Retrospect of Some Doctrines in Obstetrics

by

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Introduction

In presenting this Essay to the Medical Faculty it will perhaps be necessary to make a few observations with regard to my choice of a subject. Out of the very wide and varied field of Medical science it has been my desire to seek a subject, which should prove beneficial in its study and useful in its results. The matter contained in the following pages has been the results of some thoughts, which occurred to me during my perusal of some works on Midwifery, by the writers of the past century. The rapid advance and mighty improvements, which this particular branch of the Medical art has made and undergone during

the last century are not excelled, if even equalled, by any other of the same science. No one casting but a hurried glance at the obstetric works of the older authors, can fail to be interested with the quaint and curious remarks contained in them. But their perusal affords far greater and more useful results than the mere interest excited by them. For no one can deny, that some of the greatest modern improvements in midwifery practice have been the result of mere modifications of the practice common one-hundred years ago. By comparing the views held by writers of the last century and earlier, on certain doctrines, with those entertained at the present day, we are able to deduce certain important practical conclusions & it is only by this method that we can fully comprehend the great advances, which Midwifery has made. The doctrines, which I have specially chosen for consideration in this present essay, are those of the greatest interest both in a practical and theoretical point of view, and some of which remain as yet unexplained. I have endeavoured to give the sentiments of the old writers, referred to in the course of the essay, in as clear a manner as possible, and have not hesitated in some parts to give my own views on the subject treated of.

To lay down in clear terms the opinions of the older writers on midwifery, on the few doctrines treated of in this essay; to give their theories and practice at length, and then to discuss them, indicating the advantages of our own in the present day, and thereby to estimate our advance and improvement in this department of medicine - are the objects of this essay; if these results have been attained, then its end is accomplished, and this essay is submitted with the strongest hope, that it may find kind indulgence in its criticism.

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Texture of Vagina

No fact nor phenomenon in Midisifery is so startling and yet so true as the wonderful power, possessed by the Vagina and external parts, of, in an instant, dilating themselves, from their usual small and rigid state, to allow of the passage of the childs head through them into the external world. Though this circumstance is of every day occurrence — though palpable to the eyes of every one, who practises the Obstetric art — yet, whether it be from its very frequency of occurrence, a perhaps, and what indeed is more probable, from its great difficulty of explanation, from its very sudden appearance and as sudden disappearance, and other obscurity, which attends it, it certainly has never received the attention of writers on midwifery, which it assuredly deserves. It cannot be that this wonderful power of distension or rather self-accommodation is beneath the notice of accoucheurs, for alas! how much danger and anxiety for both mother and child; how much difficulty and how much grief its absence brings with it.

Beside all this how many children are yearly lost, whose from the acquirement of the smallest increase of space, at the critical moment of birth, might have been saved; but more, how much suffering to the mother, though this now is happily alleviated by the aid of chloroform, is produced by a contracted and rigid vagina. Of all the causes of tedious labour, this is the most annoying as well as being one of the most dangerous. A great amount has been written upon its treatment but very little, if any, has been done in investigating the Mechanism by which the dilatation of the parts is effected. On the careful study of this phenomenon depends of course its proper treatment, and, when we consider its vital importance, of which it has been impressively said by Dr. Simpson, that "if we could but relax by any means these passages a little more, in cases requiring the least degree more of space we would in one single year save thousands of lives", we can form an idea of the great good to be derived from a study of this important question. For true it is, as has been proved by statistics, that, of mothers giving birth to boys, two die for every one, who gives birth to a girl. And why this? Simply because the boys head is larger by the thickness of a towel than the girls, and this eighth part of an inch costs many boys their lives. Surely a question of such vital importance will well repay an attentive consideration, and perhaps, we

1 Treatise on Midwifery by Sir. Fielding Ould

may be permitted to lay down in this essay our own opinions on the subject; but before so doing let us see what the accoucheurs of the last century knew about the structure and dilatability of the Vagina and external parts.

In the books of writers on Obstetrics of the last century, the structure of the Vagina is very lightly discussed; indeed they seem to have been quite contented with the simplest explanation, and although they frequently remark of its distensibility, still almost the whole of them number do not attempt any explanation of the mechanism, by which it is effected. Thus we find Ould in his work on Midwifery published in 1742 giving a somewhat singular description of its structure. Of course it must be borne in mind, that he had not the great advantage of the microscope, but had merely his eyes to guide him in his researches, and consequently, its structure would appear to him very complex in its nature. We find him calling it a Muscular Membranous canal but its further intimate structure seems to have puzzled him. He threw out the hint that, as the structure is very loose and can admit of enormous distension, it must be of some peculiar construction, something like that of a loose knit stocking. Doubtless so they would appear to the naked eyes of the observer with their fibres some longitudinal, and others transverse, intermingling with each other, and connected one with another by their cellular tissue, giving a pretty good idea of a

(1) Complete System of Midwifery 1751.

(2) Principles of Midwifery 1824.

(3) Theory & Practice of Midwifery

loosely knitted stocking. He seemed from this to infer that it was this peculiar loose structure, which was instrumental in allowing of relaxation to occur in the vaginal walls, so suddenly and to such a great extent. Burton,[1] who with a few years later than Fielding Ould, describes it as consisting of a lax substance made up of two coats, the internal membranous and much wrinkled: the external muscular, consisting of longitudinal fibres intermingled with bloodvessels. This is the opinion of the writers of the last century, who have dared to advance any - maintaining chiefly that the rugose condition of the internal or mucous membrane of the vagina, was the principal source of the dilatation.

Of late years and in our own day various opinions have been held chiefly as regards the structure of the vagina. Some authors, as Burns,[2] with the idea of Ould before them, describe it as consisting of a spongy cellular substance, endowed with some elasticity and having an admixture of unstriped muscular fibres. This spongy elastic structure must need the plexuses of bloodvessels, especially those of veins, which are so plentiful in this region, with their connective tissue uniting them together. This kind of tissue assuredly possesses the elastic property in a high degree. The description of the structure of the Vagina, as given by Dr. Churchill, in his work on Midwifery,[3] differs materially from that of Burns. He says "the tissue is dense, and of a pearly white colour in part resembling fibrous tissue". The mucous.

lining membrane of the canal being disposed of in the form of loose folds or rugæ, and these so arranged as to permit of great dilatation of the canal, besides a greatly increased discharge taking place on the commencement of a natural labour, lead me to think that it is not in connection with this lining membrane so much, as some think, that the mechanism of the dilatation of the passages depends. But it is not to be thought that important changes in this mucous membrane, immediately before the time of labour, as has been clearly shewn by Professor Goodsir, and which, results according to him in the rapid formation of cells from the free surface of the cervix uteri, have little to do with the dilatation of the passage, for it is very clear that, at the same time dilatation is taking place, this membrane changes its character also, but it is more probable that the real agents employed in the mechanism of dilatation are situated externally to this.

The muscular fibres must of necessity relax, but I donot think that they are the primary agents in the enlargement of the canal. Having said this much let me now in as few words as possible give a short account of what I consider the true mechanism of the process, with the agents concerned in it.

