result of all this was to force the pelvic organs and especially the uterus down. When this happened, the assiduous gynecologist inserted a uterine sound or an intrauterine repositor and pushed the uterus up, and endeavored to sustain it in its new position by a carefully fitted hard rubber pessary. As there were no antiseptic precautions, infection often resulted; in many cases no essential harm was done.

When infection developed, endometritis, metritis, parametritis, perimetritis, pelvic cellulitis, pelvic peritonitis and sometimes pelvic abscess developed; then the patient was put at prolonged rest

in bed and counterirritation was extensively applied. Some of the earliest cubist paintings in American Art were those perpetrated upon these patients, with pledgets of cotton or camel's hairbrush, dipped in tincture of iodine. If the patient's nourishment failed, she was treated to a Salisbury beef-steak; this extraordinary substance consisted of shredded raw beef in the shape and consistence of an eight months' placenta. It was quickly broiled on both horizontal surfaces, and the patient made, not to eat it, but devour it, with the hope that her hemoglobin might thereby be increased.

Some of these cases became highly neurotic and greatly disturbed. The aid of the neurologist was then sought. The most famous of these had a very complete method of treating these patients. The patient was carefully isolated from the cheering influence of home and friends; she was placed in charge of a nurse and kept in bed, fed upon milk, massaged and electrified physically by the interrupted current. She was electrified mentally by literature consisting of fiction and verse which the distinguished neurologist composed as part of the treatment. Her progress toward recovery was estimated by her ability to consume this literature. If a woman in ordinary health chanced to read these productions, she was thereby rendered a fit subject for the rest cure, and so the therapeutic circle was complete.

Some of us were house officers in hospitals when the carbolic wave of Listerian antisepsis flowed gently in upon us. We remember that we were cautioned not to allow the Listerian gauze, impregnated heavily with carbolic acid, to come in immediate contact with the line of incision and suture. To promote healing this was carefully protected by an impervious material. In obstetrics and gynecology, as we could not close the field of operation by gauze or other dressings, we resorted to copious applications of carbolic solutions to the field of operation by means of douching. In abdominal section the peritoneum was sometimes sponged with 2 per cent carbolic solution and the peritoneal cavity irrigated. The result of this misapplication of Listerisin was unfortunate and this was soon abandoned. So long as carbolic antisepsis was confined to the external surface of the body, to instruments, dressings, hands and appliances, the results were excellent, and abdominal section advanced rapidly.

In obstetrics cesarean section became successful, symphyseotomy was revived; very gratifying lessening in septic mortality and morbidity in parturition developed. In gynecology, ovariotomy had become an established procedure. The profession was largely occupied with the development of hysterectomy. We had the Porro operation, Lawson Tait's knitting needles, and his rubber band, as elastic as his conscience, and Koeberle's wire loop for controlling hemorrhage from the stump.

The stump was invariably left outside the peritoneal cavity. On one occasion B. F. Baer, a member of this Society, operating at the Philadelphia Polyclinic Hospital, had removed a large fibroid tumor with many adhesions. He had controlled all the visible bleeding and was forming a plan to fasten the stump in the abdominal tissues, when his anesthetizer warned him to terminate the operation as the patient's strength was failing. With misgivings he immediately closed the abdomen, dropping the stump-an uninterrupted recovery followed. This was done at about this time by others, and hysterectomy, with the dropping of the stump, was accepted. At this time the tubes and ovaries were frequently removed, in some cases unnecessarily. Gynecologists had some knowledge of appendicitis and appendectomy was added to their operative procedures.

A very interesting phenomenon was the fear of morphine. One of the founders of this Society took his wife to a European gynecologist for treatment. An abdominal section was performed and on the night following the operation the patient begged for morphine; her husband gave it to her. She subsequently died and the operator was not slow in reminding the husband that his injudicious administration of morphine had caused the death of his wife.

At present, the work done in the clinics of this Society, in the present stage of medical science, is unsurpassed. Patients are carefully prepared for operation, analgesia and anesthesia professionally

and skillfully administered. Operative technic, trained assistants, abundant facilities are all developed in the highest degree. In obstetrics we have thoroughly studied the indications for, and abundantly demonstrated the methods of delivery by abdominal section. We know something also, not much, about the toxemia of gestation. We have some information concerning placenta previa, and we have been again warned of the injurious effects of birth pressure in producing intracranial hemorrhage.

Whatever is known concerning the use of radium and the x-ray in the treatment of cancer and other conditions, has been thoroughly studied in these clinics, and the reports emanating from members of this Society are among the most accurate and reliable in modern literature.

Among the individual contributions to medical science may be mentioned the research of Reynolds on "Pathology of Human Sterility" and the very interesting studies and demonstrations of Sampson on the "Aberrant Behavior of Endometritic Tissue." But perhaps the most brilliant achievement of this Society is that operative work which gives a woman, condemned otherwise to chronic invalidism, a comfortable degree of health and strength. Edebohls showed us that a number of operative procedures may be done at one time, upon one patient, under one anesthesia or analgesia. It is not uncommon in the clinics of the present to have a patient relieved of a diseased gall bladder and appendix, to have the position of the uterus restored by operation upon the round ligaments, and a diseased condition of the tubes and ovaries dealt with in a most conservative manner possible, at one operative procedure.

It is a comparatively simple matter to save life in many cases, but one is not sure that the person whose life is saved may thank him for it afterwards. But is there any one at any time, under any condition, to whom an improvement in health and strength is not most welcome?

What are the obstacles to the scientific progress of this Society? They pertain largely to obstetrics and they are in the mind of the laity and in the mind of the profession. With the laity, the cheapness of infant life leads a man to consider a difficult forceps delivery of an infant as in no way comparable in difficulty and in the skill required, or the care required, with the removal of a tumor from the body of his wife. He is sometimes inclined to compensate adequately for the latter, but very rarely for the former. The belief that labor should be conducted with surgical precautions in hospitals is, however, gaining ground.

In the profession, obstetric science has long been impeded in its progress by the reluctance of the profession to apply to the complications of parturition sound principles of surgical reasoning. The surgeon endeavors to save life and health and especially to guard his patient against hemorrhage and septic infection. If the obstetrician is to do this adequately, he must in some cases resort to direct surgical methods, and yet it has taken thirty years for the profession to seriously consider the proposition that a cervix uteri badly torn in labor and bleeding profusely, if the patient's condition justifies, should immediately be closed by suture. It has taken thirty years for the profession to seriously consider the proposition that in central placenta previa, in primiparae, at or near full term, with mother and child in good condition and the cervix undilated, that this patient should be immediately delivered by abdominal section.

But the greatest menace to obstetric progress is the practitioner who does everything. This man has no inclination for obstetric practice, little knowledge and less skill, but he dare not refuse obstetric cases because his competitors take them, and he hopes through obstetric cases to gain the medical practice of the family. When complications arise he generously calls in his colleagues in his town that they may share with him the responsibility and blame of the possible bad result. Until this man can be made to believe that it will be better for his interest to transfer obstetric cases, if in any way complicated, as soon as possible to a maternity hospital and an obstetrician, and thereby to have a good result follow the pregnancy, than to retain the case himself with a bad result, until he can be made to believe this, there will be no essential diminution in the mortality and morbidity of parturition from septic and other causes, in this country.

What of the future of our science? We cannot forecast, but we should revise our vocabulary. The word impossible must be omitted. There is nothing impossible to science. The words good and bad have no place in scientific nomenclature. The results of operation are not good or bad, but they cause the restoration or abolition of function, they restore the relation of parts, they remove diseased tissue, they conduce to the health and strength of the patient, or they fail so to do, and the accurate description of the results of operation or treatment should be stated in such terms and not in the ambiguous and pseudoethical words good or bad.

So great have been the changes in physical science in recent years that we in medicine are without the power to forecast. The physiologic chemist tells us that in his laboratory by laboratory methods only, and without contact with living tissue, he can produce the phenomena of life. If he can produce life, he can cause death, and he may tell us what are the processes which result in life and death.

Is the day of the knife and needle rapidly passing away? Are we to treat patients not only by radium but by undiscovered metals of somewhat similar nature, with undiscovered powers over the human organism? Are we to use not only the ultraviolet, but ultrared and green and other rays? Shall we unlock the secrets of basal metabolism? Shall we know something of electricity and its effects upon the human body? Will the modern psychoanalyst say which of the neurons, dendrites and synapses is diseased in a given case and suggest the appropriate methods of treatment? We do not know, nor can we as yet imagine.

There should be a wider scope than the treatment of the individual patient, for this Society. If there is a science of eugenics, should not our knowledge be of value in its development? It is too much to expect in that miserable mixture of spite, cupidity and ignorance, which we call politics, that the politician should become cognizant of the existence of scientific truth, but somewhere, somehow, sometime, there may be statesmen to whom the truths of science may be of value in promoting the best interest of human civilization.

Of two things we may be certain: one is that fifty years from tonight, the man to whose lot it falls to narrate the advances and achievements of the second fifty years of this Society, will allude with dignified restraint, with polite tolerance, and with delicate repression to the fact that we, men of otherwise average intelligence, should have failed so utterly to apprehend the great scientific discoveries which the men of his time have made, and he will lament in ironic sympathy the fact that we have failed in the achievements in which he has taken a prominent part. We may not only be certain, but sure of a very important fact: the spirit of this Society will not change, that spirit which welcomes any truth, which examines it impartially, thoroughly and patiently and acclaims it when genuine; that spirit which promotes mutual respect and which engenders in many instances those personal friendships which are the choicest blossoms of our membership.

We have spoken at some length concerning ourselves, but have we no word of remembrance for that immortal spare rib, woman, to whose physical good our best efforts are directed? Shall we not at least concede to her bravery in trusting herself in our hands? Was there ever a braver woman than the first ovariotomy patient, Mrs. Crawford? You recall her, a slender person with brown hair tinged with grey, and grey blue eyes that looked straight at you without fear. She rode upon a horse over the mountains of Kentucky to consult McDowell. Her abdomen was so large by reason of the tumor, that it chafed against her saddle. McDowell told her the operation had never been done, but that he would attempt it, if she consented. When he was ready she walked from her bedroom to his operating table and was placed upon it, a handkerchief over her eyes. There was no anesthesia, there was no antisepsis. The tumor was so large that McDowell was obliged to empty it before he could remove it. During the operation the men of the town, armed, were waiting outside the house to kill McDowell for butchering a woman, if she had died during the operation. Two weeks afterward, Mrs. Crawford was able to put her room in order and make her bed, three weeks afterward she rode back over the mountains to her home, a well woman. Shall we not acclaim her as brave?

A distinguished psychologist has remarked that he envied the opportunity of the obstetrician and gynecologist to study the psychology of woman. There are times when we would gladly relinquish this opportunity to the distinguished psychologist. We have found her charming, original, sometimes baffling.

So elusive, so delusive, from her cradle to her grave;
What an imp for waste and spending, what a miracle to save!
So elusive, so delusive, like a vision of a saint,
With the tender grace of pity, as she listens to my plaint.
So elusive, so delusive, cold and bitter in her hate,
With the irony of boasting all her triumphs to relate.
So elusive, so delusive, like the sunshine in the air,
With its radiance and its beauty and its blessing everywhere.
So elusive, so delusive, like the streaming northern light,
Splendid, dazzling, unapproachable, the siren of the night.
So elusive, so delusive, oh! I cannot tell thy power,
But I know that thou art with me in each bright and happy hour;
And I hold this fearful pleasure as a mystic precious treasure,
So elusive, so delusive, witch and saint and fragrant Rower.

Fifty years in the life of this Society have gone, half hundred chime the bells of time; and as we listen in memory to the ringing of the years, there comes to us, like voices beard across an unseen sea, the familiar speech of those whom we have loved long since, and lost a while.

Theirs the felicity, from us to vanish into the light;
Theirs the security, gaining the infinite, limit to banish.
Out of the night into futurity, gone and forever!
Grandly potential have they become,
Part of the all soul thinking eternally,
Part of the great whole never more dead.

Amid the whirl of human thought and the tremendous drama of psychic and material forces in action, we cannot imagine a time when the clear light of science will not shine above the confusions of humanity as the stars rise above the tempests of the sky; and the devoted students of scientific truth, made wise by that truth, shall shine with the brightness of the firmament forever and forever.

1926 – Presidential Address – Am. Gyn. Soc. – Newell - Boston

By FRANKLIN S. NEWELL, M.D.
Boston, Mass.,

Trans Am. Gyn. Soc. Volume 51 (1926) p.1-9

THE presidential addresses at the annual meetings of this Society combined with the scientific papers form an almost complete record of the development of modern gynecology and obstetrics. The mistakes are recorded equally with the successes and the fact that many procedures now obsolete have been ardently advocated at our meetings does not detract in any way from the value of this record, since we learn more from our failures than from our successes. The completed whole is a worthy monument to the founders of this Society, whose vision has made it what it is.

This meeting marks the completion of fifty years of active work in the life of the Society, and would seem to be an appropriate occasion to recapitulate the constructive work accomplished by our members past and present, but the presidential address of five years ago so completely covered the subject as to leave no opportunity for such a memorial.

When this Society was founded, gynecology was an undeveloped specialty, and obstetrics as practiced today was not even dreamed of. The years which have passed have seen a steady development in gynecology up to its present point of relative perfection. It is hardly possible that a similar development can take place in the next fifty years. The founders of this Society were the pioneers in the specialty and it is to their inspiration that we owe in large part the great advances which have been made. It is interesting to note that in the earlier transactions many procedures now commonplace were once subjects of bitter controversy, while others which were generally accepted have become obsolete. Our predecessors were developing a new field of surgery at a time when asepsis was either unknown or in its infancy, and each step forward was fraught with hypothetical or actual danger. Operations which are now definitely standardized were once considered the height of rashness, while each advance was violently opposed by the conservatives of the time, only becoming accepted after absolute proof of its safety and of its benefits to the patient was demonstrated.

Gynecology has been so developed that we can expect comparatively little advance in its main principles, except in the treatment of malignant disease, and -possibly in the application of the advances which may be made from time to time in our knowledge of the endocrines.

Our work as operating and investigating gynecologists must be largely limited to the refinement of diagnosis and to the improvement of operative technic where that is possible. The dangers which beset the paths of our forbears have been largely eliminated.

Equally striking, though less conclusive, developments have taken place in obstetrics, since our whole conception of the subject has been radically altered, but there remain many unsettled problems in this field which require investigation. The literature of the last fifty years shows that not only has the treatment of practically every obstetric complication been radically altered and the possibility of the prevention of many of them become recognized, but obstetrics has been developed into a surgical specialty. The recognition of cesarean section as a legitimate procedure in appropriate cases has made it necessary for the obstetric specialist to be a trained surgeon. As time goes on it may be that the low cervical operation will entirely supplant the classical operation, but outside of this possible development there seems to be no great change which can be made in operative obstetrics except a closer limitation of operations to qualified operators for definite indications.

The application of surgical technic to obstetrics has greatly lessened the frequency of septic infection. In the practice of a well-trained obstetrician of today the development of a case of septic

infection of a serious nature is rare, except under conditions which develop when an epidemic, such as influenza, is rampant in the community, -so rare indeed that our interns receive little training in the treatment of this condition. Nevertheless, septic infection is still so common among patients under the care of men not surgically trained that the statement is often made that the conditions have improved little in general practice.

The treatment of septic infection is still unsatisfactory, however. We have learned not to kill our patients by indiscriminate curettage, but we have not yet learned how to control virulent infections except by raising the patients' resistance and thus aiding nature. Prevention rather than cure is our sheet anchor in this important complication. Future progress must place the care of the obstetric patient in the hands of the surgically trained man if septic infection is to be abolished either in hospital or in private practice, and an increasing number of semiprivate obstetric beds must be provided in our hospitals to provide for the safety of those who cannot afford the fee of the specialist and yet do not belong in a charitable institution., this being the class in the community for which little provision is made at the present time.

Our knowledge in regard to the toxemias of pregnancy and eclampsia has been increased to some extent. We have not yet learned what toxemia is, but we have perhaps a greater understanding of what it is not. The advances have been such that we have reason to feel that the development of eclampsia in any patient is a reproach to the attendant and argues either a lack of intelligent prenatal care or an inability to appreciate the warnings of danger. We cannot prevent the development of the milder forms of toxemia in the present state of our knowledge, since we do not know the actual cause. We can recognize the danger signals, however, and either minimize the dangers by prompt treatment or cut short the pregnancy if treatment fails, and thus practically render eclampsia an obsolete condition. The laboratory diagnosis of toxemia by blood chemistry and allied methods is still of little practical value, but an intelligent interpretation of the blood pressure changes combined with accurate clinical judgment will save many lives.

This advance and many other improvements in the care of our patients have been due to the recognition of the importance of careful prenatal study, which is perhaps the greatest advance in obstetrics in the last fifty years. The prevention of complications, or at least their early recognition at a time when they can be adequately treated, is one of the great advances in preventive medicine.

The importance of a careful study of the pelvis has been recognized in this country during the last twenty-five years. Every student in a well-organized medical school of today is instructed in the taking and interpretation of the pelvic measurements and in the comparison of the size of the baby with the pelvic canal. In the practice of a well trained obstetrician no patient is allowed to go into labor today without the possibilities of dystocia having been thoroughly canvassed, and in doubtful cases an appropriate course of action is decided upon in advance for each individual patient, and the patient is given the advantages of modern progress in accordance with her needs.

In general practice, however, little more attention is paid to the pelvis apparently than twenty-five years ago. The attitude of the general practitioner is still one of hope that no untoward conditions are present and that no obstruction to labor exists, rather than one of foresight. It must be remembered, however, that the majority of general practitioners of today, particularly in the smaller communities, were not trained under modern conditions and have had little or no opportunity to improve their early training. A distinct improvement should occur when the men who have been trained in the last ten years come into their own.

Great as the advances in obstetrics have been in the last fifty years it is only a beginning. We know little about the toxemias. We know the end-results in neglected cases. We do not know, however, the etiology or the nature of the poison, and the scientific treatment of the toxemias must remain in abeyance until the etiology has been definitely settled.

The possibility of the regulation of the size of the fetus is another problem that has not been adequately studied. We do not know how far it may be possible to control the size of the child in a

given case without reducing the mother's vitality by starvation to a point which is unsafe. This offers a very attractive field for study.

We are still in doubt as to the best method of induction of labor in cases in which premature termination of pregnancy is necessary. Presumably no single method is applicable to all cases. My own experience leads me to believe that we are using the best of several more or less unsatisfactory methods, rather than that we have discovered an ideal method, and I find that I can never get the results reported by my friends who strongly favor some particular method. These are only a few of the many obstetric problems open to investigation and it is probable that in obstetrics the next fifty years will show even greater advances than the last fifty.

With the development of the obstetric specialist many fads have entered into practice. The delivery of all patients by a certain method undoubtedly renders the individual obstetrician very proficient in that particular operation and thus leads to improvement in the technic of the operation. In his hands the results become exceedingly good, but when less proficient individuals try to follow his example, disaster is sure to follow. The routine induction of labor at a given date, when no indication is present except the saving of time for the patient and attendant, has resulted disastrously for the mother and child in many cases. The operative craze which has led to the performance of cesarean section for no good and sufficient reason has led to the loss of many lives. Obstetrics must be reduced to a sane basis with only one object in view, an increase in safety for mother and child rather than the popularization of any particular procedure before the results can be called satisfactory.

The obstetrician must be trained as carefully as is the surgeon for his life's work. With the increase in the number of well-trained men the results of the future should be much improved. The better education of the men who are to practice and teach obstetrics will result in a better training for the members of the medical profession as a whole and in a steady improvement in obstetric standards. The interest in the study of obstetrics seems to be definitely on the increase among medical students. For the first time they realize that modern obstetrics is more than expectant midwifery, which argues well for continued progress.

This progress in obstetrics and gynecology is part of a general advance which involves the whole of medicine and which has had a great influence on medical teaching. New specialties have been developed and have found a place in the medical curriculum. The laboratory branches have assumed an increasingly prominent place in medical education and have to a very unfortunate extent encroached upon the time formerly devoted to clinical teaching, and medical education, the final aim of which is the training of doctors, has gradually passed more and more under the domination of the laboratory group, which is composed of men who have never taken care of patients and who have little conception of the training necessary for a practicing physician. We are most of us teachers as well as clinical practitioners, and, it is our duty to so train students that they shall be fitted to minister to the needs of patients, unless we are ready to admit that the work of the great clinicians of the past is of no value to the community as compared to laboratory research. A sound scientific training is important, but it behooves us to see to it that the present tendency to overemphasize the importance of the so-called fundamental medical sciences in our medical schools is reduced to a sane basis. The great majority of medical students expect to practice medicine, but they are often unfitted for this end by their very training, owing to the undue emphasis laid on laboratory diagnosis and treatment, and the much reduced attention given to the training of their powers of observation and to the study of the patient. Conditions must be changed, since, unless the student is fortunate enough to supplement his medical school training by an internship under a good clinician instead.of, as often happens, under a full time appointee who has never had any clinical experience outside of a hospital ward, he is obliged to enter practice, if in fact he dares to do so, with little practical training in the care of the patient and none in the humanities of medicine.

The medical course has been gradually lengthened in the last fifty years, first to three and then to four years, while in some institutions a fifth or hospital year is either required or is under consideration. In spite of this lengthening of the medical course the amount of time devoted to clinical subjects has been relatively curtailed, until an entirely disproportionate amount of time is devoted to the laboratory sciences, in the attempt to make them not an adjunct to the proper training of physicians but the predominating force in medical education.

The raising of medical standards should result in attracting a higher grade of men to the profession than formerly, as well as in turning out better equipped physicians, but in my judgment the student body of today is not of as high a grade as it was ten to fifteen years ago. Apparently the present system is dwarfing instead of developing the average student, the curtailment of the time allowed to the clinical courses resulting in the teaching of too much predigested material instead of aiding him to develop by the study of patients under intelligent guidance.

Many of the ablest men in medicine today would find it impossible to enter a Class A medical school without returning to college to take a special course to meet the entrance requirements, and yet they are among the leaders of the profession. The required premedical course is of such a nature that unless a student decides relatively early in his college career to study medicine he cannot complete the required work without devoting at least an extra year to it, a sacrifice of time and money which many men cannot afford to make. Theoretically the premedical course should raise the standard in the medical school by eliminating the relatively unfit and the poorly educated. It does this to some extent, but it also eliminates many men who after careful and mature consideration arrive at the decision toward the end of their college course that they wish to study medicine. Many who are relatively unfit for the practice of medicine decide early that they wish to enter the medical profession and take the necessary courses which enable them to do so, while a considerable number of men who are in every way unusually well fitted for the profession are barred from it, unless they are able to devote one or two extra years to preparation, and these men have been in the past among the ablest students even without the preliminary course at present required and are today at the top of the profession. In addition the marks obtained in college are often the principal basis on which fitness to study medicine is judged, and thus the man of many interests during his college course who is distinctly a well-rounded man is often refused a chance to study for a profession for which he is superlatively well fitted, while a second-rate man who has devoted himself to obtaining high marks in his college courses is accepted. My own impression of the average medical class in our own school, which is supposedly handpicked from a large number of applicants, is that while there are few very poor men in the class, the number of men of outstanding ability is so small that the average is certainly no higher than it used to be and the general impression is one of distinct mediocrity.

My own experience, gained from teaching fourth year students and from dealing with house officers who come to us from various hospitals and medical schools, has convinced me that the students of today are not as well fitted to enter the practice of medicine as those of fifteen years ago. They have perhaps been taught more but have learned less. Their knowledge of the laboratory side of medicine is greater, but when it becomes a question of making a patient comfortable and of meeting the human problems that arise, they are singularly helpless and have little self-reliance.

I feel strongly that, in spite of the great increase in the cost of a medical education necessitated by the research and teaching laboratories, the results are meager. I do not wish to infer by this statement that I do not favor the maintenance of research laboratories in connection with a medical school for the purpose of advancing medical progress in every way, or in any way grudge the expense involved, since I believe that future progress depends on a judicious cooperation between the clinical and research branches, but I do believe that the education of competent physicians to care for the needs of the community suffers when laboratory teaching dominates our medical schools at the expense of clinical training as at present. Less than 5 per cent of a class,

according to recent figures, enter the research branches of medicine and yet the whole class must take an exhaustive training in laboratory work which so crowds out clinical training as to work a serious injustice to the 95 per cent or more who wish to practice medicine. Furthermore, a considerable number of men who might be useful and able physicians are dropped from the medical schools each year because they fail to reach the standard of laboratory excellence required, their fitness to continue their studies being judged by men who have never practiced medicine, and yet they are college trained men selected from a large number of candidates.

Before a proper balance can be restored and the study of medicine placed on a sane basis, the present undue importance given to the so-called fundamental sciences must be materially reduced, by which I mean that they must be so taught as to be an aid to the clinical training which is to follow, and not as if the end-result aimed at was to make every student a laboratory investigator. In other words, medical education should primarily serve the 95 per cent who hope to practice medicine instead of the 5 per cent who hope not to. Under modern conditions the great majority of medical students must depend on their postgraduate hospital training for much that should be taught in the medical schools in order that the 5 per cent may need less postgraduate training. The conditions should be reversed.

The great function of the medical schools used to be to train doctors to care for the sick and suffering in the community. The outstanding teachers were men of wide clinical experience who inspired the students by their teaching and example. Such of the medical sciences as were taught were included because they aided in the development of better doctors. With the development of new specialties it was realized that the student must be given some instruction in them, although the only adequate training was to be obtained by postgraduate study. The time to be devoted to the teaching of these specialties was obtained by lengthening the medical course from three to four years, but the four cardinal medical subjects, surgery, medicine, obstetrics, and pediatrics, were still taught by men of broad clinical experience and occupied the major portion of the course, supplemented by practical work in the out-patient departments and by a hospital internship later. With the increase in the laboratory branches of medicine more time bad to be provided if the student was to receive an up-to-date medical education. Since this could only be done by decreasing the time devoted to clinical instruction, it has been so arranged, and the community which pays the bills is the sufferer.

The great clinical teacher has either disappeared or his opportunities for teaching have been so curtailed that his efforts are largely in vain. The control of medical education has been taken over by the laboratory group who are always able to devote an indefinite amount of time to meetings and organization, and the influence of the clinical group in our medical schools is small. As a natural result the medical student of today receives an intensive training in the fundamental sciences, a fairly comprehensive course in laboratory medicine and research, a very minor training in the study of a patient as an individual and not as a test tube, and practically no instruction in the relief of suffering and in the humanities of medicine. This would be a good enough preparation if the primary object of medical training were to fit a man to do research or to practice entirely within a hospital, but it is a very poor training for a man who wishes to enter practice. It is a fortunate thing for the community that the students themselves realize that the training afforded by the medical schools has little practical bearing on the practice of medicine and that a prolonged training as intern and resident in properly equipped hospitals is absolutely necessary.

The increasing interest in research medicine has led to the establishment of full time teaching positions in various hospitals which are affiliated with medical schools. Theoretically a full time appointment should be ideal from the standpoint of research, the teaching of students, and the care of the patient. Practically, the patient suffers in most cases, because if a young man takes such a position, it means that he is interested primarily in research, and perhaps somewhat in teaching, but that he has had little or no experience in the care of the sick. He may be able to stimulate interest in the study of various medical problems and thus as an investigator add to the prestige of his hospital,

but the patients under his charge and the students for whom he is responsible are less efficiently served than they would be by a less scientific man of greater clinical experience.

The ideal full time teacher is the man of wide interests and clinical experience outside the hospital, who elects a full time teaching position as offering the widest opportunity for good in the community as a fitting close to an active career, and not the untried man who is selected because of his interest in laboratory problems, and who is sufficiently mediocre to be satisfied with the salary of a second-rate man, provided he can be in a position sheltered from competition.

In many cases the full time teaching position is a menace instead of a benefit since it carries with it a prestige which is not warranted by the facts. Laboratory research is stimulated and therefore some increase in the sum of human knowledge probably occurs, but the man who wishes to enter the practice of medicine should not have to depend for his training on teachers who have never had to face the problems which are met in private practice and who are not interested in them.

The curricula of our medical schools should be revised. The control of medical education should be not in the laboratories but in the fundamental clinical departments, surgery, medicine, obstetrics, and pediatrics. Such of the laboratory branches as are of direct aid to the study of medicine from a practical standpoint should be taught, and what should be taught in these sciences should be determined by the clinical group. If a man wishes a further education in physiology or biochemistry, he should take that as a postgraduate course, just as a man who wishes to take up clinical medicine takes an internship, and the amount of laboratory teaching should be cut down and placed on a practical basis. A considerable experience with students from our own and also from other schools leads me to believe that in physiology the attempt is made to train all students to become physiologists and not to instruct them in the application of physiology to practical medicine, and that a similar condition exists in other scientific branches. The time to be devoted to the cardinal clinical medical sciences should be increased to the limit and such time devoted to the teaching of specialties as is possible, with the understanding that no man can be educated as a specialist in the medical school. The clinical teacher should be a man of clinical experience and not a laboratory trained man who has never practiced, as is often the case. The scientific and clinical men should work side by side, and the student should be given a greatly increased training in the use of his powers of observation under the supervision of men who have been properly trained in clinical medicine, the laboratory methods of diagnosis only being employed after exhaustive study of the patient.

Most of us are teachers. Many of us realize the unsatisfactory state of medical education today. I believe that we, in conjunction with the other clinical societies, can accomplish most for the good of the community by a concerted effort to restore the teaching of clinical medicine and the fitting of men to enter practice to their proper position in medical education. The modern graduate may have been taught more but he has learned less than his predecessors. He is a poorer doctor and often hesitates to enter practice except under the Ægis of a hospital, because he has had very little training in practical therapeutics and none at all in the humanities of medicine. As has been well said by one of the greatest exponents of modern medicine, it is more important to know what kind of a patient is suffering from a disease than what kind of a disease a patient is suffering from, a fact which has been entirely lost sight of in our medical schools.

443 BEACON STREET.

1927 – Response – Am. Gyn. Soc. – Chipman – Montreal

By DR. W. W. CHIPMAN, MONTREAL, CANADA

T.A.G.S. Volume 52 (1927) p. xxxix - xli

Mr. President, Fellows and Guests:

It is a great pleasure to thank Dr. Hinsdale again for his warm welcome, to thank him again after an absence of three years. It is an honor to thank him in the name of this Society.

