An introduction to the practice of midwifery. Vol. II. / [Thomas Denman].

Contributors

Denman, Thomas, 1733-1815.

Publication/Creation

London : J. Johnson, 1798.

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AN

INTRODUCTION

TO THE

PRACTICE

OF

MIDWIFERY.

By THOMAS DENMAN, M. D.

LICENTIATE IN MIDWIFERY OF THE COLLEGE OF PHYSICIANS.

IN TWO VOLUMES.

VOLUME THE SECOND.

THE SECOND EDITION.

LONDON:

PRINTED FOR J. JOHNSON, NO. 72, ST. PAUL'S CHURCH-YARD.

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INTRO-

INTRODUCTION

TO THE

PRACTICE OF MIDWIFERY.

CLASS SECOND.—DIFFICULT LABOURS.

CHAPTER X.

SECTION I.

FROM the foregoing hiſtory of a natural labour, and from the whole tenour of what has been advanced in the preceding chapters, it appears that parturition is a proceſs of the conſtitution which, generally, does not require any aſſiſtance; and that when it is natural, it ſhould be ſuffered to have its own courſe, without interruption, for the very ſame reaſons, which render all interpoſition with other natural operations, unneceſſary and improper. Whence then ariſes the neceſſity or expediency of eſtabliſhing midwifery as an art for the relief of the human ſpecies? or in what reſpects has ſociety profited by the eſtabliſhment? Certainly not on the preſumption that women are by nature deſtitute of thoſe powers, which

at the time of parturition, are in all other creatures generally equal to the exigencies of their ſituation; nor when thoſe powers are fairly exerted, every cauſe producing its effect, in the order and in the manner which the parts by their conſtruction were framed to perform and undergo; nor, when there exiſt no uncommon impediments by which the effects to be produced by the natural cauſes, are, or may be obſtructed. But as the aid of medicine becomes neceſſary, when from ſome defective, or irregular exertion of the native powers of the conſtitution; or from ſome adventitious cauſe of obſtruction; or from ſome infirmity in the conſtituent parts of any of the organs of the body, the functions of any part are ſuppreſſed, impeded, or in ſome way rendered irregular, to the detriment of that part, or of the conſtitution: from the ſame cauſes, and in like manner, the aſſiſtance of the art of midwifery may be required for the relief of irregularities or difficulties in the act of parturition.

In all creatures in which there is a difference of ſtructure, there muſt be a difference in the conduct or manner of every function of the conſtitution, which is at all connected with, or dependent upon ſuch variety in ſtructure;

ture; and a difference in the proceſs of any function, eſpecially if this ſhould be rendered more complex, may become the prediſpoſing cauſe of ſuch deviation from the natural courſe of that function, as may require the aſſiſtance of art: though the very ſame function, proceeding or being performed in a natural way, might be void of danger, and require no aſſiſtance whatever. The knowledge of the peculiarities of the human ſpecies, or of the ſpecific circumſtances in which the conſtitutions of women differ from thoſe of all other female creatures, may therefore be conſidered as affording the only juſt and true baſis on which both the theory and practice of midwifery ought to be founded. Before we proceed, then, to an enquiry into the particular caſes which may demand the aſſiſtance of art, or determine upon the manner in which that art can be exerciſed with the greateſt propriety and advantage, a ſhort review of thoſe peculiarities will be neceſſary and uſeful, that we may be cautioned to avoid the abuſe of the art, or the exerciſe of it, except in thoſe caſes in which that aſſiſtance which art can afford, is abſolutely required.

The firſt and moſt obvious circumſtance in which women differ from all other female

creatures, is the erect position of the body; of the consequence of which, with regard to the *pelvis*, and some diseases to which women are particularly liable, notice has been already taken*. In the original construction of the *pelvis* in quadrupeds, with a view to parturition, there seems to be a necessity for regarding its capaciousness alone; because if even more than sufficient space were provided for the passage of their young, no attitude into which they put themselves, or into which they can be compelled by any accident, during utero-gestation, would subject them to danger on this account. But from the erect position of the human body, if the cavity of the *pelvis* had borne the same relative proportion to the size of the *fœtus* as in quadrupeds, women would have been liable to many and great inconveniencies. For the weight of the *ovum* and enlarged *uterus* must, in advanced pregnancy, have been occasionally sustained by the soft parts, which becoming thinner, and less equal to that office, according to the advancement, premature labour would often have been occasioned. For this, and perhaps several other less obvious, though equally impor-

* See Vol. I. Chap. i. Sect. v. and Chap. iv. Sect. i.

tant

tant reaſons, which it is not neceſſary to enumerate, there undoubtedly is in human beings, a greater difference between the dimenſions of the cavity of the *pelvis*, and the head of the *fœtus* at the time of birth, than in animals; and this difference muſt eventually become the cauſe of more painful and difficult parturition.

As there is no effect throughout nature without ſome adequate cauſe, as well as ſome wiſe end, perhaps the moſt ſatisfactory proof of the exiſtence of this diſproportion, may be drawn from the conſtruction of the head of the human *fœtus*, which being incompletely oſſified at the time of birth, is capable of having its form changed, and its ſize diminiſhed, without any injury, from the compreſſion. Theſe effects are produced in ſome degree in almoſt all labours, but very remarkably in thoſe which are completed with difficulty; for in ſuch, the ſutures not only accede, but the edges of the bones will ride over each other in a very extraordinary manner. From this original and comparative relation between the cavity of the *pelvis*, and the head of the *fœtus*, women are naturally more liable to difficulties in parturition than animals; which

difficulties may be eſteemed as an allay for the advantages obtained by the erect poſition; or becauſe their offspring were ſo framed as to be capable of greater excellencies than animals; which excellencies may depend upon this conſtruction of the head. Without this incomplete oſſification, great numbers of children muſt have been inevitably deſtroyed at the time of birth, or the parents muſt have died undelivered. Nor is this proviſion only ſufficient to anſwer the end of mitigating thoſe evils to which women are by their ſtructure neceſſarily liable; but it is generally equal to the relief of thoſe which are occaſioned by morbid alterations in the ſize of the cavity of the *pelvis*.

2. The intercourſe between the parent and *fœtus*, while it abides in the *uterus*, though generally alike in all viviparous animals, has ſome variation in each claſs. The *ovum* is conſtructed for a temporary uſe, but in a moſt beautiful and perfect manner for the purpoſes for which it was ordained. The variations may exiſt either in the *uterus* or *ovum*.

In the *uterus* of the different claſſes of animals, the moſt obvious variety is in the form. Animals might, perhaps, be nearly as well arranged,

arranged, and the claſs to which they belong as well determined by the form of the *uterus*, as by any external or other internal mark. Such as are the form and ſtructure of the *uterus*, ſuch will be the properties; and of courſe in every animal in which there is a difference in form or ſtructure, there will be ſome correſponding difference in the circumſtances of parturition; ſo that if an enquiry was attentively made, it is probable we ſhould not find an exact likeneſs in the parturition of any animals which vary either in *genus* or ſpecies.

The *uterus* in all animals, may be conſidered as the bed or ſoil in which the *fœtus* is nouriſhed, preſerved and accommodated, till it arrives at a ſtate of perfection, and the part by which it is ultimately expelled. For the completion of theſe ends, there muſt be a perfect coincidence between the nature of the *fœtus* to be thus nouriſhed, preſerved, and accommodated, and the form and properties of the *uterus*, by which thoſe offices are to be diſcharged. The varieties in the form of the *uteri* in different animals are progreſſive, from thoſe of the loweſt tribe, which are horned, to the human, which when un-impregnated, is pyramidal,

becoming more oviform according to the degree of its diſtention. On the form of the *uterus* not only the accommodation of the *fœtus* may depend, but the term of utero-geſtation alſo; o the power which every individual *uterus* has of bearing diſtention only for a ſpecific time. Yet if this were allowed, it would ſtill remain to be proved why an *uterus* of one form, became capable of bearing diſtention for a longer time than that of another.

Complicated with, or dependent on form, is the ſubſtance or thickneſs of the *uterus*; and on this again the power which the *uterus* is capable of exerting at the time of parturition. The *uterus* in women is of greater thickneſs, and of a firmer texture in the unimpregnated ſtate, than in animals; for in theſe it is ſaid to become ſomewhat thinner, in proportion to its diſtention; whereas in women it retains its thickneſs, if it does not become rather thicker during pregnancy. It appears that by this thickneſs is gained the medium of that power which is exerted by the human *uterus* in the act of parturition, and without which women could not in many caſes have been delivered. But if there had

been

been occaſion in animals, for the exertion of an equal degree of power, they could not have been delivered; as there is not in them a medium by which ſuch power could have been exerted, and the form of the *uterus* would alſo have been leſs favourable for its operation had it exiſted.

This thickneſs of the *uterus*, notwithſtanding its diſtention, is chiefly preſerved by the gradual enlargement of the arteries, veins, and lymphatics, and their enlargement is moſt conſpicuous about that part to which the *placenta* adheres. The quantity of blood circulating in the human *uterus* and the adjacent parts, during pregnancy, is very great; and it probably undergoes in the *uterus* itſelf, ſome preparatory change, before it is conveyed to the *placenta*; ſo that it may be preſumed, that the *uterus* performs the office of a gland altering and preparing the blood, before it is conveyed to the *placenta*, for a more perfect ſecretion of whatever is to be ſeparated from it, for the uſe of the *fœtus*; as well as that of the containing part of the *ovum*. On the quantity of blood circulating in the *uterus* may alſo depend its action at the time of labour; for if the *placenta* be looſened before the child is born, and the blood has a free diſcharge, there

is

is ſeldom any efficacious action, though the *uterus* may be, in all other reſpects, in a ſtate of perfect health.