To understand properly with what we have to do, we will in the first place, glance, as briefly as possible, at the structure of the vagina and vulva; and first of the Vagina. —

1. Gr. Quains Anatomy Vol III p. 390 -

This is a membranous dilatable tube, connected loosely by areolar tissue to the neck of the bladder, rectum, and levator ani muscle. The posterior aspect of its upper fourth receives a covering from the peritoneum. The tube itself in structure consists of two layers. The internal or mucous has ridges extending along its anterior and posterior walls - columns of vagina - and, from these columns dentated transverse ridges or rugæ extend, at right angles to them. The external layer is a dense pale red, highly dilatable, and vascular areolar tissue, adhering closely above to the tissue of the cervix; and round the tube we find a layer of loose erectile tissue, which is most marked at the lower part. At the lower end muscular fibres occur, forming the Sphincter Vaginæ muscle. Of the general anatomy of the vulva I will say nothing, but only consider the structure of the parts more immediately connected with parturition. On dissecting the external parts we are astonished to find such a large amount of vascularity, which is shewn by the very numerous supply of blood vessels venous plexuses and erectile tissue. Thus we find two large leech-shaped masses, a perfect network of veins, inclosed in a fibrous membrane, lying immediately below the symphysis pubis, surrounding the opening of the canal, pointed at their upper extremity rounded below. These so called "bulbi vestibuli" are suspended to the crura of the clitoris, and some

of the pubis, and are covered externally by the fibres of the constrictor vaginae and internally lined by mucous membrane. Beside this, the layer of loose erectile tissue surrounding the vagina is continuous with these "bulbi vestibuli" by means of large veins, and in fact the tube with its outlet is completely surrounded by masses of erectile tissue formed of these venous sinuses. All these erectile tissues receive branches from the internal pudic artery. The veins of the bulbi vestibuli pass back and these plexuses surround the vagina and communicate with the obturator veins. The labia themselves consist of fat, vessels, nerves and glands, with involuntary muscular tissue. Thus we see that the vagina and vulva are completely surrounded by erectile tissue, and the dilatation & contraction of the tube must be modified by its presence. Now what is the function of this so-called erectile tissue? Seeing it is composed principally of bloodvessels, intimately interwoven with nervous filaments; that it is in its ordinary state soft flaccid and spongy; but under a stimulus, either directly applied to part, or acting through the medium of the sensorium, it admits a greater quantity of blood into it, than is necessary for its nutrition, entering at the same time into a state of turgescence, becoming when it is in quantity as in nymphae perfectly rigid, we must come to the conclusion, that this particular variety of tissue,

confined as it is to certain regions of the body, must have some particular function to perform. Be this as it may, it is very evident that the great influx of blood into this tissue, producing the highest state of turgescence, must at the same time produce a great change in the relation of parts among which it lies. Let us take the corpora cavernosa penis for example; when this structure becomes turgid with blood - by the resisting force of the investing fascia a state of absolute rigidity is produced. So likewise may be the case with those large masses of erectile tissue, which form the greater part of the labia; when blood is thrown into them they must undergo some change in their size and position. Being crescent shaped, they, whenever any stimulus applied to them renders them more turgid, become more bent - that is the extremities of the crescents approach each other - producing a state of comparative rigidity in parts. Now since these venous plexuses exercise so great an influence on the relative positions of the neighbouring structures, we think that structures of this nature surrounding a canal must exercise considerable power over its enlargement or diminution in diameter. For, if well gorged with blood under any stimulus, then, by the increase in size, which these structures undergo in these circumstances from the full distension of the elastic constituents of their fibrous coverings, they must reduce the diameter of the tube. Now

let us return to the Vagina and External parts. Here is a canal, surrounded, as we have already seen at its outer extremity by large masses or plexuses of erectile tissue, and, along the whole of its course, by a layer of the same structure, and this tissue in the usual quiet state of the parts only containing within it sufficient blood for its nutrition, it must be evident that, if under any circumstance, this tissue could be deprived of that blood also, by its collapsing and consequent yielding in space, it must in that act retract, along with it, the lax muscular fibres and the still more lax mucous membrane, and so enlarge the diameter of the tube, as well as at the same moment rendering it flaccid. For it is convincing to any one, who will give his attention for one moment to this subject that, if by some power, these tissues be deprived of their blood or contents, and consequently occupying less space, they must, in their change of position, drag, as it were, or carry along with them, the tissues with which they are intimately connected. And, which do they drag? Necessarily the most moveable and relaxed viz: the mucous membrane. Consequently, by this decrease in size and consequent retraction, as also by the absence of, as it were, the structure, which forms the resisting wall (for what could form a more resisting structure, than this same erectile tissue, thoroughly engorged with blood?) to the

§ On the Anatomy of the Sympathetic system of Nerves. (Thesis presented to the Medical Faculty of Edin: Univ: 1859)

mucous membrane, in the quiet unexcited state of parts, advantage is taken of the condition of the mucous membrane produced at that time by the increased formation of cells on its free surface, and which has been so well described by Prof. Goodsir, its vessels are distended, the whole canal is greatly increased in diameter and is at the same time rendered moist. But then it may be justly asked, how can the blood be at one time as it were determined to these erectile tissues, and at another, these same tissues be deprived of the small amount of blood sufficient for their nutrition? Well, it must be confessed that, up to a very recent period, we were very much in the dark as regards the power, which presides over blood vessels, and their distribution of their contents. Why, one should grow pale on hearing some dreadful news or why on the other hand his cheeks should be suffused with a rosy blush, when his sense of honour has been doubted, events, generally the work of an instant, were circumstances altogether inexplicable till within a very recent period. It is true that these phenomena were vaguely attributed to some action of the Nervous system, but further than that no one attempted to go. But of late years the numerous experiments of Brown Sequard, Bernard, Dupuy, Petit and Rorie, with a host of others have gone far

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to settle for ever the point, for their experiments have proved that we have to regard the Sympathetic System of Nerves as the great agent, which presides over over the bloodvessels and the distribution of their contents, in reference to nutrition. Though these experiments were undertaken to discover the agent, which governed the contraction and dilatation of the capillaries especially, almost all of these experimenters hint that probably the function possessed by the Sympathetic system in regulating the amount of blood to any part of the economy, extends to these erectile tissues. Such being the case, can we detect the presence of sympathetic filaments distributed over these plexuses? We can and not only do these filaments exist but the dissections of the best anatomists of the day have led them to believe, that they are distributed in unusually great quantity to these plexuses, and hence naturally we may infer, it must play an important part in connection with the nutrition and function of the organs of which the tissue form a part. It is probable then that the same effects produced by the Sympathetic in other parts of the body, in relation to the fullness a total emptiness of the bloodvessels of the part, are repeated in these large plexuses surrounding the vagina. That while galvanism or like stimulus

produced paleness of the part from the abstraction of its blood by means of the vasomotor nerves, distributed in it that, a like stimulus, whatever that may be, whether the presence of the childs head in the upper extremity of the canal or what is still more probable the pressure caused by the childs head, as it lies in the cavity of the pelvis at the end of the first stage of labour, preying on the great hypogastric plexus, from which the nerves distributed to these plexuses proceed, acts on the sympathetic, that an influence is generated and distributed by the branches of that trunk, which are distributed to these particular plexuses depriving them of their contained blood and by their consequent collapse accompanied by that of the muscular tissue and very much relaxed a moist mucous membrane and so accomplishing the dilatation of this canal, so necessary for the safe transit of the child. True it is, that the sympathetic, as previously stated, can regulate the quantity of blood in a part and it seems more probable than ever that the same function is exercised here. For we cannot for one moment entertain the idea, that Nature could have left the safe transit of the infant, to be ensured by the mere dilatation of the passages by means of its head alone, efficient though that be, she has taken the

wise precaution of superadding this most ingenious piece of mechanism and by this means she, at this most critical period of human existence, prepares the way for the entrance, into this wide, wide world, of a statesman perchance, or it may be, a warrior or a poet. If by any means, which art and skill has yet to divine, if by any medicine still unknown, we be ever able to produce this action in those unfortunate cases where it is absent, the good we will be able to afford to the community at large, and the lives we will speedily save will fully compensate for any little trouble it may have entailed on our part. These must be the results of experience and to speculate in the least degree upon them here, would be premature and would only interfere with work, which could be accomplished we are certain, in a much more satisfactory manner by hands, much more skillful than ours. Let what we have above stated be taken to express our views upon this important subject, and, as we have already occupied a greater part of this essay with it, than we originally intended, let us without further preface proceed to the second question, which I propose to discuss and which is: ——

The Uterus.

