

An essay on difficult labours. Part third, and last, on puerperal convulsions, and on the descent of the funis / by Thomas Denman, ...

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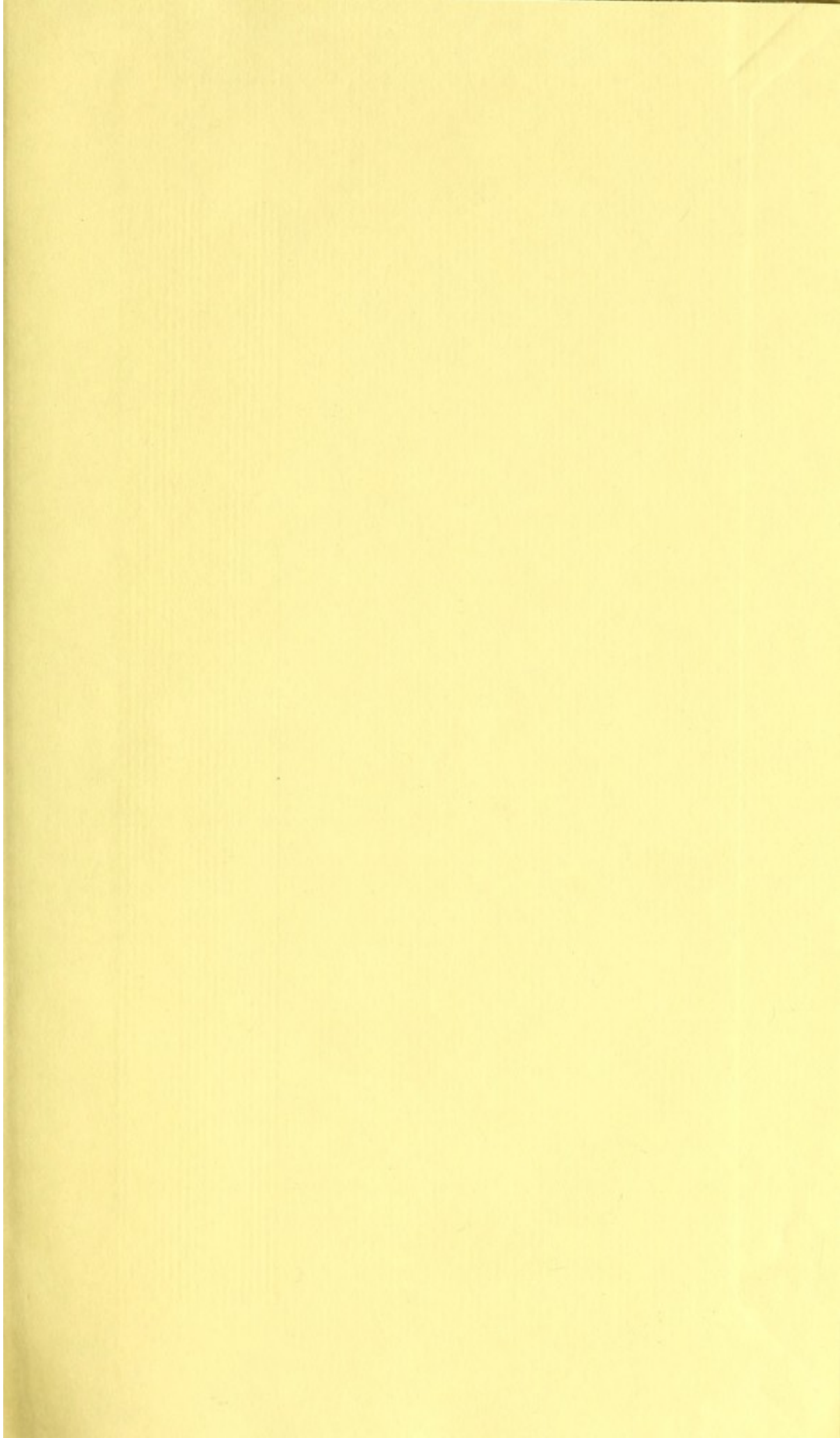
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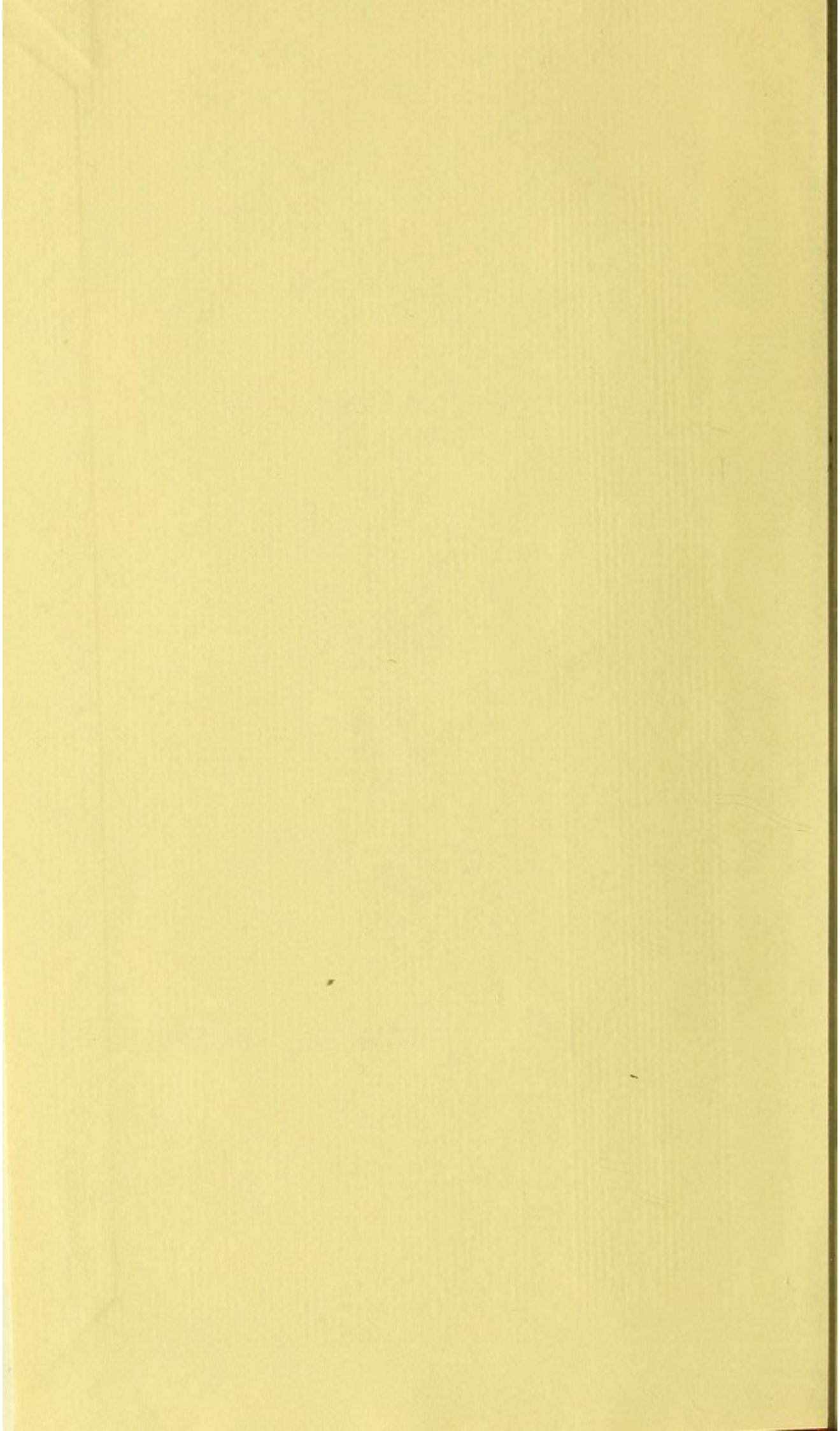
Medicine

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AN
E S S A Y
ON
DIFFICULT LABOURS.

PART THIRD, AND LAST,
ON PUERPERAL CONVULSIONS,
AND
ON THE DESCENT OF THE FUNIS.

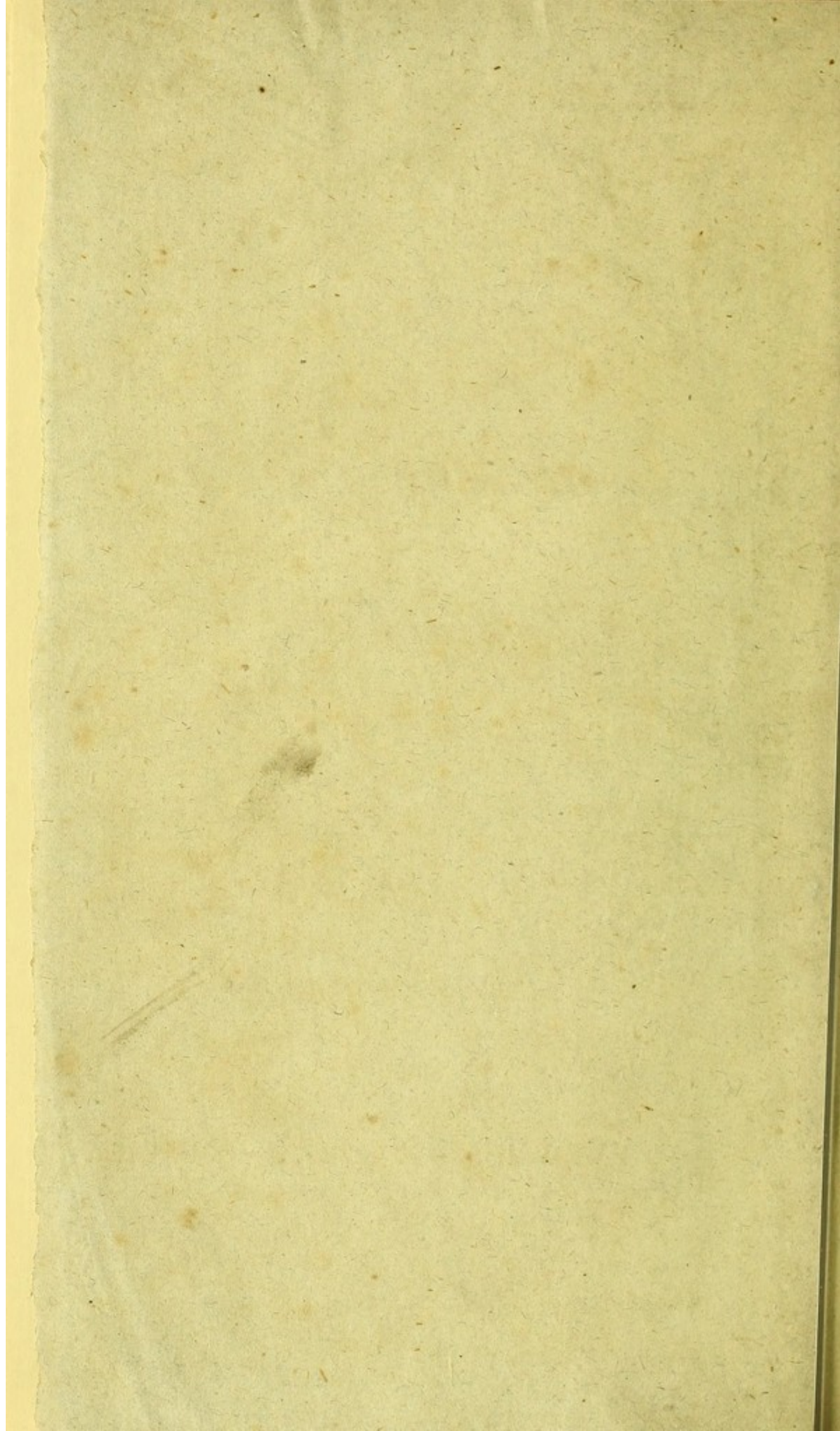
By THOMAS DENMAN, M.D.
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AT EDINBURGH.