In our preſent inquiry, the principal part of the *ovum* which deſerves attention, is the *placenta*, and of this there is an endleſs variety in the different kinds of animals, according to the nature and properties of each parent and the offſpring. In the *belluæ*, the office of the *placenta* is performed by the whole membrane of the *ovum* being thickened, and becoming proportionably vaſcular; in the *pecora* the *placenta* is divided into many lobules, compoſed of long and vaſcular fibres, called *cotyledons* or cups, affixed to as many temporary eminences of the internal ſurface of the *uterus*; in the *feræ* it ſurrounds the *uterus* like an internal belt; and ſo on, with great variety, in the different claſſes of animals. But in the human ſpecies, the *placenta*, as the word implies, is in one flattened maſs, of a circular form, becoming gradually thinner towards the edge, and it adheres to the *uterus* with a broad ſurface. When this is ſeparated, the orifices of many of the large veſſels of the *uterus* are opened, and a conſiderable quantity of blood is immediately diſcharged, far beyond what could poſſibly be loſt in any animal, though of a much

a much larger ſize; and if the *uterus* was to continue diſtended, the orifices remaining open, there would be a dangerous or a fatal hemorrhage. For not only the blood circulating in the *uterus* would be immediately poured out of its veſſels, but all that which is contained in the body might be drained, and the patient ſpeedily periſh, if ſhe was not relieved by art; and yet no animal ever was or could be deſtroyed, or brought into danger by this circumſtance. From the ſame cauſe alſo, the uterine diſcharges continue a longer time, after delivery, in women than in animals; the irregularities and interruption of which may become the cauſes of diſeaſe, and are proofs that, independent of faſhion or cuſtom, there is a neceſſity that women ſhould, for their own ſafety, be ſeparated from ſociety for a certain time after delivery. On account alſo of the form of the *uterus*, and the peculiarities of its action, of the bulk of the *placenta*, and the manner of its connexion, it is more likely to be retained in women than in animals; and its retention may be followed by worſe conſequences.

3. In the conſideration of this ſubject, the paſſions of the mind are of too evident impor-

tance

tance to eſcape attention. On a variety of occaſions, theſe, in human beings, to a certain degree, in a natural ſtate, and much more when heightened by all the refinements and perverſions of ſociety, are found to be capable of producing the moſt extraordinary effects; by ſuppreſſing or ſuſpending for a certain time the action of any, or of all the powers of the conſtitution; by occaſioning them to act with irregularity, and at improper times; and in ſome caſes alſo by exciting them to act with too great energy and force. But animals ſuffer neither from the recollections of the paſt, or dread of the future; and acting according to their nature, the good or evil of the preſent moment, probably to them appears to be the whole of their exiſtence. In the paſſions we may then diſcover ſources of danger, and diſturbance in the parturition of women, from which animals are wholly exempt; and the obſervation is ſo general, that care is univerſally taken to prevent the communication of any intelligence to women in, or about to be in labour, which can either diſtreſs, or much agitate them. To this principle or cauſe, may alſo be referred, the many nervous affections to which women

are

are ſubject in the ſtate of childbed, and for ſome time after they are delivered, when the animal powers are reduced, and the ſenſations quickened. But it muſt be allowed, that the greater degrees of theſe evils, are not to be attributed to phyſical infirmities, but to moral errors.

A conſideration of their unimpaired conſtitutions and leſs exquiſite feelings, will likewiſe diſcover to us the reaſon why the lower orders of women have more eaſy and favourable births than thoſe who live in affluence; the frame of whoſe bodies, and the ſenſibility of whoſe minds are altered, and often depraved, by the indulgence of parents, when they are infants, and by their own luxury, when they are adult. The conſtitutions of thoſe who are hardy, are better able to bear the common accidents of childbearing, and they ſuffer leſs becauſe they have leſs feeling and apprehenſion. When the *Egyptian* midwives were charged before *Pharaoh* with diſobedience to his orders, becauſe they preſerved the lives of the *Hebrew* children, they pleaded in their excuſe, that the *Hebrew* women were not like the *Egyptian*, " they were lively, and were delivered before they (the midwives) could come to them." The *Hebrew* women

were

were ſlaves, accuſtomed to labour and hard living, yet they had more children and eaſier labours than the *Egyptian*, who, we may preſume, ſuffered all the evils ariſing from indolence and luxury. The ſame obſervation will alſo explain the reaſon of many of thoſe evils which women in the higher ranks of life ſuffer; particularly why fewer women die in child-bed in the country than in cities, where even thoſe of the lower claſs are often compelled to live in unwholeſome ſituations, and too often plunge into groſs indulgences, and therefore ſuffer the ſame or a worſe fate, than the delicately luxurious.

4. We are laſtly to conſider, that women are by conſtitution and by habits of education and living, ſubject to diſeaſes to which animals are not liable; which diſeaſes may create new cauſes of difficult parturition, may increaſe natural evils, or may weaken thoſe powers by the operation of which, difficulties ſhould be overcome. All theſe diſeaſes it is unneceſſary, and perhaps impoſſible to enumerate; but that, which by affecting the bones in general, and thoſe of the *pelvis* in particular, has the greateſt influence on labours, is deſerving of eſpecial notice.

By the *Rachitis* is not only underſtood the diſeaſe of children properly ſo called, but the *oſteo ſarcoſis*, or *mollities oſſium* alſo, this being the only difference between them; that in the former, the bones, in the infantile ſtate, are prevented from acquiring ſuch a degree of firmneſs, as will enable them to ſuſtain the weight of the incumbent body, without yielding and becoming diſtorted; which diſtortion may remain to adult age. But, in the latter, the bones having been properly formed and oſſified, become ſoft again, in conſequence of the abſorption of the oſſific matter, by which the moſt extreme degrees and frightful kinds of deformity have been ſometimes occaſioned, the progreſs of the diſeaſe being ſometimes indicated by the increaſing difficulties of ſucceſſive labours*. From diſtortion produced by either of theſe cauſes, the cavity of the *pelvis*, which in a natural ſtate, ſhould meaſure upwards of four inches, in its narroweſt limits, may be reduced to two, or even to leſs than one inch; by which the reciprocal proportion between it and the head of the *fœtus*, is perverted or deſtroyed, and it is abſolutely impoſſible for the latter to paſs through the former. This

* See Vol. I. Chap. i. Sect. x.

ſoftneſs

ſoftneſs and conſequent diſtortion of the bones, being peculiar to, or infinitely more frequent in the human ſpecies, occaſions difficulties at the time of parturition, from which animals are almoſt univerſally free. Even if animals were liable to it, from their poſition, and the diminiſhed weight which the *pelvis* ſupports in quadrupeds, it could not produce the ſame kind or degree of effect. From the frequency of this diſeaſe in cold and unwholeſome climates, or in crowded cities, or wherever the employments and manners of the human race, weaken the conſtitutions of the inhabitants; and from its rarity in warm and healthy ſituations, with ruſtic employments and ſimple manners, we may conclude, though we retain and act upon the ſame principles, that the events reſulting from the practice of midwifery muſt be different in different places, and that the authority of the beſt writers muſt in ſome meaſure be local.

On account of the originally relative ſmallneſs of the cavity of the *pelvis* to the head of the child, of the ſtructure of the *uterus* and *placenta*, of the paſſions, and of the diſeaſes to which mankind are by nature, or by the cuſtoms of ſociety, rendered peculiarly liable, the

cauſes

cauſes of many difficulties and dangers which attend parturition, will be evident; and of courſe, the neceſſity of eſtabliſhing midwifery, as an art, for the relief of women, will be evinced.

But to render theſe obſervations, with others, diffuſed through this work, of greater uſe, I ſhall endeavour to reduce them into propoſitions in the following order:

1ſt. All viviparous animals bring forth their young with pain.

2d. The degree of pain which they ſuffer, will depend upon the degree of their ſenſibility, natural or acquired, and upon the difficulty with which they bring forth their young.

3d. The difficulty with which they, in general, bring forth their young, depends upon their conſtruction.

4th. By their conſtruction, they are alſo endued with powers capable of overcoming all the difficulties to which ſuch conſtruction generally renders them liable.

5th. The proceſs of parturition in animals is therefore to be eſteemed a natural proceſs, requiring no other aſſiſtance, than the exertion of thoſe powers which depend upon their conſtruction.

6th. The conſtruction of the females of the human ſpecies is different from that of the females of any order of animals.

7th. The conſtruction of the females of the human ſpecies is ſuch, as to render them unavoidably ſubject, in general, to greater pain and difficulty in parturition, than the females of any order of animals.

8th. But by the conſtruction of the females of the human ſpecies, and by the original formation of the head of the human *fœtus*, proviſion is made for overcoming all the difficulties to which the peculiarities of their conſtruction may render them generally liable.

9th. With regard to the act of parturition, when natural, women are therefore to be eſteemed on a ſimilar footing with animals.

10th. But as women are by their conſtruction, and by the cuſtoms of ſociety, ſubject to diſeaſes and accidents, which increaſe the natural difficulties and danger attending their parturition, from which the females of every order of animals are free,

11th. It will follow, that the occaſions which require aſſiſtance at the time of parturition, muſt, of neceſſity, occur more frequently

quently in women than in the females of any order of animals.

From theſe premiſes, the expediency and neceſſity of eſtabliſhing midwifery as an art for the relief of the human ſpecies will appear, and the art be directed to its proper objects.

SECTION II.

MANY general circumſtances and appearances have been mentioned, and conſidered as preſumptive ſigns of difficult labours, and it will not be improper to enumerate them; though I apprehend, that much ſtreſs cannot be laid upon them with a view to practice. If they were certain and invariable, it would be incumbent on us to underſtand the degree and extent of their influence, and to apply ourſelves to the diſcovery of ſome means, by which we might prevent or remedy the evils which were foreſeen.

1ſt. The kind of labour which any particular woman will probably have, has been ſuppoſed to be indicated in ſome degree, by

her complexion. Women with very fair or very dark complexions, have been ſuppoſed equally ſubject to difficulties or inconveniencies in parturition; whilſt thoſe of the intermediate ſhades were conſidered as having advantages in their favour. Now, as far as any particular complexion can indicate a general ſtate of health, this obſervation is reaſonable and true, with reſpect to labour; thoſe who have the beſt health, uſually paſſing through that proceſs in the beſt and ſafeſt manner. But as thoſe who are of complexions in either extreme, may have perfect health, any inference drawn from this principle, muſt be liable to many exceptions.

2d. By the general ſize of the body, it has been conjectured that we might foreſee whether an enſuing labour would be eaſy or difficult. This obſervation will ſtand upon the ſame ground with the foregoing; that is, it may hold good, as far as any particular ſize may be found beſt ſuited for performing all the functions of the body, and for the general purpoſes of life. Thoſe who are very tall, are not often very active, or capable of bearing much fatigue; and thoſe who are very ſhort, may have been cramped or become deformed

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in conſequence of ill health in the early part of their lives: thoſe, on the contrary, who are of a middle ſize, or rather below it, being preſumed to be more generally healthy, and beſt adapted to the common occaſions of life, may be expected to have the beſt labours, as they have ſufficient power, and a readier diſpoſition to act.