I <u>The Glands at its Neck.</u> — Various surmises were prevalent, among the older accoucheurs, as to the probable use or function of these glands, which are present in great number on the surface of the Cervix uteri. The most remarkable of these theories concerning their function, and which we find repeated again and again by subsequent writers, is that advanced by Fielding Ould, who rejected the opinion previously espoused viz: that these glands by their secretion sealed up the orifice of the matrix. We joined him saying the following reasons, which to him appear conclusive, that this cannot be their function and 1st That so moist a liquid as so moist a part could not be consistent enough to effect a closure. 2d That the shape of the orifice is so small at the entrance that the cavity does not require a plug 3d That these glands are placed here because this is the only place for them, as the bottom of the womb is taken up by the Placenta. Now in considering these objections let us first ask ourselves is it a fact that these glands do secrete so thin and watery fluid as they are here alleged to do. It is true, that in the unimpregnated state of the womb,

their secretion is watery to a great extent, and sometimes very profuse indeed, but it is now well known that, whenever impregnation takes place the "os internum" is immediately sealed up, as it were, by a firm plug of mucus secreted by these same glands, which must obviously be for stopping up completely the communication between the uterus and external parts. And further we know that, when parturition is about to occur one of the first symptoms of its approach is the discharge of this plug, which, with the altered, hypertrophied, mucous membrane of the uterus or as it is called "decidua vera", completely blocks up the entrance to the cavity of the uterus, and is familiar to nurses as the "show". As we shall see afterwards, however, another and quite different function has by some modern writers been ascribed to this plug of mucous, but whatever further functions it may possess we speedily know, that by its presence the orifice of the uterus is shut up during the nine months of uterine gestation. Though the "os tincae" is of small size and peculiar shape, and though its lips may be pretty closely approximated, still it appears impossible that this closure can be complete and the addition of the plug, makes the closure more certain. Besides being placed here, these glands might have occupied the lower part

of the body of the uterus, but then this would have interfered with the immediate function of the organ, and doubtless their true position at the cervix has led to the idea that their proper function is to close the "os" during uterogestation and to lubricate the passages in time of labour. Now Ould assigns several functions to these glands. He hints that the secretion may be for the ovum to swim in - a very plausible theory but exceedingly improbable. That it can in any way forward the growth of the roots (villi of chorion) which are to insinuate themselves into the mouths of the Uterine bloodvessels is altogether out of the question, as the mucous secretion is in the great majority of cases far removed from the placenta, and secondly as it contains no nutrient material whatever. His contemporary Burton held much the same views. In our own day Dr. Smith, who has made several investigations into the structure of the mucous membrane of the cervix, calculates that in a virgin cervix uteri there can be no less than 10,000 follicles in fact an open gland- The presence of such a number shews that they perform an important function, whatever that may be. It is to be observed that Dr. Tyler Smith assigns to them another function viz: that their secretion is for

the purpose of affording a suitable medium for the passage of the spermatozoa into the uterine cavity. It is very probable that this is its primary function.

II Mode of Dilatation of Uterus in Pregnancy.

As in the last few years so a hundred years ago great discussions were occupying the minds of accoucheurs as to the manner in which the womb enlarged during pregnancy. The extraordinary development which the womb undergoes in the short space of nine months caused the ancient writers to regard it as the most extraordinary part of the human frame.

Let us now consider the theory advanced by the writers of the last century to account for the uniform dilatation of the uterus. I speak of the theory as only one, as far as I am aware of, ever brought to light, was so thoroughly condemned as this particular one was. It was first advanced by that great promulgator of doctrines Fielding Ould in his work on Midwifery. Upon the consideration that the unimpregnated uterus is compact & of a whitish colour that, when enlarging, it becomes more & more spongy & also redder; that the blood vessels increase & the veins have no valves; that the menses, being obstructed during the time of uterogestation,

the Doctors cannot require such a large amount of blood, and, lastly, from the circumstance of the uterus collapsing after parturition from loss of blood he frames his theory concerning the dilatation of the uterus. It is this: That the womb is made up of infinite convolutions of small vessels, which contain a most subtle lymph, forced into them by the arteries; just enough to preserve their cavities open and that, when conception occurs, instead of breaking forth in the usual monthly discharge, the blood insinuates itself into these vessels, inflating them and unravelling their convolutions from being curved to perfectly straight vessels and so enlarging the capacity of the uterus without diminishing the thickness of its substance".

When we look at the uterus after conception has occurred, we observe great congestion of the blood vessels, the vessels enlarging their calibes and becoming of great size. Instead of forming almost straight lines, from their great increase in size, they present the appearance of an intricate network on the surface of the organ and in the substance of its walls. It is stated, that the coats of the blood vessels become thickened at this period, and hence we find them large and tortuous in women, who have borne many children. We find

* Ramsbotharns Obstetric Medicine –

† Cases in Midwifery p. 80. –

it stated in one work on midwifery that the minute tortuous vessels, which can scarcely take in the finest injection in the unimpregnated state, suddenly take upon themselves a process of growth when conception occurs*. Smellie in his work published in 1779 states that, when the uterus stretches in time of gestation, the vessels are proportionately dilated by the increase of the fluid they contain, so that at the time of delivery some of them are capacious enough to admit the end of the little finger†. We find, when the uterus commences to enlarge, that the fibres loosen and separate from each other, leaving spaces to be filled by the enlarging blood-vessels, especially the veins, which at this time form sinuses, - and which separation of fibres, although it accounts for the certain amount of sponginess, which the organ presents, and may permit of distension to accommodate the growing foetus, fails to account for the uniform thickness preserved throughout its dilatation. So that, while we allow that the sudden congestion produced in the vessels of the uterus by a so called determination of blood to the organ, and which is caused by the sudden fit of growth in the part may to some extent increase it in bulk, we may safely infer that the enlargement of the uterus

[1] Philosophical Transactions 1850 part II p. 519 -

is not due to the distension & straightening of the bloodvessels, but that certain changes in the tissue of the organ are the immediate and proper causes of its uniform enlargement. Some indeed have assumed that new matter somehow or other is added to the walls of the organ during gestation and becomes absorbed or is by some means removed after parturition. The proof adduced by the supporters of this doctrine is the very great difference in weight between the virgin uterus and the same organ after parturition. That the uterus after firm contraction at the time of delivery, should then weigh more than the virgin uterus, is, I think, fully accounted for by the following and, we are inclined to believe, true explanation of the increased size of the impregnated uterus. It is that first communicated to the profession by Mr. Rainey, who thinks that the increase in volume of the fusiform nucleated fibres, which, according to him, takes place in pregnancy, is quite sufficient to account for the amount of enlargement which the organ then undergoes. He thinks that the unimpregnated uterus consists of an assemblage of embryonic nucleated fibres inactive and which remain so until they receive the stimulus imparted to them by the ovum, when immediately they

† Heschl on Conduct of Human Uterus after Delivery: also Barlow in Edins. Monthly Journal Aug. 1852 p. 127 -

are developed, so that, when the foetus is perfectly developed, they are also perfect to effect its expulsion. This very sudden development of these fibres and consequent sudden increase in size of the organ which they compose, is quite peculiar to the uterus. Harvey compares it to the sudden swelling of a part, stung by an insect, but it is slower and yet much greater in fact quite peculiar to the uterus. It is also well known now that these fibres inversely undergo a species of absorption called fatty degeneration after parturition.† Prof. Retzius has chiefly described this. †