I am sure we have all been interested in the history of the gyne bird and one of the best proofs of his wisdom evidently is that he is guided always by the old birds.

It is now twenty-one years since he first bade us welcome here, and this is our fourth visit since that time. It only shows you how much we think of Virginia. In his own phrase, we may designate him as our "Official Greeter." We are delighted to see how kindly time has treated him and to realize that really he is younger than ever. And we are delighted to receive again his assurance that he is glad to see us. Again, we experience the hospitality of the Homestead, and we thank its Management for their kindness and consideration.

Virginia Hot Springs is the one place in our extended itinerary to which we voluntarily return. Our visit each third year to Washington is obligatory and inevitable -delightful as it is. But our visit here is entirely another matter, entirely of our own choosing, and so we come back again and again to the Homestead to enjoy the courtesy of the gentlemen of Virginia. We return like the Prodigal Son, only our fatted calf is waffles and fried chicken.

Dr. Hinsdale has welcomed our Society, our Society as it stands today, its older members and its younger brethren. In returning thanks I gladly speak on behalf of our young recruits, even as I congratulate them upon their admission to one of the oldest and most distinguished Societies in this country; one of the oldest of the National Medical Societies throughout the world. It is a great pleasure to speak on their behalf. We realize that it is through them and by them that this Society will persist. They carry the honor and the burden of their own generation. At the same time, we remember the older Members of this Society, and especially, perhaps, some of the older forms and faces that we shall see no more. Time takes its toll, and our loss has been a heavy one since our last meeting here. I shall not mention the names of these, but today we remember them, the work that they did, their influence and inspiration.

As a veteran of this Society I shall not dwell upon this note of sadness. I feel that the memory of these older and these departed friends is safe in our keeping. Rather shall I say, as did Reuben Peterson in your behalf, in 1925, that we, the veterans rather glory in our own behalf. Even as did Rabbi Ben Ezra, who said:

> ***"Grow old along with me,***
> ***The best is yet to be."***

In speaking of special medical societies, Sir Humphrey Rolleston lately made an apt observation. He described these special societies as having always a tendency to acquire a keyhole vision, to become narrow and too intensive. He said a special medical society is prone to become "A knowing more and more of less and less." There may be truth in this observation, and yet I feel that this accusation cannot fairly be charged against our Society. I for one have always been glad that our Society represented both Obstetrics and Gynecology; for in this union there is secured in my judgment a wider and more comprehensive vision, and a truer perspective. They provide, each for the other, a mutual salvation; they are copartners in the selfsame business. The problems they

present are joint problems, and many of these can be solved only through an intimate knowledge and experience of the two subjects.

Again, I need not remind you that these two subjects are not merely mechanical arts; we are not mere artificers, mere surgeons and midwives. This mechanical work must always be imbued with a scientific spirit, an increasing interest in an added knowledge of embryology, physiology, pathology, and biochemistry. Much of our surgery is merely marking time until the advent of this wider knowledge, until the deeper problems, one by one, reach a truer solution.

I am glad that our Society may escape the charge of provincialism and of narrowness, and I am sure our younger members will carry on that tradition, and that as the years go by we shall strive for a wider and a farther view of these various problems. You will forgive me the personal mention, in this respect, of Whitridge Williams, John Sampson, Robert Frank, and I shall add to these George Gellhorn, Robert Dickinson, and Howard Taylor. And I name only a few. These men have done much to give us a clearer sight and a wider horizon, to secure .for our Society a true spirit of research. In his whole professional life, his educational life, each man is inevitably his own Columbus and must of necessity conduct his own exploration. In my judgment, thinking -hard, sane thinking- is a genuine investigation, and the critical application of one's thoughts to any problem constitutes a true research, and this, not only in a laboratory but in a hospital or general practice.

We are grateful to this Society for the inculcation of such a spirit. Within this Society we view as from a height, each one his own medical landscape, and this perhaps explains, Dr. Hinsdale, our great fondness for Virginia. From your beloved hills we catch a glimpse of far horizons, a horizon denied to us in our city life; and there is borne in upon each one of us a truer perspective of his own heaven and his own earth.

I thank you again for your kindly words of welcome.

THE STUDY OF STILLBIRTHS OCCURRING IN 4000 CONSECUTIVE DELIVERIES*

*From the clinic of the Woman's' Hospital

By EDWARD C. LYON, Jr., M.D.
New York. N.Y.
(Attending Surgeon, Obstetrical Division, Woman's Hospital)

Published TAGS Volume 52 (1927) p. 160-170

Unless we are willing to review our records and study the results obtained, we are really not in a position to judge accurately, or to value rightly any line of treatment, or any form of surgical procedure. If we admit, as I am sure we all do, that growth in medicine is dependent upon the correction of mistakes as well as upon the adoption of new methods of treatment, then statistic studies are as valuable and as well worth while as research and experimental studies, and aid equally in the solution of many problems.

On an obstetric service there are three outstanding groups of statistics that register efficiency and good treatment in a most impartial and accurate way; namely, maternal mortality, infant mortality, and stillbirths. At the Woman's Hospital we have just completed a study of both the maternal mortality and the stillbirths, and we are still at work on that of infant mortality. These studies are all based on 4000 consecutive ward deliveries, covering seven and one-half years (June 26, 1919, to January 1, 1927).

I shall offer in this paper the results and figures obtained in the study of stillbirths, and I desire to consider especially the group of cases which might be termed remediable, those in which there was born a normal viable baby, and in which the fetal heart was heard during labor or at the onset of labor. It is the study of this group, I feel, that will give the most helpful information.

In these 4000 deliveries, there are classified as stillbirths all those cases in which the baby never breathed, even though the heart continued to beat after birth, and in which the delivery occurred between the twenty-eighth week of pregnancy and term. On this basis there are 105 stillborn babies, or 26 per 1000, but since one mother had twins, both born dead, there are only 104 patients to be considered. In 55 of these patients no fetal heart was heard on admission to the hospital, in three there was doubt, while in 47 patients the heart was distinctly audible when the patient was admitted. Of these 47 there were 41 in which the heart was subsequently heard during labor, and 13 cases in which the heart continued to beat after the baby was delivered. Among the 105 stillborn babies 37 were premature and 68 at term; 44 were macerated and 61 were not.

In view of the amount of work that is being done to educate patients to the importance of prenatal care, it is very interesting to see that 85 of these mothers had been attending the prenatal clinic and only 19 were emergency cases and not admitted from the clinic, giving a ratio of stillbirths among clinic patients of 21 in 1000 deliveries. Further analysis shows that of the 58 cases in which a fetal heart was not heard or was doubtful on admission, 45, or 77.5 per cent, were from the prenatal clinic, while among the 47 in which a fetal heart was heard on admission there were 41, or 87 per cent, from the prenatal clinic. This series, though small, is further substantiation of the importance of antepartum care, showing a higher percentage of clinic patients among those who entered the hospital with living babies. At the Woman's Hospital, all patients are expected to report every two weeks to the clinic, and oftener, if necessary, thus placing a real responsibility upon the men in

charge of this department, in recognizing and treating abnormal conditions. Clinic patients are admitted to the hospital ward whenever any condition arises needing hospital observation and care; and the records show that the most frequent cause for this is toxemia. The rule in the past has been to admit all women showing evidence of this condition, but recently we have made this rule more elastic and are now admitting arbitrarily every woman who has a prenatal systolic blood pressure of 140. This may seem rather extreme, but we hope our results will justify the extra hospital days required. In this group which we are studying there were 25 patients with evidences of toxemia and 79 without, but only 18 cases came from the prenatal clinic. Four of the 25 patients with toxemia had convulsions.

Negative Wassermann reactions were found in 70 mothers; nine were four plus. One patient had extensive condylomata lata, syphilitic in type, and the remaining 24 had no Wassermann tests made. These omissions, I may say, occurred early in the series. Thus there were ten cases of syphilis found among the 80 examined, or one in eight. To these ten luetic mothers two babies were born with lues, one having a marked pemphigus and one a four plus cord Wassermann; the remaining eight showed no signs of syphilis. All placentas are sent routinely to the laboratory for examination. In addition 23 babies had cord Wassermanns done. Of the 105 stillbirths 53 were autopsied, and no other cases than those just mentioned gave any signs of syphilis.

A review of the autopsy findings on these 53 babies gives some interesting data, especially on intracranial injuries, of which there were 12. Three of these injured babies were delivered by breech, five by breech following version, four by forceps, and one normally. In only one case was a fractured vertebra found; this occurred in conjunction with a torn tentorium and was not given as the cause of stillbirth. Table I is compiled from the reports of the pathologist.

TABLE I

Macerated Fetus		13
Cerebral Injury		12
Tear in Tentorium	7	
Tear in Falx Cerebi	1	
Tear in Falx Cerebi and Tentorium	1	
Cerebral Hemorrhage	3	
Intrauterine Asphyxia		7
Premature Fetus		4
Anencephalus		3
Hydrops Congenitalis		1
Fetus Papyraceus		1
Syphilis		1
Normal		11
		53

The cases of prematurity were not as frequent among these stillbirths as had been anticipated (Table II), there being only 37 babies born before term. These were very evenly distributed between the twenty-eighth and thirty-eighth weeks; 11 of them were in induced and 26 in spontaneous labors. In 14, toxemia was an associated condition; in 6, syphilis, and in 5, premature separation of the placenta.

TABLE II

28 to 38 weeks	6	34 to 36 weeks	7
30 to 32 weeks	7	36 to 38 weeks	10
32 to 34 weeks	7	38 to 40 weeks	68
			105

As one would expect, abnormal deliveries predominated, there being 61 (Table III), though it is surprising to find only 22 babies delivered with forceps. However, too much stress should not be laid on the method of delivery per se, when one considers that in more than half of the cases studied no fetal heart was heard on admission to the hospital.

TABLE III

Normal		44
Forceps		22
Low	5	
Medium	12	
High	5	
Breech		17
Breech after version		22
		105

Pelvic deformity was not an important factor in these cases, for ninety women had normal pelves (Table IV). Eleven were abnormal and three were not measured.

TABLE IV

Flat	6
Justo-minor flat	1
Masculine	4
Not measured	3
Normal	90
	104

Prolapsed cord occurred 11 times, in ten of which it was a contributing or actual cause of stillbirth.

Realizing that many figures confuse and are hard to assimilate, further study of these cases can be limited to the most important group, that in which a fetal heart was heard when the patient entered the hospital. If the baby was alive in 47 of these cases when the mother was admitted, and in 41 during part of her labor, why was there a stillbirth? This question is the one which should be carefully studied and all the important data tabulated in the hope that some definite and instructive conclusions may be reached. The six cases, in which a fetal heart was heard on admission, but not during labor (Table V), showed conditions which readily explain the stillbirths, and except for the two cases of prolapsed cord, could not have been altered. However, an earlier recognition in these two cases might possibly have helped in avoiding the stillbirths which resulted.

TABLE V

Eclampsia	(emergency case, not from prenatal clinic. Labor induced).
Premature Labor	(admitted with ruptured membranes at thirty-second week, but no pains. Autopsy: prematurity).
Abnormal Fetus	(heart heard on admission, not afterwards. Autopsy: anencephalus).
Premature Separation of Placenta.	(Labor induced. No fetal heart after insertion of bag. Hemorrhage 800 c.c.)
Prolapsed Cord—two cases	(each admitted with history of ruptured membranes: in one, cord was prolapsed nine hours before onset of pains; in the other four and one-half hours. No pulsation in cords when found. One autopsy: normal baby).

The 41 cases in which a fetal heart was heard during labor show a variety of conditions, often several being associated in the same case. This has made it difficult to classify them concisely and at the same time to present tables that are accurate. However, there are certain outstanding points that can be briefly summarized, thereby enabling one to obtain quickly a general idea of this group of cases. Ten deliveries were spontaneous, 13 were with forceps, and 18 by breech, 14 of which followed version. This gives 75 per cent abnormal deliveries, with version and forceps about equal in frequency. Eight patients had a labor of over thirty-six hours and seven had ruptured membranes for more than twenty-four hours. There were ten persistent occipitoposterior positions, six being delivered by forceps after an instrumental rotation, and four by version and breech. Four presentations were breech, one was transverse, and one a face with chin posterior. Seven patients had deformed pelves, three being flat and four masculine in type. Three had a placenta previa, two a premature separation of the placenta, and five a toxemia. In seven babies the cord was around the

neck, and in six the cord was prolapsed. Of the 18 babies autopsied, eight had a cerebral injury and ten were uninjured. It is interesting further to note that 31 of these stillbirths occurred in primiparae and ten in multiparae, or 75 per cent in patients having their first labor.

A more careful analysis of these 41 cases shows a group of 21 cases which may be called unavoidable. Either the complications were recognized early and all procedures that were possible instituted to meet them, or the stillbirths were beyond human control. Table VI shows these cases, listed according to the most important condition in each case.

TABLE VI

Prolapsed Cord	4
Prolapsed Arm and Cord	1
Placenta Previa	3
Persistent Occiput Posterior	3
(Medium forceps,—instrumental rotation.)	
Premature Separation of Placenta	2
Toxemia (induced labor)	2
Masculine Pelvis, medium forceps	1
Transverse Presentation	1
(With prolapsed arm.)	
Face Presentation, R.M.P.	1
Breech Presentation, dry labor	1
Cord around neck six times	1
Anencephalus	1
	21

There is a second group (Table VII) of eight cases in which the choice of a different type of delivery might have given the baby a better chance. Seven were in cases with a persistent occipitoposterior position, three of which were delivered by high forceps and four by version and breech. One was an elective version with the head unengaged. These eight are borderline cases in which the choice of delivery was difficult, since the patients were often entitled to a test of labor (seven being primiparae). Though they form a very small percentage of the 4000 deliveries reviewed, they illustrate a most important point, if we are to make every effort to reduce stillbirths to a minimum. Looking back upon them with our present view of these problems, one must feel that the three high forceps deliveries should not have been done, and the choice should have been between cesarean section and version; also that the patient with two previous stillbirths (Case 4) should have had a cesarean section and not a version. On the other hand the patient with marked toxemia (Case 7) was probably best handled by a version, since, in our experience at least, toxic patients do not stand laparotomies well. In the remaining cases one may question whether the choice of a version was the best solution. However, as these were all primiparae much may be said in its favor. Prolonged labors are bound to occur, and if we decide upon a thorough test of labor, they are at times unavoidable, However, should we not seek in every way to curtail these? Personally, I feel that on a hospital service where a majority of the patients have in the prenatal clinic the advantage of frequent and careful observations, during the latter weeks of pregnancy, this group of borderline cases should be so well studied in the clinic, that after admission a decision can be made within a reasonable number of hours and without subjecting these patients and their babies to the risks of prolonged labors. These cases emphasize the importance of the most careful prenatal study in all cases where potential difficulties during labor or delivery exist.

TABLE VII

1. Primipara, at term, normal pelvis. Prolonged test of labor, lack of advance, persistent O.P. High forceps; prolapsed cord, caught by forceps blades. Baby 9 lb. 4 oz.
2. Primipara, at term, flat pelvis. Prolonged labor, bag for dilatation of cervix, persistent O.P. High forceps. Baby 7 lb. Autopsy: Cerebral hemorrhage. Subsequent delivery by cesarean section, normal baby.
3. Primipara, at term, flat pelvis. Prolonged dry labor, bag for dilatation of cervix, persistent O.P. High forceps. Baby 7 lb. 13 oz. Subsequent delivery by cesarean section, normal baby.
4. Multipara, at term, normal pelvis. History of two stillbirths at home, last one of which was 13 years previously. Mild toxemia, persistent O.P. Version and breech. Baby 7 lb. Autopsy: Bilateral tear in tentorium.
5. Primipara, at term, flat pelvis. Dry labor, persistent O.P. Version and breech. Baby 8 lb. 3 oz. Subsequent delivery by cesarean section, normal baby.
6. Primipara, at term, normal pelvis. Prolonged dry labor, bag for dilatation of cervix, persistent O.P. Version and breech, cord tight around neck twice. Baby 7 lb. 12 oz.
7. Primipara, at term, normal pelvis. Marked toxemia. Labor induced with bag. Persistent O.P., too high for forceps. Version and breech. Baby 7 lb. 9 oz. Autopsy: Torn tentorium.
8. Primipara, at term, normal pelvis. Prolonged test of labor, L.O.A.; too high for forceps. Version and breech. Baby 9 lb. 4 oz. Autopsy: Torn tentorium and fracture of 6th cervical vertebra.

The third group (Table VIII) contains 12 cases, being those in which a more careful watching might have resulted in the recognition of fetal embarrassment in time for a successful operative interference.

TABLE VIII

TYPE OF DELIVERY	NO. OF CASES
Spontaneous Delivery	
Uncomplicated (following normal labor of less than 13 hours. One autopsied: Asphyxia)	4
With cord around neck (following normal labor of less than 20 hours. Two autopsied: Asphyxia)	3
Forceps Delivery	
Low Forceps (following normal labor. Two autopsied: Asphyxia)	2
Medium Forceps (following prolonged labor. One autopsied: Cerebral hemorrhage)	2
(Following prolonged dry labor. Masculine pelvis)	1
	12

The importance of following the fetal heart rate carefully during labor is apparent, and the need of promptly recognizing fetal embarrassment is essential, if each baby is to be given every possible chance. At the Woman's Hospital we are constantly laying emphasis on this point. At the beginning of this series, in 1919, the interns and resident physician made the observations on the fetal heart. Soon, however, the nurses in the delivery room were taught to count this, and directed to report any changes noted. Then we required them to record their findings on the labor record hourly in the first stage and half-hourly in the second stage. At the present time, in addition to the observations made by the interns and the resident physician, the nurses count the fetal heart every half hour from the onset of labor, and when the membranes rupture, second stage contractions begin, or complications arise, they do this every fifteen minutes. Frequent observations are continued in the delivery room, on abnormal cases, and, where there is slow advance, on normal cases, for the unborn child is entitled to every protection until safely in the world. The practice of obstetrics requires most careful watching of both mother and baby throughout labor and delivery if the best results are to be obtained.

SUMMARY

This study of the stillbirths in 4000 consecutive ward deliveries occurring on the Obstetrical Division of the Woman's Hospital shows:

1. There were 104 patients who had 105 stillborn babies, or 26 stillbirths per 1000 deliveries.
2. There were 85 of these patients who had been attending the prenatal clinic, giving 21 stillbirths, among clinic patients, per 1000 deliveries.
3. There were 25 patients who showed evidences of toxemia, and four of these had convulsions.
4. Nine patients among the 79 who had Wassermanns were four plus. One showed clinical evidences of syphilis. To these luetic mothers two babies were born with syphilis. No other babies gave any signs of syphilis.
5. There were 61 abnormal deliveries, 22 being by forceps and 39 by breech.
6. There were 90 patients who had normal pelvic measurements.
7. There were 37 premature babies and 44 were macerated.
8. There occurred 11 cases of prolapsed cord in ten of which it was a contributory or actual cause of stillbirth.
9. There were 53 babies autopsied and 12 of these showed cerebral injury.
10. In 55 patients no fetal heart was heard on admission, and in three it was doubtful. The heart in 47 was heard on admission and in 41 of these subsequently during part or all of the labor.
11. An analysis of these 41 cases suggests that some of these stillbirths might have been avoided:
    A. In eight cases if a different method of delivery had been chosen.
    B. In 12 cases if an earlier operative interference had occurred.

121 EAST SIXTIETH STREET.

DISCUSSION

DR. HARVEY B. MATTHEWS, BROOKLYN, N. Y. -I should like to stress the definition of stillbirths. Most reports have included infant mortality. We should regard stillbirths as those that occur at or beyond the twenty-eight week only and should not be held responsible for the life of the child before the period of viability. In New York City one must report every abortion or miscarriage as a stillbirth, and I have always been very much opposed to such a scheme because it does not give a true index of the incidence of stillbirths.

The class of patients one is dealing with will, to some extent, determine the percentage of stillbirths. We find at the Long Island College Hospital and at the Methodist Episcopal Hospital two entirely different classes of patients; hence, we get a different stillbirth rate for each hospital. Again we get a different rate from those patients that are brought in or sent in by doctors who do not do competent prenatal work. Private patients too will have a different stillbirth rate. The prenatal clinic cases have the lowest stillbirth rate. Now as to a working classification of fetal deaths I would like to suggest the following: those that are dead on admission; those that die during labor but before delivery; and finally those that die during delivery.

The statistics from the Long Island College Hospital and Methodist Episcopal Hospital show about the same as Dr. Lyon's. In 2000 labors at the Long Island College Hospital, we had a stillbirth rate of 44 per 1000, including all classes of cases. A number of these cases came from extremely poor neighborhoods, were brought in by the ambulance or were referred by doctors and midwives. In 1000 cases from our prenatal clinic there was a rate of 24 per 1000. A former series from our clinic, tabulated by A. C. Beck, showed 18 per 1000. In 4000 consecutive labors at the Methodist Episcopal Hospital we had a stillbirth death rate of 24 per 1000. The private cases showed 26 per 1000, and the

general ward cases 19 per 1000. Ward cases receiving prenatal care during the greater part of pregnancy showed 14 per 1000. Hence, it is evident that the stillbirth rate varies in proportion to the amount of prenatal care the patient receives, and the stratum of society to which she belongs.
In looking over the main causes of stillbirths in our series, they may be put down about in this order: toxemia, placenta previa, ablatio placenta, prolapsed or knotted cord or cord about the neck (an important factor in both the above series), macerated fetus with or without toxemia, probably syphilitic; syphilis; instrumental and breech delivery; intracranial hemorrhage and other cranial injuries; monsters and prematures.

DR. RUDOLPH W. HOLMES, CHICAGO, ILL. -The benefits which accrue from a rational routine supervision of the pregnant woman are no longer debatable. Prenatal care is one of the greatest prophylactic measures and has brought about a great amelioration of the incidence of morbidity and mortality of mothers and their children. It is unfortunate but true that only a few prenatal maladies may be recognized and then, largely only by reflection: syphilis and the toxemias, recognized in the mother, have their effects on the fetus definitely interpreted. By the x-ray gross developmental defects may be recognized. Twice it has been my fortune to recognize congenital heart disease before birth.

In Chicago, the Commissioner of Health, Dr. Bundesen, has issued a photostatic graph of the deaths, in hospitals, within the first two weeks of life: on a basis of 1000 live births, the deaths range in Chicago hospitals, from 18 to 147. This graph clearly shows that many women still go through pregnancy without prenatal care, and with something wrong in the attention during labor. If we eliminate the inevitable sequences of the above conditions, syphilis, toxemias, maldevelopment, and unskillful obstetrics, we yet have a large number of fetal deaths of which we know little or nothing. Personal contact with a patient is essential in the proper interpretation of disease, --we have not that personal contact in the case of the unborn child. So we find a large proportion of fetal deaths are due to what Dr. Cragin denominated "congenital weakness" for lack of definite knowledge.
We know that fish produce an enormous number of eggs in the spawning season, a wise provision of nature, as so many of the eggs are lost directly or soon after fertilization has been accomplished. This biologic fact has its parallel in the human family; more children are produced than are needed. We see a similar parallel in the 200,000 ova in the newborn female child, few ever reaching perfection and fertilization.

DR. JOSEPH L. BAER, CHICAGO, ILL.-A comparison of statistics, of which this paper is an excellent example, is perfectly futile without a standardization. What is a stillbirth? The definition of viability is twenty-eight weeks, 1800 grams weight, 35 cm. length. The law of Illinois, the Bureau of Census at Washington, and the American Public Health Association recognize as a stillbirth a fetus that is born without movement, heartbeat or respiratory effort, and a fetus that is born with any one of those three phenomena is a live birth legally, quite regardless of viability. Therefore, if Hospital A chooses to regard viability as a criterion for its stillbirth incidence, Hospital B ignores viability, and Hospital C chooses to call a fetus a live birth at twenty weeks because it gasps once or twice and is then entitled to a death certificate, our figures are perfectly useless, and until we can get some unanimity as to what constitutes a stillbirth we shall not be able to compare them.

DR. J. WHITRIDGE WILLIAMS, BALTIMORE, MD.-A number of years ago I collected and tabulated the deaths occurring in a series of 10,000 deliveries, which included all babies dying during the first two weeks of the puerperium. A considerable part of that series was before satisfactory prenatal care was employed. It was shown that the predominant cause of fetal death was syphilis, which was responsible for over 30 per cent of the deaths. The mortality of the last three years in about 3,500 cases, from the period of viability up to and including the first two weeks of the

puerperium, was 6 per cent. I was very much interested in two things: first, to see that the prenatal care had reduced the deaths from syphilis from over 30 per cent to about 6 per cent. In this series, practically all the deaths from syphilis occurred in the children of women who had Dot had prenatal care. Consequently, intensive prenatal care has served to reduce the incidence of death from syphilis almost to the vanishing point.

The second thing that interested me in this study was to determine what proportion of the children died from cerebral injuries. Practically all of the 210 children in the series came to autopsy, and cerebral injuries were found in 6 per cent, only half the number in Dr. Lyon's report. I had expected to find it much higher. Likewise, just as he did, we found a very large incidence due to placenta previa and separation of the placenta.

The general result of my experience is that by efficient prenatal care we are able to do away almost entirely with the deaths due to syphilis. We are scarcely able to affect those due to placenta previa or premature separation. We can to some extent diminish the deaths due to toxemia. But we have a very considerable field for the reduction in the number of deaths due to dystocia, especially when associated with moderate degrees of pelvic contraction, and it is in this field that we can look forward to improvement in the future.

DR. R. A. BARTHOLOMEW, ATLANTA, GA.-I would like to comment on the auscultation of the fetal heart as a sign of impending danger to the fetus. Some confusion exists as to how we should interpret the changes in the fetal heart during labor. I feel that any rate from 120 on, even to 200, is not to be looked upon as a sign of danger to the baby. In my experience I have never seen a fetal death associated with such a rate. A rate from 120 to 100, I have always looked upon as a suspicious sign and one that calls for greater watchfulness and more frequent auscultation. A rate below 100, is certainly to be looked upon as a very dangerous sign, particularly if such intermittent slowing becomes more frequent or persistent. A temporary slowing does not demand immediate interference, but a slowing that persists below 100 for more than several minutes indicates serious danger to the fetus and calls for interference. Fortunately such slowing is seldom present until the latter part of the second stage of labor; hence, quick delivery can usually be easily accomplished.

DR. J. P. GREENHILL, CHICAGO, ILL. -Our experience at the Chicago Lying-In Hospital has been essentially in accord with what Dr. Lyon has said concerning his study at the Woman's Hospital. However, our incidence of cerebral hemorrhage was only 19.7 per cent. We found that syphilis as a cause of stillbirth is not very significant, since it accounted for only 2.6 per cent of all our fetal deaths. The toxemias of pregnancy caused the death of a large number of fetuses, most of which were expelled prematurely. In a few of our cases pituitrin was the cause of death. The house staff practically never uses pituitrin during the first or second stage of labor, and the fetal deaths which followed the use of pituitrin occurred at the hands of attending physicians. At autopsy, babies presumably killed by the action of pituitrin showed a most intense congestion and pinpoint hemorrhages of the brain.

You may be interested to know that at the Chicago Lying-In Hospital during the past seven years we had nineteen fetuses which were monsters or had gross deformities. Seven of this number, or 36.8 per cent were associated with placenta previa. I mention this in particular, because a few years ago I tried to emphasize the not infrequent association of fetal monstrosities and deformities with placenta previa.

DR. LYON (closing).-In regard to the fetal heart our custom now is to have the heart rate taken during the interval between contractions, and if there is an increase or decrease of 20 points, it is reported to the resident. It is not our custom to permit pituitrin either to induce labor or to hasten the second stage, without an order from one of the attending surgeons.

The Prevention of Maternal and Infant Mortality

The prevention of maternal and infant mortality in the United States during the past five years is closely allied with the enactment of what is known as the Sheppard-Towner Law, or, to be more exact, the Federal Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy. Any consideration of this subject, according to S. J. Baker (Atlantic M. J., May, 1927) must, therefore, include a brief survey of what this Act has accomplished and what it may promise for the future.

The Sheppard-Towner Act was signed by President Harding on November 23, 1921. The money appropriated, however, was not available for expenditure in the various states until March, 1922. The Act provides for a direct allotment of $5,000 to each state, with a further allotment of $5,000 to each state matching the appropriation and a further allotment of pro-rata amount of the remainder of the appropriation, based upon the population of each state, provided the state will appropriate an equal amount. The total money available amounts to $1,190,000 each year.

The response to the opportunity offered by the Sheppard-Towner Act was immediate, and at the present time its provisions and aid have been accepted by all but five states: Maine, Massachusetts, Connecticut, Kansas and Illinois; and Hawaii has recently been included by virtue of a special act of Congress. At the best, the appropriations available to each state, even with the additional state appropriations are much less than the situation demands, but a definite beginning has been made and definite results are already shown.

Although there has been a distinct reduction in the maternal death rate in the U. S., our situation in this regard is still far from enviable. In 1918, the maternal death rate per 1,000 living births was 9.2; in 1924, it was 6.6. Yet among 18 nations having available birth and death statistics, the U. S. now stands 17th in its maternal death rate. There is only one civilized country in the world that has a higher maternal death rate than the U. S.; that is Chile. In order that we may understand in some degree why we are in such a humiliating position and why this country is so seemingly negligent with regard to the safety of women at this critical time, we must know something of the reasons why childbirth seems so unsafe when contrasted with the conditions in other countries.

The last official statistics issued from the Census Bureau on this subject are those for 1921. From these we learn that during that year 15,027 women died from accidents and diseases incident to childbirth. Of these deaths, 40.3% were from puerperal septicemia; 31.1% were due to other diseases incident to pregnancy, and the remaining 28.6% resulted from what are known as accidents of pregnancy. From the medical point of view, and in the light of our present knowledge, it seems safe to assume that the two first groups of deaths, comprising 71.4% of the total, could have been prevented either wholly or in greater part. In other words, if it were possible to apply the knowledge we possess, we could save 10,000 of these lives each year and reduce the maternal death rate two thirds. It is possible also that some of the so-called accidents of pregnancy might be avoided by better obstetrical training and practice.