3d. The habits of life, and the diſpoſitions of patients, have been ſuppoſed to have ſome influence in forwarding or retarding labour. Thoſe women who are indolent in their tempers and habits, perform all the functions of the conſtitution in a ſlow and indolent manner, and of courſe may be expected to have tedious labours. But thoſe who are of lively diſpoſitions and active habits, being in the conſtant exerciſe of their powers, have not only theſe powers ſtrengthened and improved, but greater energy alſo; and the activity of the parts concerned in parturition, will partake of that of the body in general.

4th. The regularity, together with the eaſe or difficulty of a labour, may, in ſome meaſure, depend upon the ſtrength or weakneſs of the faculties of the mind. But this muſt be a very general obſervation, and can only

hold good in that extenſive way in which it is admitted in other occurrences of life, in which weakneſs of judgment may pervert regularity into diſorder, fancy evils that do not exiſt, or add to the weight of thoſe which are unavoidable.

5th. Labours are generally affected by the climate in which women are born and reſide. In hot climates, all natural labours are ſaid to be more eaſy than in thoſe that are cold; probably, becauſe the diſpoſition to relax and dilate, is ſooner aſſumed, and more perfectly accompliſhed. But in cold climates, from the native or acquired rigidity and firmneſs of all the parts of the body, there will be occaſion for greater exertion, though there may be greater power; yet if the labours are ſlower, perhaps the feelings are leſs, and they may terminate with equal ſafety, and probably on the whole, without greater ſuffering. In the ſame climate there will generally be ſome variations in labours at different ſeaſons; and I believe it is true, that in this country, women have eaſier labours in ſummer than in winter.

Such obſervations might be extended to a greater length, and diſcuſſed with more nicety; but

but they can hardly eſcape the notice of an attentive man, and he that is prudent will not eſteem them of too much value.

SECTION III.

WITHOUT ſome accuracy of diſtinction, it will not be poſſible to acquire or communicate ſuch a knowledge of *Difficult Labours*, as will enable us to conduct women through them ſafely and properly. It is therefore neceſſary, in the firſt place, that we ſhould define what is meant by the term; and we will ſay, that every labour, in which the head of the child preſents, which is protracted beyond twenty-four hours, ſhall be called *Difficult* *.

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* Fit partus difficilis et laborioſus, quod nec modo neque ordine debito res peragatur, aut pravis aliquibus ſymptomatis impediatur. HARV. *Exercit. de Partu.*

Dicitur autem partus ille difficilis, qui cum fœtûs vel matris periculo accidit; vel quia cum graviſſimis fit ſymptomati-

This definition, which is chiefly taken from time, is liable to ſome objections, as there may be more pain endured, and greater difficulties ſurmounted by one woman in ſix hours, than by another in twenty-four; but on the whole, it will be found to apply to practice in an advantageous and unexceptionable manner. It will, in particular, afford a remedy for impatience, and guard the practitioner, in ſome meaſure, from premature attempts to give aſſiſtance, without incurring the danger of thoſe evils which might be apprehended from too long delay.

Of thoſe labours which come under the denomination of *Difficult*, there is an almoſt endleſs variety in their cauſes or degrees. Some are occaſioned by one cauſe alone, but more frequently by a combination of various cauſes, though one may be more obvious and

bus, vel quia tardius procedit, ita ut longo tempore prematur mulier—*Roderic. a Caſtro Luſitan.*

Partus difficilis appellatur, qui debitas atque ordinarias naturæ leges non ſervat, ſed longius tempus inſumit, et dolores ſubito vehementiores, aliaque ſymptomata graviora comitantia habet—*Riverii Prax. Medic. De Partu difficili.*

Fœtûs maturi enixus laborioſiſſimus. *Linnæi Noſologia.*

important

important than the reſt*. For the uſes and purpoſes of practice, it is not ſufficient to ſay, that all labours are rendered difficult, either from the greatneſs of the obſtruction, or by the inſufficiency or debility of the power by which the obſtruction ſhould be overcome; or, that ſome depend upon the mother, and others upon the child. Such diſtinctions or references are too general. The particular cauſe of every individual difficult labour, ſhould be pointed out, as well as the conduct which each ſpecific cauſe may require. It was before obſerved, that there are advantages to be gained by experience, of which no doctrine or words can convey an adequate idea, and thoſe who are in poſſeſſion of experience, ſeldom bend to the rules or admonitions of others; nor indeed is this to be expected. But it is of the greateſt conſequence to thoſe who have not yet at-

* As many cauſes concur in the production of compound effects, we are liable to miſtake the predominant cauſe, unleſs we can meaſure the quantity of the effects to be produced, compare them with and diſtinguiſh them from each other, and find out the adequate cauſe of each ſingle effect, and what muſt be the reſult of their joint action.

See Dr. DESAGULIER's *Preface.*

tained

tained experience, that they ſhould acquire the cuſtom of regiſtering and arranging the particular knowledge they may have an opportunity of gaining, in regular and ſyſtematic order, or they will loſe the benefit of it; as it will either be forgotten, or recollected with difficulty, when they want to apply an obſervation made in one caſe to the exigencies of another. To leſſen thoſe defects, and to point out a better method of preſerving the advantages of experience, as well as to record, in the cleareſt manner, what my own experience has taught me, we will divide all *Difficult Labours* into four Orders or Kinds, and then enumerate the principal cauſes of each Order. As the knowledge of cauſes, and the management or removal of effects or difficulties, ſhould accompany or immediately follow each other, the methods to be uſed for the relief of theſe, will at the ſame time be pointed out.

In the *Firſt* Order will be included all thoſe labours which are rendered difficult from the inert or irregular action of the *uterus:*

In the *Second* thoſe which are occaſioned by the rigidity of the parts to be dilated:

In the *Third*, thoſe which are occaſioned by

by diſproportion between the dimenſions of the cavity of the *pelvis* of the mother and the head of the child:

In the *Fourth*, thoſe which are rendered difficult by diſeaſes of the ſoft parts.

Under one or other of theſe Orders may be arranged every labour which can properly be called *Difficult*.

This kind of labour has by many writers been ſubdivided into lingering and difficult; but as by the former appellation, a leſs degree of difficulty is only meant both with regard to cauſe and effect, the ſubdiviſion ſeems unneceſſary.

SECTION IV.

ON THE FIRST ORDER,

OR

Thoſe Labours which are rendered difficult from the inert or irregular action of the Uterus.

THE action of the *uterus*, by which every child muſt be expelled, is accompanied with pain proportionate to the force and to the reſiſtance made. But as this action may become imperfect, irregular, or inſufficient for the purpoſe of expelling the child, it is needful that we ſhould be acquainted with the cauſes of ſuch imperfection, irregularity, or inſufficiency. Of theſe cauſes there is,

1. *The too great diſtention of the uterus.*

It was formerly believed, that the *uterus* was diſtended mechanically, by the increaſe of the *ovum* contained in it. With this opinion, it might be concluded, that either from the ſize of the child, or the quantity of water, the *uterus* might be brought into a ſtate

ſimilar

ſimilar to that which takes place in the bladder; which, when diſtended beyond a certain degree, loſes all power of action. But later obſervations have proved, that the impregnated *uterus* is never completely diſtended, nor in any degree by its contents, but by the operation of a principle, which it acquires in conſequence of pregnancy; which principle ceaſes to act at the concluſion of the term of utero-geſtation, and is immediately ſucceeded by another directly contrary, that of expulſion *.

But though the *uterus*, when in an healthy ſtate, cannot be diſtended beyond its power of action, occaſion has been taken to obſerve, from the ſlowneſs and ſmallneſs of the effect of the firſt pains of labour, that the power exerted by the *uterus*, is generally ſuited to the ſtate of the parts, and the parts to the *uterus*, with a wonderful co-incidence. Yet as every principle in nature may alter or fail, ſo that of the diſtention of the *uterus* may prevail to ſuch a degree, or may continue ſo long a time, that its poſſible expulſatory force ſhall be weakened, and its energy leſſened; and

* See Vol. I. Chap. v. Sect. xi.

this

this ſeems to be proved, not only by the ſlackneſs and feebleneſs of the pains in the beginning of all labours, eſpecially in thoſe caſes in which there are two or more children, but by the increaſe of that action, when part of its contents are evacuated. It is however to be recollected, that the *uterus* cannot be diſtended beyond its power of action, though when greatly diſtended, it is only capable of ſlow and feeble action, which is nevertheleſs preparatory to that which is ſtronger. But this ſlow or feeble action, from diſtention, is not an object of art; and it is perhaps beyond the influence of any earthly power to give to the *uterus* its native or genuine diſpoſition to act, to add to its power, or in any material degree to increaſe its energy, though many applications and medicines have been recommended and tried for this purpoſe. Human art may put or preſerve the conſtitution in a ſtate fitted for ſuch action, or it may remove any impediments to its effect; but the principle is wholly independent of the will of the patient, or the ſkill of the practitioner. When therefore the pains of labour are in the beginning feeble and ſlow, as no harm can ariſe from this cauſe,

either

either to the mother or child, except that the former is under the neceſſity of bearing them for a longer time, though on the whole, perhaps, not in an increaſed degree; and as the methods adviſed and practiſed for the purpoſe of accelerating labours rendered tedious from this cauſe, are either immediately injurious, or may lay the foundation of future miſchief to one or both, it becomes our duty under ſuch circumſtances to leave the buſineſs entirely to its own courſe without any interpoſition. Even when a labour has made conſiderable progreſs, and there was reaſon to expect that it would have been concluded in a ſhort time, there may be a ſuſpenſion of the action of the *uterus* for many hours, without any miſchief or hazard, as experience often ſhews, though the cauſe of ſuch ſuſpenſion may not be obvious to, or explicable by us *.