But in connection with this change, which takes place in the uterine walls a more important and practical question arises, do the walls of the organ become thicker or thinner? This question has been variously answered by different writers. Some said that they were thicker, but probably they had examined the uteri of women newly delivered and when the uteri were as yet in full contraction. Others among whom we find Mauriceau, who had made their observations in the uteri of women, who had died of hemorrhage, found the walls very thin, and were consequently led into the belief that this was always the case. But from the careful examinations and dissections

Of Meckel we now have abundant evidence to shew that, during the first three months the walls become thicker, that after this period, it gradually becomes thinner in proportion and at the eighth month they are about as thin as those of the virgin uterus. Although the walls may be generally said to be uniformly thickened still at some places they are more markedly thinner than at others:- for instance opposite the promontory of the sacrum and at the cervix; while at the fundus they are slightly thicker. The consistence of the walls varies in different persons. We find it more solid at fundus up to the third month:- in fact it is said, that the increase in the size of the uterus commences in the fundus; and this has been explained by Dr. Meade of America as being occasioned by the placenta causing an increased development in the part, to which and near which it is attached, until the increasing thickness spreads over the whole organ:- it then gets more & more consistent and acquires the feeling of a fine caoutchouc bag, a bottle.

Thus then, seeing that it is the change in the muscular tissue of the organ that is the true cause of the development of it during gestation, the rather ingenious, and it must be confessed suitable theory ofOuld

must fall to the ground. It is only one of those beautiful, mechanical, theories, which are ever ready to be formed by an inventive mind, which engage attention for a little and are then cast aside to make room for one of a more modern stamp.

One thing before finishing the consideration of this theory I wish to notice and which is that he states that the fluid, which forms the usual monthly discharge, instead of so appearing during pregnancy, dilates the minute tortuous arteries of the uterus, and so increases its capacity. In his mind and in those of his contemporaries the catamenial discharge was thought to be occasioned by the simple infiltration of blood from the interior of the uterus into its cavity. This being the case it was very easy to suppose that, when the cavity of the uterus was occupied, the blood would insinuate itself between the tunics of the walls of the organ and, by some means, reaching the minute arteries, would as he expresses it "so inflate them and from curved make them straight and so enlarge the capacity of the organ". However the disappearance of the menses during conception admits of a very different explanation. We now know that this discharge is in fact a secretion from the lining membrane of the uterus and that this function

has in view the object, as it were, of preparing the uterus for impregnation. When impregnation does occur the uterus from being a secreting organ takes on a series of very different functions indeed viz; the nutrition, protection, and expulsion of the foetus. Sometimes however we know that Menstruation does continue during pregnancy, but this must be considered as a morbid symptom; very frequently the discharge from the glands at the cervix has been mistaken for it especially in those cases where that discharge has become very profuse.

From the consideration of this subject let us pass to that of one no less interesting both in a historical and practical point of view — viz:—

The Attitude of Foetus in Utero.

Of the posture assumed, during the period of uterogestation, by the foetus, nothing definite, until a very recent period indeed was known. Towards the end of the sixteenth & commencement of seventeenth century Mauriceau gave it out as his opinion that for the latter months of pregnancy the head of the foetus was the lowest part. Baudelocque stated it as his opinion that the head was the lowest part of the foetus in utero from the very first months of uterogestation. Ins

fact, since the true mechanism of labour was unknown to them, their conclusions, with regard to anything in connection with it, were very vague & generally erroneous. Most of the older authors believed that the head of the child was the lowest part, upon for the whole period, during the greater part of intra-gestation. That gravitation had the principal power in effecting this position they very naturally inferred. But not satisfied with the alleged position and cause for its adoption, which had been offered by previous writers, Ould, in the work before referred to, started a new theory as to the attitude of the foetus in utero and the mechanism of parturition, quite original. To describe it in his own words he says "the head of the child hangs down with its face on its knees, which are as high as the upper part of the breast, and its heels close to the buttock and the two arms embracing its legs, and having its face towards the mothers belly." This he supposed that the foetus sat with head uppermost and face directed forward probably on the promontory of the sacrum. No doubt he had the further idea in view, that, since the promontory of sacrum served as a seat, the crests of the ilia were supports for its elbows, and the coccyx a stool for its heels. For assigning this posture, Ould must have had

some reasons for so doing, and still we must confess we are at a loss to suggest any whatever. How such an idea entered his mind it is impossible to conceive, for even a very superficial examination of the abdomen of a pregnant female might have convinced him that this could not be the actual position. The characteristic globular contour would have been greatly diminished, and however comfortable the position might have been for the foetus, there would, most certainly have resulted a greater mortality to the mother. Besides, as we shall see in a little, he tells us that the child does not move out of this position until labour sets in, and consequently any examination immediately before labour commenced would fail to detect the head, a result which his practical experience must have convinced him was far from being the actual state of matters - But then we must bear in mind that the mechanism of parturition was comparatively unknown, in fact the idea which we find conveyed in the writings of accoucheurs of the last century was to this effect, that the foetal head entered the brim of the pelvis as it cleared the outlet viz, in the conjugate, or antero posterior diameter; and the author of the theory now under consideration was undoubtedly the first to differ from this view - Of course in those days

unless the childs head was well down in the pelvis and could be reached with the finger, they were unable to say how, or in what diameter, it was presenting and consequently they could not ascertain in what diameter it presented at the brim and had greater difficulty in altering and rectifying mal positions, when the head was well down in the pelvis, than they would have experienced had its position at the brim been known. Hence the great value of our stethescopes by means of which combined with external examination, we can tell almost to a certainty the exact position taken up by the head at the brim and can rectify it if necessary. One circumstance I think should have convinced him of his error and that is the comparative rarity of breech presentations, a circumstance, which could never have occurred had the posture, which he assigns to the foetus, been the true one for what could have been more probable or likely to occur, than that the uterus, instead of turning the child, a process necessary as we shall hereafter see for the safe expulsion of the child, should have, by its strong contractions, sent the breech down first and that the child would have in the great majority of cases so presented. However let us continue the mechanism of parturition according to his view. He next observes "a change in the position

of the foetus does not happen until after the first labour pains and then the first and greatest (?) efforts for the expulsion of the child are in the bottom of the womb, which presses directly on the back of its head and must immediately turn it downwards, with its head towards the vagina and face towards the mothers back". Thus in fact the foetus to use the happy expression of Dr. Simpson performs a summerset. It will now be observed that Dld accounts for the head being lowest without the aid of gravity. In fact he denies that gravity can have any effect at all because "every considering person must be convinced that the head is really larger in a double proportion with regard to the body, at its first formation than at the last months". In considering this argument against gravity let us look into what we now know of the progress of affairs:
At full time the foetus, flexed on itself, is of an ovoid form fitting exactly into the uterus, which presents the same form. But during the first three or four months of uterus gestation when the uterus has not commenced to take on its pyriform shape the foetus can assume any attitude, moves freely about, generally lying where it is best protected from injury. But whenever the uterus becomes of an ovoid form the foetus assumes it likewise, and its longitudinal axis fits into the corresponding one of uterus. This generally

takes place about the sixth month and from that time to the end of intra uterine life, the foetus walks "bottom uppermost." — We must remember that the older authors thought that the child was suspended by the cord, that gravity then came into play and the head dropt lowest. So that Ould's argument that gravity can have little to do with the posture of the child, because it doesn't take effect during the first two or three months, - goes for nothing, as we now know that it matters little what position the child assumes during that time and that it is only when the uterus has assumed its pyriform shape that the child should be in the best position. But of course in the position, which Ould ascribes to the child, gravity would have less effect and besides, as he remarks, the fundus of the womb contracting first would push the head down more effectually over the os. But he was decidedly at fault in saying, that gravity had little to do with the placing of the child. Indeed some of our modern accoucheurs believe that it is the chief cause why the head presents in 96 out of every 100 cases. But though gravity has been held to be such an important agent, we must not think it is the primary cause, for, independently of gravity altogether, we can see at least one reason why the head should be lowest, and that is for its safety -