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W. B. de B.



D I F F I C U L T L A B O U R S .

P A R T T H I R D .

S E C T I O N V .

O N T H E M A N N E R O F P E R F O R M I N G T H E
O P E R A T I O N .

MUCH consideration is required before we determine to perform this operation; but when we have decided upon the necessity of its being done, together with circumspection in the manner of doing it, there is occasion for our being resolute and persevering in our attempts to accomplish it; even when the difficulties to be surmounted appear to be too great for any degree of skill, or any force we have the power of using. One common error formerly prevailed in this
• and many other operations, founded on an
B opinion,

opinion, that it was needful to perform it speedily; but it is now proved by experience, and generally acknowledged, that the more calmly and slowly we proceed, the less chance there will be of failing, or doing mischief. As the sole aim of this operation is to preserve the life of the mother, without regard to the child, whatever its state might be, it will be our duty to be extremely careful to guard against every accident which might prove injurious or hazardous to the mother. But, as by following the distinctions specified in the last section we shall be able to mark and explain all the circumstances of the operation as they occur, we will abide by those distinctions in describing the manner of performing it.

S E C T I O N VI.

ON THE PERFORATION OF THE HEAD.

THE ease or difficulty attending this and every other part of the operation, will depend upon the distance the head may be from us ;
 whether,

whether, for instance, it be descended and locked in the *pelvis*, or be lying at the superior aperture; and upon the degree of distortion of the *pelvis*, which may be only so much as just to prevent the passage of the head, or so great as to render the use of the instruments both troublesome and dangerous. Some inconvenience may also be produced by the *os uteri*, should not this be dilated; but this may rather be esteemed a reason for extraordinary care than as a cause of difficulty.

Without regard to the part of the head we mean to perforate, but deciding upon that which is most obvious and easy of access, as the most proper, the left hand flattened is to be introduced into the *vagina*, and the fore finger of the same hand is to be directed upon that part of the head where we mean to fix the point of the instrument. The *perforator*, held in the right hand, is to be conducted with the convex part towards the palm of the left hand, and with the point kept close to the fore finger, till it reaches the part we mean to perforate. The fore finger of the left hand is then to be passed round the point of the instrument, that we

may be assured none of the soft parts of the mother are in the way of being hurt. With the instrument held firmly in the right hand, we must then press through the integuments of the head; and, the point being fixed upon the bones of the *cranium*, begin to perforate, by turning with a femirotatory motion the handle of the instrument. This motion of the instrument, taking care to confine the point to the place where it was originally fixed, is to be continued till we judge the bone to be actually perforated; trying occasionally, by advancing the instrument, whether the bone be perforated. When the bone is perforated, the instrument being pressed forwards will penetrate the head, and go on till it reaches the stops formed upon the blades. Then, fixing the finger and thumb of the right hand in the bows of the handle, or pressing the thick part of the hand between the stems, or calling for the help of an assistant, let the handles of the instrument be separated to such a distance as to make a slit or opening of sufficient length in the *cranium*; judging of, and in some measure guiding, the effect produced upon the blades by the separation of the handles, by the finger of
the

the left hand retained in its primitive position. Then, closing the handles, the instrument must be turned in a transverse direction, and they are again to be separated in the same cautious manner, by which means a crucial opening of a proper size will be made in the *cranium*. The *perforator* is then to be closed and withdrawn in the manner it was introduced.

In this part of the operation the principal things which demand our attention are, first, that the instrument be carefully introduced; second, that we be not alarmed at the discharge which follows the perforation of the integuments of the head, as that is to be expected; third, that the point of the instrument does not slip while we are perforating; fourth, that the opening in the *cranium* be sufficiently large.

SECTION VII.

ON THE EVACUATION OF THE CONTENTS
OF THE HEAD.

A VERY large opening of the *cranium* has been generally reputed necessary for the well performance of this operation; but this is not absolutely required in any point of view, nor can it always be made with safety. It must, however, be sufficient for the purpose of suffering the contents of the head to pass through it; and for the evacuation of these, it was before mentioned, that various instruments had been contrived. But these, especially the ferrated spoon, appear to be unnecessary and dangerous; unnecessary, because the texture of the brain and *cerebellum* being broken down, their evacuation will follow of course, as the head is propelled or extracted; dangerous, because an instrument with many sharp points could not be frequently introduced and withdrawn, without the hazard of being caught on the soft parts of the mother. Any smooth instrument of a proper size and length, such as the handle of
a silver

a silver spoon, or a blade of the *forceps*, will answer the purpose of breaking down and evacuating the contents of the head safely and effectually. But I have generally introduced the crotchet into the opening in the *cranium*; and, turning it round frequently, in various directions, especially near the basis of the scull, have completed this part of the operation without difficulty. With all the care which can be taken, it is not always possible to do this on the first trial; but, if in the course of the operation it should be found that any part of the contents of the head had escaped the action of the instrument, the same method may at any time be repeated, without delaying the operation.

SECTION VIII.

ON THE EXTRACTION OF THE HEAD.

IT was formerly a rule of practice, whenever the head of the child was opened, that the efforts to extract it should immediately

B 4 commence,

commence, and be continued till the purpose was accomplished. With all the cautions which have been given for ascertaining the necessity of the operation before it was performed, it was strongly inculcated, that we should be on our guard not to defer it till the strength of the patient was too much exhausted; because by such delay we should altogether lose the advantage that might result from the natural efforts; and, when the child was extracted, the mother would remain in a state of the greatest danger from mere debility. Our conduct with regard to the extraction of the head must then depend upon the state of the patient; whether that state will permit us to wait for the advantages to be derived from the putrefaction and compression of the head, or whether the head should be speedily extracted by art. If, from the great distortion of the *pelvis*, it should have been found necessary to lessen the head in the beginning, or early part of labour, the head when lessened may be left for many hours, to undergo those changes which putrefaction occasions, to the diminution of its bulk by compression, to its gradual descent into the *pelvis*, when it
may

may be readily extracted, or to the chance of its final expulsion without assistance, as the reason and nature of the case may indicate or require. Under such circumstances the late Dr. *Christopher Kelly** informed me, and I believe the practice originated with him, that he had left the head of a child, after the evacuation of its contents, for more

* The papers of my late worthy friend Dr. *Kelly* are in the hands of my son-in-law Mr. *Croft*, who found among them the following account of the individual case, probably, of which the Doctor had informed me.

“ March 11, 1763. — has a *pelvis* extremely narrow, and, by the measure I took, do firmly believe the distance between the *os pubis* and projection of the *sacrum* is not more than two inches, therefore I knew it was in vain to hope to bring the child alive by any means whatever: therefore, for her safety, I opened the head freely, and emptied the *cranium*, in about sixteen hours after being first called to her, and then left it to settle into the *pelvis* twenty-four hours (as in the case of Mr. *Ford*'s patient), before I delivered her, which I did with tolerable ease, by means of the blunt hook only. She recovered as well as possible. This was her first child. She was so ricketty when a child as not to be able to walk till nine years of age, and is now very short. Her name is ———.”

The *pelvis* of this woman came at length into my hands, and in some parts of the superior aperture does not measure more than one inch and a quarter. D.

than

than twenty-four hours, without making any artificial attempts to extract it; and that the operation was, by this delay, rendered more safe, and infinitely more easy. The late Dr. *Mackenzie* also informed me, that he had in the latter part of his life followed this practice with success. But the matter has been more fully discussed, with great ingenuity, and as much precision as the question admits, by Dr. *Osborn**, who, in a case of which I was a witness, left the head of a child more than thirty-six hours after it had been lessened, and then extracted it; the woman recovering without any untoward symptom. When the head of the child has been lessened, the length of time during which the patient may therefore be trusted in expectation of favourable changes, must be left to the judgment that may be formed of every individual case which may be the object of practice. In some cases, from the precarious state of the mother, there will exist a necessity of extracting the head as speedily as we can with safety; yet the general principle to be established is, that the

* *Essay on Laborious Parturition.*

longer

longer we do wait the more easily will the head be extracted. But the patient is to be carefully watched that we do not wait too long, lest unfavourable symptoms should come on, and the end for which the operation was performed be defeated.

Sooner or later then, according to the state of the mother, it will be necessary that we should begin to make our efforts to extract the head of the child; and taking care, in the first place, to remove cautiously any loosened or sharp pieces of bone, I have been accustomed to avoid using the crotchet, or any kind of instrument, till I have tried what advantage was to be gained with my fingers. With this view, introducing the fore finger of my right hand, armed with my glove, or some such contrivance, into the opening in the head, and then bending it in the shape of a hook, I have pulled it with all the force it enabled me to exert, repeating my attempts at intervals when the natural efforts of the mother returned.

Should the head of the child be so high in, or above, the superior aperture of the *pelvis*, or this be so much distorted as not to admit of my giving this kind of assistance,

or

or should it be unequal to the purpose, I carefully introduce the crotchet, guided by my left hand into the opening in the head; and, fixing the point of the hook as far from the edge of the bone as it will allow, I begin to pull moderately by the handle held in my right hand, guarding at the same time the hook of the crotchet with the fingers of the left, if it should happen to tear away the bone.

