Observations on the Obstetric Extractor, the Instrument usually called the Midwifery Lever. By JOHN BREEN, M. D., Honorary Fellow of the King and Queen's College of Physicians in Ireland, and formerly Assistant to the Dublin Lying-in Hospital.

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BEING engaged in preparing for publication, a Dissertation on the Management of Difficult Parturition, a subject on which I laid some facts before the profession, in the Dublin Medical and Physical Essays, as far back as the year 1808, my opinions and experience on instrumental delivery, which are necessarily connected with the management of difficult parturition would not now be communicated, but would be reserved for future publicity, had not Dr. Churchill, at a late meeting in this Hall, read a valuable paper on Instrumental Delivery. He excluded, designedly, all consideration of the lever from his inquiries. It, therefore, appears to me, that following up his researches by some observations on the history, uses, and best mode of application of the instrument, which I call the obstetric extractor, would form not an useless supplement to his Essay, and be not uninteresting to those engaged in that branch of medical pursuit. For the adopting of this somewhat new term, I hope to offer, in another part of this paper, a more satisfactory reason than the mere love of introducing novel appellations.

Having mentioned the inquiries of my friend Dr. Churchill, which demonstrate that the opinions of all those most competent to form a correct judgment on such a subject, concur in the necessity of occasionally using instruments in obstetric practice, I have to regret that some of his statements are hastily drawn up. Thus in his Dublin references he says, that only two among Dr. Clarke's fourteen forceps cases proved fatal; when this distinguished practitioner states that he lost seven, or one half of the entire number. In referring to my paper, first pub-

lished in this city, in 1808, and afterwards in the Edinburgh Medical and Surgical Journal, in 1819, he gives only forty-four instrumental cases, when in fact sixty-two are mentioned. In the foreign references, the most remarkable, from the small number of instrumental cases, is the practice of Boer of Vienna. A careful examination of his book has given me a different result from that given by Dr. Churchill, his being only one instrumental case in 388, while my inquiries into Boer's work bring his practice nearly to coincide in the number of instrumental cases with our Dublin Lying-in Hospital. In summing up the practice at the Great Vienna Lying-in Hospital, from 1793 to 1800, both years inclusive, during which time 9,053 women were delivered, page 363 of his book, he states, that he used instruments once in almost every 200 cases (*inter ferme ducentos.*) Dr. Clarke's instrumental cases in our Dublin Hospital, were, from the commencement of 1787 to towards the end of 1793, as one in 157; mine from November, 1800, to July, 1806, as one in 188. Page 65 of his book, Boer states his instrumental cases, from September, 1789, to Sept., 1790, as seven in 958, or one in 136; from Sept., 1790, to the commencement of 1793, he used instruments once in every ninety-five cases.* In 1805 and 1806, he only used instruments three times in 2,034 cases, as he states at page 585 of his book, and lost but eight women out of the entire number. I give the results from Boer, but cannot account for the discrepancy of his practice, in 1805 and 1806, from all former years. In estimating the value of Dr. Churchill's facts, I look decidedly to those operators who are quite free from the suspicion of having used instruments unnecessarily; it is, therefore, on this account I dwell so much on Boer's statements.

I am the more induced to undertake the object of my present inquiry as to the value of the obstetric extractor now, and not de-

* See pages 131, 203, and 362, of his Libri septem Naturalis Medicinæ Obstetriciæ, Viennæ, 1812.

fer it to a future time, when I call to my recollection the aphorism of the father of medicine, that life is short, and opportunity fleeting; also as I flatter myself I can so condense my remarks, as not to be tedious to such of my auditory as are not obstetricians.

That the Chamberlens, father and sons, who lived in the latter part of the seventeenth century, were the inventors of the midwifery forceps and veetis, is now pretty certain; that their successful exertions to discover means compatible with the safety of both mother and child, obtained for them the rank of eminent obstetricians, and also one of its agreeable consequences, wealth, is proved by their acquisition of landed property. It is ascertained that one of the family, Dr. Peter, purchased the estate of Woodham, Mortimer Hall, near Maldon in Essex, prior to the year 1683, which was sold by another of the family in 1715.