Immediately on the acceſſion of labour, it

* With the ancients it was a cuſtom in theſe caſes to introduce a ſtimulating peſſary into the *vagina*, and lately with a phyſician in *France* to apply a mixture of the berries of the Bay tree and oil, to the navel, in the time of labour, by which he was ſuppoſed to do ſome good, and certainly gained ſome credit.

has

has been the cuſtom to confine women to their beds, or to ſome particular poſition, on the preſumption that it would be thereby rendered more eaſy than in any other. By ſuch conduct, expectations of a ſpeedy delivery are often raiſed; and when theſe are baulked, the mind of the patient is diſturbed, and the proceſs then becomes irregular. But it will always be found more comfortable and uſeful to leave the patient to her own choice in theſe matters, and her inclination will be a better guide than any other. Time is the ſafeſt and generally the only remedy for lingering and tedious labours occaſioned by the too great diſtention of the *uterus*, and the patient will often find relief, either by walking or ſtanding, or chooſing that poſition which ſhe herſelf prefers, becauſe ſhe will inſtinctively ſeek that which is proper. However, in many ſituations of this kind, the repeated exhibition of emollient clyſters will be of ſervice; and when the labour is far advanced, in ſome caſes in which the action of the *uterus* is very feeble and ſlow in its returns, as if it were unwilling to come on, a clyſter rendered ſtimulating by the addition of one ounce of culinary or

cathartic

cathartic ſalt, will often rouſe the dormant powers into action, and the labour will be much ſooner completed *.

2. *Partial action of the uterus.*

It was obſerved, that previous to labour, the *uterus* commonly ſubſided lower into the *abdomen*, and that the more perfect this ſubſidence was, the more kindly would the labour probably be; becauſe the *uterus* would act with more advantage. But in ſome caſes, the *fundus* of the *uterus* does not ſubſide before or even in the time of labour, the patient herſelf being ſenſible of, and complaining that the child is very high in the ſtomach. Sometimes the patient will alſo complain of vehement and cramp-like pains in various parts of the *abdomen* producing no effect, and which are afterwards proved to have been occaſioned by the irregular contraction of the *uterus*. This irregular and partial action, which is properly called ſpaſmodic, is capable of throwing the *uterus* into various forms; ſometimes

* Clyſteres injiciantur, quorum irritatione expultrix uteri facultas excitatur, et depleta inteſtina, ampliorem locum utero relinquant.

Riverii Prax. Medic. De Partu Difficili.

the longitudinal, and at others the hour-glaſs, with all their varieties and degrees. Every change in the form of the cavity of the *uterus*, from the genuine will be productive of inconvenience, according to the peculiarity and degree of alteration; and it is to be wiſhed, that we could diſcover the means of altering the form of the *uterus* when thus irregular, of ſuppreſſing its action when too vehement or untimely, and of ſtrengthening it when too feeble, according to the neceſſities of each caſe that might occur. But as theſe things are beyond our power, and all that we can do muſt depend, not on commanding what we chooſe, but by making the beſt of ſuch circumſtances as do really occur, it is neceſſary to conſider, whether by any previous management it is in our power to prevent this irregularity of action, or remedy its effects when it is in ſuch a degree, as to be very painful or troubleſome before, or productive of inconvenience at the time of labour. When there is any unuſual kind of pain in the region of the *uterus*, greater than, or different from, that which may be conſidered as one of the common effects of pregnancy, there is generally an increaſe of that feveriſh diſpoſition, which

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in a certain degree is natural to all women with child; and it will then be neceſſary to take away ſmall quantities of blood, to give cooling medicines, to be very attentive that the regular courſe of the bowels is procured or preſerved, and I think I have ſeen much good done by gently rubbing the whole *abdomen* with warm oil. This irregular, as well as the inſufficient action of the *uterus*, moſt frequently happens to thoſe who are naturally too irritable, or who lead inactive lives; and to ſuch women ſhould be pointed out the neceſſity of acquiring a compoſure of mind, and of uſing exerciſe in the open air as far as their unwieldineſs will with propriety allow; and even in the time of labour, if rendered tedious from this cauſe, in which the pains are very ſharp yet ineffectual, it is of uſe to bear them, when in an erect poſition, and to walk about in the intervals. The chief part of what can be further done, is to impreſs upon their mind the neceſſity of exerciſing that patience which we on our parts ought never to want. In ſome caſes of this kind, when the patient has ſuffered much and for a long time, after bleeding and the adminiſtration of a clyſter, I have directed twenty drops of *Tinct. Opiica* to

be given, with the intention of ſuppreſſing the preſent pain which was irregular, and with the hope that when the pain returned, it would be with regularity and efficacy. But in general I have great objections to opiates on ſlight occaſions for women in labour; being perſuaded, that by diſturbing the order of labour, they frequently produce very untoward ſymptoms, and make that which was in itſelf natural, become difficult or dangerous to the mother or child, as evidently as any other kind of unſeaſonable interpoſition.

3. *Rigidity of the membranes.*

This has been mentioned by the generality of writers, as a cauſe of difficult labours; and I have obſerved, when a labour proceeds ſlowly, the membranes being unbroken, their rigidity is uſually aſſigned as the cauſe of the difficulty. This ſubject has already been conſidered in the hiſtory of natural labours; but we cannot too often inculcate, as the obſervation is of the greateſt importance, that neither the mother nor child are ever in any danger on account of the labour before the membranes are broken; and that there is infinitely more caution required to avoid breaking them too

too early, than there is difficulty in breaking them when it is neceſſary. The true cauſe alſo why the membranes do not break at the uſual or proper time, is not in truth from the rigidity of the membranes, ſo commonly as from the weak action of the *uterus*; becauſe the membranes are ſcarcely ever ſo rigid as to withſtand the force of very ſtrong pains, unleſs the whole *ovum* were expelled at the ſame time; a circumſtance not unfrequent in premature labours. More than one caſe has occurred in my own practice, to which particular attention has been paid, for the purpoſe of regiſtering the obſervation, in which the labour has commenced properly, and proceeded with much activity, till the *os uteri* was fully dilated, and then ceaſed altogether for ſeveral days: at the end of that time the membranes breaking, the action of the *uterus* has returned, and the labour been finiſhed ſpeedily, with perfect ſafety to the mother and child *.

* When the head of the child is born with the membranes unbroken, it is ſaid to be born with a cawl. To this cawl imaginary virtues have been attributed, and a fancied value has been ſet upon it. It was eſteemed the perquiſite of the midwife, and perhaps the whole was the contrivance of ſome intelligent man, to prevent her from interfering with any labour, which was going on in a natural way.

The circumſtances of labours are however ſometimes, though very ſeldom, ſuch as make it not only juſtifiable but eligible or perhaps neceſſary to break the membranes artificially. But before this is attempted, we ought firſt to be aſſured of the ſtate of the *os uteri*, becauſe this will ofter be ſpread over the head of the child, ſo thinly and uniformly, before it is in any degree dilated, as to reſemble the membranes. But when the *os uteri* is wholly dilated, and we have determined upon the propriety of breaking the membranes, no inſtrument is required for that purpoſe. If they are confined with the end of the fore-finger upon the head of the child, during the time of a pain, they generally give way; or if this is inſufficient, they may be rubbed with the end of the finger, on one particular ſpot, till they are worn through; or they may be ſcratched with the nail of the finger, cut and turned up for that purpoſe. I am perſuaded, that no perſon, who is capable of judging when the membranes ought to be broken, will ever meet with any difficulty in breaking them.

4. *Imperfect diſcharge or dribbling of the Waters.*

This circumſtance is a cauſe, or at leaſt a frequent

frequent attendant on Difficult Labours, eſpecially when the membranes have been broken deſignedly, or ſpontaneouſly before the *os uteri* was dilated, though far more frequently in the former caſe. For if the membranes do not break or are not broken, before the complete dilatation of the *os uteri*, the whole quantity of the water is generally diſcharged at once, and the head of the child is ſpeedily advanced by the ſucceeding pains. Sometimes indeed the head of the child is ſo placed as to lock up a great portion of the water, which cannot eſcape till the head is expelled. Should the water be imperfectly diſcharged, a further ſmall portion of it is evacuated whenever there is a pain, and the pain is not immediately efficacious, or entirely ceaſes after the diſcharge. In this ſituation there are only two methods to be purſued; we muſt either wait till all the water be drained away by theſe repeated ſmall diſcharges, or we muſt contrive ſome method by which their evacuation may be haſtened. If there be no particular reaſon againſt our waiting, it is better not to interfere, but to leave the buſineſs entirely to nature, explaining the ſtate of the caſe to the patient or her friends, taking care to pre-

vent their apprehenſion of danger from the delay of the labour, and not by our ſolicitude to raiſe their expectations or their fears. But when the water dribbles away in the advanced ſtate of a labour, or there is reaſon for our wiſhing a ſpeedy concluſion of it, either on account of the mother or child, it will be expedient to forward the diſcharge of the water, by raiſing the head of the child a little higher into the *pelvis*, by the introduction of the fingers and thumb of the right hand, which may be done without prejudice either to the mother or child, during the continuance of the pains; or, by preſſing the head towards the hollow of the *ſacrum*, by which means, more room will be made for the water to eſcape. However, the dribbling of the water is not a circumſtance of much importance, when it is not combined with other cauſes of difficulty; and it may be again mentioned that it is generally occaſioned by the artificial or premature rupture of the membranes.

5. *Shortneſs of the* funis umbilicalis.

The *funis umbilicalis* ſeems to admit of a greater variety than any other part of the *ovum* when at its full growth, being in one ſub-

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ject perhaps three or four times as long as it is found in another. It may be naturally very ſhort, or it may be rendered ſo accidentally, by its circumvolution round the neck or body of the child. Whichſoever of theſe is the caſe, the inconvenience produced at the time of labour is the ſame; that is, the labour may be retarded; or perhaps the *placenta* may be looſened prematurely; or the child may, in a tedious labour, be injured or perhaps deſtroyed by the mere ſtretching of it, as this muſt neceſſarily leſſen the diameter of the veſſels. But the two latter conſequences very ſeldom follow.

The ſhortneſs of the *funis* is always to be ſuſpected when the head of the child is retracted upon the declenſion of every pain; and it may ſometimes be diſcovered that it is more than once twiſted round the neck of the child, long before it is born.