A factor which has been considered as having a distinct relation to our high maternal death rate is the extensive employment of midwives in certain localities and among certain groups of our population.

In practically all of the European countries, midwives are well trained and under governmental supervision. With such safeguards, their practice has been made safe for both mothers and babies. In this country we have had to deal with untrained, unskilled, and often dirty and densely ignorant women whose habits and methods of practice have undoubtedly been responsible for many deaths of mothers at the time of childbirth. The decrease in our maternal death rate, even though it

has been small, has been due undoubtedly to our efforts to deal with this deplorable situation. Classes for the instruction of midwives are being held in 20 states, and the results are already apparent. Higher standards of practice have eliminated to a great extent the worst type of midwife and improved the methods pf those now practicing. In several states this is shown by the decrease in the number of women employing midwives and the total number of the latter.

But granted that the midwife situation may be brought under full control and made safe for women who must secure that method of care or none at all, there still remains great need for further cooperation from the medical profession in making childbirth a less dangerous experience. The extension in the states of what is known as prenatal care has been gratifying and productive of splendid results. We need a recognition on the part of our medical colleges of the importance of obstetrics, and more extended and widespread opportunities for obstetrical training for medical students.

We have cause to congratulate ourselves on the present status and the trend of our infant death rate. In a list of 24 countries of the world, the U. S. stands 8th in its baby death rate.

If our present infant mortality is to be still further reduced, increased emphasis will have to be placed on prenatal care. The reduction in the number of baby deaths that has already been secured is due mainly to better community sanitation, a more adequately guarded milk supply, more natural nursing as opposed to artificial feeding, and the consequent reduction in the number of deaths from diarrheal disease. At the present time, over 40% of all baby deaths occur during the first month of life. They are due almost entirely to what is called prematurity, malnutrition, or congenital debility --all largely dependent upon prenatal conditions affecting the health of the mother. It is evident that no amount of instruction of the mother or care of the baby after birth will serve to save the lives of these babies. But repeated demonstrations of health instruction to groups of expectant mothers have shown that this death rate during the first month of life can be reduced one-half or even two-thirds, if all expectant mothers can have adequate care and health instruction during their period of pregnancy.

The present Sheppard-Towner Law will not be in effect after this year. An Act for its extension for two more years has passed the House of Representatives in Congress. The bill was amended in the Senate Committee to limit the extension to one year. The recent session of Congress failed to act on it, but it may be brought before the Senate in the next session beginning in December of this year.

As stated, the annual appropriation for the welfare of the mothers and babies of this country is slightly more than one million dollars annually. It may not be amiss to call attention to the fact that Congress has appropriated $75,000,000 for the current fiscal year for Federal aid to good roads, and it may also be mentioned that a single battleship costs about $20,000,000. If we accept Federal aid for our roads, we can hardly consider it wrong to accept it for our mothers and babies, and surely our women and children are worth at least one-twentieth of a battleship. We have gone far in our protection of child life, but until every mother is assured of safety when she gives birth to a child, and until every baby has its chance to live and be well, we shall not have reached our goal.

[*The fundamental reason for the high mortality in childbirth is the disesteem in which it is held by the medical and the nursing professions, and by the public and the legislators. Until the pathologic dignity of the function of childbearing is recognized and the art of obstetrics is placed on a plane equally as high as that of surgery and medicine there will be no great decrease in the mortality and morbidity of our childbearing women and their babies.-Ed.]*

Results of Supervised Midwife Practice in Certain European Countries

A journey through Scandinavia last summer with the American Gynecological Club impressed G. W. Kosmak (J. A. M. A., December 10, 1927) greatly with the good results obtained in a carefully supervised system of midwife instruction and practice. To begin with, the midwife in Scandinavia is not regarded as a pariah. Her ranks are recruited from the substantial middle classes of the population, mostly daughters of farmers, shopkeepers or minor government officials, who take up the study not solely with the desire to earn a livelihood, but because of their wish to educate themselves in this important function of womanhood, or to be a part of a much respected system of social welfare activity. These women are thoroughly instructed in elementary obstetrics, more by practice and precept than by book learning. They are taught to revere the physician, and they are distinctly shown their limitations. Moreover, the one great and important factor in their training is the knowledge that pregnancy, labor and the puerperium are physiologic acts in a woman's life in the majority of cases, but that pathologic conditions may develop in any one of their patients. With such pathologic conditions they must not concern themselves except in emergencies, and they are compelled by law to call in a physician for a transfer of responsibility in every case in which their clearly defined limitations are exceeded. An excellent system of supervision involves the reporting of their work to some central authority at regular intervals during each year. In addition to this, midwives are compelled to take review courses of two weeks, each, at stated intervals, in their original hospital, if possible, and are retired from practice at 50.

In considering the instruction of midwives in Scandinavia, one is greatly impressed by the thoroughness of the teaching and the length of time given to such training as compared with what is required of our medical students in this country. Here are women who have come into the most intimate contact with at least eighty cases of labor during each year of a two-year period as compared with the paltry ten cases required by licensure for graduate physicians in many states.

The proportion of births attended by midwives and physicians, respectively, in Norway is available for 1918 when, out of 64,187 births, 54,670 were attended by midwives, or 85 per cent. In Sweden, in 1921, the percentage was 84.3 Sweden has a widely scattered population of about 6,000,000, most of whom are in rural districts which makes it necessary for Swedish midwives to be capable of acting in emergencies when physicians cannot be reached. Those in charge of this training see no objection, therefore, to teaching such women how to perform certain obstetric operations, including manual removal of placenta, external, internal and combined version, extraction in breech presentation, and even the use of low forceps. Each student during her course has an opportunity to conduct about eighty deliveries under supervision. She is likewise trained on the manikin to perform various obstetric procedures. In addition, the course covers lessons in a pediatric clinic, where the pupil is impressed with the evils following artificial feeding. The midwives are moreover educated to give advice on the general hygiene of pregnancy and likewise on the health of the normal child in the first year of its life. The results of this midwife training are evidently excellent because the mortality rates of these countries are remarkably low and likewise the morbidity following childbirth. In connection with these low rates, the fact must be taken into consideration that the Swedes and other Scandinavian nations have remained a pure sound Germanic race. For this reason, the proportion of abnormal confinements is quite small.

It has been assumed, whether justly or otherwise, that the maternal morbidity and mortality statistics associated with childbearing in the United States are on a very low plane, and we have been accused in various quarters of presenting a picture in this respect which is not in accord with our otherwise high standards of civilization. Kosmak repeats the qualification" justly or not" because the comparison made between our records and those of foreign countries is perhaps not based on equal standards. Undoubtedly our maternal mortality statistics could be improved, but in this connection one should bear in mind that possibly there are factors influencing these figures which are not prevalent in those countries with which the United States is compared. It cannot be denied, however, that this country is credited with a puerperal mortality rate entirely too high. We have shown in our

own country what advanced prenatal care will do to reduce the mortality from toxemia, from endocarditis and from other preventable complications of pregnancy, but we have not sufficiently reduced the occurrence of sepsis and deaths from operative deliveries. Of what use is all the prenatal care if the mother succumbs to a fatal septicemia or to shock from hemorrhage?

Whether a midwife system in this country shall be a part in this scheme is for the profession to decide. A comparatively small number of states have presented data concerning the practice of midwifery, but the majority are ignorant of the number as well as the qualifications of midwives working within their boundaries. When this negligence is compared with the carefully supervised and studied system in Scandinavian countries to which Kosmak has referred, the necessity for reform becomes at once evident, if we are to retain this type of medical practice. If, as is claimed, the midwife is absolutely essential in certain rural districts and among the foreign born of our large cities, then some steps must be taken to provide for her proper education and subsequent control and supervision. If midwife attendance is an objectionable form of medical practice, the profession must gird its loins and find a substitute, or continue to be saddled with the odium of unjustified mortality figures in childbearing which are not in accord with the achievements in other fields of American medical practice.

The Midwife Problem

J. P. Bowdoin (J. A. M. A., Aug. 18, 1928) confines his remarks on the midwife problem to that of the midwife as he finds her in the Southeast. The problem is one that is peculiar to his section, as practically all midwives are negroes who have reached middle age or over. They are, as a rule, ignorant and superstitious, having absorbed many things from the traditions of the race. Most of them are unable to read; consequently, teaching them is a slow process. He deals with Georgia figures, but the same conditions very likely prevail in all of the Southern states.

In 1924, a roll of the midwives known to be practicing was compiled. The number found was 2,675. It is believed, however, that there are over 5,000 in the state. The midwife to qualify must attend a school of instruction of ten periods; and to pass a satisfactory examination, she or he (there are a few men midwives) must have a negative Wassermann reaction and be vaccinated against smallpox. They must agree to abide by the rules and regulations as promulgated by the state board of health, and report promptly all births to the local registrar. The law requires that 1% silver nitrate be put into the eyes of each baby immediately after birth, free of charge. The lessons prepared and used are of the simplest kind. Most of the teaching consists in telling them what not to do and when to send for a physician. Each midwife is required to have a proper bag for the protection of her supplies, and just what she shall carry is prescribed. They are required to demonstrate before the class how they would do certain things. They are required to memorize the birth certificate.
Every one who is not informed asks the question, "Why a midwife at all?" The fact that 20,794 babies were delivered by midwives in Georgia in 1927, of which number 19,384 were live births, shows conclusively to the author's mind that the midwife is necessary. This represents 31.4% of the total births. She is doing business and under present conditions is indispensable. In 1927 there were 65,475 births, of which 3,839 were stillbirths. Of the stillborn, 1,410 were delivered by midwives, or 36.7 stillbirths chargeable to them. When one considers the part syphilis plays in the stillbirths and the infection that prevails in the class of people who call the midwives, their showing is most creditable.

The foremost questions are what is best to do for her and how to do it; also how best to protect those who use her service. In her present condition, she is not desirable as an accoucheuse. The problem is to educate her in personal cleanliness and hygiene, and teach her how to prepare her patient properly for delivery. This instruction should include prenatal care, and if possible all should be given by a physician. In addition she should be taught the best way to collect specimens and get them to the laboratory for examination; also how to prepare sterile dressings out of rags or such materials as the patient may have, for both mother and child. She must know that the things once sterilized must not be touched; she should know how to clean her hands, fix her scissors and how to dress the cord. She should know the symptoms that forewarn of eclampsia, that she may call a physician at once. These and other things she should be taught to do, but the vast majority must be taught well what not to do.

Maternal Mortality in the United States

It is the belief of S. J. Baker (J. A. M. A., Dec. 10, 1927) that the United States holds at present an unenviable position with regard to its maternal mortality rate. According to the latest available statistics, this country ranks nineteenth among the twenty nations of the world which can offer data on this subject. The only civilized country that shows a higher death rate among women from accidents and diseases incident to childbirth is Chile. Moreover, the maternal mortality rate in the United States is one-third higher than that of England and Wales and more than twice as high as that of Denmark, Italy, Japan, Netherlands, New Zealand and Sweden. Even allowing for possible doubt

as to the entire accuracy of the statistics from the countries studied, and taking into consideration the varying methods used in computing these rates, it is evident that the present obstetric practice does not assure to the women of this country the safety which they have the right to demand and which we should be ready and able to give.

The situation in this country in this regard has not shown any evidence of improvement during the last ten years. In the death registration area of the United States during 1921, more than 40%, or two-fifths, of all maternal deaths were due to puerperal septicemia. We are agreed that the researches of Oliver Wendell Holmes, Pasteur and Semmelweis have proved that this is a purely preventable condition, and that with the proper obstetric technic the maternal death rate could be at once reduced by 40%. 27% of maternal deaths are due to puerperal albuminuria and convulsions --a condition that in the present state of medical knowledge may be held to be at least partly preventable. The same assumption is fair with regard to the 10% of maternal deaths that are due to instrumental delivery and surgical procedures including cesarean section. The remaining 23% of the maternal deaths are due to what are called the accidents of pregnancy, including abortion, ectopic gestation, puerperal hemorrhage, embolus, puerperal phlegmasia dolens and certain ill-defined causes.

There have been many reasons advanced to excuse and explain our failure in this direction. Possibly the most prominent one has been that referring to the employment of midwives in many of the states. There can be no difference of opinion as to the danger involved in allowing unskilled, ignorant and often dirty persons to assume the responsibility of obstetric care and the delivery of pregnant women. There is plenty of evidence available that in many states women would be without any aid at the time of childbirth if midwives were not available, and in many of our cities they still fill a racial and social need. Our large alien groups are used to employing them in their native lands and demand their services here. If the midwife is to be eliminated from her calling, her place must be filled with those better fitted to serve; and this we have so far been unable to do, for the supply of physicians, particularly in rural communities, and of available hospital beds for this purpose falls far short of meeting the need. New Hampshire, Vermont and Oregon all report that 100% of their births are reported by physicians and that there are no midwives practicing in these states. Wyoming reports that 99.2% of its births are cared for by physicians. Yet New Hampshire has a maternal mortality of 7.1; Vermont a rate of 6.8; Oregon a rate of 7.2, and Wyoming a rate of 9.0 maternal deaths per thousand live births. All these rates are higher than that of the birth registration area, which is 6.4. Let us contrast the showing of these states with that of four others where the percentage of births reported by midwives ranges from 9.4 to 21.7. These four states have an average maternal mortality of 5.9, which is lower than that of the birth registration area and lower than that of the four states first considered as having practically all their births cared for by physicians. These comparative data do not show that the midwife can be held responsible as a dominant factor in the present high maternal mortality rate. In this connection it should also be noted that the proportion of births attended by midwives shows a definite decline.

Hospitalization of confinement cases would seem to be one of the ways in which the elimination of puerperal septicemia might be assured and safe operative procedure carried on. But even in our large cities where hospital care at this time is becoming more commonly accepted, the supply of beds still falls far short of meeting the need, and in the rural districts there is the same vital and urgent need of more hospital facilities for this class of cases as there is for all others. The three remaining methods of reducing the maternal mortality rate which seem evident are enforced reporting of all cases of puerperal septicemia, better training of medical students in the science of obstetrics, and the extension of facilities for prenatal care and supervision. The urgent need of stressing the importance of obstetrics as a subject in our medical schools has already been brought forward by many prominent obstetricians. With the lure of surgery and other specialties, obstetrics has been in a fair way of falling into disrepute and of offering little attraction to the young physician. In practice it

has not been uncommon for many to use obstetrics as a basis for a more varied medical field. Then, too, we have too long considered childbirth as a normal process.

A Frontier Nursing Service

A movement is of just as much value as the goal it sets itself and the success with which its activities tend to reach that goal. The purpose of the Frontier Nursing Service is to reduce the maternal and infant death rate in remote areas by providing resident nurse-midwives, trained and licensed as nurses and as midwives, by civilization's centers for work in its outposts, in cooperation with the nearest available medical supply. Why is such a plan desirable? How is it made practical? The area chosen by Mary Breekinridge, RN, and associates (Am. J. Obst. & Gynec., June, 1928) has for hundreds of square miles no railroad, no automobile road, no bridges over its rivers and streams. Horseback and mule team are the only possible modes of travel. They felt that if they could put the project over in the Kentucky mountains it would be feasible to duplicate it afterwards anywhere.

No figures are obtainable, but in the area where they began there was not one registered physician for nearly 15,000 people in over fully 700 square miles, covering one whole county and the borders of several others. It took the nearest doctor six to twenty hours to reach a patient, on horseback, at necessarily, a fee prohibitive for any but a few families. Before the actual beginning the Service took two steps they considered fundamental. First, they checked up on the existing obstetric situation in a mountain area of 1,000 square miles, with a population just under 30,000. This fell to the author's lot, and took over two months of horseback travel through three counties. In the preceding year 968 births had been reported from these counties, 144 by 9 doctors (not all, however, were state licensed or qualified doctors) and 824 by 128 midwives. The author found 20 other midwives who had not recorded or reported their deliveries, and she is sure there were more, but she did not cover the section minutely. The rule of the service is simple -if the "daddy" can come for the nurses, they can go with him. Once the patient is in labor and the nurse-midwife has been called, she cannot leave her case. If complications supervene she has to send a man on a mule for a doctor.

The first fundamental step was to study the existing obstetric situation. From this study they learned three things. One was that 30,000 people scattered over 1,000 square miles in a rough country, have got to have a number of obstetric attendants, decentralized living at regional intervals within reach of the patients, if the patients are to get any delivery service and any postpartum care whatever. Second, they found that the existing medical supply, especially if limited to state qualified doctors (for a number of so-called doctors practice on county permits and are grossly unfit), could not possibly handle these deliveries even if the mothers wished male practitioners and could afford it. The existing medical supply was not even adequate for consultation, nor always equipped to that end. Third, they learned by their study that it was useless to try to improve the quality of the native midwife. Miss Breckinridge had her investigation of 53 tabulated. The average age was 60.3. This is not a teachable age. The native midwife does not begin to practice until she is over forty and has "raised" her family.

Having learned that attendants sufficiently numerous to live within reach of their patients were essential to a delivery service in the frontiers, that the medical supply was wholly inadequate, and the native midwife unimprovable, the service took its second fundamental step. It accepted the principle of the trained midwife as the right person to replace the untrained one, and began a long study of the methods and the results in those other nations who make use of her. This also fell to the author's lot and consumed the better part of eighteen months, during which she took a midwife's training in London and qualified by examination under the English Central Midwives' Board. She early decided that the Anglo-Saxon plan of combining nursing and midwifery in country districts would fit better into our American tradition than the Continental system of specialization. The famous Queen's Nurses of Great Britain, under the generalized system have a death rate half the

national and one-fourth that of ours in the United States. Their midwifery service cares for some 40,000 to 50,000 women annually in England alone.

It was in the Scotch Highlands that the author found the plan for her local Kentucky formation. In 1924 she made a trip through this region, covering many of the stormy islands of the Outer Hebrides. For every 700 or so of the population she found a splendid resident nurse-midwife, living in the heart of her district, often with the thundering seas between her lonely island and the nearest medical man, with whom she communicated by telegraph, and operating under a local voluntary committee, composed of her own leading people. The new method in Kentucky is one of decentralization. The nurse-midwives live in little houses in the heart of their districts of not more (sometimes less) than a five-mile radius, which is about 78 square miles. They have four of these centers to date, with money for a fifth to be opened this summer, and they cover about 250 square miles. The staff, besides the author, consists of a supervisor, six nurse-midwives and two nurses who are not midwives and do not carry responsibility for this part of the work, except their share of the postpartum nursing. All of the eight nurse-midwives got their midwifery training in England, three at their own expense, one on a scholarship, and the rest are English --three out of four members of the famous Queen's service.

The work is carried forward on horseback. Each nurse saddles and grooms and feeds her own animal. Each nurse has two pairs of saddlebags --one with blue checked, detachable lining for general nursing and one with white lining for midwifery. The nurse-midwife resterilizes its contents and sets a filled lantern by it immediately after a case. Very few of the homes (which are mostly one or two room cabins) have a light other than the open fire. The nurses carry for the delivery a rubber apron, a clean operating gown and a cap to cover completely the hair. They use white in the dispensaries at the centers, as well as on the cases, but the regular uniforms are cadet gray riding coat, breeches, and overseas cap. The midwifery bags weigh 48 lbs. packed (10 lbs. more than the general nursing bags) the weight evenly distributed to both sides of the horse.

The midwifery equipment includes soap, scrubbing brush, gloves, thermometer, enema tube and funnel, artery clamps, hypodermic set, scissors, and cord ties, with more basins than would be needed in the city home, and a two-yard square of rubber sheeting. They carry plenty of dry sterile gauze and cotton, in little white bags, and perineal pads baked in the oven, and towels. For the bed, after delivery, they use pads made of clean rags and newspaper, but these, like the baby clothes, are in the home before the call comes. Among drugs they carry Lysol, silver nitrate ampoules, and ergot. It is routine to give a teaspoonful of ergot in water before leaving the patient, not less than one hour after delivery. They carry pituitrin, in cases of postpartum hemorrhage, provided the third stage is complete, and sedatives for the first stage. The aim is to get a quiet first stage, and a second stage without 4 tear by delivering between pains when the head is fully crowned, and with a minimum of bleeding. They usually deliver on the left side, as they were taught, keeping careful pressure on the fundus and following down with the left hand. The third stage causes the deepest anxiety, because upon the judgment of the nurse alone hangs the life of the patient, should the third stage not be normally complete, as medical aid could not possibly reach her until too late. They have twice in their first 130 deliveries had adherent placentas with terrible bleeding, and these are the only postpartum hemorrhages they have had. The routine calls for a sterile glove always ready for manual removal in such a contingency.

The service has obtained doctors for prenatals with high blood pressure, vaginal discharge, history of stillbirths, general medical conditions, and for miscarriage. They count the losses which occur when a doctor is present as their own. This is the English custom.

The nurses give mother and baby ten days' postpartum care, every day if within a three mile radius, every other day if within five (except at impossible seasons of ice and "tides"). The prenatal work includes blood pressure observations, urinalysis, abdominal palpations, and pelvic measurements on primiparas. The service gives attention to the breasts and advice about such food as is procurable. They help with the baby clothes and in all the little feminine ways in which women

can be of use to women at such a time. The prenatal work is more and more appreciated and the women come increasingly early to established centers. The prenatal and postpartum visits fit in with the general nursing routine, and public health. At the request of the State Board of Health they give hook-worm treatment, chlorinate wells, and inoculate against typhoid and diphtheria. In fees they follow the Scotch Highland custom of a small, yearly fee of $1.00, which covers all nursing care. They charge a $5.00 midwifery fee and will accept payment in kind, as fodder for the horses or a husband's labor. They follow the Scotch custom also of working through local committees of leading mountaineers who meet monthly at the centers to advise with the nurses. From them, from the Louisville and Lexington specialists who give services innumerable without charge, from the Children's Hospital in Louisville, which has taken many of the children, from the Kentucky Crippled Children's Commission, etc., they acknowledge assistance with grateful hearts.

[The editor cannot close his comment in a more agreeable way than to express his high and deep appreciation of a work in constructive charity as has been just described. The Frontier Nursing Service is a Beacon Light for our plans in providing care for the women far from city civilization. And what should be said of these hardy women who are out on the Frontier? We must "take our hats off to them, " and we do.-ED.

The Trend of Modern Obstetrics.

It is the belief of *W. E. Brown (J. Iowa State M. Soc., December, 1930)* that, taking the country over, about 70 per cent of deliveries are in the homes, and it is the province of the practitioner to apply the standards of surgical asepsis to the fullest extent. He must be fortified by complete knowledge of the subject, and his armamentarium should be positive. He should be prepared to meet all emergencies. The first requisite is sterilization, and this requirement is met only by the use of the autoclave. Rubber gloves and instruments boiled in a nondescript vessel with or without a cover, are wholly inadequate and do not constitute sterilization. All paraphernalia should be included in one bundle, and should have been sterilized previously by the autoclave. This should include instruments, drapes, towels, and sponges. The practitioner should have an able assistant. A trained nurse of mature years who possesses a special love and appreciation for the work is adequate. She should have had special training in obstetrics and anesthesia. Every case should be so conducted whether primipara or multipara, because complications of labor occur with startling rapidity, and the obstetrician should be prepared to meet them fully in order to forestall morbidity and mortality.

In obstetrical practice, the question of records is important. A very small percentage of obstetrical patients are hospitalized, and Brown believes it should be the duty of every practitioner who cares for unhospitalized patients to keep complete records. It would seem that statistics must be absolutely unreliable in the absence of case records.

Prenatal care is the recognized agency which enables the practitioner to give to his patient the prerogatives of modern obstetrics.

The responsibilities of the general practitioner when he encounters a case of toxemia of advanced pregnancy are indeed great. He must at once institute treatment that will be efficient, remembering that two lives are at stake. The symptoms which predominate are hypertension, albuminuria, edema, and headache. Immediate hospitalization is ideal,- but not always attainable, so he must proceed on his own initiative. His first consideration should be in the interests of the gravida. In the absence of hospital facilities, induction of labor should be done. This is not a complicated procedure, but the surgical asepsis must be absolute.

The danger to the offspring is not as great at or past the 35th week of gestation. During the past 5 years Brown has treated 32 so-called "pre-eclamptics" in this manner with no maternal mortality and with but 3 fetal deaths. Delivery was done by podalic version and extraction.

With lack of adequate hospital facilities the same line of treatment is efficient in eclampsia. During the past 5 years the author treated 12 cases of eclampsia, the seizures varying in number in the different cases from 2 to 27. Delivery in 2 cases was spontaneous, and in 10 cases, podalic version and extraction was done. There was no maternal mortality, but there was one fetal death.

Another complication which is frequently met and which is often the cause of mortality is placenta praevia. Here the primary consideration is conservation of blood. The most efficient treatment is packing of the lower segment with gauze. This will induce labor, and after the uterine contents are expelled the danger is over. Brown has on record 40 cases of placenta praevia treated in this way. All deliveries with the exception of 5 or 6 which were spontaneous, were by podalic version and extraction. There was no maternal mortality but 5 babies perished.

There has been much discussion relative to 'the use of pituitrin before the expulsion of the fetus. Brown agrees that its use before the end of the second stage is unwise, and he considers that the greatest forward step he has taken in the practice of obstetrics was 10 years ago when he abandoned its use until the third stage.

[The Editor is astonished to learn that 70 per cent of women still bear at home. He had estimated it at about 50 per cent. But it strongly emphasizes the necessity of continuing to teach

doctors, students and nurses, how to do obstetrics in the home. This necessity was rapidly being lost sight of. Hospital technic does not fit the home; indeed it often spoils a man f or home practice.-ED.]

THE PRESENT POSITION OF VERSION AND EXTRACTION AN ANALYSIS OF THE SHIFTING INCIDENCE OF VERSION AND EXTRACTION, HIGH FORCEPS, AND CESAREAN SECTION AT THE MICHAEL REESE HOSPITAL

JOSEPH L. BAER, M.D., RALPH A. REIS, M.D., AND JAMES J. LUTZ, M.D.,
CHICAGO, ILL.

TAGS Vol 57 (1932) pages 18-27

Operative obstetrics is steadily gaining recognition as a form of specialization essential to the practice of sound obstetrics. The successful termination of a delivery with due consideration for the maximum safety of mother and fetus depends upon a variety of factors, an intimate knowledge of the anatomic and clinical background of the patient by prenatal survey, a true evaluation of the problems which may arise in the course of labor, and the intelligent application under proper aseptic conditions of such operative procedures as may be indicated.

In recent years there has been a noticeable increase in the incidence of cesarean section in the majority of the obstetric clinics of this country. During the same period, version and extraction has, in the main, shown a definite decrease, although in some few clinics the operation has increased in popularity and frequency. Delivery by high forceps has everywhere shown a decrease.

A cursory survey of the incidence of these three operations in the Michael Reese Hospital during the past ten years revealed a decided increase in the number of cesarean sections and a 50 per cent reduction in the incidence of both version and extraction and high forceps. Convinced of the value of version and extraction and its extreme suitability under appropriate conditions, a critical analysis of the results obtained by this operation was undertaken and compared with the results obtained by high forceps and by cesarean section.

The period studied was the ten years from 1922 to 1931 inclusive, during which time, 15,136 women were confined at the Michael Reese Hospital. This included all service patients and all private patients of staff men. Of these, 156 or 1.03 per cent were delivered by version and extraction. From the New York Lying-In, Markoe reports an incidence of 2.23 per cent in 60,000 consecutive deliveries. Krukenberg reports 1.6 per cent from the Bonn clinic for the period 1912 to 1929. Good from the Boston City Lying-In Hospital reports 3.24 per cent over a ten-year period ending with 1929. Greer gives 3 per cent for a six-year period with 4668 deliveries at the Evanston Hospital. Stander reports 2 per cent incidence of version and extraction at the Johns Hopkins Hospital, and Polak reports 5 per cent incidence of version and extraction at the Long Island Hospital during 1920-30. Willets gives the incidence as 3.36 per cent in Grand Rapids.

During this same period 148 or 0.97 per cent were delivered by high forceps and 381 or 2.52 per cent by cesarean section.

The trend in the selection of these operations is well shown by a comparison of the first and second five-year periods. It will be observed that the incidence of version and extraction dropped 50 per cent, from 1.40 per cent to 0.73 per cent. The same is true of delivery by high forceps, the incidence dropping from 1.36 per cent to 0.68 per cent. Cesarean section on the kher hand increased 420 per cent from 0.91 per cent to 3.78 per cent. The total number of versions and extractions for the ten-year period was 156 and the total number of high forceps was 148. The total number of cesarean

sections was 381. The 50 per cent drop in version and extraction and in high forceps and the fourfold increase in cesarean section represents not merely a shift in indications and in the replacement of version and extraction and high forceps by cesarean section but also an actual increase in the number of cesarean sections based on a widening of the indications for this latter operation.

TABLE I. MICHAEL REESE HOSPITAL, 1922-1931

	VERSION AND EXTRACTION	HIGH FORCEPS	CESAREAN SECTION
1922	1.17 per cent	1.17 per cent	0.85 per cent
1923	1.52	1.66	0.58
1924	1.56	1.40	0.85
1925	1.70	1.86	1.24
1926	1.09	0.75	1.03
1927	0.55	0.85	3.40
1928	0.49	0.62	3.08
1929	0.77	0.33	3.85
1930	1.00	0.21	4.23
1931	0.82	0.27	4.36
Total	156—1.03 per cent	148—0.97 per cent	381—2.52 per cent

	VERSION AND EXTRACTION	HIGH FORCEPS	CESAREAN SECTION
1922-26	94—1.40 per cent	91—1.36 per cent	61—0.91 per cent
1927-31	62—0.73 per cent	57—0.68 per cent	320—3.78 per cent

Parity-The parity of the patients delivered by version and extraction ranged from pari i to para xii. Of these 42 were primipara, 38 were para ii, 24 were para iii, 17 were para iv, 5 were para v, and 21 were para vi to xi.