A very few sentences, in addition, on what can be now known of this family, may not be inappropriate on this occasion. In the year 1665, Dr. Paul Chamberlen, the father, published his Midwife's Guide, which contains no particular pretensions. In the year 1670, Dr. Hugh Chamberlen, one of the sons, gave a translation of Mauriceau's Midwifery, and stated, in the preface,* that his father, brothers, and himself, have possessed by God's blessing, though none else in Europe, that he knows a way to deliver a woman when the head, on account of some difficulty, cannot pass. During this year one of the sons went to Paris, as it is conjectured, either for the purpose of selling his secret, or with an intention of practising in that city, and turning to his emolument the possession of an important auxiliary to assist females, in difficult parturition, with safety to parent and offspring. Unfortunately for the success of his plans, he first tried his method on a patient in whose case Mauriceau pronounced the pelvis to be deformed, and that she could only be delivered by the Cesarean operation. The woman died un-

* See Bland's paper in Medical Communications, vol. ii. p. 413. London, 1790.

delivered, and her death was doubtless accelerated by the violence used in the trials of Chamberlen.

This attempt to bring a full-grown child through a deformed pelvis, without diminishing its volume, will excite the less surprise when we call to our recollection, that it was then a very general opinion among physiologists, that the ligaments of the pelvic cavity relaxed during labour, and allowed the bones to separate, in order to facilitate the exit of the fœtus, an opinion which Harvey, the great discoverer of the circulation, held, and which Mauriceau first successfully combated. Disappointed in Paris, Chamberlen went to Amsterdam, where he sold his secret to Roonhuisen, a surgeon practising in that city. Prior to the recent discovery of some private papers of Chamberlen's, and of his instruments in a false floor, in a closet at Mortimer Hall, which were given by the present owner to Mr. Casserly, and by him bestowed on the Medico-Chirurgical Society of London; it was a mooted point, whether their secret was the forceps, or the lever, or both. It was the more general opinion, that the Chamberlens used the double lever or forceps, and that the Dutch surgeon, determining to make the most of his purchase, learned to use one branch alone, by which contrivance he found the secret could be more easily concealed. But the engravings of the instruments found as just stated, and published by Dr. Rigby in the Edinburgh Medical and Surgical Journal for 1833, page 366, prove, that the Chamberlens probably also used the single blade, and were aware that it occasionally succeeded. Roonhuisen, the first purchaser, made the celebrated anatomist Ruysh a participator in the mode of using the instrument, and it continued for above sixty years to be sold by the descendants of Roonhuisen, for a valuable consideration to each succeeding purchaser, under the engagement of not communicating the method. In the year 1753, De Vischer, and Van der Pol, two medical men, who then resided in Holland, purchased on the usual terms; and reconciled it to themselves to break the conditions of their contract, and communicate the

knowledge of the instrument through the medium of the press. Their publication was in the Dutch language, and it chiefly became known in these islands, through an account of it prefixed to Monsieur Prevelle's translation of Smellie's Treatise on Midwifery into French. Vander Pol settled at Canterbury in England, and assumed the name of Dawkins, but probably from his ignorance of the English language, did little to spread the knowledge of the mode of using the obstetric lever.

Van Swieten, a native of Holland, a resident for some years at the university of Leyden, and afterwards Professor at Vienna, treats of this instrument in the fourth volume of his Commentaries on the Aphorisms of Boerhave, published in 1764, and considers the revealing of the secret of the midwifery lever, as a benefit conferred on the human race.

In the year 1774, Camper published a paper, in the Memoirs of the Royal Academy of Surgery, at Paris, on Laborious Labour, in which he fully investigated the history, and gave his opinion on the mode of action of the midwifery lever, in facilitating delivery. The eminence of the writer, and the character of the publication, immmediately called increased attention to this instrument. This Essay of Camper appeared twenty years after the discovery by De Vischer and Vander Poll, ten years after the publication of Van Swieten, and nearly about twenty years from the period of the retirement, from teaching and practice, of Smellie. I regard this individual as the father of British midwifery, and concur in opinion with Dr. Bland, that had he been sufficiently early in possession of what I may call the Dutch secret, his observant and intelligent mind would have investigated calmly its general utility, and demonstrated its relative value, as compared with the forceps. The opinion of Van Swieten, and the publication of Camper, from the high character of the men, necessarily brought the value of the instrument, as an auxiliary in difficult parturition, before that portion of the community who were best capable of judging of its utility. The learned commenta-

tor on Boerhave, though he produced testimony which could not be called in question as to the value of the instrument, did not succeed in introducing it to notice in this country, as it seems that prior to Camper's Essay, no very great attention was bestowed on the subject in Great Britain.