If on trial the crotchet be found firmly fixed, but the head be too much impacted in the *pelvis* to be brought down with the force first used; that is, supposing the force required to extract the head be equal to 10, and the force exerted by the crotchet not to exceed 5; no other purpose can be answered by striving too earnestly with the force which cannot be made to exceed 5, except tearing away the piece of bone in which the crotchet may be fixed, which does not facilitate the operation. We are to be satisfied with the steady exertion of the force 5, which, being continued, will at length be found sufficient to our purpose, the resistance gradually diminishing, and the force 5 remaining. In the repetition of
our

our attempts to extract the head, which must be made at intervals, should the bone in which the instrument was fixed be loosened and come away, wholly or in part, the crotchet must be again introduced and fixed in another place, and the same method of proceeding followed; remembering also when we extract, to pull with some variation in the direction, but always in the line of the cavity of the *pelvis*. In almost every case of difficulty the obstacle or cause of the difficulty is at one particular part of the *pelvis*, and when the head has passed that part there is no farther occasion for using force. We are afterwards to proceed very circumspectly, that there may be no laceration of, or injury done to, the parts of the mother, internal or external. The principle I wish to impress on the minds of those who may be embarrassed with difficulties of this kind is, that time is equivalent to force, and that no advantage will be obtained by pulling away small pieces of bone, except such as were loose and likely to injure the soft parts of the mother. On the contrary, when the instrument is once firmly fixed in a part of a bone which affords a good hold, I have been cautious not

to tear it away by pulling rashly, considering that as something like breaking the instrument with which I was performing the operation.

In a case of very great difficulty it is however possible that all the bones of the *cranium* might be brought away successively, and nothing of the head remain but the basis of the scull, with the integuments. It then has happened oddly enough, that I have succeeded in bringing down the remainder of the head, merely by grasping the integuments firmly in a mass, or even in distinct parts, and pulling by them in a proper direction. But, if these should be found insufficient, the crotchet is to be introduced again, and fixed upon the basis of the scull on any part where we can get a firm hold, and this assuming a more convenient direction will be readily brought down. I have not found, in cases of this kind, that I have acted from a preference for fixing the instrument in this or that part, or in this or that manner; but, giving myself time to reflect, the exigence of the case has dictated what I ought to do, so that I am not solicitous about any particular method. Some have thought that it was of
great

great importance to fix the crotchet on the out side of the head, and others have insisted on the propriety and superior advantage of fixing it on the inside; but I am persuaded that such things are of little consequence, and that in the course of a difficult operation it may be found necessary and useful to fix it in either way.

When the disproportion between the cavity of the *pelvis* and the head of the child is very great, it is possible that all the bones of the *cranium*, together with the basis of the scull, may be brought away, yet the body of the child may remain above the superior aperture of the *pelvis*. This circumstance may require different methods of treatment. If the space between the projecting bones of the *pelvis* would allow the flattened hand to be passed into the *uterus*, it might be most expedient to turn the child and deliver by the feet, which, thus situated, I have more than once done. But, if the distortion of the *pelvis* will not allow the hand to pass into the *uterus*, the crotchet must be again introduced, and fixed upon the chest of the child, where it may probably meet with some part that will bear a sufficient degree of force for extracting

tracting it. Should this not be the case, the crotchet must be repeatedly tried, by which the contents of the *thorax* and *abdomen* may be evacuated, and the general bulk of the child's body very much lessened. Then, trying to fix the hook of the instrument on some part of the spine, or bringing down the arms, we shall at length succeed and extract the body of the child, whole or in parts, though we may have been frequently baffled. In an operation difficult as that now described, disagreeable as it may appear, and really is, having only occasion to attend to the extraction of the child, in any manner, without doing mischief to the mother, the mind of the operator may be at ease, and he will then avail himself of every advantage which shall offer towards answering his purpose. On the whole, I have never known a case attended with so much difficulty that it could not be surmounted by steady and slow proceeding; and, after all his difficulties, if he has acted cautiously, the operator may be repaid by seeing his patient recover, as well, or better, than after the most easy labour.

SECTION IX.

ON THE SUBSEQUENT TREATMENT.

WHEN a child has been extracted in the manner before described the *placenta* will commonly be expelled in a natural way; but should any difficulty arise, that must be managed according to the rules before given in the Essay on Hemorrhages.

Women in general recover well after this operation, provided it was not delayed till some irreparable injury was done to the parts of the mother, and was performed with care. Besides the treatment which may be proper for all women in childbed, it will be incumbent upon us to be particularly careful in these cases that the urine be voided; and, if the patient should not be able to do it by her own efforts, that it be drawn off with the catheter, within a short time after her delivery. The use of the catheter is also to be continued twice in the course of twenty-four hours, till she may become able to expel the urine; lest there should be inflammation,

on any part of the bladder or *meatus urinarius*, and a slough be cast off, which would be followed by an involuntary discharge of urine ever afterwards; which I consider as one of the most deplorable accidents in the practice of midwifery.

S E C T I O N X.

ON THE PROPRIETY OF BRINGING ON PREMATURE LABOUR, AND THE ADVANTAGES TO BE DERIVED FROM IT.

WE have before alluded to this operation as a method of preserving the lives of children, without adding to the danger of women; if in any case the *pelvis* were so much distorted, or so small, as absolutely to prevent the passage of the head of a full grown child, and yet not so far reduced in its dimensions as to prevent the head of a child of a much less size from passing through it. Melancholy are the reflections when a woman has a very much distorted *pelvis*, and such women have usually a wonderful aptitude to
conceive,

conceive, that there should be so little chance of preserving the lives of her children; and yet, in the course of practice, I have in several instances been called to the same woman, in five or six successive labours, merely to give a sanction to an operation by which the children were to be destroyed. It is to the credit of the profession that every method, by which the lives of parents and children might be preserved, has been devised and tried; and, though frequent occasions for using some of these methods cannot possibly occur in any one person's practice, it is right that all should be acquainted with what has been proposed and done in every case, with or without success.

The first account of this method of bringing on premature labour was given to me by Dr. *C. Kelly*. He informed me, that about the year 1756 there was a consultation of the most eminent men in *London* at that time, to consider of the moral rectitude of, and advantages which might be expected from, the practice, which met with their general approbation. The first case in which it was deemed necessary and proper fell under the care of the late Dr. *Macaulay*, and

it terminated successfully *. Dr. *Kelly* informed me that he himself had practised it, and, among other instances, mentioned that the operation had been performed three times upon the same woman, and twice the children had been born living. The thing has often been the subject of conversation, and proposed by writers, but some have doubted the morality of the practice; and the circumstances which may render the operation needful and proper have not been stated with any degree of precision.

With regard to the morality of the practice, the principle being commendable (that of making an attempt to preserve the life of a child which must otherwise be lost), and nothing being done in the operation which can be injurious to the mother, I apprehend, if there be a reasonable prospect of success, no argument can be adduced against it which will not apply with equal force against inoculation, against medicine in general, and, in fact, against the interposition of human reason and faculties in all the affairs of life. Such an argument would lead us back

* The patient was the wife of a linen-draper in the *Strand*.

to the absurd doctrine of predestination, if, with justifiable intentions, and without producing any present evil, we may not use our endeavours to extricate our fellow-creatures from evils which threaten them, or under which they may be actually oppressed.

If the morality be justified, we are next to consider the safety and utility of the practice.

As to its safety, having reasoned upon the structure of the parts concerned in the operation, and having carefully attended to all the circumstances which have occurred when it had been performed, in eight cases, in which I have either performed it, or it has been done by my advice and persuasion, I have not known one untoward or hazardous accident that could be imputed to it. I therefore feel authorized to say, as far as my reason or experience enables me to judge, that the operation of bringing on premature labour is perfectly safe to the person on whom it may be performed.

But respecting the utility of the operation, the statement first made of the intention or purpose with which it may be done; that is, to try whether the head of a small child

will not pass through a *pelvis* too much narrowed in its dimensions to allow one of a common size to pass; will shew that the objects of the operation are circumscribed within certain limits. Should the cavity of the *pelvis* be of its natural size this operation is out of the question, and never can be required. If the cavity of the *pelvis*, though reduced in its dimensions, would permit the head of a child to be squeezed through it by the force of strong and long continued pains, this operation is not required, and ought not to be performed. If the *pelvis* be so far reduced in its dimensions as not to allow the head of a child of such a size as to give hope of its living, to pass through it, the operation cannot be attended with success. It is in those cases only in which there is a reduction of the dimensions of the *pelvis* to a certain degree, and not beyond that degree, that this operation ought to be proposed or can succeed.

It would be highly satisfactory to state with precision the exact dimensions of the cavity of the *pelvis* of the person on whom it might be needful to perform this operation, and on whom it might be performed with

success. But, as all the instruments contrived for measuring the *pelvis* in the living woman, too imperfectly answer this purpose to enable us by them to form a guide of practice, the determination must be left to opinion; and those who are experienced will not commit any great mistake in their conjectures. Under circumstances and in situations just preventing the successful use of the *vectis* or *forceps*, and just compelling us to the fatal measure of lessening the head of the child, it may become a duty to propose, on a future occasion, the bringing on premature labour; at seven months, or any later time, according to our sense of the disproportion between the head of a child and the cavity of any particular *pelvis*. It can hardly be doubted but that the casual events of practice first inspired the notion of this method in the mind of some person who, adverting to the fortunate termination of premature labours coming on spontaneously, in cases of distortion of the *pelvis*, endeavoured to imitate by art what not unfrequently happens naturally.

There is another situation in which I have proposed, and tried with success, the method

of bringing on premature labour. Some women, who readily conceive, proceed regularly in their pregnancy till they approach the full period, when, without any apparently adequate cause, they are in the habit of being seized with a rigor, and the child instantly dies; though it may not be expelled for some weeks afterwards. In two cases of this kind I have proposed to bring on premature labour, when I was certain the child was living, and have succeeded in preserving the children without hazard to the mothers. There is always something of doubt in these cases, whether the child might not have been preserved without the operation; but, as such cases often come under consideration, and as I am disclosing all that my experience has taught me, it seemed necessary to mention this circumstance.

I may be allowed to conclude this subject without entering into a detail of the manner in which premature labour may be brought on; because no person qualified to decide on the propriety of this operation can be ignorant of the manner of performing it. I must however observe, when the membranes of the *ovum* are punctured or ruptured, and the
 water

water discharged, that the time when the action of the *uterus* may come on will be very different; this happening in some instances in twelve hours, and in others, being withheld, for twelve or fifteen days. During this interval we have only to wait patiently for the event, and when the pains come on, the labour, if natural, is to be suffered to proceed without interruption; or, if irregular, such assistance is to be given as the peculiarity of the case may require,

C H A P. X.