because when it is expelled then one pain will expel the rest of the body without danger to the cord; and besides, Dubois has assigned many reasons for gravity not being the primary cause. The first reason which this writer quotes is, that the mothers body is not always vertical so as to bring gravity into effect. Some mothers afflicted with diseased spines recline during the whole time of their pregnancy, still in these cases we have the head presenting in the usual proportion. He also pointed out that the foetus was not suspended by cord, and that it is not attached to fundus. Dubois also shewed that in hydrocephalic children the breech generally presents, a statement which at first sight seems to coincide with Cales view, but it must be remembered, that here the head increases suddenly in bulk and cannot accommodate itself to the uterus afterwards changing its form, whereas, though the head, in the healthy child may be larger in proportion, during the first three or four months, to the body than it is subsequently, still the uterus at that time as aforesaid is round and the head can turn.

But then comes the question how, by what mechanism does the foetus take up its position in utero? And first in considering this question, we must premise that the attitude assumed is intimately connected with

1 Dubois. Memoires de L'Academie Royale de Medicine.

* Ramsbotham

the life of the child. Lying as it does in the midst of fluid the slightest movement must cause a change in its attitude, hence some authors have attributed the particular position assumed to slight muscular action in its parts. But if this is the case then comes the question does mind exist in the foetus? This question has been frequently discussed and we have some authors affirming that it has mind for this & other purposes and have stated that it has sensation in utero as it has in extra uterine life. But, I think, we may conclude that although the act be vital still it requires much additional proof to confirm the statement, that it is voluntary. We may here remark, that one modern author declares that since the child is placed by nature, and since it is the rule that the head comes first, and not the feet, that therefore we ought not to inquire into it.* Few can approve of this remark for every one knows, that if we can determine the position, which the child has assumed before labour, the good we can do perhaps in one case slightly altering it or in another inducing premature labour, is incalculably great. In short our ability to diagnose the childs position, before labour by means of the Stethescope, constitutes one of the greatest advancements, which midwifery has of late years made.

(1) Prof. Simpson (Lect. 1861-2.)

That the foetus takes up its position by means of excito-motory or reflex actions and movements entirely independent of mind, is now generally admitted. The stimuli exciting these reflex movements are mostly if not all cutaneous. Supposing its foot comes in contact with the uterine wall then the reflex action takes place, the foot is drawn up & the attitude changed. Of course the projecting parts of child are those most susceptible of receiving stimuli. It depends essentially on cutaneous irritation as muscular will not produce it This is the true explanation of these movements.(1)

Let us again take up his description (Oulds) of parturition. The foetus had its face towards the back of mother; but he disagrees at this point with all previous authors, who had described the child with its face to sacrum, so that, when she lies on her back, "it seems to creep into the world on its hands & feet". He maintains we have the head and not the face on the sacrum, and that the face is turned to either side. so as to leave the chin on one of the shoulders. He is the first of authors to point out this important fact, for as I have previously stated, they believed the head to enter and left the pelvis - in the antero posterior diameter, a diameter in which in the great majority of cases it would be im-

* ~~Ramsbottom~~

-possible from want of space, to enter, and it would invariably slip into those on either side of it, which are longer & longer than it. Mauriceau from one describes it as entering in the antero posterior diameter. We are inclined to believe that the mistaken notion of the anterior fontanelle being the usual presenting part had something to do with the idea that the antero-posterior diameter was the one, in which the head entered. The proof, which he adduces to prove that the face is turned to either side so as to have the chin directly on one of the shoulders appears conclusive. First he says the head from the frontal to the occipital bone is oblong, so also is the body arising that oblong diameter of the head & that the pelvis is elliptical transversely. From these facts he infers that, if the child presented with face to sacrum, the ovoid of the head would coop that of the pelvis and if the pelvis would permit its exit then it (the pelvis) would require to upturn another form to allow the shoulders to pass. But, if the chin is over one shoulder, then head & shoulders are in a parallel line and fit the diameter of pelvis. This observation, probably the result of practical experience, is singular in as much as it follows the very extraordinary attitude assigned to the foetus, & has only been proved to be perfectly correct by later examination. It is needless to say that from this point, Naegele

+ Burtons Midwifery Page 200 -

has wrought out the beautiful mechanism of parturition. But it must not be supposed that Ould was altogether correct in his description of this part of parturition. For he imagines that the head consequently entered the brim in the transverse diameter. What led him to this conclusion was probably a superficial examination of the bony pelvis, in which undoubtedly that diameter is the longest. But then he should have remembered that, in the natural state of affairs, large muscles greatly diminish the extent of this diameter and render it impossible for the head to enter, except indeed in a few cases where, from disease of the bones of the pelvis the ~~conjugate~~ transverse diameter is unusually long: tho' this condition may exist without disease. Ould in his discovery & description of the posture of the child was followed closely by subsequent writers, although Smellie attributes the head being the lowest part, to the fact "that the head drops down lowest when it falls into uterus," and says that this is the cause of the position: still however he was closely followed and especially by Burton who wrote a few years after him. This author not content with accurately following Ould's description of the posture has actually figured the position and its change, by two diagrams in his work; the first shewing the foetus in a sitting attitude, before commencing the perilous journey, allotted to him by Ould.

Sitting in this comfortable posture, with head slightly drooping, heels raised up, as if resting on a stool; his forearms resting on his raised thighs, he seems, at this interval before birth, to foreshadow that same condition, which will be renewed for a few years before his death, when, with perhaps fewer hairs on his head, and those few of a silvery hue, with his feet on a stool he, an old man, shall sit in his old arm chair by his own fireside. But glancing at the second drawing we see that a great change has taken place; the playful frolicksome foetus seems already to have commenced those pranks, which are to be more extensively indulged in, during the first few years of his life. For he has performed the alleged summerset and now awaits the efforts of nature to carry him into a new world ..... Though Burton agreed with Ould in the manner, by which the foetus changed its position at the commencement of labour, still he differed as to the diameter in which it enters. He alleges that the head being placed at first firmly on the chest it cannot by any means turn so as to be over one shoulder declaring that the uterus cannot do it. He also states that he has observed that when the head enters with the face turned to either side (to either of the Sacralia) the labour was always dangerous. But he evidently here

(a.) Cases in Midwifery -

(b.) Traite des Accouchemens

(c.) Baudelocque System of Midwifery (translated)

refers to the position of the head at the outlet, and not at the brim as he afterwards observes that as the diameter of the head is longer than that of shoulders, the dilatation made by the head will be more than sufficient to give passage to the shoulders. Smellie[a] in 1752 refuted Ould's argument, that the neck was twisted but agreed with him as to the diameter, in which the head entered the brim. Several writers in France & Germany agreed with Fielding Ould and among those of the first named country were Delemaps in 1770[b] and of the latter Schmidt and Mampe. But so early as 1759 a writer named Bergen stated it to be his opinion that the head entered the brim in one of the so called oblique diameters. The year following that, in which Delemye wrote, (1771) Saxtorph of Copenhagen & Solayres de Renhac of Montpellier reintroduced Bergens opinion and in their opinion Baudelocque[c] concurred. It remained for Naegele of this present century to describe in his essay On the mechanism of Parturition published in 1818 the true process & mechanism of parturition Whatever ridicule we in these days may be inclined to attach to the process described by Ould, should, we think, be greatly diminished by our consideration of the imperfect means of diagnosis, under which he laboured, the mistakes notwith

of his day, and the extreme difficulty attending such investigations. If he has in one point advanced the art & science of midwifery, if, by his quaint observations, he has in any way improved on his predecessors views, he is assuredly worthy of our thanks.

