

REMARKS ON TEACHING OBSTETRICS.¹

BY

HENRY SCHWARZ, M. D.,

Professor of Obstetrics and Gynecology, Washington University Medical School,
St. Louis, Mo.

THE teaching of obstetrics in the United States has in past years been so inadequate that the graduates of the greater number of our medical schools have entered into practice with little or no clinical experience in this most responsible branch of Medicine; a number of these incompetents made up this deficiency in their medical education by serving as internes in maternity hospitals, or by taking postgraduate courses at one of the few medical centers in the United States, which were equipped for this work, and a select few went abroad for their obstetrical training.

At present conditions are rapidly changing for the better; and in every state of the Union the medical schools, either from their own desire for advancement, or because they are forced to do so by state boards of health, are making honest attempts to give their students bedside instruction in obstetrics.

The difficulties which most of these schools experience in attempting this change from the time-honored didactic lectures to bedside and laboratory instruction, are so great and, at the same time, so little appreciated by those who have not worked under similar conditions, that a short description of the evolution of the teaching of obstetrics in the Washington University Medical School and of the manner in which this teaching has been carried on during the last few years, may be a help to some of those who are at present confronted by the same problems.

For the successful teaching of obstetrics four things are absolutely necessary—namely, qualified teachers, well prepared students, reasonable place and space in the curriculum and the necessary equipment.

1. *Qualified Teachers.*—The best qualification for a teacher and the one which should be insisted upon wherever possible, is that he has served a thorough apprenticeship in the practice and in the teaching of Obstetrics in a teaching institution.

2. *Well Prepared Students.*—Medical students in the United

¹ Read before the Twenty-fourth Annual Meeting of the American Association of Obstetricians and Gynecologists, held at Louisville, Ky., September 26-28, 1911.

States are rapidly improving in quality; in any school with average entrance requirements and with thorough courses in the ordinary subjects of the first two years the student who has successfully passed these courses is ready for obstetrical instruction.

3. *Reasonable Place and Space in the Curriculum.*—The curriculum of most medical schools is overcrowded; this is especially the case where students are still allowed to enter the school without credit in chemistry, physics and biology; these subjects must become entrance requirements, so that the first two years can be devoted entirely to anatomy, embryology, physiology, pathology, bacteriology and other subjects usually taught during the first two years, thereby leaving the last two years almost exclusively for clinical medicine.

In these two years the students must be prepared for the work of the general practitioner which consists mainly in the treatment of medical cases, in minor surgery and in obstetrics and, therefore, medicine, surgery and obstetrics must be given enough time for thorough instruction, while the undergraduate instruction in the various specialties should be limited. Obstetrical teaching differs from the teaching of any other branch of medicine in this, that in the entire scope of obstetrical work, there is not one chapter which might be safely omitted from the teaching of undergraduates; the youngest practitioner will be confronted by cases of placenta previa, eclampsia and other complications, at times and in places which make it impossible to call in more experienced colleagues, or to consult a text-book; he must be prepared to meet these emergencies without a moment's notice, else the two lives which are at stake in every case of confinement may be lost.

Instruction in obstetrics should begin with the junior year and continue to the time of graduation. Sixty hours during the third year and one hundred and twenty hours during the fourth year, that is to say, one hundred and eighty hours exclusive of the time spent in delivering women and in watching them during the lying-in state, is a fair arrangement, which cannot be much reduced in hours without impairing the efficiency of the instruction.

4. *The Necessary Equipment.*—A good example of the most desirable equipment is the modern Frauenklinik as we find it in connection with German universities; such a clinic has its maternity department with an outclinic service; it has its clinical labora-

tory; its department library; its historical collection of instruments; its museum of pelves and specimens, and a liberal supply of manikins, models and other teaching apparatus; it has also its gynecological department and is splendidly equipped for graduate teaching and for investigation and research; it enjoys, likewise, a liberal annual appropriation.

It is well for us to strive after such ideal conditions and to gather hope from the fact that many of the most renowned schools of obstetrics in Europe had a small beginning.

The minimum obstetrical equipment which to-day ought to be required of every medical school should be about as follows:

A. Control of sufficient obstetrical material to make it possible for every member of the senior class to receive a reasonable training in the examination of pregnant women. To be present and to assist at the delivery of at least five women and personally to deliver under an instructor not less than two cases, so that for a senior class of fifty the school should furnish a minimum of 100 confinements a year.

B. Equipment for a thorough manikin course.

C. A small, but well selected collection of specimens, pelves and teaching apparatus.

D. A clinical laboratory.

E. A small working library consisting of a few text-books and laboratory guides.

EVOLUTION OF OBSTETRICAL TEACHING IN WASHINGTON UNIVERSITY.

In 1899 the Medical Department of Washington University, formerly the St. Louis Medical College, was merged with the Missouri Medical College and this consolidated school is now known as the Washington University Medical School.