S E C T I O N I.

ON THE CESAREAN OPERATION.

THIS operation is to be performed by making an incision first through the integuments of the *abdomen*, and then into the *uterus*, for the purpose of extracting a child therein contained. In cases of extra-uterine children, an incision, for the purpose of extracting a child contained in the cavity of the *abdomen*, under various circumstances, has been called the *Cesarean* operation; but in the importance and consequence of these two operations there is an evident and very great difference.

It has been supposed by some writers that a name was given to this operation from a circumstance common to it and every other in surgery where a knife was used* ; by others, that it had its name from the extraordinary courage of the person on whom, or

* *A cæso matris utero.*

by whom, it was performed: but it was more generally explained by the imagined qualities and rank of the persons whose lives are said to have been preserved by it. These, and their descendants, according to *Pliny*, were called *Cæsars*, as those born with the feet foremost were called *Agrippæ*; or when there were twins, and only one was born living, *Vopisci*. Men who in the course of their lives proved extraordinary, were not supposed to come into the world in a common way*. But it is well known that the name of *Cæsar* was not conferred on that great man, or the family who bore it, from the manner of his birth, but was derived from quite another source. Nor do any of the ancient writers in medicine take notice of this operation, and we cannot suspect they were so negligent as to have omitted the description of it, or so ignorant as to be unacquainted with it, when, in all probability, had it been performed, they would have

* *Auspiciatus, eneſta parente, gignuntur, ſicut Scipio Africanus prior natus, primuſque Cæſarum a cæſo matris utero dictus.*

PLIN. *Hiſtor. Nat. lib. vii. cap. ix.*

The mother of *Cæſar* was living at the time of her ſon's expedition to *Gaul*.

been

been the very persons consulted and employed to perform it.

*Pliny**, who lived in the time of *Vespasian*, is the first author who mentions this operation; but he speaks of it with reference to those who lived before his time, and his account does not give much satisfaction. *Rouffet*†, who was a strong advocate for the operation, wrote professedly on the subject in the year 1581. But the records of this operation have been imperfectly preserved even in modern times. For, from the context of the cases recorded, it appears that some have been misrepresented; that some are fictitious, and were alleged to answer other purposes, as was the supposed one of lady

* *Plin. loco citato.*

† *Baubin*, in the appendix to *Rouffet*, dated 1588, gives the following case:—*Eliz. Alespachen* had this operation performed upon her by her husband, who was a Gelder of Cattle at *Siergenhausen* in *Germany*, in the beginning of the sixteenth century. She had several children born afterwards in the natural way.

Parè and *Guillemeau* wrote against the operation.

M. Simon wrote two papers on this subject in the first volume of the memoirs of the *Royal Academy*.

Heister and many others have written on the subject; but *Weideman* of *Dussendorp*, in his *Thesis*, has given an account of all the cases of this operation that were extant, and the event of them.

Jane

Jane Seymour, to stamp the character of greater cruelty on *Henry the Eighth*; and that others are related with a change of circumstances, so as to appear different, though they were in fact the same. From a detestation of the apparent cruelty of this operation, from a doubt of its necessity or propriety, from the destructive event which was to be expected, or from some other cause, it was never performed in this country till within these few years. But at present we have well authenticated accounts of nine cases in which the operation was performed, under the direction of, and by, men of unexceptionable abilities; and these may be esteemed sufficient to enable us to form a judgment of the advantages to be derived from the operation, as well as of the manner in which it ought to be performed.

S E C T I O N II.

By the first writers on this subject many circumstances are recited which were supposed

posed to render this operation necessary, some respecting the parent, others the child. Of the first kind were the smallness or distortion of the *pelvis*, the straitness or closure of the natural passages, from *cicatrices*, the rigidity of the parts from old age, or their imperfection from youth; almost every cause of a difficult labour, when extreme in its degree, has been mentioned as a possible reason for this operation. Those which respected the child, not only related to its comparative size, but its position also; and on this occasion twins, and even monsters, which there was no wish to preserve, have been mentioned. But, whatever was the existing cause, it appears that there must have been a full conviction on the mind of the person who proposed this operation, of the impossibility of delivering the patient by any other means. Some writers have indeed spoken of this operation, not with a view to its absolute necessity, but its eligibility, or as deserving preference to other methods of delivery which might be practicable. Such writers have not met with general approbation, but their influence has been too great; for, in the histories of the cases recorded, we find

find in several of them some circumstance which proves that the operation was not necessary, or that the grounds on which it ought to be performed were not well understood. The ideal glory of the operation has perhaps had its influence in *France*, and some other parts of the *Continent*. I am not willing to accept any other principle but necessity as a justification of this operation; that is, whenever it is proposed, there shall be no other way or method, by which the life, either of the mother or child, can possibly be preserved; and the impossibility shall be confirmed, not by the opinion of one, but as many competent judges as can be procured. I then consider this operation justified by every principle of religion, and the laws of civil society, by as decisive and satisfactory evidence as any other operation, which we never hesitate to propose, or to perform.

SECTION III.

THREE general situations have been stated in which it has been presumed the Cæsarean operation might be necessary.

I. When

1. When the parent was dead, and the child living.

2. When the child was dead, and the parent living.

3. When both the parent and child were living.

With respect to the first situation, when the parent is dead, and the child living, there cannot be any debate; because, without giving pain, or incurring any one inconvenience, an attempt is made by this operation to preserve the life of a child, which, if it be not performed, must soon and inevitably perish.

With respect to the second situation, as, in every case in which the operation has been performed in this country, the parent has died, but the lives of many of the children have been preserved, the operation holds forth as its principal advantage, the hope of preserving the life of the child; the chance of preserving the parent being little improved by an operation so full of danger. It will therefore, I think, be generally acknowledged, that the operation ought not to be performed upon a living mother, when there
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is proof, or good reason, for believing that the child is dead.

The third is the statement attended with any difficulty, and being the only case which, strictly speaking, constitutes the Cæsarean operation, it might lead to a comparative estimation between the life of the child and that of the parent. But the common sense of mankind, agreeing in the general principles adopted throughout this work, of its ever being our duty, in the first place, to preserve the lives of both the parent and child; in the second, to preserve the life of the parent; and in the third, that of the child, which have been on various occasions inculcated and applied, will point out the general line of conduct we ought to pursue, according to the exigence of every case which may occur in practice.

Without regard to the state of the child, this operation has also been proposed for our consideration under circumstances which relate to the mother alone.

1. When she was living.
2. When she was dead.

Some have been of opinion, that this operation ought never to be performed on the

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living

living subject. Perhaps, impressed with the dread of the operation, they did not distinguish between necessity and eligibility, and therefore wished to abolish it altogether. But if it were to be performed only when the patient was dead, more particularly if we were to wait for her death, as the only proper time of performing it, it would in general be fruitless. For I do not find any instance of a living child extracted by this operation after the death of the mother, unless the child escaped by the same stroke as that which proved fatal to the mother, of which the accounts seem to be almost fabulous, or merely accidental. But as, in cases of women dying in convulsions, rupture of the *uterus*, or other rapid diseases, at different periods of pregnancy, or of a labour, it is possible for a living child to be extracted after the death of the mother, by speedily performing this operation; and as no harm can possibly result from the operation, supposing ourselves disappointed, no reasonable objections can be made to our performing it under such circumstances. In some countries the laws forbid a woman dying, when pregnant, to be interred before the child shall
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be taken away. A prohibition to bury the living with the dead is the spirit of such laws.

SECTION IV.

IF it be admitted that necessity alone can justify the Cesarean operation, we are next to enquire into the causes and proofs of such necessity.

Many of the causes which have been specified by writers, as producing a necessity of performing this operation, are certainly unequal to so great an effect. The size of a child, however large, unless the *pelvis* be at the same time very much distorted; nor any untoward position of the child; nor twins; nor monsters; nor the closing or straitness of the soft parts, can ever compel us to the necessity of performing this operation; because we know, by experience, that difficulties arising from such causes admit of relief by less desperate means. It may be asserted in general terms, that there is only one cause which can justify our proposing or

performing this operation on the living subject, and that is, such an extreme degree of distortion of the *pelvis* as renders the extraction of the child, in its present state, when diminished in its bulk, or even reduced into small pieces, absolutely impracticable. It is true, if any other cause could be proved to exist which produced the same impracticability, then the operation would be equally requisite and justifiable.

To make a precise statement of that degree of distortion, or consequent diminution of the cavity of the *pelvis*, as might require this operation, is not perhaps possible in the living subject. The natural space of the cavity of a well formed *pelvis*, from the *os pubis* to the *sacrum*, is about four inches and a half, and in some subjects rather more; and the heads of children at the time of birth bear a general relative proportion to this space. But living children have been born, frequently, by the natural efforts, when the space was presumed to be less than four inches; and, if the children were small, when it did not exceed three inches: and we may judge that the head of a child is capable of being reduced by compression one third of
its

its natural bulk, without destruction of parts, or any permanent injury. But should the capacity of the *pelvis* be reduced under three inches, we have not much reason to expect a living child to pass through it, either naturally, or by the assistance of art; though the head of one that is dead, especially if it be putrified, may be pressed through a *pelvis* of about those dimensions, even without artificial assistance. Should the capacity of a *pelvis* not exceed, according to our judgment, two inches and a half, then the head of a child, unless the contents be evacuated, could not pass or be extracted through it. But if the cavity be so far closed, that it should not exceed one inch, we might then presume that the head of a child, though reduced to the least possible size, could not be extracted through it; and the necessity and propriety of the Cesarean operation might be admitted, if we had reason to conclude that the child was living.

These general positions every person engaged in practice will bear in his mind, in cases of difficulty arising from distortion of the *pelvis*. But he must also recollect, that the remaining space of the cavity of the *pelvis*, in cases

of distortion, will be differently estimated by different persons, and cannot be ascertained with precision by any one, during the life of the patient. He will also remember, that the kinds of distortion are as various as the degrees, and that the cavity, though much diminished in one part, may be far less altered in another; and that even one side of the *pelvis* may measure two inches, when the other is scarcely equal to one, which consideration may make a change in our judgment of the kind of operation required widely different. It should also be remembered that the size of children at the time of birth, and the firmness of the bones, together with the compactness of their union with each other, are very different, and might add to, or lessen, the difficulty of a birth, whether natural or artificial. After a mature consideration of the whole matter, I am however of opinion, that no rule of sufficient authority to guide us in any particular case can be formed from such calculations, and that our conduct is not to be governed wholly by them; but by the reflections of common sense working in a reasonable mind, stored with the knowledge of such calculations, and of many other
other

other collateral circumstances, which it is impossible to enumerate or describe, so as to render them applicable and useful.