For it is only on a clear knowledge of the proper mechanism of natural labour, by knowing the different axes of the pelvic brim, cavity, and outlet and the adaptation of the different diameters of the childs head to them, that we can ever attempt to be of service in difficult cases, when something out of the ordinary course of the labour has happened. The imperfect knowledge of the process, indeed the utter ignorance of it altogether, fully accounts for the many kinds and instances of needless interference, to which the older accoucheurs had recourse. All the improvements of the present day in our treatment of difficult cases of labour, may be safely ascribed to our better knowledge of the mechanism by which it is effected.

And now we have arrived at the last part of this essay, the most important of all in our point, and in which I propose discussing shortly the subject of <u>Podalic Version</u>.

Podalic Version

In what cases should this operation be had recourse to? This is a question, which has at various times excited attention and discussion among writers on the obstetric art. Nothing strikes one reading the earlier works on midwifery, more forcibly, than the very prevalent adoption of this operation, in these times. The slightest complication, the slightest difficulty or obstruction and the slightest delay, circumstances, which at the present time, would not certainly call for such active interference, then seemed to justify them in performing this operation. In our own day its substitution for more grave and destructive operations has made quite a revolution in our practice. The saving of pain and danger to mother, and of life to a very great number of children has been the result of its more general adoption.

And let us in the first place consider the cases, in which the older authors recommended and practised turning of the child. With some indeed it was the

a System of Midwifery -

favourite operation in almost every case; with others it had a more limited application. Let us take Chapman[a] who wrote in 1733 as an example of the former class. The instructions which he lays down are very short, in fact recommending its adoption in every case. Thus he says turning must be had recourse to 1st. If the face of the child is towards the pubes. 2d. Whatever way the face lies, if the head does not pass fully down by the pains, but presses upon any part. 3d. If the face looks any other way than towards the sacrum 4th. If the labour be found any cause tedious, even though the head be in the vagina: it being, as he remarks, better to do this, than put the labour on the fort of nature, being more easy and eligible than having a hard and tedious labour, with the hazard of having at last to have recourse to this proceeding.. He concludes his observations on this head with the following remark. "Thus, I say, a child presenting with its head is often to be turned and delivered with its feet first, and always turned except when it presents with the feet and Nature has saved the artist the trouble and the Mother the pain"

Again, we find Ould recommending its adoption in presentations of the face, occiput, cross births,

breech presentations, presentations of head with
funis, of the knees and in cases requiring craniotomy.
He also, like Chapeman, recommends its practice
in head presentations; but, that podalic version should
be had recourse to in these head cases, especially where
the head is well down (as is recommended by Chap-
-man) is a proceeding, as dangerous in its consequences
as it is unnecessary. For in these head cases (natural)
the round form of the head dilates perhaps more
slowly, but much more efficiently the passages, for
when it (head) has been expelled a single pain will
expel the body, without any danger to the child from
compression of the cord & any other complications.
But it is otherwise in foot presentations, where the
dilatation goes gradually on, the pelvis passes, the
cord gets compressed against the thorax, then the
shoulders pass and lastly the head and, if the cord
be not at its side, it runs a great risk of compression
and consequent death to the child. Thus it is that
so many children presenting with the feet die 1-3.
But if the head is far down near the outlet and
obstructed by the rigidity of the vagina and external
parts, when it cannot of itself pass is it possible to
introduce the hand and search for the feet?-

Mme Lachapelle. Pratique des Accouchemens 1825

The safest and in fact the only method of procedure in such a state of matters would be to wait for and assist the dilatation of the parts, observing, whether it depended on congestion or on simple undilatability of the parts, or on their original malformation &c. and employ the treatment proper to each condition. Besides it would amount almost to an impossibility to push up the head against a uterus firmly contracted, and then to turn the child with the uterus strongly grasping it. The child by such a procedure would be placed in great danger, while the risk to the mother would be more than doubled.

In regard to face presentations, in which this operation is recommended to be performed by the old writers, let us first consider the mechanism of a case, in which the face presents either at brim or outlet. We find it to be simply this instead of the head being perfectly flexed on the chest, it here has become extended, and bent back, and consequently the side of the face presents at brim, or the face may only leave the chest during the progress of the labour and present at outlet.(a) The labour is very slow and requires more time than when the head presents but is quite safe to mother and child. It is slow for obvious reasons In the first place because the angular uneven surface of

(a) Midwifery 1685

of face does not act so well as a wedge to dilate the parts, as the round globular head does. Secondly, because the bones from their hardness and shape cannot by overlapping accommodate themselves so well to the shape of the passages. Thirdly, because evidently in this case the uterine power acts at a disadvantage; the head being thrown back a portion of its force is consequently expended in bending the head still further back, and so rather dragging than expelling the head. And, fourthly, the diameter of the presenting part is greater here than in the case of head. The chief causes of this presentation are too much liquor amnii, obliquity of uterus and the occiput hitching against the pubes. It was probable [redacted] the length of time occupied by the dilatation of the parts in these cases, which induced them to turn. But it occurred to Paul Portal (a) that such cases could be terminated with safe results by Nature alone, and every subsequent observation has fully confirmed the opinion of that writer. It would be in these cases that version would be an example of "meddlesome midwifery" as all that is required on our part is to exercise patience for in 19 out of 20 cases nature will finish the case without our aid. But occasionally an extraordinary tedious face case presents itself and we are constrained to do something, rather than

allow the mother to suffer from the great and increasing dangers of a long labour, and even then we never think of turning, for the slightest aid with the forceps, if properly applied, brings the case to a safe termination. But the forceps must be properly applied or failure is certain. The head must be extracted with the face towards the pubes, so that we must first turn it round. Of course, if it is beyond the reach of forceps or above the brim, or if any dangerous complications threaten, then there is nothing for it but version. But here and here only in face cases should version be practised.

When the Occiput presents, from the head being too much flexed on the sternum, the labour goes on rather slowly but by affording gentle support to the presenting part we can greatly assist its progress. Such presentations are very rare, only occuring in cases of large pelvis, and never require version.

Necessarily in presentation of the hand if the head be lying away from "os" then turning is warranted.

So also in Cross births the surest and indeed only treatment to save the child is Version (podalic).

Like wise the presentation of the hand with funis necessitates version of the child.

But let us now consider the question of version in breech

Oulds Midwifery page 113.

Burtons Midwifery page 196.

cases. Why did the old accouchems practice turning in these cases? For we find Ould laying it down as a general rule that "if the presentation of the breech be detected early we must not suffer the child to come into the world in that position, for though the labour may happen to be very successful and expeditious, when the pelvis is large and child small, yet this is but accidental for, though we may discover the passage to be large, yet we cannot judge of the childs size, therefore we should not put the matter to the hazard." Burton makes use of the same expression and adds that "it sometimes happens, though very rarely, that it may be brought forth in this position, if the child chance to be small and the pelvis large: but yet this is very accidental". In fact we find this to be the universal opinion of the Olden authors viz.; that turning was necessary in breech presentations. Then what are the dangers of a labour with the breech presenting? In the first place there is the danger to the child; for we find on consulting statistics, that one out of every four born with the breech presenting are lost. When the breech does not dilate the parts and canal so well as the head as it is more compressible than the latter. In consequence of the imperfect state of dilatation of the passages, the breech has to pass very slowly, and time must elapse before it can enter the

† Denman, Introduction to the Pract. of Midwifery

proper diameter of brim and outlet. The cord therefore runs a great risk of being compressed and asphyxia or pulmonary apoplexy result. In addition to this the head, from the imperfect dilatation has to pass slowly, and it requires time to suit itself to the proper diameter of brim, cavity, and outlet. Sloughing of the genital organs of the child sometimes occurs from the pressure to which they are subjected. In some cases there is considerable difficulty experienced in the extraction of the head.