During these years, William Hunter, who practised and taught midwifery in London, from his high character, would appear to be the person from whom we would most anxiously look for an opinion on the midwifery lever. It is well known that he was a most implicit believer in the resources of the powers of nature, and probably, as an eminent physiologist, he was induced to look down upon the more mechanical genius of his early instructor Smellie, with whom he was domesticated as a pupil on his first arrival in London, and considering him as too fond of interfering with the forceps, was unwilling to sanction the introduction of a new instrument. In his published works there is nothing on my present subject, and his manuscript lectures on Midwifery, of which I know numerous copies exist, have never fallen in my way. By comparing Van Swieten and Camper, I may almost say by their joint testimonies, the possessors of the Roonhuysian lever, in selling their secret and handing the instrument to the purchaser, combined with whatever more diffuse instructions were given, the short sentences *potentia agit in os occipitis*, and the nearly as brief, though less intelligible Dutch jargon "*de benglestant ni de nok.*" In discussing the meaning of these Dutch words, Camper says, no one understood them, of course he means no person uninitiated, and that he cannot give an idea of their meaning, and that they appear to him something mysterious.* Through the kindness of an eminent linguist of this city, I think I have arrived at a probable explanation of the Dutch words, which I hope to turn to an useful purpose, when I come to investigate the best mode of applying the obstetric extractor.

* See Camper's paper, p. 246, vol. xv. of the Transactions of the Royal Parisian Academy of Surgery. Paris, 1774.

Not to occupy the time of the meeting, with entering into a detail of the opinions of teachers and practitioners, from the middle until towards the latter part of the eighteenth century, I will now copy what Doctor Denman wrote on this point. He published the first edition of his Treatise on Midwifery, in the year 1781, seven years after Camper's Essay appeared. It will not be assuming too much, to take for granted, that this very intelligent writer and practitioner, gave a fair view of the opinions of his more eminent contemporaries, and, therefore, that most of the celebrated obstetricians in London, were in the habit of preferring the veetis to the forceps at the period he wrote.

The following words contain Denman's sentiments on the relative value of the lever, as compared with the forceps, as an auxiliary to assist the female in difficult parturition.

He says, "from this statement it may be presumed, that the veetis, prudently used, is in every case an equally safe and efficacious instrument with the forceps, and a better adapted instrument, in many cases which occur in practice. It is with this persuasion that several teachers of the art of midwifery in London never use the forceps, or speak of them in their lectures, while others, to whose judgment I owe much respect, continue to use the forceps, and think I have advanced more than experience will justify in favour of the veetis."*

In the next page of Denman's book, he follows up the subject by saying, "I know several gentlemen of eminence in the early part of their lives accustomed to use the forceps, who discovering by accident or trial, that they were able to afford every assistance with a single blade, or the veetis; but I never knew an example of any person who having been accustomed to the veetis relinquished its use, and resorted to the forceps." With respect to the more favourable part of Dr. Denman's opinion, which, be it observed, though he lived for many years

* See Denman, vol. ii. p. 127. London, 1801.

after, he did not alter, on the utility of what he calls, the midwifery veetis, I nearly concur. After briefly attempting to account for his opinions not having carried the weight I think they merit, I will proceed shortly to explain what appears to me the safest and best mode of applying this instrument. I only once had an opportunity of trying it in the Lying-in Hospital, while I was assistant physician to that institution, but I have since repeatedly and successfully used the same instrument in private practice. There are in this room two gentlemen who have seen me successfully operate with the obstetric extractor, and a professional engagement has detained a third, Dr. M'Keevor, who has also been in consultation with me with the same result.

I now proceed to endeavour to explain the reasons why Denman's opinions on this point did not, as I think they ought, obtain more universal concurrence. About this period, at all events at a distance of time not exceeding two years, Baudelocque published in Paris, and De Herbinaux at Brussels, the latter a favourer of the lever, the former of the forceps. The Gallican writer really gave, as it were, a new form to the science of midwifery. He explained the mechanism of parturition better than any of his predecessors, and combining an important observation, or perhaps I might better call it a discovery, of his predecessor in teaching, Solayers De Renhae, on this point, with a great deal of theory and confident assertion, his opinions obtained an influence much beyond their deserts.

In Baudelocque's writings there is an attempt at too much precision in describing the passage of the child through the pelvis. He accounts for the disturbing powers that frequently interfere with this process, as if they were all well understood, and their causes demonstrated, while, from their variety and uncertainty, they give rise to numerous deviations. In his 673rd paragraph, he says, it is necessary that the head should follow a determined course. In developing his notions of this course, and describing the various turns and inflections the head makes

in performing it, the whole progress is laid down as if every difficulty could be accurately calculated, and every possible deviation satisfactorily explained. From his anxiety to make his theories appear the result of established facts, and to lead his readers to believe, that the entire efficient causes of parturition were familiar to his mind, that no part of obstetric mechanism was unexplained in his work, and by endeavouring to pass his system as perfect, I believe, he stopped the progress of improvement, so that from these combined causes, I am inclined to consider him as the great misleader of youth.