I cannot however relinquish the subject without mentioning another statement of this question, which has often employed my mind, especially when the subject has been actually passing before me. Suppose, for instance, a woman married, who was so unfortunately framed, that she could not have a living child. The first time of her being in labour, no reasonable person could hesitate to afford relief at the expence of her child; even a second and a third trial might be justifiable to ascertain the fact of the impossibility. But it might be doubted in morals, whether children should be begotten under such circumstances, or whether, after a determination that she cannot bear a living child, a woman be entitled to have a *number* of children destroyed for the purpose of saving her life; or whether, after many trials, she ought not to submit to the Cesarean operation, as the means of preserving the child at the risk of her own life. This thing ought to be considered. Moreover, when it has been ascertained, that women could not possibly bear living children,

and one great end of marriage has been frustrated, some have determined on a voluntary separation from their husbands, from a sense of the moral turpitude of conceiving children without the chance of bringing them living into the world. But the law of the land has afforded no remedy for the case, though, as this fact admits of unquestionable proof, it would not be difficult to form terms of separation between a husband and wife thus circumstanced, so cautiously, that they should not be abused, yet without the imputation of criminality to either party; and many evils might be thereby prevented.

S E C T I O N V.

IN every case in which the Cefarean operation has been performed in this country the patients have died. It may be of use to enquire, whether their death was occasioned by any disease with which they were afflicted before the time of labour; or was the consequence of the state to which they were reduced from the occurrences of labour, before the

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the operation was performed; or was the inevitable consequence of the operation. In cases of death occasioned by wounds, the following order in which the danger is produced may be observed: first, from convulsions, or hemorrhage; secondly, from inflammation; thirdly, from gangrene; fourthly, from supuration. Though all the patients on whom this operation has been performed died, their death happened at different periods; but not one died, either while the operation was performing, or immediately after it. No convulsions were brought on by the incisions, nor does it appear that any of them sink through the loss of blood accompanying or succeeding the operation. Some died within twelve, others at the end of twenty-four hours, and a few died on the third day after the operation. If we may judge of the cause of the patient's death by the time of her dying, it might be said, that the death of those who failed within twenty-four hours, was probab'y owing, not to the operation alone, but to the violence of this, combined with that of previous disease; but when they survived twenty-four or forty-eight hours, then their death might be attributed

to the succeeding inflammation, in a body before disposed to disease. If we had the liberty of selecting a patient on whom to try the merits of this operation, we certainly should not choose one who was either very much distorted, or who had the *mollities ossium*, or who had been several days in labour; because the event must very much depend upon her state at the time when the operation was performed.

It is not my intention by this kind of investigation to lessen the general aversion from this operation when it can be avoided; but I believe we cannot fall into error by conforming to such conclusions as these. Every woman on whom the Cesarean operation shall be performed will probably die, and should any one survive, her recovery might rather be considered as an escape than as a recovery to be expected; but as such an escape may happen in any case, in which the operation might be performed, we may esteem every case which can come before us, as the individual case in which a happy event is to be expected. These conclusions will lead us to the principle of necessity as the sole justification
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of this operation, and inspire us, when we do perform it, with every motive to exert all our judgment and skill for the service of the patient, as if we were certain she would survive.

SECTION VI.

HAVING never performed the Cefarean operation, nor seen it performed, I offer the description of the case related in the fourth volume of the *Medical Observations and Inquiries*, as the best example which has been recorded; the operation was performed by Mr. *Thomson*, one of the surgeons of the *London Hospital**.

“ A table being prepared, the patient was placed upon it, lying on her back, her head being supported by pillows, and her legs hanging down. The belly appeared promi-

* It is remarkable that the oldest physician or surgeon in *London*, could not recollect a case of this operation, or had heard it spoken of by their predecessors; yet that two cases, in the same street, should have occurred to one gentleman, within a very short space of time.

ment chiefly on the right side, the protuberance of the *uterus* extending but about two or three fingers breadth on the left of the *linea alba*. There was no difficulty therefore to determine where the incision was to be made.

“ Accordingly, about a hand’s breadth from the navel on the right side, I began the incision in a longitudinal direction, and continued it about six inches in length, the middle of which was nearly opposite to the navel; the skin and adipose membrane being cut through on the outer edge of the *rectus* muscle. I carefully made an incision through the tendinous expansion of the abdominal muscles and the *peritonæum*, sufficient to introduce the forefinger of my left hand, when, with a curved knife conducted on my finger, an opening was made into the cavity of the *abdomen*, and the *uterus* exposed.

“ The *uterus* appearing very solid to the touch, it was apprehended by some gentlemen, that the *placenta* might perhaps adhere to that part of the *uterus* which lay bare, and which might considerably obstruct the removal of the child, or endanger an hemorrhage. With precaution, therefore, an aperture

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ture was made in the centre of the *uterus* sufficient to admit my finger, with which conducting the curved knife, I dilated the wound in the *uterus*, upwards and downwards, to the full extent of the outward wound.

“ The *placenta*, which actually adhered to this part of the *uterus*, easily gave way, and receded as my finger advanced in making the opening.

“ The *placenta* and membranes immediately began to protrude. Dr. *Ford* at this juncture slipping his hand into the *uterus*, while the sides were kept asunder, brought forth the child by the feet, and immediately afterwards the *placenta* and membranes were extracted with the greatest ease. Dr. *Ford* took upon himself the management of the child and separation of the umbilical chord, and in a few minutes the child cried strongly.

“ The *uterus* being disburthened of its contents, and contracting amazingly fast, the *omentum* and bowels began to protrude; Mr. *John Hunter* was so obliging as to assist me in retaining them within the belly, whilst I cleansed away the grumous blood (which
was

was small in quantity) and made the *gastro-raphy* or future of the belly.

“ I made four futures at nearly equal distances from each other, and about one inch and half from the edge of the lips of the wound.

“ The ligatures being double, pieces of linen spread with common plaister, and rolled up in the form of bolsters, or compresses, were applied between them, after the manner of the quilled future, and the wound was thereby brought into and retained in close contact; and lint and a common pledget being applied, finished the operation.” This woman died about five hours after the operation.

ANOMALOUS,

ANOMALOUS, or COMPLEX LABOURS.

ORDER SECOND.

LABOURS ATTENDED WITH CONVULSIONS.

SECTION FIRST.

THE rules given by different writers for the management of labours attended with convulsions, seem to have been founded on less certain principles, and to have been less confirmed by experience, than those which have been given for almost any other cases which occur. These rules have nevertheless led to two methods of practice, offered with sufficient confidence, though diametrically opposite to each other. According to the first*, which has been most generally approved

* La convulsion est un autre accident qui fait souvent périr la mere et l'enfant, aussi bien que la perte de sang, si
la

approved and followed, it was deemed indispensably necessary to deliver the patient by art, as expeditiously as possible, to free her from the cause of the impending danger. But according to the second*, it being presumed that the convulsions appertained to the labour as symptoms, this, if natural, was to be suffered to go on without interposition, as if there were no convulsions; while we were engaged in using the means of preventing their return, or of lessening the effect) which might be produced by them. Whatever has been done or omitted, has occasionally been blamed or regretted, and, in consultations on cases of this kind, I have generally observed, that the person who advanced his opinion in the boldest manner, prevailed on the rest to acquiesce in his sentiments; the records of experience having been thought insufficient, or not so duly weighed as to justify our forming an irrefragable rule of practice.

la femme n'est tres promptement secourue par l'accouchement, qui est le meilleur remede qu'on puisse apporter a l'une et a l'autre. *Mauriceau, vol. i. cap. 28.*

* Naturæ, partus quoad cætera sanus, relinqui potest.

Roederer, Element. Art. Obstetric. Aphorism. 697.

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The true puerperal convulsions have not been accurately described, yet there are some peculiarities in the symptoms preceding their appearance, and in the convulsions or the manner of their return, which distinguish them from every kind of hysteric symptom, and from convulsions proceeding from other causes. Together with the symptoms of the epilepsy*, which they very much resemble, there is not unfrequently a *stertor*, which has been considered as peculiar to the apoplexy, or the patients are obstinately comatose. With the foaming at the mouth there is also a sharp hisping noise produced by fixing the teeth, and by the sudden motion of the under lip, as if attempts were made to retract the *saliva* back into the mouth; and by this noise I have generally been able to discover the state of the patient, though she was in another room. The in-

* *Epilepsia*—*Agitatio convulsiva universalis, chronica, cum oppressione sensoriorum, exituque spumæ ex ore.* VOGELIUS.

Epilepsia—*Musculotum convulsio cum sopore.* CULLEN.

Convulsio—*Musculorum contractio, clonica, abnormis citra soporem.* CULLEN.

- Spec. 2. 1. Idiopathica.
2. Symptomatica.

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tervals

tervals between the convulsions, which are of shorter or longer duration according to the advancement of labour, evidently depend upon the action of the *uterus*, and in them the patients sometimes seem as if they were awakened by surprise, and soon recover the use of their faculties; and, at others, lie in an insensible state as if they were truly apoplectic, which they are not; though there have been instances of patients dying in the first attack, when there was no token of labour, as far as could be judged by the state of the *os uteri**. By the degree of derangement

* In the examination of many women who have died in convulsions, I have never seen an instance of effusion of blood in the brain, though the vessels were extremely turgid; but it is remarkable, that in all, the heart was found unusually flaccid, and without a single drop of blood in the auricles or ventricles; and in several there instantly appeared many large livid spots on the extremities and surface of the body. They all died immediately after the *diastole* of the heart.

A woman in labour was put to bed, and made an effort to change her situation. She died instantly in the act of moving.

Another was in such a situation that the child was expected to be born the next pain. She threw herself back, and died instantly.

Another

ment in the intervals between the convulsions, the danger of the patient is to be estimated, as well as by the violence of the fits, or by the symptoms which preceded them.

It will be convenient to arrange what I have to say farther on this subject, in the following order: first, to enumerate the reputed causes of convulsions; secondly, the symptoms which precede their appearance; thirdly, the means of preventing them; fourthly, the treatment which may be requisite when the patient is actually in convulsions; and, fifthly, on the delivery by art.

Another raised herself in bed to take nourishment, about half an hour after delivery. She fell back, and died immediately. She was opened by Mr. *Fenner*.

There was no effusion of blood in the brain, or any other part in any of these; but the heart was found flaccid, perhaps somewhat enlarged, and not a drop of blood in either the auricles or ventricles. Yet the late Mr. *Hewson* informed me of a case of convulsions in which, on examination after death, he had found an effusion of blood, in a small quantity, on the *surface* of the brain.