These then, being the chief dangers of breech presentation is the substitution of the feet for the breech attended with less dangerous results? Looking at the statistics we find that about double the number of children are lost here than in breech viz: one in less than three children. The danger to the child arises from the same cause as it does in breech presentation viz: the undilated condition of the passages. The second stage is of unusual length and we now know, that in proportion to the duration of a labour so are the complications. The effects of the duration of the labour on its results &c. have been well worked out by Professor Simpson from printed tables, drawn up by Dr. Collins of the Dublin Hospital, and are well embodied in the following Propositions, 1st. The Maternal mortality, attend-

-ant,

upon parturition, increases in a ratio progressive with the increased duration of the labour. 2d. Infantile mortality, attendant upon parturition, increases in a ratio progressive with the increased duration of labour. 3d. The mortality to the infant and mother is tenfold greater in labour prolonged than in labours terminating within 24 hours, and the mortality to the mother and infant is fifty fold greater in labours prolonged beyond 36 hours than in labours terminating within the first 24 hours. 4th. The liability to febrile and inflammatory affections in the puerperal state increases, in proportion as the previous labour has been prolonged in its duration. 5th. Individual parturient and puerperal complications not only thus become more frequent as the labour becomes more prolonged, but in a similar ratio they also become more dangerous and fatal. 6th. The mother is more liable to suffer from diseases of the uterine system after long than after short labours. &c &c.

Keeping these conclusions in view, we can readily understand why the mortality to children should be so great in footling cases. Besides, as the breech in footling cases is less in size than in regular breech cases, owing to the extended state of the thighs, the parts are not so well prepared to allow the head to pass, and consequently delay occurs

causing compression, for a length of time, on the cord, and producing irritation of the parts - From these facts alone, excluding from consideration the dangers attendant on the operation of Version, we may draw the conclusion that by substituting in breech cases the feet for the breech, we do not by any means amend matters, if indeed we do not actually make matters worse, by our interference. For, we are certain, that if the pelvis be of normal dimensions, a fact, which in the majority of cases we can previously ascertain by measuring him with the hands, and the child of ordinary size, nature will, in the course of time, finish the labour, without any assistance whatever on our part, and that, although in a breech case the first part of the labour may be slow and tedious, the second is generally rapid and safe. For, why would we turn the child in a breech presentation, and bring down the feet? It is of course to render the labour less tedious and fatiguing to the mother, but by our facts we have been convinced, that here this result does not happen and therefore such practice would be more dangerous, than allowing the case to take its own time and way - 'Tis true that, the feet being down in footing presentations or when the child is turned & the feet and made to present, we have the entire control over the whole labour, but

we cannot agree with Dr Churchill, in as much as he recommends, by so pulling or not, with or without pains, to regulate the duration of the labour, for after the operation of turning it would be dangerous practice suddenly to withdraw (even were this possible) the body and hence remove the proper stimulus to the uterine contractions. Besides we can assist the labour materially in breech cases if we succeed for it by introducing a finger or blunt hook into the groin of the child, and thereby assist by exerting traction, although even this practice is not to be approved of unless it is absolutely necessary to shorten the labour from complications on part of mother or child &c. Thus we see that version in the case of breech presentations is out of place, and in fact, it is probable that it was adopted by our ancestors under the well intended but erroneous idea of so shortening the duration of the labour..

We now come to speak of the operation of version in cases of <u>Placenta praevia</u>.

In this most dangerous and fatal complication, — a complication more fatal to the unfortunate mother than cholera or yellow fever would be — a proper definite and clear idea of its proper treatment is desired by all accoucheurs. For as calculated by Prof. Simpson one in every 3 to 5 of the mothers perish in connection with

© Cases in Midwifery.

this complication. For a long period past the prevalent practice in cases where the placenta was found attached over "os" and hemorrhage occurring, if the passages permitted, was to introduce the hand, at once bring down the feet, and complete the delivery as fast as possible. If the passages should not admit of the introduction of the hand, then plugging was adopted, until the "os" was dilated sufficiently to permit of its entrance. This is the practice which was recommended by M. Levret in 1776. The hand was passed in the axis of the outlet, then the fingers were insinuated into "os" and passed between the placenta and cervix on the side, where we conceive the placenta is narrowest, until they reach the membranes, which they pierce and ultimately find the feet, which they bring down. By some practitioners as Smellie[a] the placenta was perforated but this was thought inferior to the former method, because, 1st Perforating a soft spongy mass like the placenta, attached in these cases only at the margin and, in some cases, with no resisting structure behind it, is indeed of itself a very difficult operation, besides being very dangerous from its occasioning internal hemorrhage. 2d That after the placenta is perforated by one finger, considerable time elapses before we can introduce the hand, to rupture the membranes and get at the feet,

* Daventer. "The Art of Midwifery Improved" 1715 p. 153.
† Elementa Artis Obstetricae 1781 p. 133.
‡ System of Midwifery -
¶ Work on Midwifery -
① System of Midwifery p. 394.
② Introduction to Midwifery

and by that time the head may be far down in the pelvis and consequently the operation of turning rendered in the majority of cases impossible. 3d. That in presentations of the head this perforation is unnecessary as Nature in these cases expels the placenta before the child. It is true in cases where the placenta only partially presents, and where the hemorrhage is slight, the practice of rupturing the membranes and evacuating the liquor amnii was in request and with success. The old accouchemens used needles trochars &c for effecting this*. Plenck† who wrote in 1781 declares of it "nullo remedio sed sola extractione foetus curandus". Bandelocque‡ Capuron§ and all succeeding authors agree in declaring that turning is the only practice here. The most modern authors also, Conguent Dewees[1] & Denman[2] are also at one on this point.

Besides these plans of treatment we find the accouchemens of last century adopted another. If we refer to Ould's work on Midwifery of 1742 we find him saying "if the placenta presents at the orifice it must first be brought away and then the child delivered". and then he immediately quotes a case, where he put this practice into effect with good results to mother and child. Ould was not alone in adopting this practice for we find Burton a contemporary of his, and after him Smellie, who reports

(a) System of Midwifery -

(b) Simpson's Obstetric Works Vol. I -

a case, in which he first extracted the placenta and then the child with the result, that the child died but the mother survived. Pugh[a] in 1754 remarks that the placenta sometimes presents itself at the mouth of the womb & is to be known by the touch . . . . so that once it is known to the child, but the reverse, from the moment it is separated from the womb & that whenever the membranes break and the placenta is in the passages you must first bring that forth and then extract the child. As I have said already this practice of first extracting the placenta, in cases of placenta praevia, was common among the old accouchers, it must be remembered that their object in its extraction was only to let them have more space & freedom for their subsequent operation, that by this extraction they did not imagine the labour would of itself be hastened, for they only extracted it when it was lying detached in the vagina: But in later times this practice in rather a greater extension of it has been turned to better account, for in 1845 Prof. Simpson recommended the practice of detaching the placenta from its connections over the cervix uteri and its extraction previous to that of the child. In an able essay,[b] which he published on the subject, he shewed that the entire placenta might be separated without any hemorrhage whatever resulting, while partial separation produced

* or if we include the ten fatal cases we find the mortality to be about 1-14.