The discovery of De Renhae consisted in ascertaining, that when the face of the child was towards the pubis, it sometimes turned into the hollow of the sacrum: the importance of this observation will again be referred to.

In London, Dr. Osborne combated the opinion of Dr. Denman, in a very well written book, which attracted much attention, as it included an exposition of the danger and inutility of the operation of the division of the symphisis pubis, then in some repute at Paris; to this publication the latter made no direct reply. Dr. Bland answered Dr. Osborne, but his book was written in such a captious spirit of special pleading, and seemed to display so much greater anxiety to conquer his adversary, than to elucidate truth, that it did not make much impression on the profession. At Edinburgh, Professor Young and the first Hamilton were rather favourers of the forceps as compared with the lever. In Dublin, during the period now under consideration, the only published evidence I find is the Essay of Mr. William Dease, the earliest professor of surgery to the Irish College of Surgeons, and the father of Professor Richard Dease, whom many of my auditory must recollect. The first Mr. Dease, as far as I can ascertain, was the originator of the proposal for using the midwifery lever solely as an extractor. I know that a gentleman, Mr. Keogh of Meath-street, who, for a great many years, enjoyed a very considerable share of midwifery practice, and left a large fortune to his

descendants, used the lever successfully and extensively. He informed me, that he was called into consultation, on one occasion, with the gentleman who for many years held the first station in obstetric practice in this city, in the case of the patient who is mentioned by Dr. Denman, in the third volume of the Medical and Physical Journal, as an Irish lady of rank, where the circumstances were such, as that Dr. Savage of London, in consultation with Dr. Denman, agreed on the propriety of inducing premature labour. Mr. Keogh informed me, that in the instance in which he was called in, he delivered successfully with the lever. This account, not very long since, was confirmed to me by the brother-in-law of the lady, one of his Majesty's counsel at law. Mr. Keogh lived to a very advanced age, and retired from practice some time before his death, in the full enjoyment of his faculties; he conversed freely with me, as to his mode of using the lever, and it corresponded with the published account of Mr. Dease. I make no doubt but the latter communicated with the former (who was his senior in the profession) on the subject. In consequence of the influence of Baudelocque's name, whose opinions seem to have swayed the French School of Midwifery, the forceps became the favourite obstetric instrument with that nation, and Dr. Osborne's authority seems to have had more weight in guiding the opinions of English teachers, and practitioners of this art, than Dr. Denman's, or Dr. Bland's. It appears from this statement, as well as from Dr. Churchill's researches, that the forceps had an almost universal preference, with the leading obstetricians of Europe, and taking Dr. Dewees' evidence as to America, we may join the practitioners of the United States to those of the old world. There were always some obstetricians who held the midwifery lever in high estimation, and used it with dexterity and success during this period: I have just now mentioned the name of the late Mr. Keogh of this city. In the 18th volume of Duncan's Medical Commentaries, Dr. Hamilton, the Professor of Midwifery in the University of Edin-

burgh, published a valuable Essay on the Midwifery Lever, in which he refers to Dease's instrument, supports his opinion on the propriety of using it as an extractor, and highly disapproves under any circumstances of using it as a lever of the first class.

Within the last few years testimonies in its favour have arisen; Dr. Blundel of London considers it a safer instrument in the hands of the general practitioner than the forceps, and refers to Mr. Gaitskill's paper on the lever, published in the 20th volume of the London Medical Repository, in 1823. In that paper it is stated, that the writer used this instrument successfully for many years. A writer in Johnson's Medico-Chirurgical Review, for July, 1821, also holds, that the lever is equally as valuable to the obstetrician as the forceps. Mr. Burns of Glasgow, though he considers the forceps the more generally preferable mechanical aid, when midwifery instruments are requisite, does not call in question the use of the lever when judiciously employed. Latterly, even in Paris, where Baudelocque was almost considered infallible, Velpeau writes as follows: "thus my object is not to substitute the lever in place of the forceps. I have simply wished to make it appear, that with us (the French accoucheurs) the mechanism of the lever has not been well understood, that without being indispensable, its employment in some circumstances is not to be despised, that its application is *too simple, too harmless,* in comparison with that of the forceps, not to have recourse to it, when the head presents at the perinæal strait, and does not appear to be detained, but by the want of action of the organs of the woman; I may even add, that its introduction will often have the great advantage of renewing uterine contraction, as well as that of the abdominal muscles, and by these means accelerate, indirectly at least, the termination of labour, *without exposing either mother or child to any danger.* I am moreover happy to state, that in nearly the entire of this view, M. Desormeaux concurs."*

* See Velpeau Traite Elementaire De l'Art des Accouchemens, &c. Paris, 1829, paragraph 1,093.