SECTION II.

ON THE REPUTED CAUSES OF CONVULSIONS.

IT is remarkable that puerperal convulsions occur so rarely in the country, that I have not been able to make some very intelligent men, of great experience, comprehend them. The very few cases of which I have been informed, out of this city, have happened in large towns, or among those who might be reckoned in the higher ranks of life. We may therefore conclude, that a remote cause of these convulsions is to be sought for in the particular influence of the air, or in some change made in the constitution, by the customs and manner of living in cities and large towns; though there are immediate causes capable of producing these convulsions in any situation. It has also been observed, that women are far more liable to convulsions in certain years and seasons than in others.

The female constitution becomes infinitely more irritable in consequence of the changes made in the *uterus* during pregnancy, every part of the body readily participating with the state of the *uterus*. This increased
irritability,

irritability, when not excessive, and only affecting parts not essential to the economy of the constitution at large, is so far from being injurious, that it proves eventually salutary either to the parent or child. But we may conclude, that in a constitution become unusually irritable from one cause, any additional cause of morbid irritation will produce different and more violent effects, than if that constitution had been at rest, before the application of the second cause. It is therefore reasonable to believe, that the constitution which a delicate mode of education can scarce fail to give, still farther augmented by habits of indulgence, and the eager pursuit of pleasure in advanced age, renders such women at all times, and in all situations, more liable to every kind of nervous affection; that the state of pregnancy still makes them more disposed to the same affections, and from slighter causes to convulsions, than those women are who, by educations and habits of living, are seasoned, as it were, against impressions which might affect either their minds or constitutions; for it is to both these we are to look for the causes of convulsions.

That the state of the mind does very often dispose women to puerperal convulsions, and other dangerous nervous affections, there are numerous proofs to be drawn from practice*. This has been more particularly observed among those women whose unfortunate situations render pregnancy an evil instead of a blessing; for, from their seclusion from society, their sense of present ill, or apprehension of future distress, such women are especially subject to convulsions at the time of labour, and to become maniacal after their delivery. It has also been observed that, from violent and sudden impressions on the mind, more generally from terror than any other, pregnant women have either immediately had convulsions, or fallen into a state which shewed a great propensity to them, though they did not appear before the accession of labour. In some cases however, from a state of apparently perfect health, the first ten-

* There is a most interesting history of this in the Bible, *1 Samuel, chapter iv.* and three remarkable circumstances are mentioned; first, the cause, the violent agitation of her mind; second, her state of insensibility; third, that the child was born living, though the mother died immediately after his birth.

dency to labour has produced convulsions, which have continued till the child was born, or afterwards, or the patient died; though in other cases the convulsions have been removed, and the labour has proceeded with great regularity. But there is often reason to suspect, that when convulsions have once appeared, they make to themselves new causes of their return, as they have continued for many hours, or even days, after delivery. There is likewise reason to think that causes, seemingly too trifling to produce convulsions, have sometimes been equal to the effect; as I recollect two instances of women who had convulsions at the time of labour, preceded by violent headachs, brought on, as it appeared, by the use of some mercurial preparation mixed with the powder used for their hair.

But it is not only in weak and very nervous habits that convulsions occur, as they sometimes happen in plethoric constitutions, and are accompanied with a strong action of the vascular system in general, or of some particular part of the body; though I have never seen a case which could be attributed solely to this cause. With such different

constitutions and indications, some with all the symptoms of debility and depression, and others of plethora and fever, the method of treatment must of course vary; and great judgment will be required to suit the proper method, if it can be discovered, both in the degree and the extent to which it ought to be carried, to the state of every individual patient.

Besides the general affections of the body, which may be supposed to give a disposition to convulsions, affections of different parts, as of the intestinal canal or bladder, if they should be too much loaded or distended, may have the same power*. But in the female constitution the *uterus* is the great source of irritability, and of course every cause capable of disturbing that part beyond a certain degree, or in an unnatural manner, may affect the whole frame, according to the kind and degree of the original affection. Yet all the parts of the *uterus* do not appear equally

* Ad spasmodica, quæ ex uteri vitio proveniunt, pathemata concitanda, non opus semper erit, ut materia corrupta et vitiata, utero inhærens, proximè et immediate id efficiat.

Hoffman, de Mal. Hysteric.

liable to be disturbed, for the *os uteri* is evidently the most irritable part, even in a natural state, as well as when disturbed by any morbid or adventitious cause*. Hence it appears in pregnant women, on the first tendency to labour, that the changes which that part undergoes occasion a variety of nervous symptoms; and that these may be brought on, increased, or continued, if they before existed, by artificial or imprudent dilatation of the part in the course of labour, when it is unusually rigid; or with an increased degree of irritability occasioned by inflammation †.

It has been presumed, that the pressure made by the expanded *uterus* upon the de-

* In a case of this kind, which was published twenty-three years ago, I observed, "When the *os internum* began to dilate, I gently assisted during every fit; but being soon convinced that this endeavour brought on, continued, or increased the convulsions, I desisted, and left the work to Nature."

† A woman, whose case was communicated to me by Dr. *Mackenzie*, though the convulsions ceased after delivery, died on the fifth day of the puerperal fever. In almost every case of convulsions that I have seen, there was evidently, after delivery, a greater or less degree of abdominal inflammation.

scending

scending blood vessels, causing a regurgitation of the blood to the superior parts of the body, to the head in particular, by overloading the vessels of the brain, produced convulsions. This opinion applies to a cause very general indeed, and, if true, must have had its effect so frequently as not to remain in doubt. But it was before observed, that plethoric habits were universally less subject to convulsions of this kind than the feeble and irritable ones, and that they sometimes continued with equal violence after the birth of the child, when this cause was removed.

Women are far more liable to convulsions in first than in subsequent labours; and then, it is said, more frequently when the child is dead than when it is living. But when women have convulsions, the death of the children ought generally to be esteemed rather an effect than a cause, as they have often been delivered of living children when they were in convulsions; or of dead and even putrid children, without any signs of convulsions. Some women have also had convulsions in several successive labours; but, having had them in one, they generally, by the precautions taken, or some natural change, escape them

them in future. Lastly, I was for many years persuaded that convulsions only happened when the head presented; but experience has proved that they sometimes occur in preternatural presentations of the child.

SECTION III.

ON THE SIGNS WHICH PRECEDE CONVULSIONS.

PUERPERAL convulsions are often preceded for many hours, or for several days, by a vacillation of the mind, joined with a slight delirium.

Swimming in the head, and other vertiginous complaints, in the later part of pregnancy, or in women in labour, not unfrequently forebode convulsions.

Violent or piercing pain of the head, preceding or recurring with the pains of labour, with similar signs of a disturbance of the functions of the brain, often denote convulsions*.

When

* The lady of Captain C. who was at the full period of uterogestation, after complaining about twelve hours
of

When women in labour frequently complain of blindness, they are in danger of convulsions.

Convulsions are often preceded by violent pain or cramp at the stomach.

Convulsions preceded by violent pain or cramp at the stomach, are usually more dangerous than those which are preceded by affections of the brain only; and they sometimes cause sudden death by stopping the action of the heart.

Women who have a rigor on the returns of the pains of labour, are in some danger of falling into convulsions*.

Women in labour, who have great swelling or fulness of the neck, joined with an enlargement of the features of the face, and a staring or protrusion of the eyes, often fall into convulsions.

of the excruciating pain in her head, coming on at intervals, fell down dead as she was walking across the room.

* All rigors may be considered as a degree of convulsions; but these happen in labours frequently, though not always, without any ill consequences. I saw a feeble woman seized immediately after her delivery with a rigor, which, in spite of all the means which could be used, continued for twenty-five minutes, and then she died. Her labour had been very slow, but was perfectly natural.

I have

I have not known any woman, who had frequent vomitings in the time of labour, fall into convulsions; nor do they often happen in difficult labours.

The danger of cases attended with convulsions is not increased by their frequent return; as these depend upon the frequency of the action of the *uterus*, and not upon an increase of the cause of the convulsions.

SECTION IV.

ON THE MEANS OF PREVENTING CONVULSIONS.

FOR the prevention of common accidents it appears reasonable and proper, that women far advanced in pregnancy should avoid all irregularities in their manner of living, and every situation where they may be under restraint; or they will be liable to many complaints and inconveniencies*. At the

* Gregarious animals, when pregnant or giving suck, choose a place in the herd, different from what they take at other times.

time of labour it is a rule generally observed; that their minds should be kept composed, their apprehensions quieted, their present sufferings soothed by the tenderness of their friends and attendants; that they should be encouraged with the hope of a happy event, and that the knowledge of every thing which might agitate or distress them should be concealed. But when any symptoms of disease appear, besides these precautions, such means as the consideration of any particular case may indicate to be necessary are to be used; and no symptoms can require more attention than those which have been recited as threatening convulsions.

Bleeding is known to lessen, in a most effectual manner, all the complaints in pregnancy which arise from uterine irritation, and to a certain degree, in pregnant women, from all other causes. It is therefore, I may say, universally recommended in all cases, when these convulsions are apprehended. The quantity of blood to be taken away, and the repetition of the operation, must depend upon the strength of the patient and the violence of the symptoms. But as, in some cases of this kind, there are also tokens of general debility,

debility, and a great dread of the operation, it will then be preferable to use local bleedings, by scarification and cupping at the nape of the neck, by the free and frequent application of leeches, or sometimes by cutting the temporal artery; a thing so easily done as not to deter us from the practice, and often so efficacious as to invite our doing it on many other occasions.

When these symptoms are accompanied with others which denote much disturbance of, or the lodgment of any offensive matter in, the stomach, emetics may be given with safety and advantage*. In many affections of the brain it has been thought that emetics afforded singular benefit; and when these convulsions have been threatened, after the

* A very short time ago, a lady had many severe attacks of this violent pain in the head, in the later part of her pregnancy; this was constantly relieved by the application of leeches to her temples. When she fell into labour she became blind, and had one convulsion. Having great sickness at her stomach, without vomiting, I urged her to irritate her throat with her finger, by which means she vomited five or six times, and had no fit afterwards; the blindness remained in some measure for several days after her delivery. The child had been dead about a fortnight.

operation

operation of an emetic, patients have been sometimes wonderfully relieved. Care is also to be taken to regulate the state of the bowels, whether they be too much relaxed or constipated.

Towards the conclusion of pregnancy some women are subject to violent cramps in various parts of the *abdomen*, or inferior extremities, together with complaints in the head or stomach. Should not these be relieved by the customary means, the warm bath may be advised, and from its daily use they will often find much benefit.