Various methods have been formerly recommended for preventing this retraction of the head, ſome of which are inſufficient and others unſafe*; and the inconvenience is uſually overcome, by giving the patient more

* Nocet obſtetricis digitus ano immiſſus, item nimia feſtinatio.—RUYSCH.

time.

time. But if the child ſhould not be born when we have waited as long as we believe to be proper or conſiſtent with its ſafety, or that of the parent, it will be requiſite to change her poſition, and inſtead of ſuffering her to remain in a recumbent one, to take her out of bed and raiſe her upright, to permit her to bear her pains in that ſituation; or, according to the ancient cuſtom of this country, to let her kneel before, and lean forwards upon the edge of the bed; or, as is now practiſed in many places, to ſet her upon the lap of one of her aſſiſtants. By any of theſe methods the retraction of the head of the child is not only prevented by its own gravitation, but the weight of the child will be added to the power of the pain; and it will likewiſe be expelled upon an inclined inſtead of a level plane. In the courſe of practice, I can with infinite ſatisfaction recollect, a great number of caſes in which, by adverting to the benefits to be gained by an erect poſition, labours have not only been accelerated, but the uſe of inſtruments, which were before thought neceſſary, has been avoided.

When the head of the child is expelled, if the *funis* be twiſted round its neck, there is

ſometimes

ſometimes a little delay and difficulty before the body can be protruded or extracted. We are, in the firſt place, taught that it is proper to bring this over the head forwards, leſt the *placenta* ſhould be ſeparated, or the body of the child be hindered from advancing till it ſuffers detriment, or is brought into abſolute danger. But it is in ſome caſes drawn ſo tight round the neck, that this cannot be done, without increaſing the hazard of the miſchief we wiſh to avoid. We have then been adviſed to ſlide the *funis* over the ſhoulders, but this may be equally impracticable with the former method. If either of theſe intentions can be accompliſhed without violence, they are to be attempted, otherwiſe they muſt be omitted. The child will nevertheleſs be expelled, if we wait for the return of a few pains, which we may very ſafely do, and without any other inconvenience than an increaſed diſtention of the *perinæum*; the body making a ſhorter bend or doubling, on account of the confinement of the neck by the twiſting of the *funis*.

Inſtances have occurred, in which, though the head of the child was expelled, the body has remained, and could not even be extracted for a long time, perhaps for ſeveral hours.

Two

Two things are then to be conſidered, firſt, whether the child be living; ſecondly, whether it be hindered merely by the ſhortneſs of the *funis*. If the child ſhould ſhew any ſigns of life, and breathe, though imperfectly, we have no occaſion to be in a hurry, it being only requiſite that we ſhould keep its mouth open to allow of the free acceſs of the air, till it is expelled, or can be more readily extracted; for the internal organs will accommodate themſelves to that ſtate, and the child will poſſeſs a ſpecies of life half uterine, and half breathing. But when it has remained in that ſituation as long as we think conſiſtent with its ſafety, and it cannot without great violence be extracted; ſhould it then be hindered by the ſhortneſs of the *funis* only, we have been taught* that it is adviſeable to divide the *funis*, before the body is expelled. Previous to our doing this, it will however be expedient to tie the *funis* with two ligatures, and then to divide it between them, otherwiſe the child will be inſtantly deſtroyed by the ſudden guſh of blood; as happened in an unfortunate caſe under my own care, though it was living when I divided the *funis*.

* See *Chapman*—p. 63 and 85.

When

When the child is dead, and the total excluſion of it is prevented by the tumefaction of the body, or by any other cauſe, by paſſing a napkin or handkerchief round its neck, and taking both the ends in our hands, we ſhall be able conveniently to exert much force, and if we pull ſteadily, and in a proper direction, we ſhall uſually ſucceed in extracting it. But if we are yet foiled in our attempts, by turning the head on one ſide, we muſt endeavour to bring down one or both arms, which being included in the handkerchief, will allow us to pull with yet more force, and facilitate the paſſage of the body. The greateſt difficulty of this kind I ever ſaw, was in conſequence of the inflation of the whole outline of the body from its putrefaction, and there was occaſion for all the force I could exert; but in other caſes I have ſucceeded better, by availing myſelf of the changes produced, by waiting and giving more time, rather than by the exertion of much force.

6. *Weakneſs of the conſtitution.*

The health of women at the time of parturition is often impaired, either by ſome general indiſpoſition which may have continued through

through pregnancy, though not altogether dependent upon it; or, by ſome diſeaſe with which they are attacked, when they are perhaps in daily expectation of falling into labour. The more perfect their health is, the better fitted they are for the circumſtance of child-bearing, as the proceſs will not only go on with more regularity, but they will alſo recover more favourably, as is well known to thoſe who are engaged in the practice of midwifery. Becauſe though it be allowed that the ſtate of child-bearing is not a ſtate of diſeaſe, yet experience has ſhewn, that all diſeaſes with which women are at that time affected, are not only apt to fall upon thoſe parts which are left in a more irritable ſtate, in conſequence of the changes they have ſo lately undergone, but the progreſs of diſeaſes is alſo then more violent, and the event far more dangerous *.

* Hence at the time of any epidemic diſeaſe, women more frequently fall in child-bed, though they are managed with equal ſkill and care. In the hiſtory of the different plagues in London, there are ſometimes two or three hundred women who are put down as dying in child-birth in one month. *Procopius* has alſo told us in his account of the plague at Conſtantinople—*Tres ſaltem puerperæ convaluere.*

But

But the caſe of which we are now ſpeaking, is when the general health of women is reduced below its proper ſtandard, by ſome previous or accompanying diſeaſe, not abſolutely connected with a ſtate of pregnancy, of which a conſumption is a very fair example, as conſumptive perſons ſeem of all others to be in the moſt hopeleſs ſtate. But though ſuch are often in their own minds, and in the opinion of their friends, not able to go through the fatigue and other unavoidable conſequences of child-bearing, I do not recollect one inſtance of any woman, in that ſituation, being unequal to her delivery, or having her fate haſtened by it. If ſuch women have little ſtrength, they have little difficulty to overcome; the ſtate of the parts which, in a common way, might require the exertion of much force to dilate, correſponding with the force which they are able to exert; and more time only is required. When a prognoſtic however is made, of the probable event of ſuch labours, it is to be preſumed that no particularly untoward circumſtance ſhall occur; for if there ſhould, it cannot be expected, that with extreme debility there ſhould be the ſame

ſame power or reſources, as in great ſtrength and good ſpirits.

In conſtitutions much reduced by a conſumption, or a diſeaſe of any part not immediately affected by child-bearing, there is, uſually, not only ſufficient ſtrength for perfecting the buſineſs of a common labour, but the patient appears to be relieved for a certain time after her delivery; and then, if they were not dependent on pregnancy, or were incurable, they return, and make their wonted progreſs.

The effect of diſeaſes ſeems alſo in many caſes, to be ſuſpended during pregnancy. Of the diſtinctions to be made in our opinion, of the event of acute diſeaſes, during which a patient may either be delivered at her full time, or ſuffer abortion, we ſhall ſpeak when we come to the ſubject of uterine hemorrhages.

7. Fever or local inflammation.

On the acceſſion of labours, there is uſually ſome increaſe of heat, of the quickneſs of the pulſe, thirſt, fluſhed cheeks, and a general feveriſh diſpoſition; and commonly theſe continue

tinue in proportion to the exertions required or made for the completion of the labour, with reſpect to which they are, properly ſpeaking, merely ſymptomatic. But in ſome caſes the excitement is too great, and inſtead of helping the action of the parts concerned in parturition, it prevents their acting with regularity or energy. Whenever the pains of labour are feeble, it is a vulgar cuſtom, without regard to the cauſe, to give cordials very freely, with the view of accelerating their returns, or of ſtrengthening them; though under many circumſtances, by ſuch proceeding * we evidently add to the evils we mean to remove. In ſome caſes alſo, from the acuteneſs and conſtancy of the pain which the patient endures, and from its ſituation alſo, it may be readily diſtinguiſhed from that which is occaſioned by the action of the *uterus*, giving us too much reaſon to ſuſpect, that ſome of the con-

* *Lord Bacon* had a clear idea of this, though by the manner of expreſſion, his meaning is rendered ſomewhat obſcure: "To procure eaſy travails of women, the intention is to bring down the child, whereunto they ſay the loadſtone helpeth; but the beſt help is to ſtay the coming down too faſt."

Nat. Hiſt. cent. x. 968.

tents of the *abdomen* are already in a ſtate of inflammation which may require immediate attention.

It does not ſeem neceſſary to bleed every patient on the acceſſion of labour, and for ſome it muſt be highly improper. But whenever the feveriſh ſymptoms become violent, it is I believe univerſally proper; the quantity of blood taken away being ſuited to the degree of fever, and to the conſtitution of the patient, and much ſervice will alſo be done by the frequent exhibition of emollient clyſters, by keeping the room cool and well aired, by giving cooling drinks and medicines, and by keeping the patient in a quiet ſtate. When the fever is removed, the natural pains will come on, and perform their office with propriety and ſucceſs. Independently of fever, when the exertions which the patient makes are vehement, if ſhe be plethoric, there is on that account ſometimes a neceſſity of taking away ſome blood; for during theſe vehement exertions, if the blood-veſſels are diſtended, ſome of them may give way, and the patient be brought into the moſt imminent danger, before the delivery then at hand be completed.

ed. Of one inſtance I have been informed by the medical attendant, in which a patient thus circumſtanced burſt a blood-veſſel and died immediately, in the exertions of the very pain by which the child was expelled.

8. *Want of Irritability in the Conſtitution.*

Under many circumſtances which occur in the practice of medicine, it has been obſerved, that when a cauſe of pain exiſts, it is found to produce an effect quite contrary to what might be expected: that is, inſtead of exciting the powers of any one part, or of the whole frame to action, it creates a partial or univerſal inſenſibility, and a diſproportionate action. In ſome caſes, on the acceſſion of labour, the cauſe, inſtead of raiſing a diſpoſition to act, or a power of acting with energy in the parts concerned, ſeems to leſſen both the diſpoſition and power to act, and in ſome caſes to deprive them, for a certain time, of all power, as effectually as if they were become paralytic. Inconveniencies of this kind are moſt frequently obſerved to take place in fat and inactive women, and ſuch, in ſpite of all the means which can be ſafely uſed, will neceſſarily have very ſlow and lingering labours;

and though they may at length be delivered by their pains, feeble as they are, when there is no material cauſe of obſtruction, much time will be required for every part of the proceſs. I have often ſuſpected that the foundation of this imperfect action, or total inaction in the advanced ſtate of labour, may have been laid by ſome error or accident in the beginning, perhaps by exciting the action prematurely, which will, of courſe, ceaſe when the artificial cauſe is removed *.