I was made professor of obstetrics and the department was turned over to me; the equipment consisted of two old manikins, two broken dolls and the semblance of an outclinic, which had been running two or three years without being able to get a proper start. It was located in a small room on the second floor of the college building, which had been furnished so that a student and a dispensary physician could sleep in it and attend on obstetrical cases to which they might be called; a meager obstetrical satchel had been furnished and the college janitors had taken care of the room. The outclinic physician was appointed from the graduating class each year, he did the best

he could and the next year turned the place over to his successor, who had to start all over again; a small endowment which the school had received provided an annual income of \$480.00 to pay this physician, whose expense for meals, laundry and car-fare consumed all or nearly all of this \$40.00 per month; the clinical material never exceeded twenty-five cases a year, and it served principally for the self-training of the outclinic physician.

Since that time the clinical material has increased from year to year, so that during the fiscal year 1910-1911 the 500 mark has been passed and the steady growth bids fair to continue. The class of thirty-three seniors, who were graduated in June, 1911, had personally delivered under supervision of qualified instructors 418 cases at term, and they had witnessed over 100 additional cases for which they received no individual credit; these were in great part complicated cases, which were delivered before sections of the class, including forceps-cases, breech and face presentations; cases of placenta previa and of eclampsia, and also two pubiotomies and three Cesarean sections. Thus every member of the senior class had delivered an average of twelve cases and had been present at the delivery of several times that number.

Let us now consider how this change was brought about and point out that part of my experience which may be a help to those who are facing the same problems.

When I took charge of the teaching of obstetrics under the conditions mentioned, I saw the opportunity for which I had been waiting and for which I had prepared myself in a five years' apprenticeship to Prof. Kehrer, of Heidelberg—namely, the opportunity of establishing a "School of Obstetrics."

The first thing to do was to put the outclinic in perfect running order. The janitors of the college had failed to keep the outclinic room in habitable condition; students and assistants alike were disinclined to occupy it; so I put the case before my wife. She at once rectified conditions by having the furniture destroyed; by having the wall-paper removed; by having the room disinfected and calsomined; by having it refurnished with sanitary furniture and by sending a woman around once a week to give the room a thorough cleaning; this woman was likewise to take bed-sheets, pillowslips and blankets to her own home for washing. Mrs. Schwarz also established telephone-service at her expense and furnished new and well equipped obstetrical satchels, and she continued to care for this outclinic until July, 1910, when

this clinic was removed to the Washington University Hospital, and the University assumed the financial responsibility.

The next step consisted in providing skilled obstetrical service for the outclinic patients. This was done by establishing a system by which the service of each assistant was extended to two years; during his junior year he was to receive a thorough training in obstetrics, so that in his senior year he should be able to take reasonable care of the outclinic and to act as instructor to his junior, so that my own activity in the outclinic might be limited to a general supervision and to the handling of special complications; this means, that we started out with one paid assistant, and that during the first year it was necessary for me to be present at as many cases as possible, and to act as bedside instructor to both assistant and student and that with the beginning of the second year a second assistant was installed, the junior residing in the outclinic room, and the senior being provided with quarters nearby.

Next it became necessary to provide real dispensary facilities, that is to say, a place, in which pregnant women may be conveniently examined and registered, and to which they can return after delivery for a final examination. This was an easy matter, because I had been conducting a gynecological dispensary in the basement of the college-building, and all that was necessary was to encourage the obstetrical cases to report at this place. Here sections of senior students received a thorough training in the examination of pregnant women; including pelvimetry; the latter, of course, could be practised on any of our patients.

The next step consisted in arranging lectures and recitations and in providing teaching apparatus. The old curriculum provided for two hours a week in the junior year and one hour a week in the senior year; these hours and the time spent by the seniors in the obstetrical dispensary and the obstetrical outclinic were sufficient for the start, especially because I had to do all the teaching myself until I had trained a few men for this work; the only addition which was made to this curriculum consisted in having the fourth part of the senior class come to my home every Saturday night, where from 8 to 10 o'clock were held quizzes and manikin courses, which were soon supplemented by lantern-slide illustrations. These Saturday evenings accomplished a good deal and the students were eager to attend; they were discontinued in 1905, after the epidiascope, which had been exhibited at the World's Fair by Zeiss of Jena, had

been installed in the college-building, and had become available for obstetrical teaching.