I have been in the habit of using the obstetric extractor for twenty-nine years, not as a lever of the first class, but as an extractor in the way mentioned by Dease. The instrument I have always used is that usually called Lowder's lever. When the hinge with which it is provided, for the purpose of being more conveniently carried in the pocket, is fastened by the pivot, this extractor is twelve inches in length. The handle, which is steel on its inner part, and partly ebony on its outer, is five and a half inches long. The blade before being curved was rather more than seven and a half inches. This, I believe, gives as great a degree of curvature as is consistent with the facility of introduction, and affords considerable extracting power. It is what artists call fenestrated at the extremity of the blade, or it has an oval aperture there, for the purpose of giving a greater number of points of contact with little pressure. The instrument has its greatest breadth, one inch three quarters, at the widest part of this oval. The description need not be more minute, as surgical instrument makers are sufficiently familiar with the construction of Lowder's lever. I consider the term lever particularly objectionable, as we are all so familiar with the mode of action of that of the first class, that the very name gives a hint to the operator, should he encounter much difficulty, to make the pelvis of the mother a fulcrum, and thus run the risk of doing much injury. I need not (particularly considering this essay as supplemental to Dr. Churchill's researches) attempt to demonstrate, that without the assistance of instruments in obstetric practice, both mother and child would sometimes perish. Though I hold that the life of the former is never to be put in serious danger, in making an attempt to save the latter; yet I doubt that any one will hesitate to afford assent to the ideas of Dr. Davis, the Professor of Midwifery in the London University. I select him particularly, as on another occasion he has spoken rather slightingly of the over anxiety of some of the continental practitioners to save the child. Dr. Davis's expressions are; "the child's life however should

not be hastily yielded up, (he means by using the perforator,) nor until nature and art shall have exerted their utmost and united resources; until the most powerful efforts of the one, and the best devised expedients of the other, shall have been fairly and deliberately exerted without effect."*

To justify the use of the obstetric extractor, it is necessary that the pelvis be not materially deformed, that the os uteri be fully dilated, or very nearly so, and that the os externum be in a yielding state. I have proved in a former dissertation, that unless accidental occurrences, such as rupture of the uterus, puerperal convulsions, hæmorrhage, or other rare contingencies take place, we may wait with safety thirty hours for the condition of the parts above described, and use appropriate means during the interval to promote such a condition. I would here observe, that though the safety of delaying instrumental aid for thirty hours be proved as a general proposition, it by no means follows, that the obstetrician should always put off affording extraordinary aid for that period.

I cannot better illustrate the propriety of occasionally interfering by extraordinary aid, than by referring to Dr. Evory Kennedy's Observations on Obstetric Auscultation, page 242, where a case is recorded in which probably "five minutes delay" of the use of the forceps, would have caused the extinction of life in the child; such a case affords a most valuable example of the utility of auscultation in saving the life of a being, endowed with the first great gift of a benevolent providence, the germ of accountable agency. It is the more gratifying to record it, as the child was alive and healthy four years after its birth. This measure of thirty hours time affords to the junior practitioner, as it were, a period of safety, during which he may pause as to his ultimate measures.

Prior to describing what I consider the best method of using the instrument under consideration, I will premise a very

* See Davis, vol. i. p. 206.

few sentences as to the mechanism of parturition where the head presents.

To obtain a correct notion of the fundamental principle of this mechanism, I would recommend the student of obstetric medicine to provide himself with a pair of callipers. By applying this instrument to the longest diameter of the child's head, from the upper part of the occiput to the symphisis of the chin, he will find this diameter, unlike that of a circle, to be confined nearly as it were to two mathematical points, as the slightest change of the callipers gives a diminished diameter. The same variation in the next longest diameter will be equally apparent, by holding one limb of the callipers on the same point of the occiput, and removing the other to the lower part of the forehead. Thus every change from the longest gives a diminished scale of measurement, until the shortest is embraced. It is equally capable of demonstration by measurement, that the human pelvis is a cavity of unequal dimensions, and different diameters, and that for the easy termination of labour, it is necessary that the largest diameter of the head should not be locked, as it were, in one of the small diameters of the pelvis. The hand of the obstetrician, unaided by any instrument, has been successfully used to remedy such an occurrence, by changing the direction of the head, as appears from statements by Baudelocque,* John Clarke,† Dewees,‡ Ashwell, and our own Professor Montgomery.§ The hand thus facilitating delivery, as proved from these authorities, shews us what very slight impediments retard delivery for a length of time, and every experienced obstetrician knows, that this delay may give rise to serious danger. It must be kept in mind, that though

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* See Heath's Translation of Baudelocque, paragraph 1,282.