There is a widespread feeling that the primipara is poorly adapted for the successful performance of this operation because of the nulliparous integrity and resistance of the lower birth canal. Potter has shown conclusively that the pelvic floor can, under surgical anesthesia, be so completely ironed out in most instances as to offer no greater resistance to the advance of the fetus than does the birth canal of the multipara. This preparatory overstretching of the pelvic musculature and fascia must be carried out gently but over a sufficiently long period of time to obtain the desired result. Episiotomy is no substitute while perineotomy sufficiently deep to lay open the birth canal involves an extensive and unnecessary trauma to the patient.

Duration of Pregnancy. -The duration of pregnancy varied from twenty-eight to forty-four weeks among the 156 patients under consideration. Of these 109 were at term 14 were postmature and the remainder were premature.

Postmaturity is not in itself a contraindication for version and extraction. The feasibility of the procedure depends upon the existence or degree of disproportion and can be determined by the Mueller or the Hillis maneuver.

State of the Membranes.-Analysis of the state of the membranes revealed that they were intact-in 75 patients, recently ruptured in 51 patients, ruptured one to four hours in 11 patients, five to twelve hours in 8 patients, and over twelve hours in 11 patients.

The facility with which the fetus can be manipulated within the uterine cavity during labor depends upon the degree of anesthesia and upon the amount of liquor amnii present at the time of version. Version is among the easiest of the intrauterine operations when these conditions are

satisfactorily fulfilled. It can still be carried out under deep surgical anesthesia after considerable liquor amnii has been lost. Version should not be undertaken if overstretching of the lower uterine segment and moulding of the uterus around the fetus indicate a complete loss of liquor, amnii with the consequent increased risk of rupture of the uterus. This explains the apparent anomaly that version sometimes fails when undertaken only one or two hours after rupture of the membranes and may succeed twenty-four or more hours following rupture in other patients.

Cervix.-The cervix was completely effaced in 142 patients and incompletely effaced in 14. Dilatation of the cervix had reached 10 cm. in 94 patients and was incomplete in 62 patients. The treatment instituted consisted in manual dilatation of the cervix in 24, dilatation by bag insertion in 25 and Duehrrsen's incisions in 8 patients. Fourteen women sustained cervical lacerations of sufficient degree to require repair.

While it might be anticipated that more injuries of the cervix would have occurred in a group in which there was so large a proportion of incomplete cervical dilatation together with 49 artificial dilatations, it must be remembered that 33 patients gave birth to premature infants. The dictum that version and extraction may not be attempted except in the presence of a fully dilated or dilatable cervix carries with it the implication that the qualified obstetrician must be able to determine the safety and feasibility of artificially producing complete dilatation.

Manual dilatation is applicable to the thin cervix, while for the thick cervix the choice must rest between the bag for slow dilatation and Duehrrsen's incisions for rapid dilatation.

Perineal Injuries.-Twenty-one patients sustained first degree lacerations of the perineum, 29 a second degree laceration, and 6 a third degree or complete laceration. Of these latter, 4 occurred in multiparae and 2 in primiparae. All 6 were repaired at the time of injury and all 6 healed with good functional results. Episiotomy was done 21 times, 15 of these patients were primiparae, 14 being at term. There were 33 primiparae at or past term. Five were delivered without injury to the perineal body, 5 sustained a first degree laceration, 7 a second degree laceration, and 2 a third degree laceration. In the remaining 14, episiotomy was done.

It is an open question whether these patients would have reached a better end-result by routine episiotomy, by vaginal ironing out, or by the selective methods just described. As previously indicated, skillful ironing out of the vagina and perineum on suitably selected patients provides the best means of preserving the integrity of the vagina and of the perineal body when a version and extraction is to be performed.

Anesthesia. -Anesthesia was employed in every instance but one. This patient was a sixteen-year-old primipara at term who entered the hospital in convulsions and died almost immediately after admission. A version and extraction done three minutes after death had occurred, resulted in a stillbirth. Open mask ether was the anesthetic used for 98 patients. Ethylene-oxygen and ether were used 45 times, ethyleneoxygen alone twice, nitrous oxide-oxygen and ether 6 times and nitrous oxide-oxygen 4 times.

It should be noted that ether anesthesia, either alone or in combination, was used for 150 of the 156 patients in this series. Complete relaxation is the essential objective for the safe performance of version and extraction. The advantage of a combination of ethylene-oxygen with ether lies first in the ease and speed of induction of anesthesia by the ethylene-oxygen and secondly in the limitation of the use of the ether to the time of the actual performance of the operation.

Indications. Version and extraction was performed 42 times for cephalic malpositions, relative disproportion and failure of engagement of the fetal head. The operation was undertaken 17 times after high forceps had failed, 16 times for failing fetal heart tones, 16 times for prolapse of the cord, 16 times for transverse presentations, and 16 times for the delivery of a second twin. Fourteen patients with placenta previa were delivered by version and extraction, 8 of these were of the marginal type, 4 of the lateral type, and 2 of the central type. Five other patients were delivered because of premature separation of the placenta. The indications in the remaining 14 patients were

face presentation 6 times, toxemia of pregnancy or eclampsia 6 times and no diagnosis in 2 instances.

Version and extraction as employed at the Michael Reese Hospital is an operative procedure based on a specific pathologic indication rather than a method of termination of labor without indication. The indications as listed above are self-explanatory in justification of the operation. One exception must be clarified. Placenta previa centralis is coming more and more to be regarded as an indication for cesarean section, but there is still room for debate as the two instances recorded above demonstrate. The one patient was a para vi in the thirty-fourth week of pregnancy and the other a para ii in the thirtieth week of her pregnancy. In each patient vaginal delivery sufficed to terminate the pregnancy and the parturient was spared the additional risk inherent in any cesarean section, especially since the degree of prematurity did not warrant this increased risk for the mother.

Maternal Mortality.-In this series there were 5 maternal deaths, 3.24 per cent.

1. The first death occurred in 1925. The patient was a twenty-one-year-old para iii, who had been operated upon two days before delivery at term for a right- sided acute mastoiditis following otitis media. Version and extraction was done following manual dilatation of the cervix for failing heart tones. The operation was not a difficult one and the fetus weighing 3460 gm. survived. Death occurred twenty-four hours following delivery and was apparently due to shock. Autopsy revealed a rupture of the uterus extending into the right broad ligament with
severe hemorrhage. The concealed hemorrhage extended into the broad ligament and into the peritoneal cavity.

2. The second death occurred in 1926 in a twenty-six-year-old para iv who was bleeding moderately from a placenta previa lateralis. The pregnancy was at term, labor induced by rupture of the membranes and bag insertion. A version and extraction was done when cervical dilatation was complete. The fetus survived and weighed 5685 gm. The placenta was removed manually, the uterus was not packed and there was a severe and continued postpartum hemorrhage which resulted in death twenty hours following delivery.

3. The third death was that of a sixteen-year-old primipara who entered the hospital at term in 1927. She had had no prenatal care and had had several convulsions before admission. She entered the hospital in status convulsus and died ten minutes after admission. Examination showed her to have complete effacement and dilatation. A version and extraction was done three minutes after death had occurred. The fetus was stillborn.

4. The fourth death was that of a forty-two-year-old para iii who entered the hospital in her thirty-sixth week of pregnancy in a moribund state from a profuse vaginal hemorrhage. The cervix was 4 cm. dilated, completely effaced, and the membranes were intact. The cervix was dilated manually, a version and extraction done. The fetus was stillborn. The placenta was removed manually and the uterine cavity packed. Death occurred ten minutes following delivery in spite of all attempts at fluid replacement. This death occurred in 1930.

5. The fifth death occurred in a twenty-eight-year-old para i (1930) at term. There was a bilateral bronchopneumonia present for two days previous to delivery, a caseous tuberculosis of one lung and aortic insufficiency. The cervix was completely effaced and dilated when the fetal heart tones became irregular. An immediate version and extraction was done and the fetus which weighed 3770 gm. survived. Death occurred one hour following delivery. The immediate cause of death was pulmonary edema with dilatation of the right heart superimposed on the bilateral bronchopneumonia.

Of these 5 deaths, one, that of the first patient who died following a rupture of the uterus, was directly chargeable to the operation. The second death can also be charged to the type of delivery, but in none of the others did the method of delivery play a role in the death of the patient. The corrected mortality for the 156 patients delivered by version and extraction is therefore 1.30 per cent.

During the same ten-year period, high forceps were used 148 times. Delivery was accomplished in 131 women and failed in 17 who were then delivered by version and extraction. This incidence of 11.5 per cent of unsuccessful attempts at delivery by high forceps suggests that the operators involved, having set the indications for high forceps delivery, were discreet enough to switch from a hopeless procedure to one that held out greater hope of survival for the fetus. Actually 16 of these 17 babies survived.

There was one maternal death in the series of high forceps deliveries, a gross mortality of 0.67 per cent. This patient succumbed to a bilateral bronchopneumonia forty-eight hours following delivery. The corrected mortality is therefore 0.0.

During this same decade there were 381 deliveries by abdominal cesarean section. There were 9 maternal deaths, a gross mortality of 2.36 per cent. One patient was operated upon while moribund from influenza pneumonia and death occurred during, the operation. The fetus which was near term, survived. The corrected mortality was therefore 2.10 per cent. The remaining 8 deaths were due to postoperative infections in three instances, once to eclampsia, once to hemorrhage following premature separation of the placenta, once to myocarditis, once to uremia, and once to hemorrhage following placenta previa.

During the same decade, the gross maternal mortality among the 15,136 patients delivered at the Michael Reese Hospital was 37 deaths or 0.24 per cent.

Maternal Morbidity. Table II offers a comparison of the causes of maternal morbidity in the three types of operations under consideration. Infection of various origins occurred in approximately one-third of all the patients subjected to cesarean section. This is double the frequency with which infection occurred following high forceps and two and one half times the incidence of infection occurring after version and extraction. It should be noted further that some degree of ileus occurred in approximately 10 per cent of all cesarean section patients, while shock and postpartum hemorrhage were more prominent complications in the other types of operations. Complications, either postoperative or incidental occurred in one out of every 5 patients delivered by version and extraction, in one out of every 4 delivered by high forceps, and in one out of every 2 delivered by cesarean section.

The annual average morbidity of all patients delivered at the Michael Reese Hospital is 11 per cent. The standard of febrile morbidity is the generally accepted one of temperature above 100.4° F. on two successive days or 101° F. once, excluding the first twenty-four hours postpartum. Thus far vaginal antisepsis has not been used except in a very small percentage of deliveries.

Study of the sources of fever revealed a considerable group classified under the heading of "fever of unknown origin." This group represented for the most part, patients in whom enough fever occurred to require inclusion under the rigid classification of morbidity. The short duration of the fever in these instances did not permit of a source diagnosis.

The incidence of foul lochia or foul lochia with fever (sapremia) 13.91 per cent, following cesarean section seems higher than it should be. The uterus is always sutured with catgut, care being taken to place the deeper row of sutures down to but not including the uterine mucosa.
The foul lochia should not therefore be charged to dissolution of the catgut but rather to mild localized infection.

Fetal Mortality. As might have been anticipated, the fetal mortality following cesarean section was the lowest in the three types of operation, 3.38 per cent gross mortality and 1.04 per cent corrected mortality. The gross fetal mortality following high forceps was 8.13 per cent and the corrected fetal mortality was 7.41 per cent. Following version and extraction the gross fetal mortality was 17.28 per cent and the corrected mortality was 10.24 per cent. In connection with the high rate of fetal death after version and extraction, it must be borne in mind that this figure represents the end-results in patients with various types of pathology in whom version and extraction was

frequently a desperate lifesaving measure rather than an operation of choice. Moreover, 7 of these babies were definitely premature. Each of the 7 weighed less than 2200 gm.

SUMMARY

Version and extraction was done 156 times in 15,136 deliveries, 1.03 per cent during the decade 1922-1931. The frequency of the operation dropped 50 per cent during the second five-year period. During the same ten years, high forceps were used 148 times, 0.97 per cent, with a similar 50 per cent drop in the second five-year period. The total number of cesarean sections was 381, 2.52 per cent, with a fourfold increase' in the second five-year period. These figures represent not merely if shift in indications and in the replacement of version and extraction and high forceps by cesarean section but also an actual increase in the percentage of cesarean sections based on a widening of the indications for this latter operation.

The maternal mortality following delivery by version and extraction was 1.30 per cent, by high forceps was zero and by cesarean section was 2.10 per cent. The incidence of infection following version and extraction was 12.98 per cent, following high forceps was 16.36 per cent, and following cesarean section was 32 per cent. Complications both operative and incidental occurred in 21.31 per cent following version and extraction, in 25.27 per cent following high forceps and in 52.75 per cent following cesarean section. Fetal deaths occurred in 12.82 per cent of the deliveries by version and extraction, in 7.41 per cent of those by high forceps and in 1.04 per cent of the deliveries by cesarean section.

CONCLUSIONS

1. The well recognized dangers inherent in delivery by high forceps, justify the 50 per cent diminution in the frequency of this type of delivery.
2. The similar decrease in the frequency of delivery by version and extraction in this series is definitely not justified.
3. The margin of safety for the parturient following version and extraction is much greater than that offered by cesarean section.
4. Cesarean section must not become a substitute for version and extraction.

104 SOUTH MICHIGAN Avenue.

DISCUSSION

DR. PHILIP F. WILLIAMS, PHILADELPHIA, PA. -In a survey made in 1931, by a Philadelphia committee on maternal mortality in that city, out of 33,000 deliveries, 23,000 occurred in 53 hospitals during the year. Among these were 359 versions and extractions, an incidence of 1.5 per cent, which is twice as high as that given by Dr. Baer. Version and extraction is therefore being 'used to a considerable degree in Philadelphia. Out of 23,000 women, confined in hospitals, 4,800 were delivered by forceps, of which 187 were high operations, an incidence of 0.37 per cent. There were 576 cesarean sections, an incidence of 2.6 per cent. High forceps would therefore seem to be almost a negligible operation in Philadelphia. Version and extraction still retain a fair place in operative obstetrics. I believe that the mortality-following version was much lower proportionately than from high forceps and very definitely lower than it was following the 576 cesarean sections.

DR. ALFRED O.. BECK, BROOKLYN, N. Y. -In our clinic in Brooklyn we follow very much the outline recommended by Dr. Baer. We have found, however, additional aid in the use of the

abdominal binder during the second stage. Since we have been using this routinely, the need for any of these three procedures has been very greatly diminished. We also teach our students to give more regard to the first stage of labor, so that when the patient reaches the second stage she will be strong enough to make the binder of value.

DR. J. M. BERGLAND, BALTIMORE, MD. -At the Johns Hopkins Hospital during the past year we have done very few versions and extractions and, I am glad to say, extremely few high forceps. We appreciate the difficulties of these procedures, and as opportunities for doing versions and extractions are becoming fewer, we feel that our skill in doing this operation in a satisfactory way is diminishing. However I believe that probably we are not doing as many versions and extractions as we should do. We follow the technic of Potter as nearly as possible, and I believe that his suggestions for the performance of the actual operation are valuable; on the other hand, I am sure that one of the most important things done in our Clinic during the last year has been the liberalization of the indications for cesarean section.

DR. EDMUND B. PIPER, PHILADELPHIA, PA. -I would like to make one possible criticism regarding the question of terminology and the word "elective." In our teaching at the University we use three indications for podalic version; first, the routine cases; second, elective; and third, emergencies. We only use the term “emergency version" where it is done in the presence of failing fetal heart sounds, but we use elective version when there is a choice between version and forceps. I believe that podalic version is one of the most difficult, if not the most difficult, operation in obstetrics.

DR. BAER (closing). -Dr. Williams emphasized a point, namely that we had not given version and extraction its proper place in these last five years. His figures are about what should be and which we are now hoping to attain.

Dr. Beck's comment about the value of the abdominal binder in the second stage of labor is a highly important one. If the patient is a multipara with a pendulous, grossly relaxed abdomen, I regard the binder as definitely desirable. I am not yet convinced that for the normally sound abdominal wall the binder is anything more than perhaps a handicap to proper observation of the heart tones during the second stage. So, except where specifically indicated, we do not use it. With reference to my misuse of the word “ elective”, what I had in mind, of course, was the “ routine” or Potter type of version and extraction and Dr. Piper's comment was entirely justifiable. Version and extraction may be routine, elective, or emergency.

I cannot feel that version and extraction should be characterized as essentially a difficult operation. I do believe we should emphasize that the trained obstetrician should know how to do version and extraction. If he possessed that knowledge and skill,, then I regard it as a comparatively simple procedure in the suitably selected patient, and I rather deprecate the position that version and extraction should be labeled by this Society as one of the most difficult of operations.

28 weeks	1	38 weeks	10
30 weeks	2	Term	109
32 weeks	5	42 weeks	4
34 weeks	6	44 weeks	10
36 weeks	9		

Manual dilatation	24
Bag dilatation	25
Duehrrsen's incision	8
Lacerations	14

TABLE II. MATERNAL MORTALITY AND MORBIDITY

	VERSION AND EXTRACTION	HIGH FORCEPS	CESAREAN SECTION
Fever of unknown origin	5.30 per cent	9.46 per cent	7.08 per cent
Foul Lochia	3.20	2.88	13.91
Sapremia	1.28	0.67	
Wound infection with or without suppuration			8.92
Puerperal sepsis	0.64	2.01	0.78
Thrombophlebitis	2.56	1.34	1.83
Total Infections	12.98	16.36	32.52
Shock	1.92	2.88	
Postpartum hemorrhage	4.49	4.69	0.26
Ileus	0.64	0.00	9.76
Pyelitis	0.64	0.67	5.77
Bronchitis	0.64	0.67	0.79
Pneumonia	0.00	0.00	0.79
Acute gastric dilatation	0.00	0.00	1.05
Massive collapse lung	0.00	0.00	0.26
Evisceration	0.00	0.00	0.79
Fistula	0.00	0.00	0.26
Total Complications	21.23 per cent	25.27 per cent	52.75 per cent
Mortality: Gross	3.24 per cent	0.67 per cent	2.36 per cent
Corrected	1.30 per cent	0.00 per cent	2.10 per cent

p. 353-361

Obstetrics Versus Midwifery

The dictionaries say that the terms "obstetrics" and "midwifery" are synonymous, but J. B. De Lee (J. A. M. A. 103:307, August, 1934, p353) draws a distinction between them. The term "midwifery" should apply to the practice of caring for women during childbirth by the old blind, empirical methods, while the term "obstetrics" should connote the fact that to the wisdom gained by experience has been added all the knowledge supplied by recent scientific investigation. In short, midwifery is the practice of midwives, male and female; and obstetrics is the practice of the scientifically trained physician.

De Lee may be accused of having drawn too dark a picture of the dangers attending and the disabilities following childbirth, and his notice may be called to the great numbers of women who have had large families and apparently are none the worse for it. He agrees to a certain extent, but he wishes to call attention to the immense army of women suffering, if he may coin the phrase, subinvalidism, and who say they have never felt well since their first baby was born; he wishes to signalize the not inconsiderable number who date permanent kidney disease from a mild toxemia in pregnancy, or permanent liver damage or suffer the sequelae of dislocation of the pelvic organs. He has painted a true picture of pregnancy and parturition, using the colors supplied by modern science, to prove that obstetrics is a richly scientific member of the triumvirate of medicine, that it has become an art of great technical beauty and that its proper practice is far beyond the capabilities of the midwife, male as well as female. He has shown only a part of the knowledge a man must have to qualify as an obstetrician, and it is this knowledge and the application of it that makes the difference between obstetrics and midwifery.

He desires to emphasize with all his might that these remarks do not mean that every labor must be terminated by mechanical art. With present knowledge and present means there is only one place where operative intervention can improve on nature in normal delivery, and that is in preventing damage to the pelvic floor. In all else it is safer to guide the labor along natural channels until dystocia becomes threatening or immediate.

Letting a woman pound the head on the pelvic floor for hour after hour is midwifery by omission. Doing routine version and extraction is meddlesome midwifery, unscientific and pernicious. Blasting the baby through the birth canal with solution of pituitary is meddlesome midwifery, unscientific and pernicious.

Cesarean section selected properly may be the finest kind of obstetrics, comparable to a scientifically conducted normal labor, but as it is performed today it is often an exhibition of the lowest obstetric intelligence, of which even a midwife would be ashamed. In the fifteenth century, midwives did cesarean sections.

The present is an era of prophylaxis. As Fairbairn has said of prenatal care, the aim must be a constructive regulation of physiologic function as much as the prevention of pathologic conditions. The conduct of labor must meet the requirements of modern womanhood. The woman nowadays demands a safe labor, freedom from unnecessary pain, a reasonable length of labor and, when she arises from her confinement, a complete *restitutio ad integrum.*

She also demands a healthy baby, undamaged by conditions affecting it during pregnancy, and free from the effects of traumatism during labor. Modern obstetrics can give the woman nearly all these things, and the people are willing to pay for them. They should not be given a midwife's services and be asked to pay an obstetrician's fee. Hospitals must turn out enough highly trained men to establish and maintain the ideals De Lee has described.

There are not enough schools, teachers, material or public and professional support to supply real obstetricians for 2,000,000 births each year.

Fortunately the principles of the conduct of labor are not difficult to master. Nature is still on her job and, though perhaps somewhat destructive, she can do it better than unskilled human beings. Let doctors be taught the beauties of normal obstetrics, the principles of asepsis and the principles of intelligent expectancy, trusting much to nature. There will soon be a reduction of the national maternal mortality and morbidity.

In the meantime the medical profession can hold the vision of its ideals and struggle to attain them, and it will attain them only through education-education of the medical schools, of the universities, of the doctors and of the public.

Maternal Mortality in New York City

The committee (J. A. M. A. 101:1826. December, 1933) of the New York Academy of Medicine made the following concrete recommendations: "To improve this situation and remove the causes out of which it arises, it is evident that there must be a determined effort to educate both the lay public and the medical profession to an understanding of the necessity for change in certain of the methods now employed. The profession itself must accept the responsibility for educating the lay public to a better understanding of the aims of obstetrics and the methods by which those aims may be realized. But prior to that must come increased education of the profession, that it in turn may wisely inform the lay public.

"First, a prospective mother must have further instruction in the necessity for prenatal care. She must be taught that prenatal care does not mean merely registering for confinement; that it is imperative to obtain that care as early as pregnancy is suspected; that one visit at which no abnormalities were discovered is no guaranty of continuing good health but that regular return for observation is vital if her attendant is to be enabled to give her the best possible care; that previous normal pregnancies and deliveries do not assure subsequent normal ones; that proper and sufficient prenatal care offers her the greatest assurance of an uneventful confinement.

"Furthermore, some information must be made available to the patient as to the standards of such prenatal care. She should have some knowledge of the purpose of such care and what she may expect from her attendance as the minimum requirements of a proper prenatal supervision. She should know that the omission of urinalysis, blood pressure determination, or the measurement of her pelvis constitutes negligence; that a thorough physical examination is a necessary part of proper care. She must be informed of the possible gravity of symptoms that seem to her mild, and the fact that early treatment is the prerequisite to the prevention of later trouble.

"The medical profession is obligated to inform the lay public that operative delivery undertaken merely to alleviate pain or shorten labor involves increased risk for both mother and baby.

"The relative safety of delivery at home should be emphasized. Effort should be made to induce women who cannot obtain adequate medical or hospital care to avail themselves of the services of qualified midwives under the supervision of physicians.

[But the man who practices obstetrics at home must be well qualified and well equipped, and this does not mean midwives. Ed.]

"To accomplish this education, the medical profession must assume a role which heretofore has been left to lay organizations. Confidence of the lay public in the medical profession will enable this to be done with greater authority and increased chances of success....

“To do this well, the outstanding members of the profession in every community must actively interest themselves in the process. Obstetrical societies would do well to use the channels of the press and radio to broaden the sphere of their activities in this line. They would further increase

their educational function by issuing authoritative pamphlets from time to time. They must assume responsibility for the teaching given through social service and lay organizations....

"Hospitals, in order to qualify for recognition by the controlling authorities, must have qualified obstetricians as directors of their staffs.... The hospital must maintain a special clinic for prenatal care, in charge of a member of the visiting obstetrical staff. There must be a sufficient number of beds set aside for the hospitalization of clinic patients with complications. There must be a social service department adequate, as to training and personnel, to keep in touch with all patients, to insure early registration and regular attendance; to facilitate the patients' cooperation through home adjustments; to assist in the educational function of the hospital to the community.

[*The hospitals and doctors must do all these things of such great weight-and then midwives are recommended for obstetric practice!! Consistency?! -Ed.]*

"All hospitals must maintain separate delivery rooms where only obstetrical cases are treated. The rules for the maintenance of asepsis must be rigid, including masking, the importance of which deserves reemphasis. Labor rooms must be sufficient to insure their availability to all patients. Isolation must conform to the most stringent regulations and include proper technic on the part of the nursing staff. All nursing must be done by properly supervised nurses, who should be especially trained in obstetrical nursing. The resident staffs must be under supervision at all times. There must be an invariable rule requiring the responsible attending physician to see patients promptly and supervise directly the residents who are assigned to them. Furthermore, the less experienced members of the staff must be under supervision of the responsible heads....

"Proprietary hospitals should be brought under the supervision of a responsible board of hospital control and unless they provide adequate facilities as described above, except for prenatal care and social service, they should not be permitted to accept obstetrical patients.

"The situation in regard to midwives must be altered. More schools are needed for their training, including both women who have had previous training and those who have not; effort should be made to enrol types of women who would be acceptable to groups of the population now unwilling to employ a midwife, and the nurse wife is suitable for this purpose. Licensure should be based upon examination. Additional short courses, at stated intervals, should be compulsory. Supervision should be increased, and changed to include actual oversight of cases under care. With physicians in charge, appropriately trained nurse-midwives might make suitable supervisors. Midwives should be required to report births within 48 hours, to report immediately any abnormality during labor, and to call consultation if labor continues beyond a definite time limit. The physician must be prepared to give the midwife unqualified cooperation. Some hospitals might well make use of midwives to conduct the deliveries in their outpatient service, under the direction of the inpatient obstetrical department.

"*The hazards of childbirth in New York City are greater than they need be. Responsibility for reducing them rests with the medical profession."*
[It takes a college degree, four years in medical school, one or two years' internship in a general hospital to fit a man to practice obstetrics, but an ignorant woman can be taught the art in perhaps one or two years. This recommendation is insulting and throws obstetrics back toward the middle ages.-Ed.]

1934 – Maternal Welfare Committee

REPORT OF THE SUB-COMMITTEE FROM THE AMERICAN GYNECOLOGICAL SOCIETY
Published TAGS Volume 59 (1934) pages XLVI- XLIX

During the current year the activities in this field were directed largely to studies of the maternal mortality rate in this country and suggestions for its improvement. It should be of interest therefore to refer to the noteworthy contributions on the subject during this period.

The chief contributions are concerned with detailed studies of maternal deaths made in various states and cities. An important and outstanding publication is that recently brought out by the Federal Children's Bureau, which includes a report in 15 states made under the supervision of Dr. Blanche M. Haines, of the Bureau, the field work being carried out largely by Dr. Frances C. Rothert, who analyzed the material and wrote the complete Teport with the cooperation of the members of the Obstetric Advisory Committee, of which Dr. Robert L. DeNormandie of Boston is Chairman. All the members of this group, with one exception, are Fellows of your Society. To the writer of this report there was extended the courtesy of being present at the final meeting of the Advisory Committee held last May. The study includes all of the maternal deaths which occurred in 13 states in 1927 and 1928, extending from New Hampshire on the east to the three Pacific Coast states and from Minnesota on the north to Alabama on the south. These states are therefore well distributed geographically and typical of the sections in which they are located. The composition of the population for the groups of states conforms closely to that of the entire country according to the census of 1920. In these 15 states during the two years of the study the deaths of 7,537 women were assigned to puerperal causes by the U. S. Bureau of the Census. This number was 26 per cent of the total in the entire U. S. Birth Registration area for the same period. Over 18 per cent of the deaths were of colored women. As there were 1,176,603 live births in these states during this period the mortality rate is 64 per 10,000 live births. The rate for the entire Birth Registration area was 67. The study was based on personal interviews with physicians and others who were in attendance, including home and hospital deliveries. The investigation was very carefully conducted and reference must be had to the original publication in order to appreciate properly the valuable and extensive information presented. The high operative incidence in the cases studied demands attention, as well as the fact that cesarean section was done on one-fourth of all the women who died following delivery. This would seem to point to an unwise selection of cases, type of operation or professional incompetency. It is noteworthy that about 40 per cent of the cesarean deaths were due to sepsis and in 85 per cent. the operation bad not been planned for. The number of sections done for dystocia after long and exhausting labors is appalling and there was evident lack of recognition of the fact that the mortality from cesarean increases with the length of the labor and attempts at vaginal delivery. A large number of cases in which toxemia served as an indication, shows a lack of appreciation of the better results obtained in the conservative treatment of these cases.

Sepsis continued as the principal cause of death, 40 per cent of all the cases being ascribed to the same. An alarming thing is that so many septic infections followed spontaneous and uncomplicated labors. The deaths from sepsis of 420 women delivered in hospitals, which apparently developed in the institutions, show clearly an unsatisfactory state of affairs.

As an outgrowth of its deliberations the Advisory Committee was forced to agree with the constantly growing idea that maternal deaths are due in large part to controllable causes. In this connection I would venture a comment that a distinction must be made between controllable and preventable and between both of these and medical or other responsibility.