Some difficulties were encountered in securing the necessary teaching apparatus; natural female pelves and fetal skulls are to be bought only in small numbers and at very high prices; obstetrical manikins are likewise hard to get and still harder to keep in repairs. The greater part of my equipment came from two sources; from John Reynder & Co., 303 Fourth Avenue, New York, who at that time handled the "Aids in Obstetric Teaching," originated or referred to by J. C. Edgar. I secured "The Edgar Bronze Pelvis, mounted on Tripod" and "The Edgar Aluminum Cast of Sagittal Mesial Section of Bony Pelvis, Mounted on Blackboard and Tripod," and I have found both of excellent service and continue to use them; from the firm "Medicinisches Waarenhaus, No. 31 Karl Strasse, Berlin, N. W. 6," I secured leather dolls for the old manikins, which I had repaired and later on some new manikins after Schultze, the kind which I find the easiest to handle and the least expensive to keep in repairs.

The Berlin House proved especially satisfactory in providing certain models for teaching and in furnishing pelves and fetal skulls of Papiermaché, which are excellent substitutes for teaching purposes, most of these models are devised by Winternitz; special mention deserve plaster-of-Paris busts, eight in number, illustrating the configuration of the fetal head during its passage through the pelvis; a model on a stand illustrating the fetal circulation; another model showing a pregnant uterus of the second month to demonstrate the various layers of decidua; an excellent aid in teaching is the model by Zangemeister, demonstrating the passage of the fetal head through the vulva and the guarding of the perineum (received lately).

Of the Papiermaché imitations I have found those of fifteen abnormal female pelves of the collection in the Berlin Frauenklinik of especial value.

All this teaching apparatus and the collection of specimens which had been started, required room for safe keeping and this was hard to get; these things had to be distributed over the college buildings wherever space could be secured, and it is only since the concentration of the department in the Washington University Hospital, that they are properly cared for.

In the meantime the system worked satisfactorily; with each year the number of obstetrical cases increased and the number

of qualified teachers or consultants to the outclinic likewise increased; for in the first place several of the former assistants, after serving their term, remained as instructors in the department, and all of those, who located in St. Louis, are in friendly touch with the work of the clinic and can be pressed into service during any emergency.

In this way we worked for six years; we had no department laboratory and the library was represented by the most necessary text-books; but what we missed most was the absence of hospital facilities; complicated cases had to be attended at the home of the patient, and extreme cases had to be referred to city institutions, where we lost control over them, or they were sent to private hospitals and had to be paid for.

In 1905 the Medical School, recognizing the urgent need of some hospital facilities under absolute control of the school, established the Washington University Hospital in the buildings formerly occupied by the Missouri Medical College; enough space was given to my department to establish a delivery-room, a large obstetrical ward for white women; sleeping quarters for one assistant and several students, and a department laboratory; the outclinic still remained in the present college building, as did also most of the teaching apparatus, and obstetrical instruction was carried on at these two places.

In 1910 the Medical School began the reorganization which is still under way; for greater efficiency the entire department was concentrated in the Washington University Hospital, and it is now in a position to do reasonably good work until the new buildings which are contemplated will be ready for occupancy.

Obstetrics and gynecology form one harmonious and undividable department in the Washington University Medical School; this paper, however, deals only with the problem of teaching obstetrics, which offers many difficulties not found in the teaching of other branches of medicine, and which cannot be successfully carried on without a number of assistants and instructors, whose full time belongs to the department.

The present plan of instruction for undergraduates as outlined in the catalogue of the school has worked satisfactorily for three years and is as follows:

JUNIORS.

Obstetrics 1.—Demonstrations and recitations. This course covers the essentials of obstetrics and closely follows a text-book.

The students are given assigned reading. The course is illustrated by the epidiascope, specimens, models and charts. Two hours a week during the year—60 hours.

SENIORS.

Obstetrics 2.—Lectures and demonstrations on selected topics. Each one is complete in itself and treats of such subjects as placenta previa, eclampsia, etc., etc. They are illustrated in the best way possible and are freely discussed by and with the students, who have already practical clinical experience. One hour a week during the year—30 hours.

Obstetrics 3.—a. Actual work in the laboratory in examination of urine, blood, lochial secretions, chorionic villi, etc.

b. Bedside instruction in the examination of pregnant women, including thorough instruction in pelvimetry; studying the conditions, normal and pathological of the puerperal woman and of the new-born infant.

c. Manikin practice in the application of the forceps, management of breech presentations, versions, etc.

The senior class is divided into three sections; each section attends the Maternity Department of Washington University Hospital an hour and a half a day for a period of ten weeks. Every section is subdivided into three groups, each of which does the work as outlined, under a special instructor—75 hours.

Obstetrics 4.—The Washington University Hospital and out-clinic department furnish from 500 to 600 cases a year. Each student is assigned ten cases or more, which he visits during pregnancy, attends personally during delivery, and continues to visit during the lying-in state. All the work is done under the supervision of competent instructors, and the history of each case as furnished by the student is discussed in clinical conference—from the end of the junior year to the end of the senior year.

The department is likewise prepared to give graduate instruction.

440 NORTH NEWSTEAD AVENUE.