Objections have been made to the frequent or habitual use of opiates for slight complaints in pregnant women; and there is much reason to suspect that they often prove injurious to the child. But these objections do not apply to their occasional use when they are really necessary. Yet as, in very large doses, opiates have been known to produce convulsions, it seems better to give them in small quantities often repeated, than in a large dose at one time*.

Nervous

* The late Dr. *Hunter* informed me of the case of a patient who had convulsions, preceded by the violent
pain

Nervous medicines of every kind are usually given on these occasions, rather with the intention of procuring temporary relief than permanent advantage; yet they ought not to be neglected. But, on the whole, it appears that in bleeding, and keeping the stomach and bowels in a healthy state, in giving opiates, and in the occasional use of the warm bath, we have the principal means, as far as can be judged either by reason or experience, of preventing puerperal convulsions, of insuring, in general, an undisturbed labour, and an uninterrupted recovery.

SECTION V.

ON THE TREATMENT OF CONVULSIONS.

FROM the attack of convulsions without any previous symptoms, or from the want of

pain at the stomach; on the approach of her next labour she was attacked with the same kind of pain. She was immediately bled largely, and took thirty drops of *Tinct. Opii*, by which the pain was removed. She was delivered after an easy and natural labour.

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attention

attention to those symptoms, we have much more frequently an opportunity of exercising our judgment in curing than in preventing convulsions. These, it was before observed, may come on in the beginning, or in the course of a labour; or, which is more rare, though not less dreadful, after the birth of the child; and some difference of treatment may be requisite, according to the time of their appearance. But, whenever they do come on, the danger is so manifest, and so alarming, as to call for the immediate exertion of all the powers of medicine for the relief of the patient.

The first and most obvious remedy in a case of such violent agitation of the whole frame, and such obtusion or perversion of the mental faculties, is, to take away a proper quantity of blood from the arm; for the direct good which may be expected to be gained by bleeding speedily, as well as for the prevention of the mischief which might follow the convulsions. One copious bleeding has sometimes entirely removed the convulsions, which have not returned; but, should these continue with equal force for a certain time, it will be expedient, for the particular

particular easement of the head, to try the effect of local bleedings. Leeches are too slow in their operation; and scarification, with cupping, could not be done without much difficulty; so that the two methods, most applicable and adequate to the urgency of the case, are, to open the temporal artery, or the jugular vein; and the latter has certainly been found preferable, perhaps because the blood is thereby discharged with greater velocity*. Objections are sometimes made to bleeding, lest there should be a difficulty in restraining the blood while the patient is so much disturbed; but there is no hazard, and the case does not admit of delay. The bleeding, from whatever part the blood may be drawn, is to be repeated according to the effect produced, the strength of the patient, and the violence or continuance of the symptoms †.

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* For a patient who was lying in a state which deprived me of all hope of her recovery, Dr. *Reynolds* proposed that the jugular vein should be opened. The good effects were almost instantaneous; the patient recovered, and has since had many children.

† The late Dr. *Bromfield* informed me of a case of puerperal convulsions, for which he had bled the patient

The state of the patient will seldom allow of the use of emetics; but, when they could be given, and have produced their effect, they have procured much relief; and the same observation may be made of purgative medicines. But the truth is, from the moment the convulsions come on, the patients often lose all power of swallowing, even in the intervals, and we are compelled to relinquish internal medicines altogether. Yet in such cases, clysters, if they can be made to pass, are usually given; but, whether they were purgative in the first instance, or afterwards composed with a due quantity of opium, of oil of amber, the fetid gums, or other medicines of that kind, I cannot say that I ever saw any good produced by them, at least before the birth of the child.

On a supposition that the remote cause of these convulsions is in the too great irritability of the constitution at large, and the immediate cause in the excitement raised by some new stimulant, of the labour, or the like,

without much benefit. In the violence of some of her struggles the orifice opened, and a considerable quantity of blood was lost before the accident was discovered; but the convulsions from that time ceased.

opium

opium in any convenient form has been freely given, and sometimes with evident advantage; though I have seen many cases in which it had no power to remove, or even to abate, this disease. Nor has more satisfaction been obtained by the various nervous medicines commonly prescribed; even musk, often repeated in very large quantities, has done as little service as the rest.

When the convulsions have continued or increased, notwithstanding the bleeding and the use of all the other reasonable means which could be devised, the patient may be put into the warm bath, in which she may remain a considerable time if the convulsions are suspended while she is in it. There have been instances of women with convulsions who have been freed from them while they were in the bath; and I have heard of one or more cases of their being actually delivered in the bath, without any ill consequences, either to the mother or child. When a warm bath could not be procured, or while it was preparing, I have directed flannels wrung out of hot water to be applied over the whole *abdomen*, and, I think, with advantage.

On every principle, of removing the cause of the convulsions, of substituting new modes of irritation different from that which produced the convulsions, of preventing their ill effects, or of abating that exquisite irritability which renders patients subject to them, almost every measure and method has at one time or other been tried. *Harvey** recommended the irritation of the nose in a comatose patient who was in labour, and gives an instance of its success. Many years ago I was led by accident to try the effect of sprinkling, or dashing cold water in the face; and in some cases the benefit was beyond expectation or belief †. But in other cases,

* *Exercitat de Partu.*—Page 554.

† I subjoin the following case to explain the manner of using the cold water. To a patient in convulsions who had been bled, and for whom many other means had been fruitlessly used, I determined to try the effect of cold water. I sat down by the bed side with a large basin before me, and a bunch of feathers. She had a writhing of the body, and other indications of pain, before the convulsions; and when those came on, I dashed, with some force, the cold water in her face repeatedly, and prevented the convulsion. The effect was astonishing to the bystanders, and indeed to myself. On the return of the indications

cases, in which I used this method with equal care and assiduity, no good whatever was derived from it; nor has the application of sinapisms to the feet, or blisters to various parts of the body, afforded any advantage, except, perhaps, when the convulsions had ceased, and the patient remained comatose.

When all means have been tried without success, and the convulsions remain, with evident and extreme danger of the patient dying every time they return, we shall, notwithstanding, be driven by necessity to wait quietly for the termination of the labour in a natural way, hoping she may struggle through; or shall be obliged to seek further resources in the delivery of the patient by art.

indications of pain I renewed the use of the cold water, and with equal success; and proceeded in this manner till the patient was delivered, which she was without any more convulsions, except once when the water was neglected. The child was born living about fifteen hours from the time of my being called, and the patient recovered perfectly.

I was much mortified to find that I had not discovered an unfailing method of treating convulsions; further experience convincing me that this often failed. It is however a safe remedy; and, though it may not always have sufficient efficacy to prevent or check convulsions, whoever tries this manner of using cold water will soon be convinced that it is a most powerful stimulant.

But this part of our subject shall be considered in the next section.

SECTION VI.

ON THE DELIVERY BY ART.

If it be necessary to make distinctions as to the time when convulsions come on, with regard to the medicinal treatment, it is infinitely more so as to the delivery of the patient by art. We will therefore consider,

1. Whether delivery by art be proper or justifiable in the beginning of a labour attended with convulsions.

Women sometimes fall into convulsions before there is any discoverable tendency to labour, when there is not the smallest degree of dilatation or relaxation of the *os uteri*, and when there is no way of judging that it will be labour, except from the peculiarity of the convulsions, which may be readily distinguished from those proceeding from any other cause. In some cases also, after a long continuance of the convulsions, the *os uteri* has remained closed, and then it has been presumed that they were not, properly speaking, puerperal. Yet, after

a long delay, it generally happens that the dilatation both of the internal and external parts begins, and proceeds very rapidly; so that, in a short space of time, from no degree of dilatation, the *os uteri* becomes completely dilated, when all hopes of delivery had been laid aside, and the very existence of the labour had been denied.*

Now whether it be proper and reasonable that attempts should be made to deliver a woman with the *os uteri* in this state, and under such circumstances in general, must appear very dubious to those who consider how much would then be required to be done by art. But, if we reflect upon the event of the greater number of cases of women who have been delivered by art, under these, and far more favourable circumstances, the greater part of whom died, their death being apparently hastened by the operation, however carefully it might have been performed, we shall be deterred from proposing it, and, I think, be justified in forming this general rule

* In a well known case of this kind, the midwife, presuming that it would not be labour, left the patient, who was found dead in the morning, with her child also dead lying in the bed.

of practice, subject to some exceptions, that women, who fall into convulsions in the beginning of labour, ought not then to be delivered by art.

I presume that, with all the assistance which art enables us to give, or if the labour be resigned to Nature without interposition on our part, patients will sometimes die in a deplorable manner. I also know that, if the patient should die when no attempts were made to deliver, that the omission is always regretted; or, if she should be delivered by art and die, that the operation is lamented. Yet there must be a rule of conduct to be preferably followed, and with few exceptions; and these are to be made not according to the timidity or boldness of the person under whose care the patient may be, nor according to the hurry or tenderness of friends; but according to a judgment formed by a sense of duty, and maturely weighing all that the knowledge of a present case, or the experience of others, has enabled us to collect*.

2. Though

* Dr. Ross, who, forty years ago, was one of the physicians of *St. George's Hospital*, was the first person who had courage to declare his doubt of the propriety of speedy delivery in all cases of puerperal convulsions. The observation

2. Though convulsions often happen in the beginning of a labour, and continue to its termination, the first stage is, in some cases, passed over without any unusual disturbance or irregularity, and they come on in the second stage of the labour when they were not expected. The propriety of delivering by art is then to be determined on other grounds than in the preceding statement. For, if it should be thought necessary to deliver by art, this may frequently be done without any peculiar force upon the parts concerned, as the *os uteri* will then either be dilated with the membranes, whole or lately broken, and the child may be turned without difficulty, and safely extracted by the feet; or the head will have descended so low into the *pelvis* as to allow of the use of the *forceps* or *veētis*; or things may be so unhappily circumstanced as to leave no other option of the mode of delivery, but we may be compelled to lessen the head of the child. Whichsoever of these methods may be put in practice, the rules be-

tion on which these doubts were founded was merely practical, and the event of very many cases have since confirmed the justice of his observation, both with respect to mothers and children.

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fore given will be sufficient guides for our conduct. But, from a review of what has passed in my own practice, I feel it necessary to caution the operator against a forwardness to sacrifice the regard due to the child in cases of convulsions, as many of these, with very unfavourable appearances, have terminated happily; and against hurry in any operation, as he would thereby lessen his chance of saving the child, and probably with disadvantage to the mother: and no good can result to society, or reputation accrue to the profession from a practice by which neither of their lives are preserved. Should the convulsions continue after the birth of the child, the methods before tried must be continued, or new ones adopted, as the state of the case may then require or allow; and under these circumstances it will often be found preferable to satisfy ourselves with giving time, proceeding gently and circumspectly with general care, rather than to use incessantly the more active means which have sometimes been recommended.