In contrast to puerperal mortality studies involving larger areas of this country, there have been similar investigations in various cities and smaller communities. New York, Philadelphia, Cleveland,

and many cities of smaller size have conducted careful investigations to determine the causes of puerperal death rates. Some of these reports have been published, others are under way. Dr. Richard A. Bolt, Director of the Cleveland Child Health Association, published in the February, 1934, issue of The 4merican Journal of Obstetrics and Gynecology the results of his survey of the city of Cleveland during 1931, every death being carefully scrutinized. His study revealed 151 puerperal deaths, including '12 criminal abortions, among 16,279 live births and 592 stillbirths. This would give a puerperal mortality rate of 9.3 per 1,000 live births or 8.9 per 1,000 live plus stillbirths. Approximately 60 per cent of the total births occurred in 31 hospitals and 85 per cent of the deaths occurred in the same institutions. A careful scrutiny of all puerperal deaths showed that of the women who died in the hospitals 76 per cent were referred from the home because of known pathologic, conditions. The maternal mortality rates varied greatly depending upon the nature of the hospital, composition of staff and selection of cases. The exclusively maternity hospitals showed the lowest rate, 5.9 per 1,000 live births as contrasted with the general hospitals with maternity licenses in which the Tate was 14.4 ' Of course, as a result of taking over abortion and other septic cases the municipal hospital had an exceedingly high death rate. The puerperal mortality for the home cases was only 3.5 per 1,000 although several extenuating factors must be taken into consideration.
Dr. Bolt concluded that there were many factors entering into the question, including social, economic and cultural, and that comparison of rates for different communities is misleading unless methods of conducting surveys are comparable. In this study, as elsewhere, the major causes of death were found to be sepsis, toxemia and hemorrhage, and these were largely associated with hurried operations and incompetent obstetrics.

Another very important contribution to the study of puerperal mortality is the report made by the New York Academy of Medicine. This is based on a study of 2,041 maternal deaths in Greater New York, during a three-year period from 1930 to 1932. The total number of births during this period was approximately 348,000. The total mortality rate including all classes varied from 5.49 to 6.12 in various years; the rate among the 1,564 women with viable children was approximately 4.5 per 1,000 live births. Each death was carefully analyzed by a committee of four, appointed by the New York Obstetrical Society and meeting as a jury once a month. The facts in each case were gathered by physician investigators within a week or two after the occurrence. The actual cause of death and the preventability were two factors which received especial consideration. One thousand five hundred and sixty-four women died who were pregnant 28 weeks and over. Abortions ended fatally in 357 cases, 70 per cent from septicemia, with a steady increase during the three-year period. Ectopic gestation was fatal in 120 cases, or almost 6 per cent of the total deaths, Among the women with viable children the principal causes of death were hemorrhage (197), septicemia (510), and toxemia (231). In 344 women death resulted from a condition which underwent exacerbation due to pregnancy or delivery.

In connection with the septic deaths attention may be called to the fact that the approximate rate per 1,000 live births was 4 after operative and only 0.8 after spontaneous deliveries. Operative delivery terminated labor in almost 70,000 cases, as compared with about 278,000 spontaneous deliveries. Cesarean section was done in 310 of the fatal cases, or in almost 20 per cent of the total. The incidence of this operation so far as it could be determined was 2.2 per cent of all deliveries and the mortality rate was 6 per cent.

The factor of preventability in this study was figured at 65 per cent-the physician being judged responsible in 61 per cent, the patient in 38 per cent of the cases. To the doctor were ascribed incompetency, lack of judgment, carelessness and inattention; to the patient, largely failure to cooperate, neglect and ignorance. The publication of this critical report aroused much discussion as to the fairness of the Committee's implications. However, the facts cannot be denied-2,041 women died within a three-year period in a single community-the metropolis of the Western hemisphere, supplied, it should be assumed, with every facility for making maternity safe. The results speak for

themselves. Certain very definite recommendations for the betterment of conditions in New York City resulted and in order to translate them into practical reforms, the Commissioner of Health has appointed an advisory obstetric council in his department which will study ways and means in an attempt to carry them out. This will include the development of standards of obstetric service; the supervision and inspection of hospitals, both public and private; the control of midwives, a revision of prenatal care methods, and cooperation between medical, nursing and lay groups in programs of instruction for the public.

Surveys of local obstetric facilities guided by the profession have been instituted in various communities in cooperation with certain lay organizations, prominent among which is the Maternity Center Association of New York City. These appraisals are of great value in apprising the community of the need of the situation and in developing methods of securing improved maternity care through immediately interested agencies.

The trend of the times is well shown in the proposals made by the Chairman of the Hospital Obstetric Society of Ohio, Dr. F. D. Skeel, of Cleveland. The program proposes the adoption of a continuous audit system of hospital obstetric mortalities and morbidities. This is to be conducted by obstetricians as the only competent judges of the facts. Then there is suggested a code of rules and regulations to govern hospital obstetrics, including housing and equipment, administrative policies related to the patient's welfare; uniform system of staff organization and control, including regular and courtesy, all obstetric cases being, subject to the supervision and control of the obstetric chief, systematic development of hospital facilities, metropolitan and urban; consistent program of teaching prenatal care. The centering of responsibility provided in this case should have a definite influence in controlling unnecessary and incompetent operating and in making every physician in the hospital cognizant of his obligations.

In all of these movements it is interesting to note the admission that the medical profession must accept the responsibility of providing adequate care to every woman in pregnancy and labor. Whether the factor of preventability stressed in the New York Report is too high as stated, is of less consequence than the recognition that at least many of these deaths are in fact avoidable if the best care, or at least the best average care, which the community can afford, had been extended. A very considerable revision of teaching methods may be required as well as an effective evatrol of obstetric hospital practice of those not fully qualified according to aceepted standards. Then must follow a satisfactory handling of the midwife situation, of the better teaching of doctors and nurses in obstetrics, and of many other problems that may develop from time to time.

The participation of a lay interest in providing adequate and satisfactory obstetric eare must be taken into consideration by the medical profession. Much of the misguided activity which has been manifest in recent years has resulted from lack of cooperation. A broader point of view is essential in the control and development of a liaison between the public and the doctor. A central committee such as that of which this Society is an integral part, must be further developed. The process of incorporating our Joint Committee on Maternal Welfare is now being perfected by Dr. Fred L. Adair, its general chairman, and the inclusion of various lay organizations will be provided for. It is to be hoped that by such closer affiliation much will be accomplished in guiding both public and medical activities into proper Channels and that a more definite and correlated program will result. This Society might well devote some of its funds to the Committee if called upon.

Respectfully submitted,

W. C. DANFORTH, F. W. LYNCH, GEo. W. KOSMAK, Chairman.

The Council recommended for appointment to the Committee on Maternal Welfare Drs. Kosmak, Lynch, and Danforth.

Motion was made by Dr. McGlinn that this Committee be increased to five, whereupon the Chair recommended the additional names of Drs. Williams and Plass. Upon motion this was seconded and carried.

A report was called for from the Committee on the Nomenclature of Disease. Dr. Kosmak reported progress in the circulation of the volume and promised to send in a formal report.

A SURVEY OF THE OPERATIVE INCIDENCES AND MORTALITIES IN 445 HOSPITALS

RUDOLPH W. HOLMES, M.D., F.A.C.S., CHICAGO, ILL.

Published TAGS Volume 59 (1934) 321- 344

INTRODUCTION

The facts presented in this paper were derived from a questionnaire issued by the Committee on Obstetric Teaching and Education of the White House Conference on Child Health and Protection. (*The membership of the Committee comprised the following: Fred L. Adair, M.D., Chairman; Palmer Findley, M.D., Chairman, Undergraduate Education; Rudolph W. Holmes, M.D., Chairman, Graduate Education; Walter T. Dannreuther M.D.; C. B. S. Evans, M.D.; Jennings C. Litzenberg M.D.; C. W. M. Poynter, M.D.; J. M. H. Rowland, M.D.; and M. Pierce Rucker, M.D.)

The data were not used in the Committee reports as they could not be woven appropriately into their fabric. I express my appreciation of the privilege accorded me, to summarize the replies elicited, and to incorporate the facts in this thesis and subsequent contributions. I would emphatically stress that the opinions expressed herein, and the interpretations made, are my own, and do not necessarily represent any sentiment of other members of the Committee. Part I which should have appeared ere this will deal with data relevant to general economic and statistical facts of institutional obstetrics: subsequent parts will present matters pertinent to the pathologies of early and late pregnancy, labor and the puerperium (abortions, ectopics, sepsis, toxemias, eclampsia, hemorrhages, etc.).

Much opprobrious comment has been accorded obstetric practice in recent years. Much of this censure has been deduced from false premises: nevertheless, there are many valid reasons for holding to such beliefs. I have undertaken this task of surveying the activities in a large number of hospitals in an endeavor to evaluate discordant views, and to reach a possible incontestable conclusion. This paper has no concern with that profoundly essential prerequisite that there shall be radical improvements in undergraduate and graduate instruction: neither does it pertain to that vitally important factor of safe obstetrics in that obstetric units in general hospitals shall be properly segregated, and isolated from the general hospital activities: likewise, the statistical facts presented have no context to pathologic incidences; i.e., indications for operative interferences. No attempt has been made to correlate pathologic incidences with the frequency of operations or their influence on mortality rates: this will be presented in a, subsequent contribution. In a rough preliminary classification we find, however, that the maternity hospitals have the lowest rate for pathologic entities, and that the 61 to 70 bassinet group have the highest incidence of pathologic complications which roughly amounts to 20 per cent over that average for all hospitals: it should be accentuated that this same group has the lowest incidence of operative interventions, and in many particulars has the highest or near highest mortality rates for mother and child.

This paper is solely pertinent to the problem of the incidences and mortalities for the four principal methods of operative delivery: subordinate to this principal problem is the question of relative merit or demerit of services in the special maternity services, and large hospitals where absolute segregation and isolation of the obstetric services are possible, and the institutions which have small units. Polypragmatic operative interventions have been the rule, rather than the exception, and in certain hospitals have become so rampant that even the normal woman is denied the benefits

of physiologic parturition. Certain high authorities have strongly recommended the routine application of forceps as safer(!) than spontaneous endeavor where indications are absent: in some hospitals this policy prevails as has been orally stated to the writer, though no hospital in this study admits the fact of the practice. Version has been advocated in certain quarters as a panacea for all obstetric ills as well as a prescribed procedure where complications are absent: its inevitably high fetal mortality has been a strong deterrent to a general acceptance of the dicta of certain pseudoauthorities. Cesarean section has been approved as the archetype in the termination of a pregnancy, even before term, with the allegation that it is perfectly innocuous to mother and baby. How fictitious these statements are is illustrated in this survey by the indubitable figures that cesarean section mortality is nearly twenty (20) times that for forceps operations, and nearly four (4) times that for version. The fetal mortality for cesarean section is nearly two and a half times more disastrous than that for forceps operations, falls below the results for version by 500 per 10,000 and exceeds the average gross fetal death rate (900.3 for cesarean section and 750.3 per 10,000 the gross rate).

The fact is that what an exceptionally skilled obstetrician may accomplish in his, ideal hospital environment is one thing, but disaster follows when the men of limited training and experience attempt to emulate him in their meager hospital facilities.

The elucidation of the theme required an arbitrary classification: the 514 questionnaires were arranged according to obstetric capacities of general hospitals, and the two types of special hospitals -pure maternities and Frauenkliniks. Eleven (11) groups were made: maternity hospitals, Frauenkliniks, and the general hospitals with the following inclusive bassinet numbers: 5 to 10, 11 to 20, 21 to 30, 31 to 40, 41 to 50, 51 to 60, 61 to 70, 71 to 80 and 81 to 150. The German word, Frauenkliniken, has been anglicized advisedly as we have no English equivalent for naming such hospitals whose activities are restricted to gynecology and obstetrics. With few exceptions, "Women's Hospitals," throughout America merely limit their clientele to the sex, not to the aberrancies of the sexual organs. Various issues of the Hospital Numbers of The Journal of the American Medical Association list but three hospitals of the Frauenkliniken type, though in this survey six (6) institutions allege their patients are limited to obstetrics and gynecology. We appreciate the inherent defects of the classification, but it was the only one which would prove or disprove the claims of those who would restrict obstetric work to special hospitals or at least large services in general hospitals, and those who would pronounce anathema upon the small hospital service. If we would be logical we should concede that the community hospital with one bassinet may be as vitally essential to the small town as that the 275-bed maternity is necessary in a city of 316,000 inhabitants, the latter being practically double the capacity of any maternity in the largest cities of our states.

There were no means of determining the training and qualification from experience of the staff members of the several hospitals though queries were propounded covering such information, as only some dozen obstetric heads deigned to answer the questions. The hospital authorities have a very definite responsibility for the acts of the staff members and other physicians who are accorded the privileges of the institution: the accredited physicians are inevitably liable for the operative incidences and mortalities, aside from those factors of jeopardy due to lethal pathologic entities. *The reiterated use of the term hospital in this study should be distinctly understood to be equipollent to that of physicians.*

We must give heed to the unconscionably high operative incidence in obstetrics in its indubitable association with the high concomitant maternal and fetal mortalities. How can we reconcile the high incidence of operative deliveries in our modern hospitals when we find that on the average the rate has increased 2,000 per cent, and in a few instances has risen to almost 10,000 per cent! These figures are based upon the necessitous operations in the Rotunda Hospital in 1826 - 1833 under the Mastership of Robert Collins. There would be ample extenuation, even merit, in this

enormous increment of operations if there were a compensatory reduction in the total obstetric death rates of mother and child. The gross maternal and fetal rates have been so negligibly altered that the differences between those in the Rotunda a century ago and our present figures are less than the variations which now exist between different regions (urban and rural), states, and even between hospitals in this study. In a broad interpretation of the facts we must assert that the gross maternal mortality rates in institutional practice have been immaterially reduced on the average, and in some not at all. The Rotunda in 1826 to 1833 had a gross maternal loss of 99.9 per 10,000 deliveries. In 1929 the rate in Frauenkliniks was 103.8: in the 11 to 21 bassinet group it was 97.6: in the 61 to 70 group it was 97.0: and the average rate for all hospitals was 80.8. The stillbirth rate in the Rotunda was 673.1 per 10,000 births, in contrast to the average of this study of 390.1: in the 5 to 10 bassinet group the rate was 492.4. Neonatal deaths in the Rotunda were at the rate of 170.5 per 10,000 births: the average in this study was 339.8, and the highest rate was in the 11 to 20 bassinet group-410.6. The gross fetal loss in the Rotunda was 962.5 per 10,000 births: in the 11 to 20 bassinet Group the rate was 863.4 per 10,000 births, and the average for the total was 740.3. The one astounding difference between our radical practices and the necessitous conservative methods is the reduction of stillbirths to the extent of 283.0 per 10,000 births: an increase of neonatal deaths by 232.3: and the total fetal loss has been reduced by 103.3 per 10,000 births.

All must concede that women in that pristine period endured much which now would be intolerable, the absence of any form of analgesia or anesthesia, and constantly were exposed to the serious ravages of sepsis: unquestionably numbers of mothers and their babies succumbed from their neglect, for any vaginal manipulation was fraught with almost inevitable disaster, so forceps, versions, and the crotchet were used only as last resorts. The protagonists of polypragmatic obstetrics maintain that pathologic entities now exist which were nonexistent in past generations which jeopardize the modern woman in pregnancy and parturition. We believe such allegations are untenable, and have no basis on demonstrable fact. The poverty, the squalor of their lowly habitations, entire absence of sanitary protection, deficient food and an inadequate water supply surely must have compromised the physical resources of the expectant mothers more than any putative hazards expose the modern woman. We do admit that modern social conditions, economic necessities, false teaching of the concepts of motherhood accompanied by the most blatant propaganda have all contributed to the production of an unwillingness on the part of the modern wife to submit to childbearing: the spurious propaganda that the parturient should have complete abrogation of all the throes of labor, and should always be operatively delivered have robbed the present-day woman of all that stoicism which formerly obtained.

SUMMARY OF OBSTETRIC SERVICES IN UNITED STATES HOSPITALS

In 1929 there were 4,092 hospitals listed in The Journal of the American Medical Association which incidentally or actively participated in the obstetric care of women. These hospitals contained 49,935 bassinets with a potential annual capacity for 1,498,050 parturients, though only 622,019 births were recorded: annual capacity was determined by the factor 30 -12 days the average stay in the hospital- therefore 30 patients annually for each bassinet. The report of 1932 permits more definite information: 40 per cent of all general hospitals had facilities for the care of 1 to 5 parturients: 66 per cent of the hospitals provided space for 1 to 10 patients: and 84 per cent had a capacity which accommodated from 1 to 20 patients: 124 (3.2 per cent) of all general hospitals provided space for one (1) obstetric woman: there were 135 institutions which were reputed to be maternities, though but 55 were indubitably such as 85 were unmistakably refuges of one sort or another. In 1929, 41.5 per cent of all recorded institutional births occurred in hospitals with capacities ranging from 1 to 20 obstetric beds. The proponents of the contention that obstetric

services in general hospitals, and especially small ones, should be annihilated are advocating an absurdity, and an economic impossibility, which is in keeping with the chimerical deduction that the only safe place for a woman in confinement is a maternity hospital.

GENERAL STATISTICS OF THIS SURVEY

This survey covers the obstetric interferences in 514 hospitals with 13,950 bassinets, with 240,518 births: 484 were general hospitals, 23 were certified as maternity hospitals, and 7 were stated to be Frauenkliniks. With great variations the different abnormal phenomena of pregnancy and labor were reported, from ectopics and abortions to postpartal complications.

490 hospitals with 236,016 births recorded 1,907 maternal deaths- a rate of 80.8 per 10,000 deliveries:
486 hospitals with 234,670 births recorded 9,155 stillbirths- a rate of 390.1 per 10,000 births:
465 hospitals with 226,668 births recorded 7,704 neonatal deaths- a rate of 339.8:
471 hospitals with 228,887 births recorded 16,949 infants lost- a rate of 740.3:
445 hospitals with 221,859 deliveries reported 46,946 operative terminations of pregnancy or labor- a rate of 2,116.0.
Of these 49,946 operations, 199 were craniotomies, 35,342 were forceps, 5,598 were versions, and 5,807 were cesarean sections.

Credence cannot be given to the tacit implication (due to a failure to report data) that 69 hospitals had no operations for the termination of labor; that 412 hospitals had no craniotomies; 140 hospitals no forceps operations; 168 hospitals had no versions; and 94 hospitals had no cesarean sections: this is deduced from the fact that so many hospitals had a most intensive operative furor expressed by their staff members.

As the available material represents 12.6 per cent of all hospitals with obstetric services, 29.9 per cent of all bassinets, 36.9 per cent of all recorded institutional births, and about 10 per cent of all national births, 13 per cent of all maternal deaths, and 11 per cent of all infants' deaths (stillbirths and neonatal) it may be accepted that this survey represents a fairly accurate cross-section of the obstetric activities in our hospitals as regards operative incidences in spite of the fact that about 14 per cent of the hospitals failed to supply the data. It does not give quite accurate visualization of the maternal operative deaths as 16 per cent of the hospitals failed to record the outcome in 22 per cent of the total operations: and 43 per cent of the hospitals reporting operations failed to record the fetal sequelae in 40 per cent of the interferences. In many divisions of the tabulations more glaring omissions were evident, as in the 51 to 60 bassinet group the fetal results were wanting in 77 per cent of the versions. We may surmise that the frequent omissions of fatalities were partly due to a failure to compile statistical records of the hospital activities, and in part, to a desire to suppress excessive death rates. It is not presumption to believe that the actual facts are worse than the tabulations depict.

CRITERIA OF CONSERVATIVE OPERATIVE OBSTETRICS

Any arbitrarily devised criterion for the estimation of conservative operative practice in obstetrics is subject to diverse opinions which may be fixed by the ultraconservative or the radical: necessarily a true judgment may be ascertained only when the judge is cognizant of the practice of a specified physician, or (and) knows the type of clientele which a specific hospital may have. In the beginning of the twentieth century cesarean section was not an obtruding problem: forceps, version,

and the very occasional craniotomy alone received particular thought. Then, forceps were considered indicated in about 5 per cent of charity hospital practice, and, perhaps, double that rate for private patients. Version was limited to indications placed by transverse presentations, rarely as a "prophylactic" version in flat pelves, and in placenta previa, as well as the exceptional prolapse of the cord or extremity. Craniotomy was employed only as a last resort. In recent times various writers have suggested certain incidences for the four principal delivery operations as guides for conservative practice.

The indices which shall be presented here were computed from the data of this study, and were developed in the course of a different classification than is offered at the present time. The 46,946 operations have been calculated for incidences on a percentage basis: the 35,048 operations where maternal results were recorded were grouped according to their percentage rates, just as was the case with the 27,533 operative terminations where fetal outcomes were recorded.

The Cesarean Section Index is 0.629 Per Cent: 87 hospitals (20.7 per cent of the institutions reporting) had 286 operations in 45,464 deliveries.

The Version Index Is 0.677 Per Cent: 76 hospitals (22 per cent of those reporting) had 292 operations in 42,981 deliveries.

The Forceps Index Is 6.02 Per Cent: in 102 hospitals (27.3 per cent of those reporting) there were 3,203 operations in 53,168 deliveries. This index closely approximates that of E. D. Plass.

The operative incidences for cesarean section and version were derived from those institutions whose rates fell below 1 per cent. The rates for the 102 hospitals in the calculation for forceps were all below 10 per cent.

EXPLANATIONS FOR TABLES AND CHARTS

Table I merely gives the grand totals of all operative incidences, and of all maternal and fetal mortalities: gives the same data for all general hospitals, and for the two special hospitals (maternities and Frauenkliniks). The eleven (11) groups, 9 of which comprise the divisions of general hospitals according to bassinet capacities, and the two special hospital groups have their data suppressed that there may be a conservation of space. However, Chart 1 depicts the incidences (in percentages) of forceps, version, cesarean section, and of all operations collectively. In the extreme right is the column which represents the total operative incidences in the Rotunda from 1826 to 1833. The maternal mortalities are similarly shown in Chart 2. Chart 3 presents the fetal percentage rates in the same manner. Each block of the three charts was similarly arranged: that hospital group which had the lowest incidence or mortality rate was placed at the left, and the others followed in their due percentage sequence. At the extreme right of Charts 2 and 3 appear the gross maternal and fetal mortality rates for the Rotunda. They are presented to show how little polypragmatic operative obstetric practices have altered the death rates in reproduction in a century.

TABLE I

TOTAL OPERATIVE DELIVERIES

CRANIOTOMIES, FORCEPS, VERSIONS, CESAREAN SECTIONS IN 445 HOSPITALS WITH 221,859 DELIVERIES, THE INCIDENCES AND MORTALITIES OF THE GRAND TOTAL, THE GENERAL HOSPITALS AND THE SPECIAL HOSPITALS AND THE GROSS * MATERNAL AND FETAL MORTALITIES OF THE SAME GROUPS IN 490 HOSPITALS WITH 236,016 DELIVERIES.

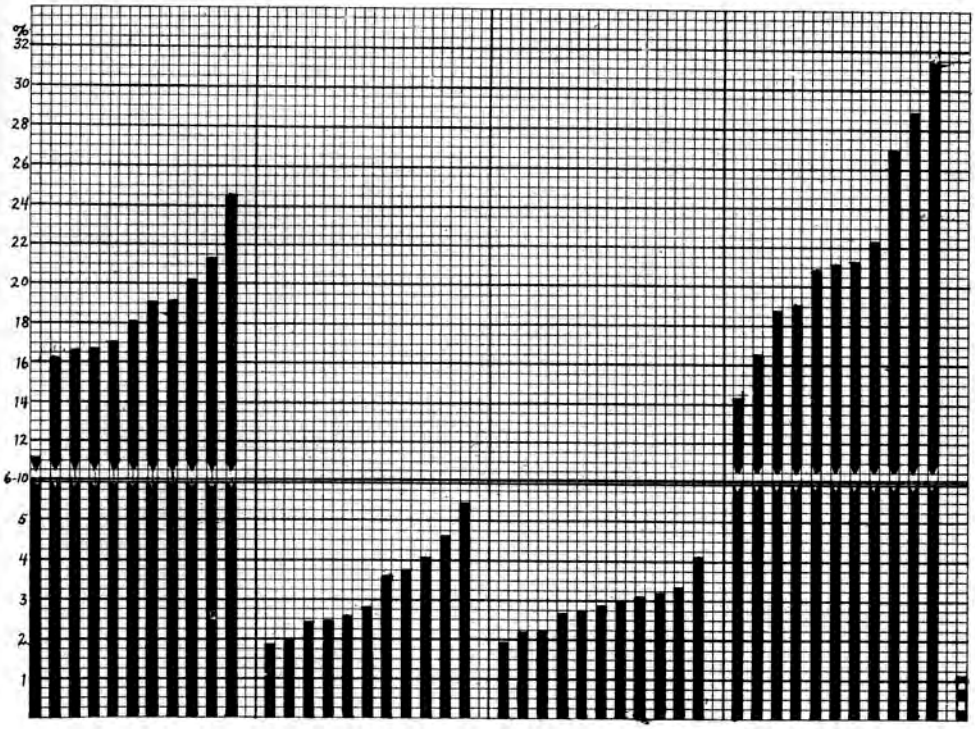
(The Operative Death Rates Are Based Upon the Numbers of Operations; the Incidences, the Gross Maternal and Fetal Mortality Rates Are Based Upon Deliveries—All per 10,000.)

		INCIDENCES				MATERNAL MORTALITIES					FETAL MORTALITIES				
COLUMN		1	2	3	4	5	6	7	8	8A	9	10	11	12	12A
TOTALS AND HOSPITAL TYPES	OPERATIVE METHODS	NUMBER OF HOSPITALS	NUMBER OF DELIVERIES	NUMBER OF OPERATIONS	INCIDENCES	NUMBER OF HOSPITALS	NUMBER OF OPERATIONS	NUMBER DIED	OPERATIVE DEATH RATES	GROSS MATERNAL DEATH RATES	NUMBER OF HOSPITALS	NUMBER OF OPERATIONS	NUMBER DIED	OPERATIVE DEATH RATES	GROSS FETAL DEATH RATES
GRAND TOTALS	TETRAD	445	221,859	46,946	2116.0	376	36,048	455	126.2	80.8	251	27,533	1757	638.1	750.3
TOTALS OPERATIVE FORMS	CRAN.	102	85,139	199	23.3	65	135	12	888.8		102	199	199	10,000.0	
	FORCEPS	374	197,004	35,342	1793.4	270	27,090	86	31.7		175	20,890	816	390.6	
	VERSION	346	188,292	5,598	297.3	237	3,928	65	165.4		158	3,056	437	1429.9	
	CES. SEC.	420	216,066	5,807	268.7	336	4,895	292	596.5		196	3,388	305	900.3	
TOTALS GENERAL HOSPITALS	CRAN.	90	65,428	157	23.9	54	94	8	851.0		90	157	157	10,000.0	
	FORCEPS	348	171,370	29,685	1732.1	248	21,580	61	28.2		159	15,795	669	423.5	
	VERSION	324	163,263	4,846	296.8	219	3,332	58	174.0		144	2,456	345	1404.7	
	CES. SEC.	398	191,037	5,077	265.7	316	4,173	264	632.6		181	2,689	252	937.1	
	TETRAD	419	196,223	39,765	2026.5	353	29,179	391	134.0	82.3	235	21,097	1423	674.9	746.4
TOTALS SPECIAL HOSPITALS	CRAN.	12	19,711	42	21.3	11	41	4	975.6		12	42	42	10,000.0	
	FORCEPS	26	25,634	5,657	2206.8	22	5,510	25	45.3		16	5,095	147	288.5	
	VERSION	22	25,029	752	300.4	18	596	7	117.4		14	600	92	1533.3	
	CES. SEC.	22	25,029	730	291.6	20	722	28	387.8		15	699	53	758.2	
	TETRAD	26	25,634	7,181	2801.3	22	6,869	64	93.1	67.3	16	6,436	334	518.9	698.0

*The Incidences and Mortalities of the 11 groups—i. e., 9, according to Bassinet capacities of General Hospitals, Maternities, and Frauenkliniks—are graphically presented in Charts 1, 2 and 3. The Incidences, column 4, of the 11 groups appear in Chart 1; Maternal Mortalities, column 8, are in Chart 2; Fetal Mortalities, column 12, are in Chart 3. In each chart the sequences of the several groups are placed according to percentage ratings, for Forceps, Version and Cesarean section. Craniotomies are included in "Total Operations" only.

CHART 1

OPERATIVE INCIDENCES IN 445 AMERICAN HOSPITALS IN 1929
35,342 FORCEPS OPERATIONS, 5,598 VERSIONS, 5,807 CESAREAN SECTIONS—A TOTAL OF 46,946 OPERATIONS*
WITH A COMPARISON OF THE TOTAL OPERATIVE INCIDENCE IN THE ROTUNDA MATERNITY, 1826-1833.
ARRANGED ACCORDING TO BASSINET CAPACITIES OF GENERAL HOSPITALS, MATERNITIES AND FRAUENKLINIKS



FORCEPS	VERSIONS	CESAREAN SECTIONS	TOTAL OPERATIONS FOR DELIVERY
61— 70 Bass.	51— 60 Bass.	81—150 Bass.	61— 70 Bass.
51— 60 Bass.	61— 70 Bass.	61— 70 Bass.	51— 60 Bass.
21— 30 Bass.	21— 30 Bass.	31— 40 Bass.	21— 30 Bass.
81—150 Bass.	31— 40 Bass.	21— 30 Bass.	41— 50 Bass.
41— 50 Bass.	81—150 Bass.	11— 20 Bass.	31— 40 Bass.
31— 40 Bass.	Mat.	41— 50 Bass.	11— 20 Bass.
11— 20 Bass.	11— 20 Bass.	Mat.	81—150 Bass.
5— 10 Bass.	Frauenk.	5— 10 Bass.	5— 10 Bass.
71— 80 Bass.	41— 50 Bass.	Frauenk.	Mat.
Mat.	71— 80 Bass.	51— 60 Bass.	71— 80 Bass.
Frauenk.	5— 10 Bass.	71— 80 Bass.	Frauenk.
			Rot.

*Total operations include 199 craniotomies.