The circumſtances attending labours are generally alike, yet in many women they are marked with ſome peculiarity, moſt frequently in the time required for their completion. When there has been an opportunity of obſerving the progreſs of labour in two or three inſtances, we ſhall be able to tell what will be the probable termination of a future labour in the ſame perſon, and when it will take place; and we can no more controul the order of a labour in one woman, ſo as to make it correſpond with or exactly reſemble that of another, than we can judge of the quantity of food which one perſon may require by that which is ſufficient for another, or regulate any

* See Vol. I. Chap. v. Sect. xi.

other

other function of the body. One woman may require twelve hours for the production of the ſame effects in the time of labour, that another may finiſh in four hours; and it would be in vain to attempt to make an alteration, becauſe the reaſon exiſts in ſome eſſential property of the conſtitution, beyond the power of medicine, or of any method to alter.

9. *Paſſions of the Mind.*

As the infirmities and particular ſtate of the body have a powerful influence upon the mind, and as the affections of the mind have, on various occaſions, a reciprocal effect upon the body, it might be reaſonably expected, that the progreſs of a labour ſhould be forwarded or hindered by the paſſions. It is conſtantly found, that the fear of a labour, or the ſame impreſſion from any other cauſe at the time of labour, leſſens the energy of all the powers of the conſtitution, and diminiſhes, or wholly ſuppreſſes the action of the parts concerned in parturition. It is alſo obſerved, that a cheerful flow of the ſpirits, which ariſes from the hope of an happy event, inſpires women with an activity and reſolution which are extremely uſeful and favourable in that

ſituation. In the time of a labour proceeding very ſlowly or irregularly, doubts and fears in the mind of the patient have an evident and great influence upon the pains; and when theſe are removed, and her reſolution confirmed, ſhe will go on with courage, and effects will be produced which would have been impoſſible if ſhe had remained in a ſtate of depreſſion. The intelligent practitioner will avail himſelf of the knowledge of theſe things, and by his diſcretion he will inſpire his patient with ſentiments which will enable her to go through difficulties, which to her feelings, and perhaps to his own judgment, appeared unſurmountable. He will alſo regulate the conduct of all her attendants and friends, and lead them ſtep by ſtep to co-operate in his views and intentions, which will at length terminate to the real advantage of his patient, the ſatisfaction of her friends, and the increaſe of his own reputation.

10. *General Deformity.*

Many women who are gibbous or diſtorted in the courſe of the ſpine, have the *pelvis* well formed, and there are a few in general appearance perfectly ſtraight, who have yet

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ſome defect in the *pelvis*. Of the eaſe or difficulty of labours, depending upon the capacity or form of the *pelvis*, we are to ſpeak in another place. Thoſe who are gibbous, are not unfrequently aſthmatic, or have ſome infirmity which prevents their breathing freely, or the retention of their breath; and ſuch muſt ſuffer ſome inconvenience at the time of labour, though the action of the *uterus* may be proper, and all the parts concerned in parturition in a natural ſtate. For as both the inſtinctive and voluntary force, eſpecially the latter, are affected by the manner of breathing, and duly exerted only when the breath is retained, and this not being under ſuch circumſtances poſſible, of courſe the progreſs of the labour muſt be retarded. Should there be any reaſon to ſuſpect inflammation about the *thorax*, particular attention muſt be paid to it, otherwiſe we have only to give more time for the completion of the labour, and to wait for that effect from a repetition of feeble pains, which, without this inconvenience, would have been produced by a ſmaller number.

SECTION V.

ON THE SECOND ORDER,

OR

Thoſe Labours which are rendered difficult by the Rigidity of the Parts to be dilated.

1. *Firſt Child.*

EVERY woman is expected to have a more tedious labour with her firſt, than with ſubſequent children, and the difference is not unuſually in proportion to the number which ſhe has had. Thus if a woman were twenty-four hours in labour with her firſt child, ſhe might be ſix with her ſecond, and with the reſt four, or perhaps two; but from any general eſtimate of this kind there will be many deviations. It was before obſerved, that when women have had ſeveral children, the practitioner is often able to form a tolerably preciſe opinion of the kind of labour which they will be likely to have, and which may be as peculiar to their conſtitutions, in manner and time,

time, as any other function of the body: and it is no more in our power to change this conſtitutional labour, as it may be called, than it is to alter the frame of the body, or any of the functions thereon depending.

The difficulty with which firſt labours are often completed, not only depends upon the greater rigidity of the parts, or upon their reaction, but on the imperfection or irregularity of the action alſo, by which they are to be dilated; for this is generally far leſs perfect and regular in the firſt inſtance, than when the ſame office has been frequently performed. But though there is ſomewhat greater chance of women wanting aſſiſtance with firſt labours than in ſubſequent ones, there may be no ſpecific cauſe of difficulty, and they generally require only more time to be given for their completion.

2. *Advanced in Age.*

If a woman be far advanced in age at the time of having her firſt child, the difficulty attending her labour may ſometimes be expected to be greater. At a certain time of life, every woman arrives at maturity, or that period when ſhe may be conſidered as having acquired

acquired the greateſt degree of perfection of which her frame is capable; when the inconveniencies of youth are paſſed, and thoſe of age are not arrived. The ſtate of perfection, the time of which will vary in different conſtitutions and climates, and which we may conclude to be beſt fitted for the act of parturition, may continue for many years. But if a woman ſhould firſt be with child before or after this time of perfection, ſhe will be liable to difficulties, as in the one caſe ſhe would be ſcarcely able to bear without injury the changes ſhe muſt undergo; and in the other, the firmneſs which all the parts have acquired, would leſſen their diſpoſition or capability of dilating. Greater force will therefore be neceſſary, or the ſame degree of force muſt be continued for a longer time; in other words, ſhe muſt have a ſharper, or a longer labour. In this country there has ſeldom been any reaſon to ſuſpect women to be pregnant before they were able to bring forth children without any or much inconvenience on that account. For the prevention of ſuch difficulties as may attend the firſt act of parturition in thoſe who are advanced in age, we have been adviſed to order frequent

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and ſmall bleedings towards the concluſion of pregnancy, that the patient ſhould ſit over the ſteam of warm water every night at bed-time, and afterwards anoint the external parts with ſome unctuous application. Perhaps there is not authority for ſaying, that no advantage can be derived from the uſe of theſe or ſuch like means; but certainly the impreſſion made upon the mind of the patient by the novelty and peculiarity of the method, will, in patients of a timid diſpoſition, raiſe ſuch apprehenſions of danger and difficulty, as will over-balance the good which can poſſibly be derived from them. It is therefore better to omit the uſe of any ſuch means on this account, more eſpecially as it does not conſtantly happen, that the difficulty of labour is in proportion to the age of the patient when ſhe has her firſt child; that being in many caſes, as eaſy at forty years of age or upwards, as if ſhe was only twenty-five. In the worſt labours ariſing from this cauſe, there is no peculiarity in the difficulties, but merely an increaſe of thoſe which are produced by the rigidity of the parts, and therefore more time only, is in general required for their completion.

3. *Too early Rupture of the Membranes.*

The premature rupture of the membranes, whether natural or artificial, has been often mentioned as the cauſe of much miſchief and of many tedious or difficult labours. If it be allowed that the membranes containing the waters were intended to be the medium by which the *os uteri*, and other tender parts, ought to be dilated, ſome inconvenience muſt ariſe when theſe are broken and the waters diſcharged, the head of the child being ſubſtituted for them; and this being a firmer and leſs accommodating body, cannot, for a long time, be admitted within the circle of the *os uteri*, which will of neceſſity be dilated more untowardly and more painfully.

After the rupture of the membranes, many hours or ſeveral days ſometimes paſs before the acceſſion of labour, and the difficulties ariſing from this cauſe, even in firſt labours, will then be very much leſſened, if the patient has generally lain in a recumbent poſition, and we have deferred, as far as was in our power, the coming on of the action of the *uterus*, till the moſt perfect diſpoſition to dilate may be previouſly aſſumed by the parts. More pain will be endured, and a longer time

will

will certainly be required for completing labours attended with this circumſtance only, but they may in general be more properly called lingering or tedious, than really difficult.

4. *Oblique Poſition of the* Os Uteri.

The natural poſition of the *os uteri*, and that in which it is moſt conveniently diſtended, is at the centre of the ſuperior aperture of the *pelvis*; and when thus placed, the effect of the action of the *uterus* is moſt favourably produced. But the *os uteri* is ſeldom found exactly in this ſituation, and in ſome caſes is projected on either ſide, and in others ſo far backwards that it cannot be felt for many hours after the commencement of labour. This oblique poſition of the *os uteri*, to what direction ſoever it may tend, has been conſidered not only as a frequent, but as the moſt general cauſe of difficult labours; and this doctrine was, at one period of time, taught and received in all the ſchools of midwifery in Europe. In every inquiry after knowledge, in almoſt any ſcience, opinions may be advanced, which ſometimes lead to further improvement; but when experience has proved, opinions ſhould end; for if ſo much regard is paid to opinions as to found any certain practice

tice upon them, and they ſhould prove erroneous, they become the ſource of much miſchief. The preſent caſe is a ſtriking example of the truth of this obſervation; for when it was preſumed that every difficult labour was occaſioned by the oblique poſition of the *os uteri*, it was immediately ſuppoſed neceſſary to remedy the inconvenience thence ariſing by manual aſſiſtance, and to drag the *os uteri* from its oblique to a central poſition during the time of every pain. The opinion of the oblique poſition of the *os uteri* being the chief cauſe of difficult labours, is now fully proved to be erroneous; and though it were oblique, ſuch poſition is not to be conſidered as a general cauſe of the difficulty, but as an accompaniment of ſome other primary cauſe. Thus when the *pelvis* is diſtorted, the *os uteri* is conſtantly found in an oblique ſituation, yet the difficulty of the labour, as well as the obliquity, are occaſioned by the diſtortion.