† John Clarke's paper in Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii. p. 229.

‡ Dewees, paragraph 651.

§ Montgomery's paper, Dublin Journal of Medical and Chemical Science, vol. vi. pages 234, 235.

we have quite sufficient authority for the occasional success of the manual operation without instrumental aid, the cases of failure in such an attempt, which must be numerous, have not been recorded. Madame Lachapelle, in the first volume of her Midwifery, page 81, says: "for my part I have sometimes succeeded in changing the position of the face or the parietal, often also I have foundered in my efforts." She also quotes the opinion of Schweighauser, in which she appears fully to concur. His words are: "I have not been able as yet to satisfy myself of the facility which some authors say they find in changing the position of the head into a more favourable one, before having recourse to the application of the forceps." The writer of these observations, though he has never met with such striking cases as those of Dewees, Ashwell, and of his friend Professor Montgomery, is satisfied he has sometimes shortened the duration of labour, by changing the direction of the head in the manner before referred to. He is equally willing to acknowledge that failure has often attended what appeared to be similar trials.

In the most frequent vertex presentation, where the labour has made some progress, and where the os uteri is dilated entirely, or nearly so, the posterior fontanelle is found to the left of the pelvis, near the left acetabulum, the sagittal suture traversing the pelvis obliquely, the anterior fontanelle generally higher than the posterior, in the majority of instances corresponding to the right sacro-iliac syncondrosis, shewing the chin to be bent on the chest. In this case the right parietal bone is the part of the fœtal cranium which is lower than any other. The head is propelled downwards with a rotatory motion from left to right, and generally expelled before the base of the occipital bone is moved completely round to the arch of the pubis. This last statement is not quite in agreement with the more general description of authors, but I am satisfied future and attentive observations will confirm Professor Naegle's views on this point. In this most favourable presentation the uterine

action is occasionally for hours exerted in vain from causes which we are frequently unable to account for. Much delay may excite fears for the safety of the child, and lay the foundation of a tendency to inflammation in some of the soft structures of the mother, indicated by some or several of the following symptoms: increased frequency and fulness of pulse; tongue loaded in its centre; secretion of urine diminished, and becoming higher in colour, sometimes requiring to be drawn off by the catheter; countenance assuming an anxious aspect; stomach irritable; general increase of restlessness. This state of things, not an imaginary fiction, but one which I have witnessed, allows me an opportunity of describing how the obstetric extractor should be applied under such circumstances. The instrument can be passed with the greatest ease, as the patient lies on her left side, in the direction of the hollow of the sacrum, more to the right of the pelvis, than to the left, it is to be carried forward under the right ischium, and cautiously passed until the extremity of the instrument reaches the base of the cranium, somewhere near, but beyond the mastoid process of the temporal bone. Were I giving a lecture to mere tyros, I should be under the necessity of laying down the process by which the relative direction of the occiput to the pelvis might be ascertained. Writing for practitioners, I take for granted, that they possess this very necessary preliminary information. Yet it may be useful to recommend the operator before introducing the extractor, for fear of mistake, to reconsider the view he has taken of the position of the fœtal head, on the accuracy of which his success must depend. Should he have formed his judgment before the cranium has escaped from the cervix uteri, the contraction of this organ on the easily compressible anterior fontanelle, will frequently lead the hasty or less experienced to mistake this for the posterior. This contraction affords an explanation of the hitherto prevailing error, as to the great frequency of the occurrence of the first position of Baudelocque, particularly as compared with his fourth. The influence of this

sphincter-like action is well illustrated by the certainty with which we sometimes ascertain the anterior fontanelle, when the membranes, rigid and unbroken, contain a large quantity of liquor amnii, the interposed fluid taking off the pressure from the cranial bones. Should he, as it were, wish to check his opinion, founded on the situation of one of the principal fontanelles, by finding the direction of the helix of the ear, which is always towards the occiput, let him recollect, that if, in examining, his finger change the direction of the helix towards the forehead, the head is always sufficiently pressed to the pubis to retain that appendage of the cranium in the irregular situation which the search for its direction may have placed it in. When called on after violent labour has lasted many hours, and that there is considerable cranial tumour, this precaution will be found useful, and as far as I know, it, as well as the *cause* of the common mistake of the great frequency of the first position, is now first communicated to the profession.