The mortality rates following operations in the Rotunda, as was the case in all hospitals of that

TABLE II

ISOLATED EXAMPLES OF THE OPERATIVE CRAZE
HIGH INSTANCES COMPARED WITH LOW RATES
ARRANGED ACCORDING TO TOTAL OPERATIVE INCIDENCES
(FRACTIONS DISREGARDED EXCEPT WHERE PERCENTAGES ARE LOW)

TOTAL DELIVERIES	FORCEPS		VERSIONS		CESAREANS		TOTAL OPERATIONS	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
116	58	50.0	36	31.0	5	4.3	99	85.0
296	79	27.0	168	57.0	3	1.0	250	84.0
367	268	73.0	2	0.54	19	5.2	289	78.0
408	244	59.0	56	14.0	5	1.2	305	75.0
150	97	64.0	12	8.0	5	4.0	115	76.0
1302	376	29.0	371	28.0	190	14.0	937	72.0
604	376	62.0	36	5.9	17	2.8	429	71.0
1374	797	58.0	29	2.1	50	3.5	876	63.0
1447	808	55.0	59	4.0	22	1.5	889	61.0
525	211	40.0	78	15.0	3	0.57	292	55.0
571	214	37.0	51	8.9	33	5.8	298	52.0
250	100	40.0	24	9.6	8	3.2	132	52.0
237	33	14.0	71	30.0	14	5.9	118	49.0
229	72	31.0	2	0.87	23	9.9	97	42.0
295	90	30.0	14	4.7	21	7.1	125	42.0
162	38	23.0	1	0.6	25	15.0	64	39.0
161	39	24.0	7	5.3	18	11.0	64	39.0
314	73	23.0	36	11.0	12	3.8	121	38.0
136	16	11.0	4	2.9	18	13.0	48	35.0
285	55	19.0	2	0.7	41	14.5	98	34.0
195	49	25.0	19	10.0	1	0.5	69	35.0
1947	546	28.0	35	1.8	94	4.8	675	34.0
LOW INCIDENCES								
2022	236	11.0	33	1.5	31	1.5	300	14.0
945	63	6.6	13	1.4	7	0.7	83	8.6
901	43	4.7	13	1.4	3	0.3	59	6.5
166	2	1.2	2	1.2	1	0.6	5	3.0
3228	32	1.0	22	0.7	23	0.7	77	2.4

period, were excessively high as interferences were undertaken only under the direst necessity, and even when the patients were in extremis. To contrast these operative rates of that era long before aseptic surgery and anesthesia with the results obtaining in our modern hospital environment would not prove the point: the gross rates of the Rotunda are presented that our contention may be intensified -a sane use of operative interventions, employed when scientifically indicated, would be reflected in lowered maternal and fetal mortality rates, whereas, polypragmatic operations, especially cesarean section, determine very definite operative hazards without the extenuation of indicating pathologies which in themselves have inherent jeopardies to mother and child.

The 11 arbitrary groupings show the very great diversities in operative incidences and operative mortalities, they are but averages for each group, and conceal the extremes of individual hospitals. To what extent these variations are dependent upon serious pathologic entities and complications a future contribution may show: we are inclined to believe that they are due to indiscriminate use of operations on the part of many attendants.

Table II offers a selected list of hospitals where unconsciously high incidences obtain, contrasted with a few whose rates are phenomenally low.

Table III is an attempt to grade the various groups: we are fully cognizant of the difficulty of fixing an arbitrary grading without knowing the attributes of the attending men of all the hospitals, the facilities and the types of patients admitted to them, but, at least, it is suggestive in showing the relative incidences and mortalities of the several groups. The digit "1" represents the lowest incidence or mortality of the 11 groups, the figures "11" the highest ratings: the intervening groups were marked according to their sequences, insignificant as, the fractional differences between consecutive rates might be. This table demonstrates that maternity hospitals, the 71 to 80 bassinet group, and Frauenkliniks stand highest in operative incidences: and that the 61 to 70 bassinet group had the lowest operative rate. The Frauenklinik stands highest as regards total maternal losses: the maternity hospitals are lowest, the fact being that the former have a fairly large number of ectopics and abortions, while the maternities have relatively few of such. The smallest hospital groups, 5 to 10 and 11 to 20 bassinets, are the highest as regards total fetal losses, and almost the highest as regards operative lasses, only exceeded by the 61 to 70 group where pathologic incidences exceed any other group. This table shows that each group has some virtues, and probably faults: and shows that the maternity hospitals group as far as operative interventions go is third from the highest.

THE OPERATIVE INCIDENCES AND MORTALITIES

(All rate calculations in the text and Table I are expressed in 10,000 deliveries in the incidences, and in operations for the mortalities. In the charts the rates are transcribed into percentages.)

CRANIOTOMIES

Craniotomies were recorded in the questionnaires of 102 hospitals with 199 operations in 85,139 deliveries: in 140 hospitals the query pertinent to this matter was checked with a zero or some ambiguous mark. In view of the paucity of such markings in all other connections they were omitted as apocryphal in this as well as all other connections -in every connection definite figures alone were used in the computations. The import of this preponderant denial, or equivocal checking will be commented upon in the discussion of the operation.

COMPARATIVE DATA

INCIDENCES:	
Rotunda: 118 crotchet operations and 6 embryotomies	75.5
Average: 102 hospitals of the study	23.3
Highest Group—rate: 5 to 10 bassinets, 6 hospitals	71.2
Lowest Group—rate: Frauenkliniks, 5 hospitals	11.4
Maternities: 7 hospitals, tenth in grading	24.8
MORTALITIES:	
Rotunda: in 79 difficult labors (in 45 cases, figures not obtainable)	1898.6
Average: 65 hospitals	888.8
Highest Group—rate: 61 to 70 bassinets (4 operations)	2500.0
Lowest Group—rate: 5 to 10, 51 to 60, 71 to 80, 81 to 150 bassinets, and Frauenkliniks	0.0
Maternities: 7 hospitals, eighth in grouping	1111.1

Due to the necessities of the times *any* operative intervention was a *dernier ressort*: in the Rotunda, destruction of the child comprised 67 per cent of all operative interferences. The destruction of the living child to save the mother when other justifiable measures were permissible has rightly received the condemnation of all obstetricians, yet there are times when even the living

child, especially if moribund, should be sacrificed that the mother might be saved: I write this though it is many years since necessity demanded mutilation on the living child in the practice of the writer. This is a casuistic problem which does not concern us here, but it is an irreconcilable discrimination which shall dictate a therapeutic abortion to be legitimate and in consonance with the highest professional ideality, yet view with abhorrence the destruction of that same child some months later when both operations are employed for the same altruistic motive of saving maternal life. The child dead, or moribund, or proved to be a monster by modern investigative means, should demand that operation which is safest for the mother: it must, indeed, be a dictation of maudlin sentiment which will prompt any operator to perform a more dangerous operation when craniotomy may be safely carried to a conclusion. We concur with Bretschneider that under its given conditions the *safest*operation that may be performed is a craniotomy: according to the writer quoted when death does ensue it is due to the indication, not the operation per se. Just contrast the fact of over 1,700 therapeutic abortions of this study with 199 recorded craniotomies! Are we consistent when we nearly relegate this operation to oblivion when in 19 hospitals version carried a maternal mortality of 1,949.6: this is over double the average craniotomy rate. In 92 hospitals version terminated fatally for 367 infants in 1,440 operations -a rate of 2,548.6: and in 16 hospitals the rate was 6,380.9. Can we declare that the cesarean section indications were good when in 7 hospitals the maternal and fetal mortalities were 10,000! Can we reconcile 199 recorded craniotomies when in the total survey 9,155 babies were dead born, let alone the 7,704 others that died in the hospital! Was cesarean section rightly undertaken when 17 per cent of all operative fetal deaths followed that operation?

It is an inexpugnable, conviction that craniotomy has not been accorded a proper place in obstetric practice.

FORCEPS

(See Tables I, II and III. Charts 1, 2 and 3)

INCIDENCE:

Rotunda: 24 forceps, 3 lever —27	16.4
Average: 374 hospitals	1793.4
Highest Group—rate: Frauenkliniks	2450.6
Lowest Group—rate: 61 to 70 bassinets	1122.1
Maternities: grade 10	2131.8
Highest incidence in single hospital	7302.4
Lowest incidence in a hospital	99.1

MORTALITIES: MATERNAL		FETAL	
Rotunda	1481.4	Rotunda:	2962.9
Average: 270 hospitals	31.7	Average: 175 hospitals	390.6
Highest Group—rate: 61 to 70 bassinets	123.4	Highest: 61-70 bassinets	1018.5
Lowest Group—rate: 71 to 80 bassinets	11.0	Lowest: 71-80 bassinets	160.8
Maternities: eighth in grading	43.9	Maternities: fifth in grading	326.3
Highest mortality in a hospital	1818.1	Highest in a hospital	7307.7
Lowest mortality in a hospital (465 operations)	0.0	Lowest in a hospital (438 operations)	0.0

The startling and outstanding proof of the use of operative interventions rests with the widespread employing of instruments, ranging from below 1 per cent to 73 per cent: the reports did not show the fact, but one chief of staff stated to the writer that in his hospital "all women are instrumentally delivered unless otherwise artificially terminated. " How may we explain that the maternal losses following forceps are but 31.7, while the gross mortality for all hospitals is 80.8 per 10,000 operations: or that the fetal fatalities were 390.6, while the gross loss from all causes was 750.3?

These relative death rates are not quite contextual, but 270 hospitals reported on operative maternal deaths, while 490 institutions recorded the gross maternal losses. Likewise, 175 hospitals

reported fetal deaths following instrumental deliveries, while 471 certified as to the total fetal losses. At least the comparisons are illuminating if not perfectly in juxtaposition. Apparently two factors are involved in the high incidences of forceps operations; the average practitioner has the assurance to practice the art, and employs the instruments as a time saver -aided and abetted by the patient and family that the labor shall be shortened: in large hospitals, especially where there is a considerable charity service, the residents and internes may have full sway to perform the operation indiscriminately. The low mortalities, in contrast to the high version and cesarean section rates, imply that the instrumental deliveries were operations of expediency with little essential indication: that the serious complications were treated by other methods.

VERSIONS

(See Tables I, II and III. Charts 1, 2 and 3)

INCIDENCES:

Rotunda: 33 versions for transverse presentations	20.1
Average: 346 hospitals	297.3
Highest Group Rate: 5-10 Bassinets	546.1
Lowest Group Rate: 51-60 Bassinets	180.9
Maternities: sixth in grading	276.8
Highest incidence in a single hospital	5675.6
Lowest incidence in a hospital	23.8

MORTALITIES: MATERNAL		FETAL	
Rotunda:	909.0	Rotunda:	3939.3
Average: 237 hospitals	165.4	Average: 158 hospitals	1429.9
Highest Group Rate: 31-40 Bassinets	433.8	Highest: 61-70 bassinets	2727.2
Lowest Group Rate: 71-80 Bassinets	20.9	Lowest: 71-80 bassinets	453.4
Maternities: fifth in grading	106.1	Maternities: tenth in grading	2109.3
Highest mortality in single hospital	5000.0	Highest mortality	10,000.0
Lowest mortality in single hospital (168 operations)	0.0	Lowest mortality (24 operations)	0.0

Turning is one of the essential procedures in certain clear indications: in transverse and anomalous presentations, prolapsed cord, and above all else in placenta previa, besides being a complemental operation when imperative indications demand prompt termination of labor before the conditions for forceps exist. The average incidence for version in this study is probably about double that which would be dictated by conservative obstetrics. In Table 11 are shown the wide variations of the operation in individual hospitals, from 0.54 through the gamut to 57 per cent.

This study demonstrates that polypragmatic version has less of a place than other interventions, except craniotomy. The average high fetal mortality, 1,429.9, and the inevitably high frequency of permanent, if not lethal injuries, have rightly put a quietus to this type of interference as a near routine measure. Further, there may be no question that more skill is required for a properly conducted version and immediate, or delayed, extraction than any other obstetric procedure.

ABDOMINAL CESAREAN SECTIONS

INCIDENCES:

Rotunda: no cesarean sections (total operative incidences)	112.5
Average: 420 hospitals	268.7
Highest Group Rate: 71-80 bassinets	409.5
Lowest Group Rate: 81-150 bassinets	187.5
Maternities: seventh in grading	286.2
Highest incidence in single hospital (162 deliveries, 25 operations)	1543.2
Lowest incidence in a hospital	17.6

MORTALITIES: MATERNAL		FETAL	
Rotunda: total mortality	99.9	Rotunda:	962.5
Average: 336 hospitals	596.5	Average: 196 hospitals	900.3
Highest Group Rate: 5-10 bassinets	860.9	Highest Group: 61-70 bassinets	2266.6
Lowest Group Rate: maternities	294.1	Lowest Group: Frauenkliniks	395.4
Highest mortality in hospitals (7 hospitals, 8 operations)	10,000.0	Highest mortality in hospitals (7 hospitals, 14 operations)	10,000.0
Lowest mortality in single hospital (142 operations)	0.0	Lowest mortality in a hospital (21 operations)	0.0

RELATION OF CESAREAN MATERNAL DEATHS TO TOTAL DEATHS:

*Average: 320 hospitals, 1,325 total deaths, 276 cesarean deaths:	per cent	20.83
Highest Rate: 5 to 10 bassinets:	per cent	38.2
Lowest Rate: 81 to 150 bassinets:	per cent	8.1
Maternities 14.7 (11 to 20 bass., 26.9; 21 to 30 bass., 28.3; 31 to 40, 34.3):	per cent	14.7

***320 hospitals gave gross maternal deaths and, cesarean deaths; the former were the losses from all puerperal causes.**

Cesarean section, whether performed according to the technic of the classic or low cervical methods are laparotomies for delivery: as this study is solely concerned with general procedures, not special deviations in technic, all the data herewith presented in this division form the composite picture of the surgical delivery of the child. At another time the two types will be severally amplified and compared.

The removal of the uterine contents by laparotomy is generally the simplest method for the termination of pregnancy: it ordinarily offers less deviations from the usual than almost any other abdominal operation; it demands the minimum of time in attendance for the physician; it eliminates the protracted period of increasing anxiety on the part of the patient, the family, and the medical man: therefore, it becomes the most inviting solution for the mastery of any and all obstetric ills. In its pristine application the operation was restricted to those exceptional cases where no other recourse were possible that mother and infant might be saved. Not twenty years ago it was considered censurable to lose the baby or to produce a monstrosity in a cesarean section: today, this no longer holds true, for repeatedly we find that the operation was undertaken when the child already had succumbed, or a gross teratoid deformity was demonstrated by an x-ray examination: too frequently it is undertaken for the most trivial and spurious indications. We see this in the report of a metropolitan survey, and in one maternity where the diverse indications numbered over 80 for the former and 53 for the latter. The mere desire of the patient is offered as an excuse: within the year I saw a woman suffering from a post-cesarean ileus: she had had three perfectly normal labors previously: in the fourth, labor pains were nagging and irregular for some hours with pulse and temperature normal, fetal position normal. Her physician stated, "she looked so appealingly into my eyes, and said “ O Doctor, please do something for me,” so I did a section. The whole perspective of obstetric knowledge and experience is lost: breech and face presentations, and the host of other complications, readily amenable to simple correctional manipulations are no longer considered

modifications of eutocia: opportune interventions are discarded: in too many quarters conservatism and watchful expectancy are no longer obstetric watchwords.

The opposing factors to the ease and simplicity of performance of the operation are awarded slight consideration: the determining factors of the recognition of the existing conditions which dictate whether or no the operation is permissible and truly indicated will tax the most expert. The operation has been lauded as a perfectly safe one, which belie the facts. In this study cesarean sections (5,807) constituted 12.3 per cent of the 46,946 operative terminations of pregnancy and labor. Cesarean sections constituted 13.58 per cent of all operations where maternal deaths were recorded, and constituted 64.1 per cent of all the operative deaths: and these cesarean deaths formed 20.83 per cent of all puerperal deaths, whatsoever their nature (see tables heading this caption). Where fetal deaths were recorded cesarean section comprised 12.3 per cent of all operations: fetal deaths following cesarean section comprised 17.3 per cent of all postoperative fetal losses.

Many years ago a medical journal stated editorially that anesthesia and asepsis were not unalloyed blessings in that numbers of operators relying upon their skill and protected by the thought of the annihilation of pain and the reasonable certitude of having protection against sepsis were prone to operate on too trivial indications. Whatever truth lies therein as regards surgery, it would seem apparent that it does hold true today as regards obstetric practices. The surgeon routinely deals with definite pathology or disturbed anatomy: the physician is concerned with dysfunction and disease in his patients. By and large the obstetrician practices upon women who at the very least are 80 per cent normal,-: undergoing a physiologic process, and that proportion may be increased to a full 90 per cent: not more than 1 or 2 per cent of all parturients are seriously jeopardized so that health and life are: dependent upon the action of the physician: the 8 or 9 per cent are materially concerned in having watchful care, but exceptionally are vitally involved. Prenatal care and all it connotes is more the alertness in recognizing aberrancies, and promptly correcting them in their incipiency - it is a parody on modern obstetric thought and practice when different writers have shown that women protected by prenatal care, and delivered spontaneously by midwives, are better protected than when they are in the hands of physicians with their high incidences of operative interventions. It is self-evident that some few physicians and some hospitals supported by political units, or privately endowed, have greatly increased incidences of pathology and complications, but such physicians and such hospitals do not militate against the above postulate. The perfection of the modern operating rooms of many hospitals with the manifold facilities for meeting any and all emergencies invite physicians to, exert their skill in circumventing the number of trivial events which transpire during labor by drastic procedures until indications are: practically nonexistent in the majority of their interventions. It is too preposterous to believe that any hospital or any physician has such an excessive incidence of obstetric complications that operative interventions to the extent of 50, 60, and 85 per cent are justifiable. Nor can any thoughtful physician give credence to the

TOTAL OPERATIVE INCIDENCES AND MORTALITIES

(See Tables I, II, and III. Charts 1, 2, and 3)

INCIDENCES:

Rotunda:	112.5
Average: 445 hospitals	2116.0
Highest Group Rate: Frauenkliniks	3144.1
Lowest Group Rate: 61-70 bassinets	1419.5
Maternities: ninth in grading	2695.9
Highest incidence in a single hospital	8534.5
Lowest incidence in a single hospital	238.5

MORTALITIES: MATERNAL		FETAL	
Rotunda (gross, not operative deaths)	99.9	Rotunda: gross deaths	962.5
Average: 376 hospitals	126.2	Average: 251 hospitals	638.1
Highest Group Rate: 61-70 bassinets	217.6	Highest Group: 61-70 bassinets	1495.3
Lowest Group Rate: 81-150 bassinets	50.1	Lowest Group: Frauenkliniks	279.9
Maternities: second in grading	83.0	Maternities: fifth in grading	610.7
Gross mortalities: all causes	80.8	Gross mortalities: all causes	750.3

warranty that an operative incidence of 2,695.9 in 23 maternity hospitals, or a rate of 2,896.3 in 9 general hospitals with an average capacity between 70 and 80 patients, and of the rate of 3,144.1 in 6 Frauenkliniks are all demanded by such remarkable frequencies of gross, let alone, minor pathologies.

CONCLUSIONS

1. The data presented in this paper are factual records submitted by authority of 445 American hospitals: the fact that figures relating to maternal and fetal deaths were absent in varying proportions in many reports suggests that in many hospitals where facts were not stated the mortalities were worse than the statistics would lead us to surmise.
2. Polypragmatic operative obstetrics pervades the country due to an insistent demand of a misguided public, and abetted by physicians who are carried away by their enthusiasm or led by overzealous authorities.
3. The isolation and segregation of obstetric units in general hospitals, or their housing in special pavilions is preeminently desirable. Such segregation is of secondary importance: the vital problem is that the responsible authorities and the medical attendants shall conform to standards of conservative practice.
4. As a result of excessive operative interventions, maternal and fetal mortalities have not been diminished.
5. In only two divisions of the 11 groups are operative maternal losses less than the average for those groups: in the 51 to 60 bassinet group the operative deaths are 94.1 in contrast to 94.4 for the total maternal rate: in the 81 to 150 group the maternal operative death rate is 50.1 against 74.7 for the total mortality rate.
6. The fetal operative death rate is 1,025.2 in contrast to 845.0 for the gross rate: in the 61 to 70 bassinet group the operative rate is 1,495.3 against the gross of 814.3: in the 71 to 80 bassinet group the operative rate is 317.3 against the gross of 637.7: in the Frauenkliniks the operative rate is 279.9 in contrast to the gross of 687.2.
7. Cesarean deaths constituted 64.1 per cent of all maternal operative deaths, though the former operations were but 13.58 per cent of the total number.

8. Cesarean section was done in 12.3 per cent of all operations where fetal results were recorded, but totaled 17.3 per cent of all fetal operative deaths.

DISCUSSION

DR. GEORGE W. KOSMAK, NEW YORK CITY. -Preliminary to any attempt to discuss specifically Dr. Holmes' important and opportune description of a situation which demands our careful consideration, must come an acknowledgment of his courage in presenting such distasteful facts as are contained in his conclusion. It may be recorded, however, that Dr. Holmes is not the only one who has the courage of his convictions. There are others among our fellowship and elsewhere whose combined testimony about things as they are, and not as they should be, has built up a picture sufficiently serious in its aspects to call for concerted action. During the past fifteen years the studies, among an increasing number, of Plass, Adair, Mussey, Bolt, the Federal Children's Bureau, and the New York Academy of Medicine, all point to the same thing, namely, that there is little change in the mortality figures of this country commensurate with what we might expect from the so-called advances in the science and art of obstetrics. For 20 years the rate has been substantially unchanged, perhaps a little worse, notwithstanding the increasing hospitalization of maternity cases. In New York City, for example, about two-thirds of the births take place in hospitals and the causes of death are the same old triad, sepsis, hemorrhage, and toxemia. Of course it is difficult to analyze such a maze of figures as Dr. Holmes has worked with. It may be possible, moreover, to develop other interpretations, but the fact remains that a good many women died in pregnancy in whom interference with the normal processes of labor may have turned the scales against them. Of course this is speculative, yet we do know that the death rate is less high where noninterference was practiced.

In connection with what Dr. Holmes has done I want to refer briefly to the recently published Maternal Mortality Report in New York City. This was based on a three-year study of individual case records by a competent jury which concerned itself, among others, with two questions, the establishment of the true cause of death and the factor of preventability. In about 18 per cent of the cases the final diagnosis differed from that in the Registrar's office, due to careless or deliberate omissions. Out of all the deaths 2,041, the jury believed that about 65 per cent were preventable, either on the part of the physician or the patient. Incapacity of the attendant, poor judgment, carelessness, all entered into the picture and pointed to a lack of respect, largely on the part of the physician, for the gravity of obstetric operations. It was not possible to analyze the operative incidence in this study as Dr. Holmes has done, except in an incomplete manner for cesarean section. There were 396 sections in 67 hospitals in the three-year period, about 2.2 per cent of all deliveries, varying from 5.3 in one to 0.4 in another. But there were 310 fatalities, over 19 per cent of all the deaths (1,564) excluding abortions and ectopics. Faulty indications, incompetence, improper environment were all prominent and the operations were undertaken without hesitancy by men who, on closer investigation, were found with no qualifications to perform such a major procedure.

I am making this extended reference to the New York report to show that it supports the conclusions laid down by Dr. Holmes and hope that our Society may take suitable action. The problem is a serious one, it must be attacked from many angles, but the issue must be met and it can be met by established and authoritative bodies whose recommendations would meet with attention and respect.

DR. HUGO EHRENFEST, ST. Louis, Mo. -Most of us will acknowledge that too many unnecessary obstetric operations are performed and that many of them are done by inexperienced men, at least inexperienced and unqualified to make an exact obstetric diagnosis, on which alone can

be based the justification for operative interference. We all must agree that these two facts of necessity play an important role in the loss of maternal and infant lives incident to labor.

Most of us, unfortunately not all of us, will agree that there is no real justification for the view prevailing among the women of this country that they can demand a short and comfortable labor. Compliance with this demand fosters injudicious use of all kinds of not entirely innocuous drugs and inevitably increases the operative rate. Thus undeniably risks both to mother and infant are increased.

However, I doubt that all these deductions can be drawn from the impressive array of figures and charts presented by Dr. Holmes. He admittedly has collected an immense amount of material and deserves credit for the immense amount of work involved. But, as he himself has to admit, these figures are incomplete, often inaccurate because so large a number of hospitals refused to give any information or offered palpably incorrect figures. He very properly suggests that hospitals should be *forced* to keep and offer to proper authorities statistics decidedly more accurate and detailed.
A study of Dr. Holmes' charts and graphs, and especially of his many work sheets, proves bewildering and puzzling. They are full of unexplainable and seeming contradictions. Large and again small obstetric services in general hospitals and the large "Frauenkliniken" show either strikingly low or astonishingly high operative frequencies, and these associated with either a high or low mortality for mother and child, and to add to the confusion a high maternal mortality may or may not be found associated with a high or a low infant mortality. Of course, it is obvious that death rates for mothers and infants by themselves do not permit acceptable conclusions in regard to the character of work done in an obstetric service. These rates are too greatly dependent upon the character of the material, the type of patients, the amount of prenatal care though, of course, they are also greatly influenced by the ability of the actively working staff. For an exact and truly dependable statistical analysis a correlation at least of all these factors would be necessary. Such information at present is not available. The official death certificates for the mothers and birth certificates for the newborn, particularly if stillborn, are inadequate, require thorough revision, as emphatically recommended by some of the White House Conference Committees. Just to point out one of the glaring defects: the death certificate of every stillborn child or one dying within the first few days of extrauterine life should indicate, e.g., whether patient had prenatal care; duration of gestation; weight of child; whether fetus was dead before labor started, died in course of labor, or had heart still beating after expulsion; whether there was any sort of artificial interference and for what reason, etc. Only on the basis of such detailed information acceptable conclusions can be drawn concerning the actual cause of death and valuable prophylactic measures developed.

Such essential information at the present time, unfortunately, can be secured only by means of such time-consuming and expensive private investigations as have been carried out in New York, Cleveland, and in Philadelphia. Appropriate changes in death and birth certificates would enable the Bureau of the Census to give to the profession truly valuable data, of inestimable importance for efforts to discover the various causes for this present great loss of mothers and infants,

DR. PHILIP F. WILLIAMS, PHILADELPHIA, PA. -An investigation of obstetric practice in Philadelphia during 1931, 1932, and 1933 shows that the maternal mortality rate underwent little change. Home deliveries by physicians dropped from 55 per cent to 25 per cent. Deliveries in hospitals show an increase. In the last year 73.5 per cent of all the births that now take place in Philadelphia occurred in hospitals. The midwife situation has become practically negligible, for they have delivered only 3,000 patients in the city in three years, less than 3 per cent of the 99,579 births. We do not have facing us in Philadelphia that situation which may exist in other cities, namely the private sanitarium which does not keep records. During the three years there were 65,733 hospital deliveries. There were 1,775 cesarean sections, of whom 98 of the patients died; 14,292 hospital forceps deliveries of which 103 of the patients died; and there were 1,050 hospital versions of which

63 died. The average operative incidence was 28 per cent, which ran from 8 per cent to 65 per cent in the individual hospitals.

DR. HERMANN J. BOLDT, WHITE PLAINS, N. Y. -The new Mussolini hospital in Rome has separate buildings to which every patient who has the slightest sign of sepsis is transferred, whether it be a surgical or maternal sepsis. The same is true also for cases of tuberculosis.

DR. HOLMES (closing). -There were innumerable data presented in the paper which could not be brought out. I would again accentuate that the polypragmatic practices of modern obstetrics have not reduced either maternal or fetal mortality. I would make two recommendations: First, that the two organizations which offer recognition of hospitals should demand that, in the course of routine investigation, any hospital which does not supply an answer to every query should not be recognized. The last report of the American Medical Journal Hospital number is better than its predecessors, but in 1929, 20 per cent of all hospitals which had an obstetric service failed to give the number of their births, or the number of their bassinets; a number of so-called maternities failed in both particulars. There must be something radically wrong with a hospital which cannot, or will not, furnish facts to an accredited body. All data of hospital activities should be available at all times to such bodies.

Second: We know that undergraduate teaching is both deficient and defective: the fundamental fact is that students are taught to believe that parturition is a pathologic process and demands operative interference without scientific indication. Therefore, it behooves the American Gynecological Society to join with other special groups to formulate plans for a sound obstetric pedagogy and practice. The propaganda which is foisting ruthless and unjustifiable interference should be combated with a propaganda of sane obstetrics.

Cesarean section when rightly indicated is invaluable -as it is used for trivial reasons, not indications, it is responsible for over half the operative deaths in this survey. The placing of the indications and the performance of the operation should be in the hands of expert obstetricians, not loosely left to the unwise "discretion" of general practitioners and general surgeons. One hospital permitted a general practitioner to perform two sections in one morning; both patients were dead before he perpetrated his third offense the next morning, and this one died, too.

Only 93 hospitals of the 514 admitted they had septic obstetric deaths! In the hospitals reporting, uterine rupture is just as prevalent as in the Rotunda a hundred years ago. I am convinced that the maternal and fetal mortalities are worse than are portrayed in this paper. In every group there was a great disparity between the total numbers of operations recorded and the numbers which supplied definite statements as to the outcome of mother and baby. In one group 77 per cent of the operations had no association with fetal mortality. Undoubtedly the results were so disastrous that the hospitals did not want a record made of their disasters.

All the data presented in this report were gathered dispassionately: a key number was given every questionnaire, and that "key" never was scrutinized during the time the tabulations were made. In this study we could not obtrude a conjecture as regards the personal equation of the operator, his repute, his dexterity, or his judgment. The relation of pathology to the reputed indications received no animadvertence.

In conclusion: Polypragmatic obstetrics has circumvented every opportunity for progress in diminishing maternal and fetal mortality which had been promised by the introduction of asepsis and anesthesia -we are just where we were a hundred years ago.

p. 325-

Obstetrics as Community Problem

From a study of many reports on maternal mortality, G. W. Kosmak (South. M. J. 28:231, March, 1935) draws three principal conclusions: that there is a high, apparently unjustified, puerperal death rate; that there are remedies at hand for reducing it; and that a certain number of these deaths are definitely preventable. In fact, the belief is steadily gaining ground that perhaps one-half of these deaths may be so, designated.

Who are the responsible persons? Kosmak believes that an obligation exists among several groups, each in a different way, to, do certain specific, things in order to bring about improvement. The groups are (1) the husband and wife, (2) the physician, (3) the nurse and midwife, (4) the medical educator, and (5) the public as represented in the community.