It muſt however be allowed, that ſome labours are procraſtinated by the mere oblique poſition of the *os uteri*, and that it is often combined with other cauſes of difficult labours, though, ſingly, it is ſeldom of ſufficient importance to be the cauſe of truly difficult ones. But when it does retard a labour, or accompany

company a difficult labour, it does not require any manual aſſiſtance, or that we ſhould retract it to a central poſition with reſpect to the cavity of the *pelvis*; both the thing itſelf and the difficulty thence ariſing will be obviated, without detriment or much trouble, if the patient be confined to a proper poſition. If, for example, the *os uteri* be projected to the left ſide, ſhe ought to reſt as much as poſſible on the ſame ſide, and ſo of the right; if it be projected backwards, which is always the caſe when we cannot reach the *os uteri* in the beginning or early part of a labour, ſhe ought to lie upon her back. By this method the *fundus* of the *uterus*, conſtantly leaning or inclining to the ſide of the obliquity, will gradually but effectually project the *os uteri* more and more towards a central poſition.

Caſes have been recorded, in which it was ſaid that the *os uteri* was perfectly cloſed, and in which it has not only been propoſed to make an artificial opening inſtead of the cloſed natural one, but the operation has actually been performed. I do not know that I ſhould be juſtified in ſaying that ſuch caſes have never occurred, becauſe they have not occurred in my practice; but I am perſuaded that there

there has been an error in this account, and that what has been called a perfect cloſure of the *os uteri* has not been ſuch, but that we have been unable to diſcover it by reaſon of its obliquity.

5. *Extreme Rigidity of the* Os Uteri.

Difficult, as well as tedious and very painful labours are frequently occaſioned by the unuſually rigid ſtate of the *os uteri*. The manner of, and the time required for, its dilatation will depend upon two circumſtances; firſt, the degree of diſpoſition to dilate which it may have previouſly acquired; and ſecondly, the degree or force of the action exerted by the *uterus*. The former of theſe is, in general, far leſs perfect with firſt than with ſubſequent children, even preſuming that it is in its moſt natural ſtate; but when the *os uteri* aſſumes from any cauſe a ſtill greater indiſpoſition to dilate, of courſe the labour will be both more difficult and tedious. In a firſt labour it not unfrequently happens, that the *os uteri* may not be dilated in leſs than twenty-four or even forty hours, when the reſt of the labour may be completed in four, or perhaps a ſhorter time, yet the very ſame perſon may have the

whole

whole proceſs with her next child completed within ſix hours or even a ſhorter time.

We have before taken notice of the advantages ariſing from the changes in the ſtate of the ſoft parts being perfected, before the acceſſion of labour. But when theſe are as favourable as can be wiſhed, by the very action of the *uterus* preſſing its contents upon the *os uteri*, and much more frequently by attempts to dilate it artificially, this part may become inflamed, and indiſpoſed to dilate according to the degree of inflammation. The inflamed ſtate of the part is often indicated by its heat and dryneſs, but whenever it is extremely rigid, and there has been a long continued action of the *uterus*, with little or no advantage, the impediment to the progreſs of the labour being clearly occaſioned by the reſiſtance made by the *os uteri*, I believe it is always right to conſider that part as inflamed. If this be allowed, inſtead of attempting to dilate it artificially, it is the proper object of art, to recover in the firſt place the natural diſpoſition to dilate, and then the pains of labour will be equal to the purpoſe. With this view it will be neceſſary to take away ſome

blood, to give cooling medicines and drinks, to direct emollient clyſters to be frequently injected, and, inſtead of uſing any means with the intention of increaſing the force of the pains, to confine the patient to a recumbent poſture; and to gain, if it were in our power, a ſuſpenſion of the labour, till the inflammatory diſpoſition be removed, when the dilatation will proceed more ſpeedily, leſs painfully, and without danger.

When a labour comes on prematurely, or before the parts have acquired their dilatable ſtate, as it may be called, the poſition of the *os uteri* will at that time be very different. In ſome caſes it begins to dilate when it is high up in the *pelvis*, but in others, eſpecially when the *pelvis* is, in compariſon with the child, very large, the *os uteri* may be protruded very low down before there is any degree of dilatation, though it be ſpread ſo thin over the head of the child, or the membranes, as to give the feel of the membranes alone. If, under theſe circumſtances, the external parts ſhould be much relaxed, and the pains at the ſame time ſtrong, it is poſſible for the head of the child to be expelled though enveloped in the *os uteri*,

and

and much miſchief may be thereby occaſioned *. For the prevention of this accident, or any tendency to it, when there is reaſon to dread it, the patient ought to be confined to an horizontal poſition, and the practitioner to reſtrain the advancement of the head; or, if the caſe has actually happened, to uſe all the means he ſafely can, to extricate the head and to ſupport or replace the *os uteri*. When the *pelvis* is large, and the head of the child, being moved from its reſting place upon the *pubis*, drops by its own weight into the lower part of the cavity of the *pelvis*, bearing the *os uteri* before it, the accident often becomes a cauſe of a *procidentia* or *prolapſus* of the *uterus*, which cannot, as far as I know, be always prevented. All that art dictates to be done at the time of labour, is to render this as ſlow and gradual as poſſible, and after delivery to confine the patient to her bed for a longer time.

6. *Uncommon Rigidity of the external Parts.*

The ſtate of the external, as well as of the internal parts is very different in different wo-

* Os uteri aliquando prolabitur.
RUYSCH. Obſ. Anatom. XXV.

men, both in the beginning and in the progreſs of labours. Even in firſt labours they readily yield in ſome women, ſo as to allow the head of the child to paſs through them with great facility and ſafety, but in others they are extremely rigid and unyielding, and withſtand the action of the *uterus*, though ſtrong, for a very long time; and then do not dilate without great danger of laceration. A more difficult dilatation is always to be expected in firſt labours than in others, and more care is required to prevent a laceration. The ſtate of theſe parts is however very different, and they require ſome attention in every labour. There ought to be, and uſually is a correſpondence between the ſtate of the parts and the power of the pains; but in ſome caſes the external parts are rigid when the pains are feeble, whilſt in others, when the parts are diſpoſed to dilate, the pains are exceedingly ſtrong, puſhing, with unabating force, the head of the child, ſo that the parts muſt either dilate or be lacerated. Of many of theſe circumſtances we have already ſpoken.

In firſt labours the external parts may require one, or ſeveral hours continuance of the pains, before they are ſufficiently dilated to allow

allow the head of the child to paſs through them without danger of laceration; but the difficulty thence ariſing does not ſeem to require, or to be relieved by our interpoſition, farther than to prevent injury as far as that is in our power, by too ſpeedy an excluſion of the head of the child, in the manner before adviſed. The merit of our conduct under theſe circumſtances will be chiefly negative; for as we cannot give to the parts their diſpoſition to dilate, and ought not to dilate them artificially, there only remains for us to wait the due time in order to prevent miſchief; art being more frequently exerciſed on ſuch occaſions in remedying the evils which the miſtaken exerciſe of the art has produced, than in rectifying thoſe which are neceſſary or unavoidable. It is alſo to be obſerved, when the head of the child paſſes through the inferior aperture of the *pelvis* with difficulty, though the external parts are preſſed upon with conſiderable force, that the impediment to the delivery does not always ariſe from the reſiſtance made by theſe, but more properly from the elongation or bending of the ſpinous proceſſes of the *iſchia*, and the labour is then to be referred to the next order.

SECTION VI.

ON THE THIRD ORDER,

OR

Labours rendered difficult by diſproportion between the dimenſions of the cavity of the Pelvis *and the Head of the Child.*

1. *Original Smallneſs of the* Pelvis.

THE cavity of the *pelvis* in women generally bears a certain proportion to the common ſize of the heads of children; yet as they both admit of conſiderable variation, independent of diſtortion or diſeaſe, it is poſſible that a woman with a *pelvis* rather under the common dimenſions, may have conceived a child far beyond the uſual ſize; and when this is the caſe, there muſt of courſe be an increaſed difficulty at the time of parturition. When therefore the ſmallneſs of the cavity of the *pelvis*, and the largeneſs of the head of the child are mentioned, they are to be conſidered as relative and not as poſitive terms; becauſe

the *pelvis* of ſome individual women may be ſo large as to ſuffer the largeſt head of a child of which we have any example, to paſs through it; and the ſmalleſt head may be eſteemed large, if compared with a yet ſmaller *pelvis*.

Though a labour may from either of theſe cauſes, ſeparate or combined, be rendered more tedious and painful than uſual, as in conſequence of the action of the *uterus* the head of a child rather larger than ordinary will be compreſſed into a much leſs compaſs, and moulded to the form as well as the dimenſions of the cavity of the *pelvis*, there is not uſually occaſion for the aſſiſtance of art, if the labour be in other reſpects natural. But we are to wait patiently for thoſe changes, which in due time may be reaſonably expected, and ſcarcely ever fail, to take place.

2. *Diſtortion of the* Pelvis.

On the cauſes, kinds, and degrees of diſtortion of the *pelvis*, we have already ſpoken very fully *. The effects produced, or the impediments occaſioned by this diſtortion, at the time of parturition, will ſomewhat depend upon the part diſtorted, but chiefly on the de-

* See Vol. I. Chap. i. Sect. x.

gree of change in, or reduction of the dimenſions of the cavity, by which the natural relation between it and the ſize of the head of the child is perverted or deſtroyed. Diſtortion of the *pelvis* at the ſuperior aperture creates an obſtruction to the paſſage of the head of the child, which will be overcome with more difficulty by the powers of the conſtitution, and which will be more inconveniently managed by art, than an equal degree of obſtruction in the lower part of the *pelvis*. The greatneſs of the difficulty will nevertheleſs chiefly depend upon the degree; and in the various degrees which are found to occur, the practitioner may ſee a cauſe for every kind of difficulty which he may meet with in practice. A ſmall degree of diſtortion may occaſion a difficult labour of that kind which may not be an object proper for the exerciſe of his art, as it will at length be completed by the long continued action of the *uterus*, firſt moulding and reducing the form and ſize of the head, till it is adapted to that of the *pelvis*, and then forcing it through the diminiſhed cavity. Or, the degree of diſtortion may be ſuch, that notwithſtanding all the moulding and reduction of the head, which can be accompliſhed

by

by time and the efforts of the conſtitution, there does not remain ſufficient power to expel the head; but it may be brought into ſuch a ſituation, as to afford us the hope of ſafely delivering the patient by art, and of preſerving the life of the child. Or, the diſtortion may be ſo conſiderable, that it is impoſſible for the head of the child to be expelled without leſſening it, and the child, if living, muſt be ſacrificed to the ſafety of the parent. Or, laſtly, the diſtortion may be ſuppoſed ſo great, that if the head of the child were leſſened, there would not be a poſſibility of extracting it, and we muſt either ſubmit to loſe the lives both of the parent and child, or attempt to ſave that of the latter, by the *ceſarean* ſection, or by ſome other operation almoſt equally hazardous.