With respect to those convulsions which first appear after the birth of the child, the exigence of the case must govern the treatment,

ment. There is in these an appearance of instant danger beyond what is found in convulsions before delivery, frightful as they are; and they seldom admit of any other consideration than that of supporting the patient by cordials and stimulating medicines, when she can swallow; or the application of such means as are in common use for restoring those who are faint, or in fits of any other kind; the principal and most efficacious of which is, to dash repeatedly cold water in the face, in the manner before described. If women escape the first fit there is a great chance of their recovery; but, should they remain comatose, or whatever their state may be, the particular symptoms are to be considered; and, from all that has been said upon this subject at large, we shall be at no loss to discover what may be applicable in any individual case.

ON COMPLEX LABOURS.

ORDER FOURTH.

ON LABOURS IN WHICH THERE IS A DESCENT
OF THE FUNIS UMBILICALIS BEFORE ANY
PART OF THE CHILD.

SECTION I.

THE *funis umbilicalis* may be easily distinguished from any part of the child by its pulsation when the child is living, and by its form and continuation, whether the child be living or dead.

Some incident is generally assigned as the cause of the descent of the *funis*; but the rupture of the membranes, with a rapid discharge of the waters of the *ovum*, especially if they be excessive in quantity, has been considered as the most usual cause. This
circumstance

circumstance may sometimes occasion the descent of the *funis*, but far less frequently than has been imagined. For, before the rupture of the membranes, the *funis* may frequently be distinguished through them, lying before the head, or presenting part of the child; so that, whenever the membranes break, whatever might be the quantity of water, or the manner of their discharge, it would be impossible but that the *funis* must be the part which first descends. For this, with many other reasons, so many cautions have been given to avoid breaking the membranes; because, though the *funis* were thus situated, the child would not be in danger before the membranes were broken. It has also been observed, that the descent of the *funis* has happened to the same woman in several successive labours; so that, from the uncommon length of the *funis*, or from some other peculiar circumstance, some women seem to be particularly liable to this accident.

The descent of the *funis* makes little or no difference with regard to the progress or event of a labour, as far as the mother is concerned. The danger thence arising is wholly

wholly confined to the child. All our attention, and every measure we pursue, must then relate to the prevention of this danger, which can only arise from the compression of the *funis*, and the consequent interruption or suppression of the circulation of the blood between the *placenta* and child.

All the assistance which art has afforded for this purpose has led to two points of practice; first, in directing us to return the descended *funis* beyond the head, or presenting part of the child, whatever that may be, in drawing it to the sides where it might be out of the way of compression; and, if these were impracticable, to favour the continuance of the circulation by preventing its exposure to the influence of the open air. Secondly, by passing the hand into the *uterus*, turning and delivering the child by the feet; by which the labour was accelerated and the danger of the compression of the *funis* avoided.

When the *funis* has descended, the state of the child may be precisely determined by the *funis* itself. If there be a pulsation in it, the child is certainly living, or though the pulsation may cease during the continuance of a pain and return in the intervals; but, if
there

there be no pulsation to be perceived in it, the child, we may be assured, is already dead. When the child is dead all the efforts of art must be useless to it, and might be injurious to the mother; we must therefore be satisfied with permitting the labour to proceed as if the *funis* had not descended. It is only when the child is living, which, as we before observed, will be proved by the pulsation of the *funis*, that any interposition can either be required or of service; yet it is remarkable that writers on this subject have instituted their directions in general terms, without regard to the state of the child, whether living or dead. It is also to be observed, that the same directions have been given under all the various circumstances in which the mother may be, though these are sometimes such as to make it impossible for them to be followed, without inducing some danger to the mother, or with any prospect of advantage to the child; but we shall understand this subject better by considering it in the following manner.

SECTION II.

ON THE DESCENT OF THE FUNIS WHEN THE
OS UTERI IS BUT LITTLE DILATED.

SHOULD the membranes break in the beginning of labour, more especially if it be the first, when the *os uteri* is but little dilated, and the *funis* descend before the presenting part of the child, this would probably perish long before the *os uteri* became dilated, or acquired such a state of dilatibility as to allow of the safe introduction of the hand, if we were disposed to turn the child; and before we had an opportunity of putting in practice any of the methods for replacing the *funis*. With this statement of the situation of the mother, it appears to be most eligible, and, I believe, it is generally consonant to the present practice, to submit quietly to the natural event of the case, than by ill-timed and violent attempts to deliver the patient by art, with very little hope of saving the child, and with no small danger to the mother.

SECTION III.

WHEN THE OS UTERI IS FULLY DILATED.

THE *os uteri* is understood to be completely or sufficiently dilated when it will allow of the introduction of the hand without much force. When the membranes break in the advanced state of a labour, should the *funis* descend before the child, it will even then be necessary to consider the state of the child before we determine on the measures we might find it safe and think it reasonable to pursue. If the child should be dead, we then certainly ought to resign the labour to the natural efforts without any interposition. But, if the child be living, and so far advanced as to give us hope of a speedy delivery, or if the presenting part of the child remain high up in the *pelvis*; especially if the pains have been slow and feeble, it will generally be better to pass the hand into the *uterus*, to turn and deliver the child

by the feet; using, at the same time, the precaution of carrying up the descended *funis*, that it may be out of the way of compression. But if the head should be so far advanced in the *pelvis* as, in any conspicuous degree, to render the turning of the child unsafe to the mother, it may be proper to use our endeavours to preserve the child by other means, such as by replacing the *funis*, or by accelerating the labour.

For the first we have been directed to raise the descended *funis* beyond the presenting part of the child, in the absence of a pain, as far as we can reach; retaining it there when the pains come on, till it shall abide above the presenting part of the child, when we might presume it was in safety. But this method is, on trial, seldom or never found to succeed, for the *funis* is usually forced down again on the return of the pains; though the success of these attempts will very much depend upon the quantity of *funis* descended, or upon its being in a single fold, or in several convolutions, and whether it be on the fore part or sides of the

pelvis,

pelvis, where it can be more commodiously managed.

The late Dr. *Mackenzie*, than whom I have not known a man more intelligent in conversation, or more excellent in practice, informed me of another method which he had tried. Instead of attempting to replace the descended *funis* in the common way, he brought down as much more of it as would come with ease, and then inclosed the whole mass in a small bag made of soft leather, gently drawn together with a string, like the mouth of a purse. The whole of the descended *funis*, inclosed in this bag, was conveniently returned, and remained beyond the head of the child till this was expelled; and, the bag containing the *funis* having escaped compression, the child was born living. But he very ingenuously told me, that he had made several other trials in the same manner without success.

Many years ago Mr. *Croft* also informed me of a method which he had successfully used in these cases. When he had in vain attempted to replace the *funis* in the common way, he carried up the descended part beyond

yond the head, till he met with a limb of the child, suppose the leg or arm. On this he suspended the *funis*, and then, withdrawing his hand, suffered the labour to proceed in a natural way. There may be much of accident in the success of these different methods, but I should believe, whenever it may be thought necessary to introduce the hand into the *uterus*, that it would be found more expedient to complete the business by turning the child and delivering by the feet.

With respect to the acceleration of the labour, the means to be used must depend upon various circumstances, which we will consider in the next section.

SECTION IV.

I. IT is to be observed that every child is not born dead, though the *funis* had descended, and no means were used to free

it from compression; but it is evidently in great jeopardy. The danger depends upon two circumstances; the time which may pass when the *funis* is compressed before the expulsion of the child, and the degree of compression made upon it, in consequence either of the smallness of the *pelvis* in proportion to the head of the child, or upon the resistance of the soft parts. The first is beyond the power of art to remedy, and the second will depend upon the state of the parts, whether it be a first child, or whether the patient may have had one or many children. If the *funis* should have descended with a first child, in general, the slower the labour proceeds, the less will be the hazard of the compression; but, unfortunately, the children thus circumstanced will commonly perish, though sometimes they escape; and I have been mortified, in some instances, with an assurance that a very few minutes delay in the expulsion of the child has been the cause of the mischief. When the *funis* descends in those women who have had many children, there is little resistance made by the soft parts; and, by
exciting

exciting the pains to act with more vigour, or by encouraging the patient to exert her efforts more strenuously towards the conclusion, the child will be sooner expelled, and its life be preserved. But no attempts to save the child are to be practised but such as are consistent with the safety of the mother.

2. When the head of the child presents, and has advanced far into the *pelvis*, if the pains are slow and ineffectual, and the child living, it may be considered whether, without hazard to the mother, we may not apply the *forceps* or *veclis*; and, by extracting the head sooner than there was reason to think it would be expelled by the natural pains, preserve the child. With regard to turning the child, and delivering by the feet in these cases, the operation can only be performed before the head has descended far into the *pelvis*; though in some instances I have gone beyond the common rules of the art, and have succeeded in saving the child.

3. When there is a descent of the *funis*, with a preternatural presentation of the child,
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our conduct must have regard to both these circumstances.

Should the breech present, the case will very much resemble the presentation of the head; that is, the same methods for replacing the *funis* may be tried, and with rather a better chance of success. If these fail, instead of considering the labour as one of those which is to be resigned to the natural efforts, it may be expedient at a proper time to bring down one or both of the inferior extremities, taking care that the *funis* be not entangled between the legs of the infant; and there are few cases in which we may not conduce to the preservation of the infant, by proceeding in this manner.

Should the arm of the child present, and such presentation be complicated with a descent of the *funis*, very little difference of conduct will be required; because, for the first reason, we should determine to turn the child, and deliver by the feet; and the additional circumstance of the descended *funis* can require nothing more to be done. The general rules already given for

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the use of the *forceps* and *vectis*, and for the management of preternatural labours, make it unnecessary to enlarge on this part of our subject in this place.

Very much to be desired, that the same method of operating the *forceps* may be tried, and that a better chance be taken of conducting the labour, in a manner which is to be preferred to the rest, in cases where it may be expedient to attempt this.

FINIS.

It is not intended, however, that the *forceps* should be used in every case, but only in those where it is necessary, and where it is conducted to the satisfaction of the patient, by proceeding in the manner

shall the aim of the child present, and such presentation be considered with respect to the *forceps*, very little difference of conduct will be required; because, for the first reason, we should determine to use the *forceps*, and deliver by the feet, in the additional circumstances of the case, which can require nothing more to be done. The general rules already given for

the