It has been definitely shown that the main cause of mortality in childbirth is related to the labor, rather than to the prenatal period. This does not mean that prenatal care is unimportant, but it means, rather, that the act of delivery itself requires the most expert attention, and that not enough attention has been paid to this fact. Obstetrics is not only a science; it is an art, and the record of the physician selected for the successful practice of this art is the most important factor in a safe delivery. Wisdom lies in using care to select the physician, and then reposing in him full confidence. He will know whether or not anesthetics or instrumentation are needed, and the patient who tries to prevail upon him to use them unnecessarily is making an attempt to render entirely painless a process from which pain cannot be wholly dissociated without a sacrifice in safety.

When American women began to go to hospitals in increasing numbers to have their babies, this was hailed as a solution to the problem of high maternal death rates. It was generally assumed that the hospital was safer than the home. But there is abundant evidence that a hospital confinement is not necessarily a safe confinement and, in fact, that the degree of safety varies as the hospitals and their attendants vary in quality and competence. A certain proportion of accidents are unavoidable, but these have been shown to be small in number compared with those complications which may be attributed to carelessness, to unskilled or untimely interference, or to improper environment. The obstetrician has developed as a specialist in comparatively recent times, but a considerable number of confinements even now are still in the hands of the general practitioner, and he will do well with them if his mind is not disturbed by the importunities of the patient or his desire to, resort to shortcuts in terminating labor.

If the public and the medical profession were to encourage adequate education of nurses and midwives so that they could do, in this country what they do in many foreign countries with death rates less than those in the United States, some of the difficulties in improving maternity care would disappear.

There is less attention paid in medical schools today to teaching students proper obstetric practice than there is to surgery and certain minor specialties. The average recent graduate will certainly do more deliveries than he will appendectomies, yet he gets inferior preparation for the former. A large part of the instruction in obstetrics has been along radical and operative lines, so that many students gain the impression that the greater part of obstetrics is operative. Greater stress must be laid on the conduct of normal labor, and each student must personally attend under competent guidance and supervision a larger number of confinements than is required by law in many states at the present time. It is only when an aroused and interested community begins to ask questions that proper attention will be given to improving the situation. Kosmak firmly believes that an inventory by the community of its obstetric facilities will do much to engender a spirit of cooperation between those most closely interested, the prospective mother and her attending physician and nurse.

[*The Editor has so often commented on these matters in the pages of this Year Book and has written so much on them in medical journals and in a few lay journals that he feels justified in sinking back and letting the younger men carry on the fight. He may be pardoned the expression of satisfaction that the principles for which he fought are being recognized all over the world. Williams and Hirst, now dead, waged the good fight, too, but there is as much yet to do as has already been done--indeed, more. Ed.*]

Maternal Welfare

In the opinion of J. K. Quigley (Rochester, N. Y.) (New York State J. Med. 35:914, June 27, 1935), improvement in existing conditions, in obstetrics can only be brought about by education of the general public and those entrusted with the care of patients, first as to the need for reform, and second, as to how it may be accomplished.

The public must be taught to seek prenatal care and to seek it early. It was found by the committee responsible for the 15 States' report of the Children's Bureau that of the 7,537 women on whom a report as to prenatal care could be obtained, 54 per cent had had no prenatal examination by a physician, and in only 1 per cent of those having prenatal care was it up to the standard that it is the right of every pregnant woman to have and to demand.

Two suggestions recently offered to better conditions are. a return to home deliveries and more deliveries by midwives. The experience of Rochester, a city of 350,000, as evidenced in a survey of maternity facilities last year, would not seem to support either suggestion, for Rochester has probably the highest proportion of hospital births in the United States, almost 80 per cent, and an extremely low number of cases cared for by midwives, 68 in 1933 (750, 19 years ago), and yet the maternal death rate was 4.1 as against 6.3 for the United States and 6.2 for New York State. On the contrary, operative deliveries should, it seems to the author, be done in the hospital, and preferably the delivery of all primiparas.

To facilitate study of this problem, puerperal fever should be a reportable disease. (New York State three years ago removed it from the list.) More care should be taken in writing death certificates and more autopsies should be done. Hospitals which furnish accommodation to obstetric cases should be inspected and, if found wanting, should be prevented from receiving patients until up to the standard. That conditions could be improved is shown by mortality rates for some sections and for some hospitals and out-patient clinics where, as the result of an attempt at the ideal, the mortality rate is lower than that of the country as a whole. Williamson, for example, reported for the Cornell maternity outpatient clinic in New York City a mortality of 3.7 per 1,000 for 13,356 confinements in tenement homes, while in 1918 the New York Lying-in out-patient mortality rate for 69,081 home deliveries was only 3.1 per 1,000 (or about one-half the rate for the United States). Some hospitals have reported series of a large number of hospital deliveries without a death from sepsis. The author believes much can be accomplished in a definitely constructive way by local maternal welfare committees with the county as a unit.

[The rate of the home service of the New York Lying-in Hospital is astonishing and shows what good work can do in the squalid homes of the lower East Side of New York City. The Chicago Maternity Center has recently had a run of 4,500 consecutive cases with only one obstetric death-a case of convulsions. The patient had no prenatal care and died six hours after the doctors were first summoned. This record includes all cases that were sent to hospitals, which of course are entitled to part of the credit. It is, however, an enviable accomplishment in maternity care.-Ed.]

ANALYSIS OF END-RESULTS OF LABOR IN PRIMIPARAS AFTER SPONTANEOUS VERSUS PROPHYLACTIC METHODS OF DELIVERY

ALBERT H. ALDRIDGE, B.S., M.D., F.A.C.S., AND PAUL WATSON, A.B., M.D., NEW YORK, N. Y.
(From the Obstetric Service of the Woman's Hospital)

Published in Trans. Am. Gyn. Soc. Volume 60 (1935) pages 265-280

Evaluation of end-results of obstetric practice by the usual standards, maternal and fetal mortality, and the incidence of pelvic infections which have caused elevation of temperature, fails to take into account many serious accidents and complications of labor and delivery.

It is a well-recognized fact that mortality statistics, although positive in themselves easily obtained, present a very incomplete picture of the handling of groups of obstetric patients. Furthermore, conditions such as the toxemias of pregnancy, hemorrhage, surgical shock, or severe birth injuries may leave a patient with less margin of safety' and more permanent discomfort and disability, than most pelvic infections which are justly regarded with so much concern.

It is self-evident that our aim should be to develop and apply methods which will not only reduce the incidence of mortality in mothers and babies, but will also prevent accidents, complications, and birth injuries which may either immediately be dangerous or productive of physical handicaps in after life.

The Obstetrical Department at the Woman's Hospital was opened in 1917. From the beginning, members of the staff have delivered an increasing percentage of patients by methods which have since come to be known as prophylactic. The impression has been that by these methods the incidence of birth injuries and complications to both mothers and babies has been reduced. In view of all the discussion for and against such obstetric procedures, the time seemed opportune to make a comparative study of end-results of labor and delivery, especially in cases delivered by spontaneous and prophylactic methods.

Cases used in the study were 2,800 primiparas, delivered on our ward service during the years 1920 to 1925, inclusive, and from 1930 to 1934, inclusive. Patients delivered in the earlier years were selected for comparison with patients delivered more recently, because in those years a large percentage was allowed to deliver spontaneously. In the later years, 1930 through 1934, a higher percentage of patients was delivered by prophylactic methods. Only primiparas were studied, for the obvious reason that whatever permanent birth injuries were found, following delivery, could be directly attributed to the delivery. This gave an opportunity to make a more or less exact comparison of end-results after the various methods.

It is of interest that over 95 per cent of the patients in the series were delivered by hospital internes. The remaining 5 per cent were delivered by an attending surgeon, or an interne under supervision of an attending surgeon. In other words, the study is of the end-results of a system of obstetric practice in a hospital service equipped for gynecology and obstetrics. The actual work upon

which the results are based has been almost entirely done by 88 hospital internes being trained in gynecology and obstetrics.

Table I shows age distribution, in percentages, of the cases studied.

TABLE I. AGE DISTRIBUTION OF 2,800 PRIMIPARAS

AGE	PER CENT
Up to 20	10
20 to 25	42
25 to 30	31
30 to 35	12
35 to 40	4
Over 40	1

As cases were studied, they divided themselves -naturally into six distinct groups according to the methods of delivery employed:

1. Spontaneous
2. Spontaneous after perineal incision
3. Perineal incision and elective low forceps
4. Operative
5. Operative after perineal incision
6., Patients delivered by the abdominal route

Patients delivered by "elective low forceps" are those who would have delivered spontaneously if allowed to do so. All other forceps deliveries referred to later as "indicated forceps operations" were necessary for the protection of the mother, of the baby, or of both.

Midline perineal incision is now used almost routinely in the delivery of primiparas because: (1) It is easier to repair and is more likely to heal by primary union; (2) it avoids injury to the levator muscle.

The disadvantage of the midline incision is that if extension occurs, the anal sphincter and rectal mucosa may be injured. In this series, extension partially through the sphincter occurred in 4.4 % and completely through the sphincter in 3.2 %. No case in the series had fecal incontinence as a result of loss of sphincter control. One patient had a small rectovaginal fistula.

The technic used in the closure of perineal wounds has been exactly like that described by Goff for secondary repair of lacerations of the pelvic floor and posterior vaginal wall. It will be noted that the perineal body is repaired by catgut sutures, which are entirely subcutaneous. We believe that through and through nonabsorbable sutures, frequently used in the primary repair of perineal incisions or lacerations, predispose to infection and cause unnecessary discomfort.

It is self-evident that the benefits, to be derived from elective low forceps, may be lost and unnecessary or irreparable damage may be done, unless the procedure is used under satisfactory conditions, and by an operator with sufficient ability and training to: (1) Make an exact diagnosis of the presentation, position and level of the-presenting part. (2) Apply forceps correctly, and deliver the baby with a minimum of trauma.

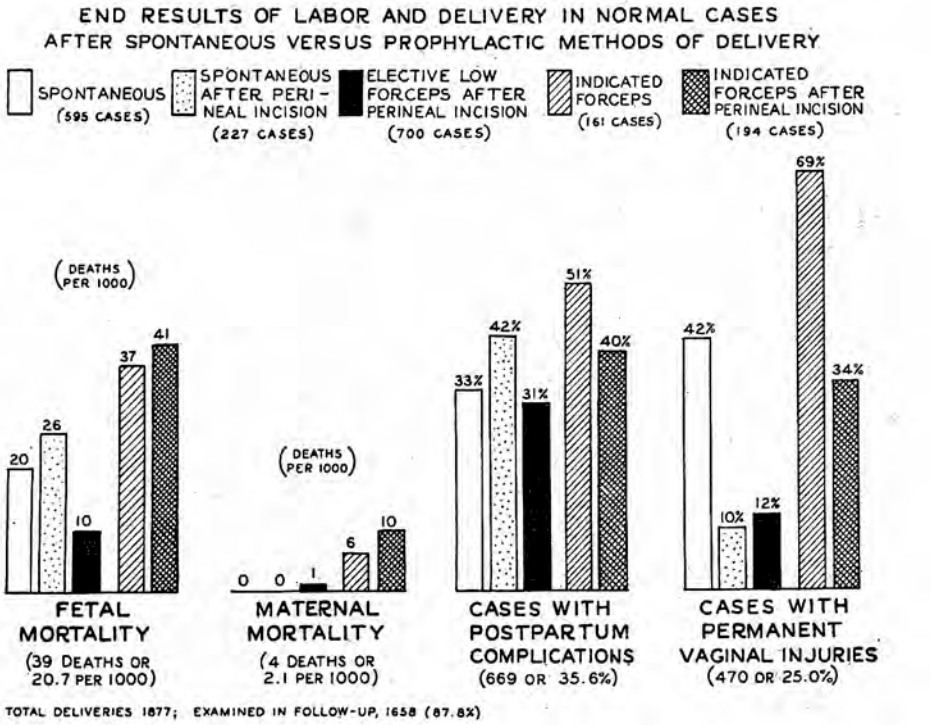


Chart 1.

We wish to emphasize the fact that elective forceps operations should not be done until, as Dr. Lee advises, "the head has come well down on to the pelvic floor, in complete anterior rotation, and has begun, to part the levator ani pillars."

Physical findings noted in the follow-up were used as a basis for comparison of end-results in patients delivered by the various methods. Approximately 88 per cent of patients delivered were examined, at least once, six weeks after delivery by one or more attending surgeons who were specializing in gynecology as well as obstetrics.

All cases showing laceration or definite relaxation of the pelvic floor or vaginal walls were considered abnormal.

A summary of the end-results of labor and delivery in 1,877 normal cases is shown in Chart 1. This group included only women with normal pelves who went into labor spontaneously at term, with a vertex presentation, an anterior position, or a posterior position with spontaneous rotation.

We note that:

1. The incidence of fetal mortality and postpartum complications, in patients delivered by elective low forceps after perineal incision was lower than in spontaneous deliveries.
2. Perineal incision, whenever used, strikingly reduced the incidence of cases, with permanent birth injuries.
3. There was no maternal death in patients delivered spontaneously. One maternal death after elective low forceps was the result of sepsis caused by retained placental tissue.

The relatively high incidence of fetal and maternal deaths, postpartum complications, and patients with birth injuries which occurred in the 194 patients delivered by indicated forceps after perineal incision as compared with the 161 patients delivered by forceps alone, can be explained by two facts as follows: (1) In the group delivered by forceps alone, 65 per cent had prolonged labors as compared with 87 per cent in the other group. (2) End-results were undoubtedly influenced by the type of forceps operation required to complete the delivery as noted in Table II. From this table it

will be noted that nearly twice as many patients were delivered by midforceps after perineal incision as in the group delivered by forceps alone.

TABLE II. NORMAL CASES. SUMMARY, IN PERCENTAGE, OF THE VARIOUS TYPES OF OPERATION REQUIRED IN PATIENTS DELIVERED BY INDICATED FORCEPS

TYPE OF FORCEPS OPERATION	METHOD OF DELIVERY	
	FORCEPS NO. OF PATIENTS 161	FORCEPS AFTER PERINEAL INCISION NO. OF PATIENTS 194
Low	77	60
Mid	22	39
High	1	1

The relatively low incidence of fetal mortality associated with delivery by prophylactic low forceps is significant. It is fair to assume that any method of delivery which is attended by a low incidence of fetal mortality, is also attended by a correspondingly low incidence of babies with birth injuries which are not fatal. Unfortunately, the babies delivered in this series could not be followed for a sufficient period of time to confirm this assumption.

In Chart 2 is demonstrated to what extent and how consistently perineal incision is a prophylactic measure in preventing permanent vaginal birth injuries in various types of cases.

Normal cases, with prolonged labor, were selected by the same standards as those in Chart 1, but were studied separately to determine the effect of prolonged labor in the causation of vaginal injuries.

In the prolonged group were included all normal cases in which labor had not terminated within twenty-four hours, or in which the second stage had exceeded two hours in duration. From this it is evident that the pressure of prolonged labor may in itself be an important factor in the causation of permanent vaginal birth injuries.

It also shows the end-results following delivery at term of 227 women with contracted pelves causing excessive pressure during labor and a definite increase in vaginal injuries as compared to end-results in cases with normal pelves.

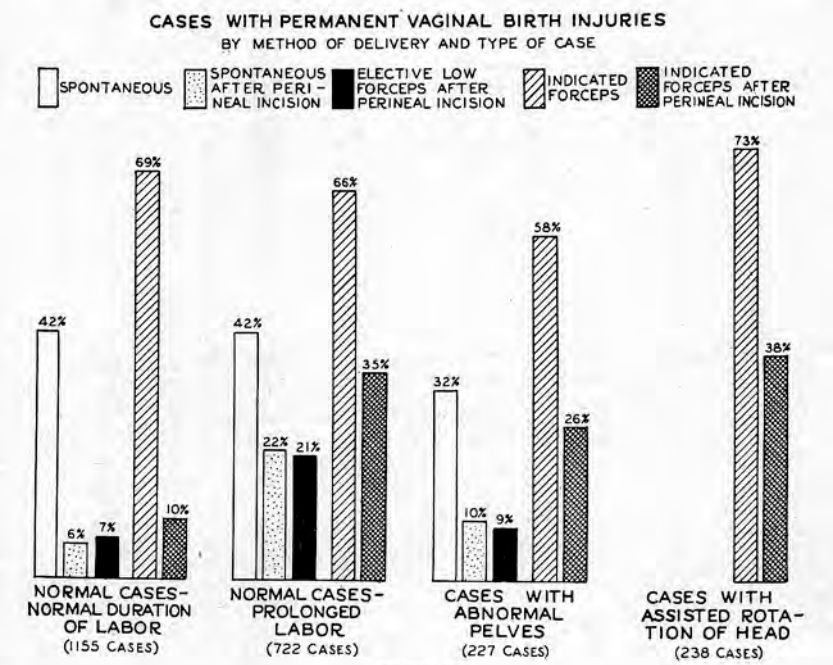


Chart 2.

Although statistics are not recorded on this chart, the relationship of the size of the baby to the incidence of birth injuries was studied and showed convincing evidence that excessive pressure from large babies was another definite factor in the causation of vaginal birth injuries.

The incidence of cervical lacerations varied from 34 to 46 % in the various types of cases and the uterus was found to be retroverted in from 16 to 25 per cent of the cases in the various groups studied.

Of the 238 patients with persistent occiput posterior position, 6 were delivered as occiput posterior, and in the remaining 232 patients, rotation was accomplished as follows: manual 55, Scanzoni 155, and Kielland 22. Following rotation 5 babies were delivered spontaneously. Of the 233 delivered by forceps, operations were classed as follows:

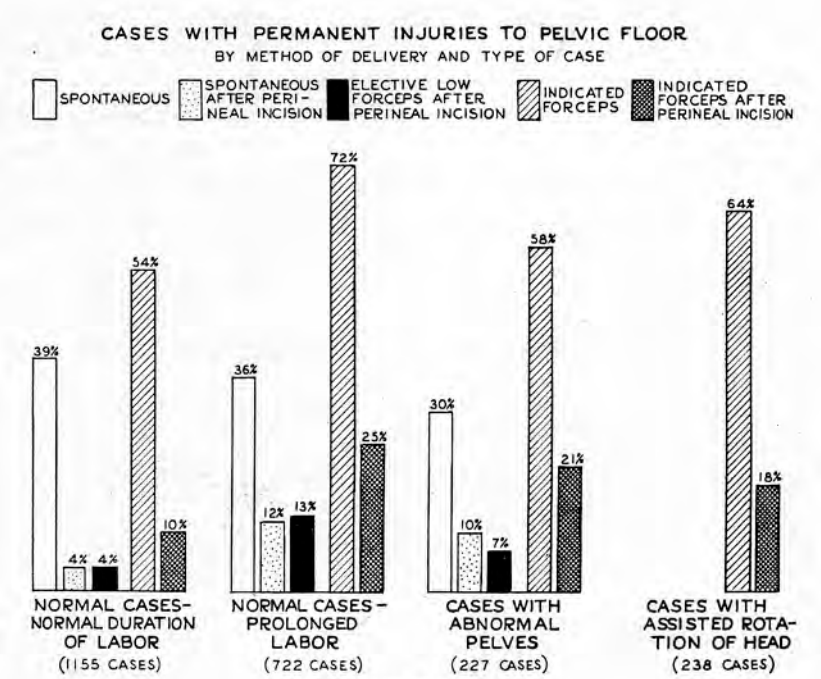
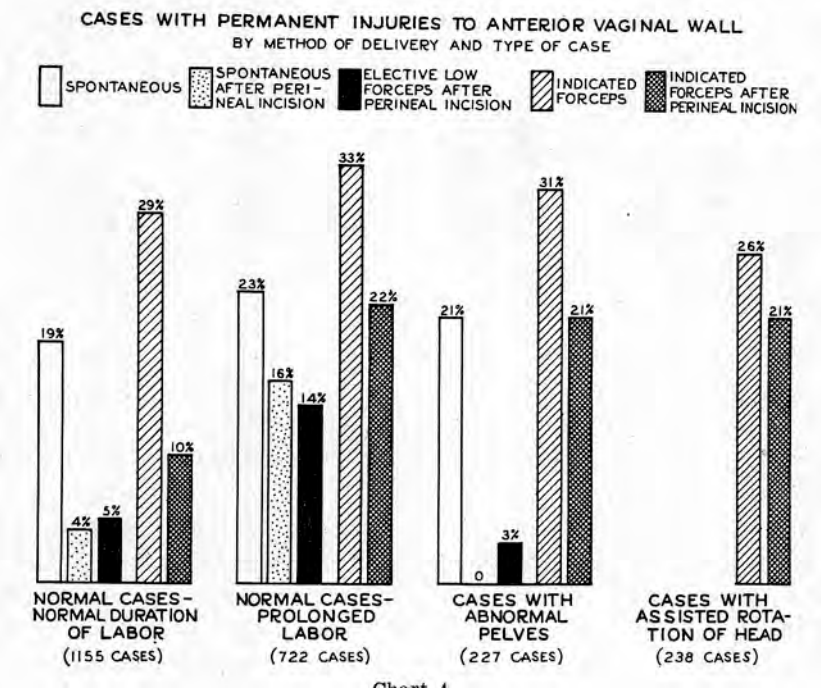


Chart 3.



low 60, mid 157, and high 16. The number of patients delivered as occiput posterior was too small to be recorded.

The graphs shown in Chart 3 demonstrate in a rather striking way to what extent prophylactic methods of delivery prevent permanent injuries to the pelvic floor in various types of cases.

From Charts 4 and 5 it is evident that perineal incision greatly reduces the incidence of permanent injuries to the anterior and posterior vaginal walls. These graphs indicate that the procedure is as effective in preventing injuries to the anterior wall as it is to the posterior wall. A comparison of the two indicates that in prolonged labor the percentage

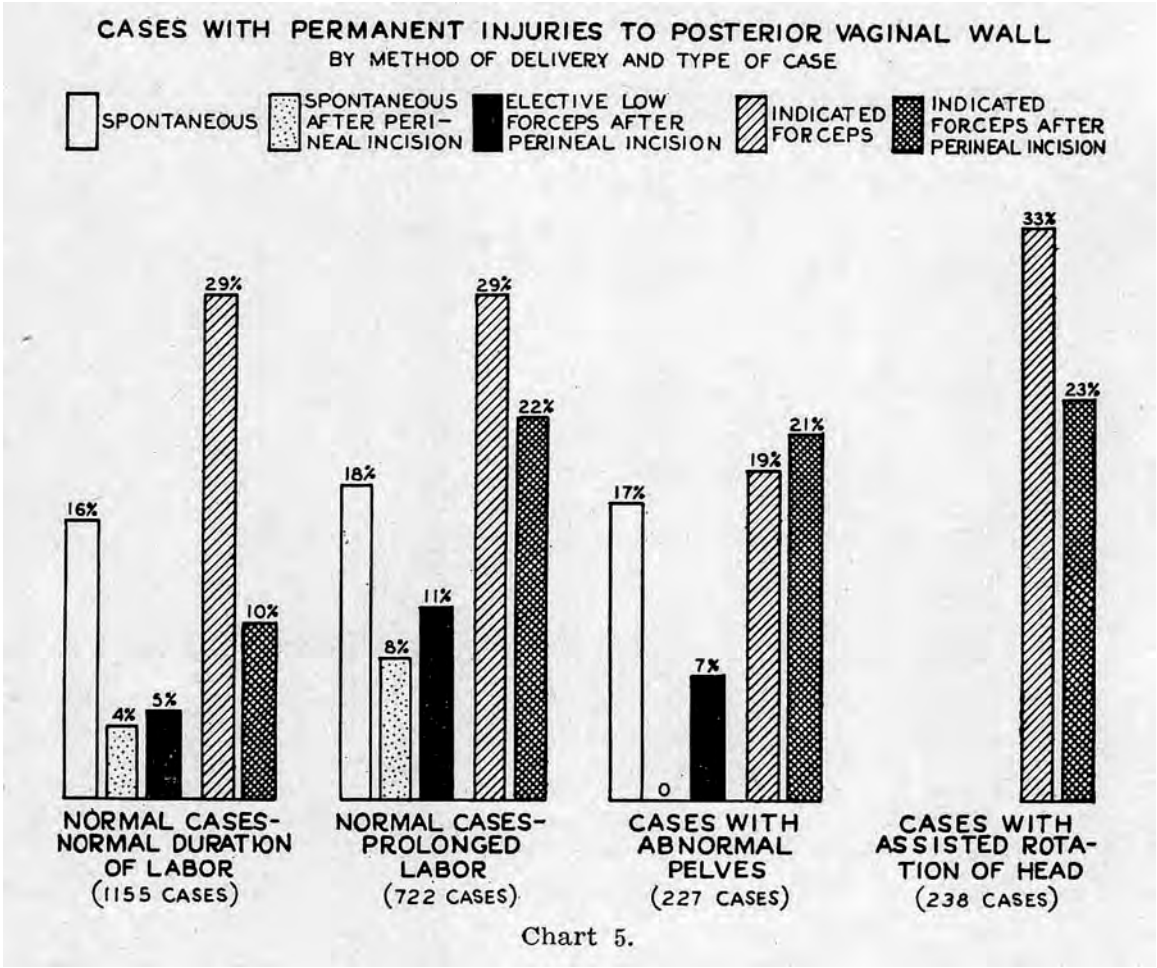


Chart 5.

of patients with injuries to the anterior wall increases more than does that of injuries to the posterior wall.

The incidence of vaginal injuries in breech deliveries is shown in Chart 6 and indicates that perineal incision is a prophylactic measure in every type of delivery.

In this group are included 94 patients who presented as breech and 28 patients who were delivered by version and extraction.

A comparison of physical findings, during the early days when a high percentage of patients was allowed to deliver spontaneously, with those of later days when a high percentage was delivered by prophylactic methods, is not an entirely fair or accurate one, for in the early days certain injuries to the cervix and pelvic floor and permanent relaxations of the vaginal walls were considered inevitable and therefore within normal limits. We now consider injuries to the pelvic floor and vaginal walls to be preventable in such a high percentage of cases, that they are recorded as definite birth injuries, rather than physiologic changes incidental to delivery.

It is now our custom to discharge from our follow-up six weeks after delivery, patients free from birth injuries. Large numbers of patients kept under observation for long periods of time have convinced us that the result at six weeks so rarely changes, that it can be considered a final one.

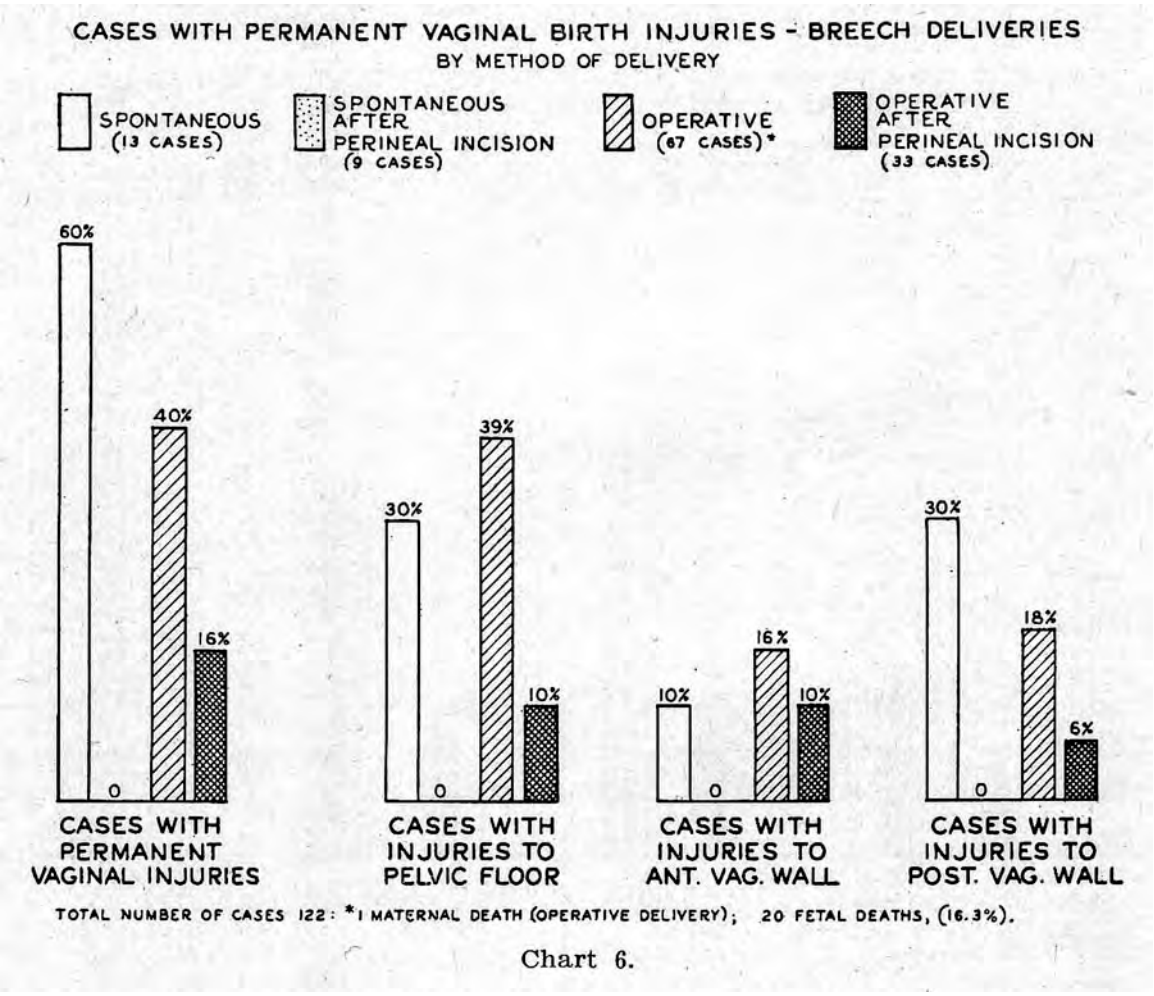


Chart 6.

Patients with postpartum cervical injuries and erosions are treated with electrocoagulation, and such patients are kept under observation until healing is complete. Retroversion is treated with posture and in some patients with pessaries. We find that if the vaginal walls are not abnormally relaxed by delivery, pessaries large enough to give proper support are difficult to insert. Consequently, we have used fewer pessaries since more patients have been delivered by elective methods.