dangerous hemorrhage. In the Essay referred to, eight cases are quoted to prove, that no hemorrhage ensued, even though the placenta was separated three hours before the birth of the child. and 141 cases are recorded where, though profuse bleeding existed before its separation, it ceased entirely after its full separation. There were indeed a few exceptions, but it was proved that in only 1 out of 22 labours, the hemorrhage did not cease. Of the rate of mortality attending this operation viz: the complete separation of the entire placenta and its extraction, Dr. Simpson found that of the 141 cases recorded ten mothers died or one in fourteen. Now if we calculate what is the rate of mortality by the other mode of treatment which was universally adopted we will find it to be far greater than this and that one out of every 3 6/10 mothers die. In 7 out of the ten fatal cases recorded the exhaustion produced by the hemorrhage from the partial separation and other complications were quite sufficient to account for the fatal result. So that only 3 out of the 141 cases in reality died from this mode of treatment or one in 47* a very small mortality, compared with the magnitude of the complication. Concerning the cause of the hemorrhage in this presentation Dr. Simpson concurs in the opinion of the late Prof. Hamilton, in believing

that the external surface of the placenta, and not the internal surface of the uterus as supposed by Guillemeau and Mauriceau, which it is its cause. He does this from the consideration of the structure presented by the surface of the placenta and its connection with the vascular maternal cells. It appears from his investigations, that the greater the amount of the placenta detached the less hemorrhage follows and that if the entire placenta be separated the hemorrhage will cease. For it seems that the cause of the continual hemorrhage, which ensues when a part only is detached, is that the maternal cells, which belong to the separated portion are still supplied through the utero placental vessels of the adhering portion, so that, if this supply is cut off by the entire separation of the placenta, the hemorrhage must of necessity cease. Dr. Simpson also differs from Gooch Velpeau and Rigby who believe that the hemorrhage from the uterine veins is ended by the simple contraction of fibres after delivery on the ground, that 1st. in those cases of placenta praevia, where the child is still in utero and consequently the organ cannot contract, no hemorrhage ensues. 2d. That after natural parturition, though the uterus is not perfectly contracted, no hemorrhage takes place. He adduces seven reasons to prove, that from the anatomical structure of the parts concerned, hemorrhage

must of necessity cease, when the placenta is entirely separated from the cervix uteri.

Such being the cause & conditions of the hemorrhage attending this complication, and having seen that the complete separation of the placenta immediately puts an end to it, let us see what are results to the child by this practice. In 106 of the 113 instances, in which the result to the child is mentioned, we find that in 73 cases the infant was born dead, and in 33 it was born alive, so that we may say, one out of every three children delivered after the extraction of the placenta survived - Now we know that, when turning is had recourse to in this complication, the infant is almost invariably lost.

Though the older accoucheurs Guillemeau, Daventer, Ould, Pugh &c. did extract sometimes the placenta before the child we know that their invariable rule in these unfortunate cases was to turn the child & deliver as soon as possible. Hence this other method is essentially new and original. The extraction of the placenta has in view, in this practice, the immediate arrestment of the exhausting hemorrhage, and a speedy & safe termination to the labour. How it succeeds in these ends is amply shewn in the tables drawn up by Dr. Simpson.

The cases suitable for it have been enumerated by its projector. He recommends it 1st Where from rigidity of "os" and vagina, from the early period or simple undilatability of parts, precludes the safe performance of the operation of version: Many fatal cases have occurred from version having been practised too early, as well as when too late. For in the operation of version, there is the great danger of the hemorrhage exhausting the patient & laceration of cervix & parts not as yet sufficiently dilated. The operation of version in first cases of labour, with this complication, is generally very fatal in its results. Dr Simpson has constructed tables of cases, from different authors, to shew the mortality to the mother, from the operation of turning here, and he finds as a result that 83 percent. died under it, in fact that it is more fatal than the Caesarian Section. He shews, further, that in these cases artificial separation and extraction of the placenta first, would have been practicable in those cases, and would have put an end to the hemorrhage and labour would have been safely terminated by nature, besides saving 80 or 90 mothers lives out of every 100. 2d In primiparae & labours which are premature. — 3d Where uterus is too contracted to permit of turning and where it would be positively dangerous indeed to attempt it. —

4th When the patient is too much exhausted from previous hemorrhage, and general debility and consequently is unable to stand the shock of the operation of turning. 5th When the child is dead this plan of delivery is much preferable, as the needless shock in this instance is avoided entirely. 6th That when tumours &c are present and turning out of the question delivery may be effected by this mode.

Dr Simpson further recommends that, when the placenta has been separated and extracted, no operative interference is to be had recourse to at all, if pains are present and the presentation natural. So that, instead of turning after its extraction, we have merely in these cases to leave it to nature to finish. It is essentially in those cases specified above, that this new method of treatment is applicable, when evacuation of liquor amnii & turning are impracticable or have failed. But still there are cases, in which turning is undoubtedly the proper practice Thus in cases, where the child is alive, and at full time of gestation; when the mother has had many children and the hand can be easily introduced - without laceration; and where the child presents praeternaturally, turning must be had recourse to. We may safely conclude that in all other cases the proper procedure would be the

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separation and extraction of the placenta first, thereby entirely arresting the hemorrhage and saving the patient from sinking, and after this leaving the labour to nature to finish.

The great care, deliberation, and careful reasoning, which characterizes Dr. Simpsons essay on this subject, along with the sound deductions made from laborious tables, which repeated scrutiny, only shews to be the more correct, are circumstances, which, I think, should strongly recommend the general adoption of this practice.

Of course as no new doctrine can be allowed to appear without objections being urged against them from some quarter, so this one too has had its. But the majority of those urged against it have been mere theories, based on no facts of any moment whatever. For example we find Dr. Lee and urging that the practice is objectionable, because it was not practised by the older accoucheurs. But Paul Portal relates two cases, where, though he did not follow Dr. Simpsons practice entirely he did partly. He had not the forbearance, after detaching the placenta from the cervix, to leave the rest to nature, but immediately turned and delivered. And besides even though they did not that is no reason why we should not adopt the most modern improvements which can in any degree

spirit as and benefit our fellow creatures. The second objection he raises is, that the child must be sacrificed, but from the tables published by Dr. Simpson we see that about 1 in every 3 children are saved whereas by turning more than half the number are lost. I cannot in this place enter into a discussion on the long and rather sharp controversies, which have taken place between Dr. Lee & others. suffice it to say that the very bitterness of the contents shews the great importance of the subject.

Dr. Churchill has entered his protest against the practice, except in such cases as from great exhaustion, when the patient could not bear the shock of turning; when the circumference of the placenta is within reach; when the flooding is excessive; the presenting part natural and the pains strong. The reasons urged by him are not very weighty indeed, nor do they seem borne to be based on truly practical grounds. Thus, the inability of the finger to reach the edge of the placenta, applies with equal force to the old method of perforating it, and to the introduction of the hand just as for the purpose of turning. That there is a difference between the expulsion of placenta & its forcible (& separation) detachment may be the case but assuredly it is not so great as in the slightest degree to affect the new method of delivery, for, by detaching it gently with the fingers,

we are only doing what nature herself does – as in the analogous case of dilatation of the "os" by the finger, when that structure, from any cause, is rigid – not interfering with but assisting her efforts. To examine the remaining arguments, which have been raised, and, as I believe, on no sound grounds, by several writers would lead us too far, suffice it to say, that no arguments, hitherto advanced, do, in the least degree, to my mind, detract from the value of this great improvement in practical midwifery. Its value is of the highest order and, in such terrible & alarming cases, as those of Placenta Praevia, when now we have a means of at once arresting the dreadful hemorrhage and bringing the labour to a safe termination, saving many lives both of mothers and children, we surely ~~should~~ should feel deeply grateful to those, who have done so much not only for the benefit of their profession, but for the welfare and safety of their unfortunate fellow creatures –.