The operator should now gently use some force to ascertain if he have a purchase. He must then during a pain draw downwards, and in a direction from left to right, to bring the occiput from the left of the pelvis towards the symphisis pubis. By this mode of action the head can generally be brought to commence the distending of the perinæum, and the remainder of the process be left to nature. This power of *readily* withdrawing the extractor before the final expulsion of the head, is a most incalculable advantage; I am satisfied the injury done to the perinæum, when the forceps are used, and which is so much dreaded by all experienced obstetricians, is universally produced by the rapidity of the expulsion of the head after the chin departs from the chest, and the difficulty, or often impossibility, of withdrawing the forceps with sufficient quickness to allow our undivided attention to be applied to the care of the perinæum. On this subject, the opinion of Madame Lachapelle, whose opportunities of observation were unequalled by any writer of the present day, is so much to the point, that I feel pleased in having her authority to support my views. She says, vol. i.

p. 46. "In the last period of labour it (the forceps) will determine almost inevitably this rupture, (that of the perinæum,) if care be not taken to withdraw it some moments before the complete termination." In this position of the head I have sometimes found, that the extractor, applied as I have just pointed out, did not seem to act, as it were, favourably on the part on which it was placed, and it has struck me, that the expelling power had forced the right parietal bone too low, in proportion to the remainder of the head, and that the power of the uterus still acting on this part was acting in vain. Whether my view be correct or not, I have certainly succeeded in such cases, by removing the extractor to the opposite side, and with a very slight degree of force applied to the head, giving that part a direction downwards, and from left to right, effected the delivery. When the head begins to distend the perinæum, I always withdraw the extractor and leave the expulsion to nature, by which it is generally accomplished; very rarely in such a case the pains again become unavailing, and require the renewed application of external aid. The head is now so low, that a very slight extrinsic force added to the uterine action, however slight this may be, will disengage it. I never met an instance where the instrument passed obliquely across the bottom of the pelvis, the handle to the left, the other extremity towards the opposite ischium, in which a very slight exertion of power, directed to move the forehead from the hollow of the sacrum, did not disengage the head. The instrument in this case need scarcely be passed beyond the reach of the fingers, while at the same time its introduction offers no difficulty, and is unattended with pain to the mother; the only precaution to be kept in mind is to avoid injuring the eye of the infant, by allowing the extremity of the blade to reach it. In a similar case Dr. Lowder advises the lever to be applied nearly parallel with the raphe of the perinæum, and the extremity of the blade to be passed over the chin; from the very slight force required in this case, I doubt not its safety, but I cannot speak from experience. Dr. Den-

man alludes to this mode of applying the vectis, but like myself, had no experience of its safety. He does not mention the name of the proposer, and it was but lately, by having procured the Historia Literaria et Critica Forcipum et Vectium, of Mulder, printed at Leyden in 1794, that I was aware that Lowder made such a proposal. The German writer attended Lowder's lectures in London, and I cannot find any trace of the latter having published his opinions. From my experience in the use of the obstetric extractor, I am satisfied, that the fact mentioned by Dr. Denman, vol. ii. p. 132, of the facility with which some practitioners operate with the midwifery lever, and the quickness with which they effect the delivery, must apply to this particular manner of using it, and that this mode is only applicable when the head begins to distend the perinæum. Dr. Denman writes as follows: "some gentlemen have by frequent practice acquired such wonderful dexterity in the use of the vectis, as to finish the operation of extracting the head of a child with one single action of the instrument." This explanation of the way of applying the extractor in the most common case of the heads passing through the pelvis, by keeping in mind, that in every instance, with one exception, the power is to be directed so as to bring the occiput towards the arch of the pubis, at the same time drawing downwards, will give a general and correct idea of the mode in which it is to be used in other presentations of that part. The one exception is where the occiput is to the sacrum, and the face to the pubis, and that the head has advanced so far in this position, and is, as it were, so jammed, that it would require too much violence to change the direction it has taken. I have never used the extractor in this position, though it is one in which some writers recommend the instrument.

Though I have described the mode of using the obstetric extractor in the position of the cranium that occurs most frequently, and with which, therefore, we are most familiar, and which is now universally called by writers the first of Baude-

locque, I do not believe it to be the position where its use is most frequently demanded. On the contrary, I am convinced, it is in the fourth of Baudelocque, the third of Naegle, and the German school, where the anterior fontanelle, originally more directed to the pubis, has receded from the front of the pelvis, and that the sagittal suture is nearly parallel to the lateral or transverse diameter of that part; this change of position, first pointed out by Solayers De Renhae, appears to be much more frequent than was generally thought, before the publication of Professor Naegle of Heidelberg. Should this movement of the anterior part of the cranium from the pubis to towards the sacrum have gone on slowly, the further change is often so much retarded as to require extraordinary assistance, or to endanger the safety of either mother or child, or both, by the delay. The obstetrician familiar with the mechanism of parturition, can readily apply the directions for the management of the most common cranial position, to this by no means unfrequent situation of the fœtal head in labour.