Table III is a summary of cases delivered by the abdominal route and .results obtained.

Of the 2,800 primiparas selected for this study, 82 or 2.9 % were delivered by the abdominal route, In the past few years, since the advantages and relative safety of low flap and extraperitoneal (Latzko) cesarean section have been established, the classical operation is rarely done, and theincidence of delivery by the abdominal route has increased to a point considerably higher than that shown in this series.

In the interest of both mothers and babies, we now consider cesarean section the method of choice for the delivery of women with obstructed labor from contracted pelvis, or cervical dystocia, and for those women in whom delivery is complicated by placenta previa. It is also used in selected cases for the delivery of women who are the victims of arrested tuberculosis, cardiac disease, or toxemia of pregnancy.

TABLE III. DELIVERIES BY THE ABDOMINAL ROUTE

INDICATION	NUMBER OF CASES	TYPE OF CESAREAN			FETAL MORTALITY
		CLASSICAL	LOW FLAP	LATZKO	
Contracted pelvis	26	14	11	1	–
Toxemia of pregnancy	15	2	13	–	–
Cervical dystocia	15	–	11	4	–
Obstructed labor	5	1	4	–	–
Disproportion	5	–	4	1	–
Tuberculosis	5	1	4	–	–
Placenta previa	4	1	3	–	1*
Premature separation of placenta	3	–	3	–	1†
Elderly primiparas	2	1	1	–	–
Cardiac disease	1	–	1	–	–
Full-term abdominal pregnancy (hysterectomy)	1	–	–	–	–
Total	82	20	55	6	2

*Baby dead at term before operation.

†Baby macerated at twenty-eight weeks' gestation. No maternal mortality. Operations: Elective, 28; after trial labor, 54.

Intelligent use of cesarean section demands careful study of patients in the antepartum period and expert handling and observation in the early hours of labor. With a proper understanding of acceptable indications and a careful study of individual patients, we feel that of all sections done, the incidence of elective operations could be increased and that on the whole, the decision to deliver a patient by the abdominal' route, after trial labor, might frequently and advantageously be made somewhat earlier.

Furthermore, we are now convinced that in the hands of men well trained in gynecology and obstetrics, cesarean section may be used as a method of delivery, in certain borderline cases, with sufficient safety to allow the welfare of the child to be considered.

Table IV presents a summary of all postpartum complications. The incidence of sapremia is high owing to the fact that the diagnosis was not based entirely on an arbitrary level of temperature. We believe that a slight but continued rise of temperature above normal is often more significant than fever to a level sufficient to be classed as "infectious morbidity" by most prevailing standards. We believe that postpartum morbidity should mean more than postpartum infection.

A recently published study of postpartum complications at the Woman's Hospital showed that patients may have significant complications without any elevation of temperature. Again, we wish to emphasize the need for a logical uniform standard for the determination of puerperal morbidity. Such a standard should be based on a consideration of all symptoms and physical findings rather than on a single symptom, such as fever.

TABLE IV. SUMMARY OF POSTPARTUM COMPLICATIONS FOLLOWING VAGINAL DELIVERIES

TYPE OF COMPLICATION	NUMBER OF CASES
Sapremia	565
Faulty wound union, pelvic floor	210
Mastitis, nonsuppurative	110
Urinary tract infections	54
Upper respiratory infections	48
Hemorrhage, 1°	41
Shock	33
Mastitis, suppurative	18
Hemorrhage, 2°	16
Fever, cause undetermined	12
Bronchitis	11
Pelvic infection	10
Thrombophlebitis	6
Pneumonia	3
Hemorrhage, 3°	3
Miscellaneous	27

Table V shows the incidence of fetal mortality and causes of death in premature and mature babies. There was a total of 2,824 (mature 2,617, premature 207) babies born. Of these babies, 150 (mature 94, premature 56) were stillborn or died within the first two weeks of life. In estimating fetal mortality, Stander has recommended that all babies weighing less than 1,500 gm. and that are loss than 35 cm. in length be excluded. By this standard the total number of babies born would be 2,796 and the total number of fetal deaths would be 122, making the rate for fetal mortality 4.3 per cent or 43 deaths per 1,000.

TABLE V. FETAL MORTALITY

CAUSE OF DEATH	NO. OF DEATHS
Birth trauma	54
Cord pressure	14
Toxemia of pregnancy	11
Malformation	7
Premature separation of placenta	6
Infections	6
Atelectasis	5
Syphilis	2
Prematurity	1
Cause undetermined	16
Total	122
Total number of infants	2,796
Total number of fetal deaths	122
Percentage of fetal deaths	4.3

Table VI is a summary of all maternal deaths in the series.

Two deaths occurred in patients who became septic following delivery. The first was in a woman who had had a severe hemorrhage from placenta previa before admission. Following vaginal delivery of a baby presenting as a breech she became septic and died suddenly of what was thought to be a pulmonary embolism on the twenty-fourth postpartum day. The other septic death occurred in a woman in whom, at time of delivery, a succenturiate placental lobe was accidentally left in the

uterus. This was removed on the thirteenth postpartum day on account of hemorrhage. The patient developed a nonhemolytic streptococcic bacteremia and died on the thirty-sixth postpartum day.

Failure in recent years to reduce the incidence of maternal mortality continues to be a matter of great concern to obstetricians. In an accounting of the end-results of obstetric practice, perhaps attention has been too often focused on maternal and fetal mortality. Prevention of the serious complications, accidents, and birth injuries during labor and delivery, seems the logical means for reducing mortality. Again we are faced with the importance of antepartum care and the necessity for as careful preparation of the patient for delivery as would be demanded for any major surgical operation. The delivery should then be conducted in accordance with established surgical principles for the prevention of trauma, hemorrhage, surgical shock, and infection.

TABLE VI. MATERNAL DEATHS IN PRIMIPARAS

AGE	ANTEPARTUM OBSERVATION	COMPLICATION OF PREGNANCY	GESTATION (WEEKS)	CAUSE OF DEATH	POSTPARTUM COMPLICATION
33	None	Placenta previa	37	Pulmonary embolism*	Secondary anemia
38	None	None	40	Pulmonary embolism	None, afebrile
31	Satisfactory	None	40	Pulmonary embolism	Furunculosis
31	Satisfactory	Cardiac disease	40	Lobar pneumonia	Lobar pneumonia
29	Satisfactory	Toxemia	40	Bacteremia*	Retained placental tissue (removed 13th p.p. day)
37	None	Chronic nephritis	28	Uremia	Uremia
37	None	Chronic nephritis	24	Uremia (died undelivered)	—

Total number of deliveries—vaginal 2,718; abdominal 82; total 2,800.
Total number of deaths—7 (0.25 per cent) or 2.5 deaths per 1,000 births.
*Deaths from sepsis—2 (0.071 per cent) or 0.71 deaths per 1,000 births.

CONCLUSIONS

1. The incidence of birth injuries to mothers and babies, and postpartum complications, were in direct proportion to the incidence of factors, such as prolonged labor, abnormal pelves, faulty presentation, and large babies, which resulted in the application of increased pressure to the maternal soft parts and to the fetus during labor and delivery.
2. Elective low forceps after perineal incision can justly be regarded as a prophylactic procedure in patients who would -deliver spontaneously if allowed to do so.
3. Perineal incision when used in conjunction with any type of vaginal operative delivery consistently reduced the incidence of birth injuries and postpartum complications.
4. Prophylactic methods of delivery should be used by men trained both in obstetrics and gynecology in hospitals properly equipped to give obstetric care.
5. Ideally, all women should have the protection of delivery in hospitals under supervision of men trained in gynecology and obstetrics.

REFERENCES

Ward, Gaff, and Aldridge: Bull. Am. Coll. Surg. 19: 9, 1935.
Goff: Surg. Gynec. Obst. 46: 855, 1928.

33 EAST SIXTY-EIGHTH STREET

DISCUSSION

DR. CLIFFORD B. LULL, PHILADELPHIA, PA. (by invitation).-Dr. Aldridge stresses morbidity. I believe that this is important because from the many articles that I have read in lay magazines, it seems that the public know more about maternal mortality than we do. Therefore a discussion of morbidity rather than mortality seems to be in order. Since 1922 we have gradually increased the number of operative deliveries. I do not mean interference in obstetric cases, particularly in cases of abnormalities of the mechanism of labor, but rather an increase in the number of so-called prophylactic operations. We have just had the experience of observing a series of 1,600 patients who were given nembutal and scopolamine in fairly early first stage labor, and we have been particularly impressed with the decrease in the number of operative deliveries, such as version and midforceps, but have also of necessity increased the number of prophylactic forceps. It is almost always necessary to deliver these cases under light nitrous oxide anesthesia in order to keep them quiet on the table. We are fairly certain that the use of analgesia when used more extensively, will decrease the number of difficult operative deliveries. Our practice is about the same as Dr. Aldridge has outlined for you.

As to perineotomy, I am in accord with the practice of doing a central incision. Occasionally this will tear into the rectum, but as it is so seldom, I do not believe that it should deter one from using the midline. We do the perineotomy fairly early and remove the forceps from the head as soon as it can be controlled in the vulvar outlet.

Our handling of breech cases differs in that we extract a rather high proportion when the cervix is completely dilated rather than to allow them to go on spontaneously. We do this under general anesthesia. We are particularly careful not to give the patient partial anesthesia when part of the child is delivered, as we feel a partially anesthetized patient being delivered of a breech presentation very frequently gives rise to difficulty in the extraction of the head.

Our incidence of version has decreased very considerably during the past few years, particularly since we are using more analgesia.

We have not accepted the low cervical section as a routine procedure. When the operation is done at the time of election, we do the low classical; if the patient has been in labor, has been examined, or has ruptured membranes, we do the low operation. I believe, however, that in the last few years, we have unquestionably given more cases a test of labor than we did previously. Our statistics are about the same as Dr. Aldridge's.

In discussing the question as to what undergraduate students should be taught, I, too, like to feel and believe that we should teach the students to do what we do, but it does not seem to me that the time has arrived as yet when the general use of prophylactic forceps should be taught to students who are going to practice obstetrics in poorly equipped hospitals or homes. In other words, the use of obstetric forceps as a routine, procedure should be done in well-equipped hospitals and by men who have had special training. If we could teach the students to recognize abnormalities and complications, and teach them that the complicated case should be handled by the man particularly trained in this work, we would do a great deal to reduce obstetric mortality and morbidity.

DR. WILLIAM C. DANFORTH, EVANSTON, ILL -A study of neonatal mortality recently made covering the work of the past five years cared for in the obstetric division of our service has indicated quite clearly, so far as our service is concerned, that the rather liberal use of outlet forceps by a staff of trained men does not increase fetal mortality or morbidity. A comparison of the cases delivered by outlet forceps shows that the result, so far as the infants are concerned, is somewhat better in the outlet forceps group than in those which were spontaneously delivered. It must be understood that this statement is sharply limited to outlet forceps cases. A moderate number of midforceps cases showed a sharp rise in infant mortality. It must always be understood that the liberal use of forceps delivery presupposes two things: first, that the liberality extends almost

entirely to low or outlet operations; and second, that the operations be done skillfully. As the essayist has indicated, it is a procedure for the skillful obstetrician in a well-equipped hospital. An outlet extraction done with full knowledge of the mechanism of labor, the last portion of which the extraction is designed to replace, and with adequate understanding also of the technic of the forceps operation, is a highly innocuous procedure. This is not true of roughly or unskillfully done operations. It has seemed to us that the total sum of trauma to which the head is subjected is greater when the head is allowed to be compressed by a strong contraction against a rigid perineum than it is when a timely episiotomy is done and the head gently disengaged from the birth canal by outlet forceps. It also enables the obstetrician to perform incision of the perineum, if this is needed, deliver the baby, express the placenta and suture the perineum under one anesthetic, thus decreasing considerably the discomfort of the mother.

In the use of perineal incision, also, I find myself in agreement with Dr. Aldridge. Particularly in primiparas a timely episiotomy, done before the levator muscles have been separated by the advancing head, and followed by a careful repair, is far more effective in preserving a good perineum than an attempt to deliver without incision. In the latter event the musculofascial structures of the pelvic floor are likely to show a lesser degree of integrity eight weeks after labor. I am quite in accord with the essayist's statement that abnormal pelves, faulty presentation and disproportion are far more active causes of neonatal trauma than properly done outlet forceps deliveries. The same is true as to maternal injury.

Our experience has quite clearly indicated that neonatal deaths during or after operative deliveries accomplished by the exhibition of greater force than is needed in the simple outlet forceps delivery in the majority of cases is caused by intracranial injury. Our efforts, therefore, have been directed toward decreasing as much as possible these more traumatic deliveries. To this- end patients and analgesic agents contribute materially. The neonatal mortality in cases delivered by various procedures is indicated in the following table:

EVANSTON HOSPITAL 4,924 CASES

	TOTAL DELIVERIES	FETAL MORTALITY	FETAL % MORTALITY
Spontaneous	2,456	17	0.69
Low forceps	1,826	8	0.43
Midforceps	161	8	4.96
High forceps (2 cases only)	2	1	50.00
Breech ext.	158	7	4.43
Version and ext.	102	10	9.80
Low cervical section	219	12	5.48
Total	4,924	63	1.27

DR. NORRIS W. VAUX, PHILADELPHIA, PA -Coming from a Philadelphia Clinic which has always been considered radical in its care of these cases, this very interesting paper of Dr. Aldridge's strikes a pleasing note. At our clinic we are very prone to have a great many emergency cases. The mortality in these cases without adequate prenatal care is very striking when compared with those who have attended our prenatal clinic, where we do not consider prenatal care adequate unless a patient has made at least three visits. In our series in over four and a half years, there was a large proportion of cases which, apparently due to the economic distress, had very inadequate prenatal care, and in this group the fetal mortality was very high.

The fetal mortality in our clinic, based on a five-year period, showed 58 deaths in 182 cases of breech delivery, an incidence of 1 fetal death in every 3 breech deliveries. In 1,972 cases delivered spontaneously, there were 189 fetal deaths, or 1 in 10.5; excluding a number of tiny prematures which dropped into the vaginal canal in this group of cases delivered spontaneously, brings the incidence to 1 in 36.7 as compared to the fetal mortality incidence in those cases delivered

by forceps application, which was I in 41.6. There were 31 deaths following cesarean section, a fetal mortality incidence of 1 in 10; in this group there were a large number of emergency cases as well as toxic cases.

DR. EDWARD A. SCHUMANN, PHILADELPHIA, PA -The papers plus the discussion have shown conclusively that mortality and morbidity may be reduced by the proper use of prophylactic forceps, limited to the skilled obstetrician in a well appointed hospital.

MR. VICTOR BONNEY, LONDON, ENGLAND -The paper is particularly interesting to me because there has been a very strong feeling against obstetric interference in our country and many well-known obstetricians inveigh against it. The reason is that the vast majority of women in our country are confined in their homes and are attended by the ordinary practitioner.

The paper bears out what I have always thought, that if the full gamut of surgery were applied to obstetrics much of the danger to the child and mother could be abolished. Unfortunately in England much of this work is not done under expert conditions. It would be difficult to get this practice applied in our country at large. We shall have to teach our students that, given expert conditions, it can be done advantageously but we must impress upon them that such practice is only justified where good conditions and expert knowledge prevail.

DR. J. C. LITZENBERG, MINNEAPOLIS, MN -This paper has done a desirable thing and that is to crystallize our ideas about the proper delivery of women, and about what is conservative and what is radical. It is not radical to do a cesarean section on a contracted pelvis through which the baby cannot go. It is not radical to do a high forceps when it is indicated. We have been doing this for ten years in the University Hospital. It is not radical to do a midforceps operation when it is indicated. The low forceps is not to be classed with forceps operations in general as a radical procedure. I have been among those who have fundamentally condemned and still condemn the promiscuous employment of cesarean section, or ill-advised forceps operation, or version, but I have been compelled during this time to find out by experience that the outlet forceps application is a conservative procedure, a life-saving one for the baby in many cases.

We have already heard in this discussion from New York, Philadelphia, and Chicago and you are now hearing from Minneapolis that we have been thinking along similar lines and developing our ideas regarding the outlet forceps operation and the episiotomy. I agree with the method of doing an episiotomy, usually central, sometimes midlateral, and, in versions, laterally.

The mortality and morbidity in high forceps operations even in skilled hands are still high. The mortality and morbidity in midforceps is about half as high, but in, skilled hands the mortality and morbidity are as low with the outlet forceps operation as in spontaneous delivery. When I use the term "outlet forceps" I mean application of the forceps really at the outlet, with the pelvic floor distending, and not their application when the head is only to the pelvic floor. We must make a distinction between “low forceps” when the head is on the pelvic floor and “outlet forceps” when the floor is distended and the head visible. The latter is a conservative procedure, the former is attended with almost the same dangers as midforceps.

DR. JOSEPH B. DeLEE, CHICAGO, ILL -About fifteen years ago I brought before this Society a paper on the prophylactic forceps operation. I was not the father of prophylactic obstetrics in the second stage but I do claim, perhaps immodestly, that I was the accoucheur who delivered the idea. Prophylaxis in this field of obstetrics preceded me by many years. My teacher, Prof. Jaggard, taught episiotomy, which was heretical obstetric practice in 1889. The prophylactic forceps operation was proposed not on statistical grounds, but as the direct result of my own personal observation of thousands of cases and a study of the pelvic floor after delivery, in both living and dead women. I took the opportunity to make anatomical dissections of several women who died of hemorrhage or

rupture of the uterus, immediately after death and I came to the conclusion that a spontaneous delivery usually causes more damage to the pelvic floor than an episiotomy and forceps. Some women will, not tear. They will deliver nine- or ten-pound babies and the pelvic floor and bladder will be in good condition. If examined several years afterward you can hardly tell that they have had a baby, but those women are rare. There are a large number of women who will tear no matter how deep the episiotomy is made; it seems that the tissues have no resilience or elasticity whatever. Now, under my more or less empirical prophylactic forceps operation Dr. Aldridge has put a statistical basis.

It has been said that prophylactic operative measures should not be taught to young men to be practiced in the home. I have had an enormous experience with women delivered at home, covering at least 60,000 cases. Among the last 10,000 patients delivered in their homes by the Chicago Maternity Center, 12 women have died and only 2 might be chargeable to the service. This includes all patients sent to the hospitals and women who have had even one visit or only a telephone call to the Center. In the last 3,300 deliveries not one woman has died. The morbidity of these women has also been low in comparison with those delivered in hospitals, and a large number of prophylactic deliveries were done in these homes.

DR. ARTHUR H. BILL, CLEVELAND, OH -I have used prophylactic forceps routinely for more than twenty years. In recent years in the University Hospitals in Cleveland there are delivered each year about 3,000 women by operative means. The reason we do this is because we are thoroughly convinced that we do not increase the mortality or morbidity in this way.

Some years ago Dr. Reycraft gathered together an extensive series of cases from my service delivered spontaneously and a similar number delivered by prophylactic means. The morbidity was no greater in cases where operative interference was resorted to. I believe that with proper prophylactic methods maternal mortality and morbidity are not increased. I think the fetal mortality is perhaps decreased.

Enough stress has not been laid upon the proper prophylactic methods. Very little has been said about when to interfere and about the cervix. Now all of these prophylactic methods should be in second stage deliveries. The minute the doctor starts to interfere before the cervix is completely dilated he is heading for trouble. The secret of our success has been largely due to the fact that we are very insistent upon allowing the first stage of labor to take its full course, except in emergencies when we do not hesitate to interfere either by the low prophylactic forceps or by the correction of abnormal positions.

A short time ago I reported before this Society a series of 500 occipitoposterior cases which I had personally delivered by operative means, and another series of 500 posterior cases delivered by operative means by the resident staff. Since then I can quote a series of 200 consecutive posterior cases which I have personally delivered. All of these cases were carried through labor, painlessly from start to finish, delivered with complete anesthesia by operative means, either by forceps rotation or by, podalic version and with no mortality. Of the 200 cases there are 199 babies living today. The one which died was a case in which there were anatomical defects which were, absolutely inconsistent with life. I simply quote these figures to show that prophylactic means can be carried out if done properly and at the right time. I again want to emphasize the reason why there is not success in a large per cent of these cases. It is because interference is done too early and resorted to when the cervix is not obliterated.

DR. THOMAS D. CARROLL, PITTSBURGH, PA -Pittsburgh has arranged to compensate in a modest way the physicians and hospitals taking care of maternity patients who are on relief. There have been thus far some 6,000 patients delivered. The requirements for the care of these patients consists of a certain amount of prenatal care; they must receive eight prenatal visits where there is sufficient time; the urine must be examined, certain attention given during delivery, and a certain,

number of visits made following the delivery. About 60 per cent of these cases have been delivered in their homes, 40 per cent in the various hospitals. Up to the present time there have been 6 maternal deaths. In spite of practice by inadequately trained doctors, the mortality has been reduced to something like 1 in 1,000 deliveries. Out of those 6 deaths one was caused by self-induced abortion resulting in septicemia; another by her husband who came home late at night and kicked her into unconsciousness. This patient was taken to a hospital with separated placenta; cesarean section was done and she died. These deaths should not be attributed to the obstetric practice but to the lack of obstetric care.

p. 304-317

Trends in American Obstetrics during the First Third of This Century

According to L. G. McNeile (Los Angeles) (J.A.M.A. 107:173, July 18, 1936, the principal causes that acted as contributing factors to bring about a change in the practice of obstetrics were: first, the scientific advances in medicine and surgery; second, the demands of the American woman; third, propaganda by surgeons and by those interested in making obstetrics a specialty, and, fourth, social, economic and biologic factors. The outstanding trends in American obstetrics since the beginning of the century would doubtless be seen in a different light by each obstetrician who paused to consider them. To McNeile they may be placed under five headings: first, the changing ideals in obstetric education; second, to regard pregnancy and labor as pathologic rather than physiologic processes; third, to make parturition easier for the mother; fourth, to make obstetrics easy for the obstetrician, and, fifth, to eliminate the midwife.

It is well known that the better trained in obstetrics a physician is, the fewer major operative procedures he finds it necessary to perform. While rather drastic changes in the practice of obstetrics have occurred during the present century, the author cannot help feeling that obstetrics today is in a transitional stage and that as obstetric practice gradually comes into the hands of those who have received adequate training, many of the present-day trends may be modified and then utilized to make pregnancy safer and easier for the American woman.

The original of this article is full of valuable observations, of which the editor would emphasize the trend to better obstetric education. The more the obstetrician knows about his science, the less radical does he become in practice. It is the "half-baked obstetrician who is keeping up the mortality. The more the public realizes that obstetrics is a fine art, the more anachronistic and out of place in modern medicine does the midwife become.

Maternal Mortality and Morbidity

J. R. Fraser (Montreal) (J.A.M.A. 105:1481, 1935) makes certain recommendations. Since puerperal infection still remains directly or indirectly the most conspicuous single cause of death following childbirth, every effort should be expended toward its prevention. Pathogenic organisms, chiefly of the streptococcus family, must be prevented from reaching the birth canal, irrespective of whether it is from the nose and throat of attendants, the patient herself, her husband or other patients. Endogenous infection must be cleared up. The use of masks, properly constructed and tied, must be adopted by all those in close contact women in labor. No person with respiratory or other infection should be in attendance, and the known carriers of streptococci should be constantly supervised. The day is not far distant when, for these reasons, certain people will not be able to undertake maternity work.

The adoption in obstetrics of many of the principles have been so successfully applied in surgery, for example, the more careful examination of the prospective mother with a view to establishing her ability to stand strain of labor, will do much toward lowering the mortality rates.

Again, more attention must be directed the mechanical problem in hand, for the simple fact remains that in a normal woman with a normal pregnancy the presenting part should be in the pelvis in the last month.

The impression is gaining ground that more care is necessary in the education of students and physicians in supervision of pregnancy, in combating the rising incidence of operative obstetrics such as forceps delivery and cesarean section, and in the building up of more efficient maternity service.

The provision of antepartum clinics, in itself admirable, cannot in any way be construed as a measure of prevention that will be an infallible guide. It is necessary that those in charge have a lively sense of what constitutes a healthy prognosis.
This bespeaks the close correlation of all agencies engaged in this work. Teamwork in obstetrics must prevail.

(There is one element in the persistence of a high maternal mortality that has not been emphasized in the preceding articles, the trend toward hospitalization of maternity cases. Years ago, and unfortunately even today, the greatest danger from this point of view was epidemic puerperal infection. In 1933, the editor showed that puerperal infection did occur too frequently in maternity wards of general hospitals. At present, great improvement has been made, and many maternity wards show as good results as the best specialistic practice.

But another danger is developing: too much operative intervention. If the woman were at home, version, premature forceps or cesarean section would be harder to do, and the attendant would give her a long test of labor and often find that intervention was unnecessary. On the other hand, operation is too easy in the hospital, and the partially trained obstetric specialist trusts too much to a highly developed "surgical technic" or to his having assistants, up to 17 in number, or to blood transfusions, counting on these to repair the damage of his trespasses of obstetric judgment and skill.
Would anyone deny that there would be fewer cesareans, etc., if the women stayed at home? And can anyone prove that the great numbers of cesareans that are done annually really have saved so many lives as to justify them? Let us balance the deaths from unnecessary cesareans against the deaths of an equal number of patients treated at home for serious complications. The editor does not know the answer, but since so many writers decry the frequency of cesareans in the United States, there might be some good in pondering the question. Is this an argument for home delivery? Oh, no! It is a plea for better obstetric education and for provision of specialistic staffs in hospitals where proper indications for operation will be followed.

While on this subject, the editor would like to point out the still existing necessity for the teaching, in full courses, of home obstetric practice. No one knows, but conservative estimates indicate that of 2,200,000 babies born annually in the United States, between 1,200,000 and 1,500,000 are born in their own homes. This means that until there are good maternity hospitals to care for the women (say for 20-50 years) we must teach home obstetrics. The teaching schools are in the cities, not in the country; further, the trek to the hospitals for confinement is greatest in the cities, in some as high as 85 per cent. Moreover, it is impossible to teach home obstetric technic in the hospital; we cannot imitate the variegated home conditions; we must take the students into the homes where the obstetric material is and where the women can safely be taken care of while being used for instruction.
Now, what are we teachers going to do about it?-Ed.]

Outpatient Obstetrics

Review of 6,863 Cases. This report by H. Buxbaum (Chicago) (Am. J. Obst. & Gynec. 31:409,March,1936) covers a series of 6.S63 cases, of which 6,537 women were delivered in poorly furnished, unsanitary homes during a period of two years. The operative incidence was approximately 4 per cent; 74 per cent were forceps deliveries. There were 45 cesarean sections, or one in 152 deliveries, an incidence of 0.65 per cent. One hundred four babies died, a fetal mortality of 1.6 per cent. Fetal mortality for forceps deliveries was 5.2 per cent; versions, 34.6 per cent; prolapsed cord, 29 per cent; rupture of the uterus, 100 per cent; breech presentation, 7.7 per cent, and

cesarean section, 20 per cent. Twelve mothers died -three in their own homes- a maternal mortality of 0.17 %.

The author concludes that conservative, patient management of obstetric cases, especially with delivery in the home, is undoubtedly the prime factor in keeping down an unnecessarily high fetal and maternal mortality. While it is certainly desirable to get a live healthy child, it is felt that one is never justified in doing this at any moderate risk to the mother.

These statistics provide a basis for an attempt to establish a possible standard for comparison in the evaluation of results obtained by the average general practitioner and the occasional obstetrician with a similar type of practice, although it is realized that comparisons in obstetrics are odious and inaccurate, due to differences in economic, racial and geographic conditions. Good obstetrics can be done under seemingly insurmountable obstacles with proper supervision.
The author feels that universities should take more advantage of this form of obstetric education, since the student can get a better insight into the intricacies of abdominal and rectal diagnosis, the mechanism of labor and the rigid aseptic technic as it must of necessity be practiced in the home.

[The editor is chairman of the board of the Chicago Maternity Center and keeps close watch over the work done in it. Every patient sent to a hospital is carefully followed up, and, if she dies, whether the death was due to inefficiency on the part of the Center's staff or not, the death is counted against the Center. Naturally, part of the credit for a low mortality rate is due to the hospitals accepting the complicated cases.-Ed.]

Some Obstetric Aphorisms

The following aphorism, are expressed by C. O. McCormick (Indiana State M. J. 29:268, June. 19364)

1. Every female child is a potential mother.
2. Woman's most important biologic function is reproduction.
3. Any group of deaths in which fully two thirds of the total number could have been prevented becomes immediately a pressing problem.
4. Since 50% of originally conceived individuals do not survive pregnancy, labor and the first year, it may be stated adroitly that "life begins at 1 year."
5. Some day, perhaps in the near future, a son of Sir Lancelot will come forth and crusade in behalf of the unborn.
6. Competent prenatal care is more important than competent delivery care.
7. If one were to cast away all prenatal examination equipment, including pelvimeters and chemicals for urinary examination, save one article, that one would be the blood pressure apparatus.
8. Outlet pelvimetry, although usually disregarded, is more important than inlet pelvimetry.
9. A breech presentation is a pathologic presentation.
10. Painless, causeless, recurring bleeding in the last trimester is a red flag, and spells placenta praevia until proved otherwise.
11. Forty ounces of urine a day keeps convulsions away.
12. Act before the "explosion," and have mother home for Christmas.
13. Every primiparous labor case is a possible cesarean.
14. Barring disproportion, "Once a cesarean always a cesarean" is an exaggeration.
15. Pituitrin is our most powerful oxytocic drug, and in the hands of a fool its effect may be fiendish.
16. In performing a craniotomy on a living baby, the *accoucheur* becomes judge, jury and executioner. On the second craniotomy he achieves the added character of criminal.

(a) When in doubt, sit tight.
(b) When certain of placenta praevia, prolapsed cord or transverse lie, do not sit at all.

17. Let diligent anticipation precede alarming surprise in meeting postpartum hemorrhage following placenta praevia, hydramnios, twins and exhaustive labor.
18. Guide the baby beside the rectum rather than through it. Otherwise your mental balm flies out the window (or falls into the pail).
19. Of all branches of medicine, obstetrics at the top is most sublime; at the bottom, the most lowly.