It now merely remains, in order to finish what I have proposed in this paper, to offer a few observations on the success of the Dutch practitioners in the use of the lever. At Amsterdam, after Roonhuysen had obtained celebrity by the use of this instrument, no man was authorized to practise midwifery, in fact he was prohibited by the municipal authorities from doing so, unless he possessed the secret of this individual; moreover, for many years, the magistracy employed either one or two surgeons, at a salary, who were bound to attend poor women in labour in all bad cases. A register was kept by them and returned to the magistrates; and from Camper's paper, p. 239, before frequently referred to, it appears by the returns, that in the city of Amsterdam, from the year 1741 to the year 1765, the average annual number of births was 7,000; the average of births calling for extraordinary assistance in each year, forty: thus giving a proportion of one in 175, approaching nearly to the average number of cases that required like assis-

tance in the Dublin Lying-in Hospital, during the time I held an official situation in that institution. Camper's paper was published in 1774. Dr. Bland of London was the next publisher on what I may call obstetric statistics; my paper first appeared in 1808, and though, as appears from Dr. Churchill's researches, many have since contributed facts to this branch, the three individuals above alluded to have priority in this field of investigation.

The mortality neither of parent nor child was remarkable at Amsterdam, as appears by these returns; in truth, we may allow the Dutch to be too shrewd a people to pay men for exercising a branch of an art which was found destructive to human life.

To fulfil what I set out with undertaking, it is now necessary, that I attempt an explanation of the Dutch jargon, as Camper calls it, *de bengelstant ni de nok.* For this I am indebted to an eminent linguist of this city, Mr. Abelthauser. *Bengelstant* must imply a cant name for the vectis of Roonhuysen: it is a compound word signifying both stick and pole, and by some kind of mystical meaning, was applied to the instrument delivered to the purchaser of the secret; *ni de nok,* without doing much violence to language, may be understood below the neck. The instructions given to the initiated may be thus rendered, *potentia agit in os occipitis,* apply your instrument to the occiput; *bengelstant ni de nok,* pass it towards the neck or base of that bone; which directions were given, because it was then supposed, that the head always passed through the pelvis without changing the direction of its diameters, and that the occiput, through the entire progress of labour, corresponded with the symphisis pubis. Baudelocque, who was much better acquainted with the mechanism of parturition than De Herbinaux or the Dutch practitioners of the earlier part of the eighteenth century, in his arguments against the use of the lever, proved that it could not act exactly in the manner they supposed. Correct in this part of his argument, and overlooking strong facts, he pushed his conclusion too far, and endeavoured to infer its

almost general inapplicability. In the endeavour to get the instrument below the neck, it always necessarily passed to one or other descending branch of the pubis, in consequence of the attempts made to get it near the base of the occiput. Towards the left branch, if the head were in the first or most common position, and towards the right if in the next most general way in which it cleared the female pelvis. The power of the instrument was then so great, acting as a lever of the first class, having one of the descending rami of the pubis as a fulcrum, and it moved the head in such a manner, and not contrary to the direction which it ought naturally to take in clearing the pelvic passage, that the pressure was not in general continued sufficiently long to injure the soft parts of the mother; the instrument being almost universally either to the left or right of the urethra.

I fear I have trespassed on the patience of my auditory, and, therefore, shall say nothing of the application of the extractor when the head is above the brim of the pelvis, as I have never succeeded in its use in such a case, and I believe in above thirty years' practice, not more than three or four individuals have come in my way, where there was reasonable grounds for using it. Had I been aware of Dr. Hamilton's opinions, which I acknowledge I ought to have been, as I read his Essay in the Medical Commentaries, when a student at Edinburgh, though I did not re-peruse it until I was preparing this paper, or of Mr. Gaiteskill's experience on this point, I would have tried more perseveringly, and with better hope of succeeding. Since I read Mr. Gaiteskill's Essay, one opportunity has occurred to me of adopting his suggestion of using the extractor, in the way I believe he was the first to recommend, after lessening the volume of the head, and I can report most favourably of this mode of applying that instrument. As the subject on which I have communicated my opinions on the present occasion, only makes a part of the more extensive one of the general management of difficult parturition, I have avoided in my present attempt the collateral branches which

might be introduced, such as the comparative value of the midwifery forceps, as compared with the obstetric extractor. Apprehensive that I have already trespassed too much on the time of this assembly, I shall, therefore, reserve for future opportunity the various points in obstetric practice closely connected with my present subject.