In many of thoſe caſes in which there is a very great degree of diſtortion of the *pelvis*, the impoſſibility of the head of the child paſſing through it, is ſelf-evident, and readily diſcovered on the firſt examination *per vaginam*. But in leſs degrees of diſtortion, no judgment can be formed *à priori* whether the head can paſs or not; and we ought to defer any determination upon the neceſſity or propriety of giving aſſiſtance, as well as of the kind of aſſiſtance,

ance, till we are convinced by conſequences that the difficulty cannot be overcome by the powers of the conſtitution; and the conviction is in general not ſatisfactory, till the efforts of the patient are diſcontinued or ceaſe entirely. Degrees of difficulty, to our apprehenſion inſurmountable, are often overcome by the mere force of the pains; and ſo long as theſe continue vigorous, we are not to deſpair of a happy event; but encouraged by experience, and ſupported and juſtified by moral as well as ſcientific principles, we muſt rely upon the advantages which time and proper conduct may afford.

The far greater part of thoſe labours which are rendered difficult by the diſtortion of the *pelvis*, only require a longer time for their completion. Some however demand the aſſiſtance of art; and when that is the caſe, the kind of aſſiſtance muſt vary according to circumſtances. But theſe will be more particularly ſtated when we come to ſpeak of the various operations in the practice of midwifery.

3. *Head of the child uncommonly large; or too much oſſified.*

No arguments are required to prove that a ſmall

ſmall body will paſs through a ſmall ſpace with more facility than one that is large; the ſize of the body being ſuppoſed to bear any relation to the dimenſions of the ſpace. Of courſe, it may be preſumed that the larger the head of the child is at the time of birth, with the greater difficulty it will be expelled. Should the *pelvis* not be diſtorted, but of a common ſize, we may always expect that the woman will be ultimately delivered by her natural pains, if there be no other cauſe of difficulty than the largeneſs of the head, though a longer time may be required for the completion of the labour.

It is not merely from the ſize of the head of the child that a labour may be rendered more tedious, more painful, or even truly difficult. The connection of the bones of which the head is conſtructed, is ſuch as to allow of conſiderable diminution and change of form in its paſſage through the *pelvis*. The extreme degree of diminution and change which it is generally capable of undergoing, is perhaps impoſſible to be determined; but it does not ſeem unreaſonable to conjecture that it may be reduced to one third of its original ſize, without the deſtruction or even injury of the child

from

from the compreſſion; the alteration being ſo gradual. The advantages gained by this compreſſion of the head in all caſes of difficulty, occaſioned by its natural ſmallneſs, or in leſs degrees of diſtortion, are often greater than could have been reaſonably hoped for, as was before obſerved. But as there is great difference in the degree of oſſification in the heads of different children at the time of birth, thoſe heads which are moſt perfectly oſſified, muſt of courſe be capable of undergoing the leaſt change; and the degree of change which they can undergo, muſt be produced with the greateſt difficulty, and purchaſed at the expence of more ſevere or longer continued pains. On this account a large head, with a very imperfect oſſification, is often found to paſs through a *pelvis* which might be conſidered as relatively ſmall, with more eaſe than a ſmaller head in which the oſſification was more complete; and yet the cauſe of the delay may not be diſcovered before the birth of the child. In caſes of difficult labour proceeding from theſe and ſimilar cauſes, it not being in our choice to ſelect the circumſtances, all that we can do is to manage ſuch as occur in the moſt prudent manner; and we have commonly to wait only

for

for thoſe effects to be produced which may be eſteemed as conſequences of the efforts of the conſtitution fairly exerted, and never to deſpair ſo long as the natural efforts are properly continued.

4. *Head of the Child enlarged by Diſeaſe.*

Two diſeaſes have been mentioned by writers as the cauſe of this enlargement, tumours growing on the heads of children, and the hydrocephalus; but either of theſe very rarely occur. With reſpect to the firſt, it has been ſaid, that when the tumour, of whatever kind it may be, is of ſuch a ſize as to be an impediment to the birth of the child, it ſhould and may be opened or extirpated, and that the operation is not only perfectly conſiſtent with the ſafety of the mother, but frequently with that of the child alſo. Of the exiſtence of theſe tumours the inſtances recorded do not leave a doubt*; nor of the poſſibility, when they are large, of their obſtructing the delivery of the patient: but of their extirpation with ſafety to the child, I ſhould very much

* Partus difficilis a tumoribus, è capitibus fœtuum dependentibus.

RUYSCH. Obſ. Anatom. LII.

doubt,

doubt, though no human being can circumſcribe poſſibility. As it is the duty, and muſt ever be the ſolicitous wiſh of every practitioner to preſerve a life, when it is in his power, he may be tempted to try the extent of his art, when there is little hope of ſucceſs. From long continued compreſſion the integuments of the head of the child may become ſo much tumefied, and altered from their natural form and ſtate, as ſometimes to give the feel of a diſtinct and adventitious tumour; and yet ſimply conſidered, ſuch certainly do not require any aſſiſtance of this kind. But when there really are any unnatural tumours or excreſcences, the point of practice would depend upon the degree of impediment to the paſſage of the head which might be thereby occaſioned; or upon the nature of the tumour, whether it could be extirpated, or only admitted of an opening to be made into it for the purpoſe of leſſening its bulk; or if neither of theſe could be done with propriety, by acting as if no ſuch tumour exiſted, on the general principles by which we are guided in difficult labours.

With regard to the hydrocephalus, which if of a certain ſize, would certainly be a great obſtacle to the delivery, this is not readily to

be

be diſtinguiſhed in the early part of a labour, becauſe the membranes of the *ovum* in ſome caſes, reſemble by their thickneſs the integuments of the head in others. But if we were aſſured that an hydrocephalus did exiſt, there would not always be occaſion for us to act; as it is far more eligible even then to wait ſo long as to give time for the expulſion of the head of the child by the natural efforts, if they be equal to that effect. Should the head be ſo much enlarged by the quantity of fluid contained in it, that it was too large to paſs, even in that caſe the integuments will generally burſt by the force of the pains. But when the fact is aſcertained, and the labour is rendered extremely tedious and lingering from this cauſe, or if any ſuſpicious ſymptoms ſhould ariſe, it does not ſeem reaſonable to allow the patient to undergo ſuch long continued pains as when we have any hope of ſaving the life of the child. When we have determined upon the neceſſity or propriety of delivering the patient, all that generally is neceſſary to be done, is merely to perforate the integuments of the head, immediately after which the water flowing away, the head is ſpeedily expelled, and the birth ſoon and eaſily completed.

5. *Face inclined towards the* PUBES.

On a former occaſion we have mentioned that there are four varieties in the poſition of the head of the child at the time of birth. The firſt when the *vertex* or hind head is turned towards the *pubes:* the ſecond when the face is turned towards the *pubes:* the third, when the head preſents with one or both arms: the fourth when the face preſents. The firſt of theſe may be conſidered as the ſtandard poſition, becauſe it is not only the moſt common, but the moſt eaſy alſo; the head of the child being ſo conſtructed as to admit, in that poſition, of the greateſt and moſt ready compreſſion and adaptation to the *pelvis*. But the other poſitions are not to be conſidered as conſtituting labours of any other claſs, but as varieties of the natural poſition, though they muſt of neceſſity occaſion delay in all labours in which they happen; either becauſe a portion of that ſpace which is wholly devoted to the head of the child, is occupied by ſome other part, unfavourably, or becauſe the bones of the *cranium* are more ſlowly and imperfectly conformed to the ſize or ſhape of the *pelvis*. When the face of the child is inclined towards the *pubes*, the peculiarity of the poſition is not uſually

diſcovered

diſcovered in the early part of the labour, nor even when the firſt ſtage is completed, the practitioner being generally ſatisfied with knowing that it is a preſentation of the head. But when there is any unuſual delay, perhaps without any very obvious cauſe, it then becomes a duty to inveſtigate and explore the cauſe, and it is not a very unfrequent thing to find the face turned towards the *pubes*. This poſition is moſt readily known by our being able to feel the greater fontanelle in a common examination, though it is alſo proved by other circumſtances relating to various parts of the head, which may be readily diſtinguiſhed. When this is found to be the poſition, it does not follow that any thing ought to be done, but we are to wait a longer time; becauſe as experience has proved that the head in this poſition may be, and almoſt univerſally is, ultimately expelled by the natural efforts, ſo long as theſe are continued, no artificial help ſhould be given or attempted. But when the pains ceaſe, or when we are fully convinced that they are unequal to the exigencies of the caſe, ſuch aſſiſtance muſt be given as the ſituation of the parent may require, and allow.

With this poſition of the head, beſides the

greater length of time which may be required for moulding and expelling it, there will alſo be a greater diſtention of the external parts, becauſe the hindhead cannot be cleared of the *perinæum* before the chin has deſcended as low as the inferior edge of the *ſymphyſis* of the *oſſa pubis*; by which an inconvenience is produced equal to what an increaſed depth of the cavity of the *pelvis* would occaſion, or a deficiency in the arch of the *pubes*. There are alſo ſome peculiarities in the operation when we deliver with the *forceps* or *vectis*; but of theſe we ſhall ſpeak when we come to the directions for the uſe of thoſe inſtruments.

6. *Preſentation of the Face.*

The preſentation of the face is diſcovered by the general inequalities of the preſenting part, or by the diſtinction of the particular parts, as the eyes, the noſe, mouth, or chin. In this preſentation the child will generally be expelled by the natural efforts, but a much greater length of time will be required for the completion of the labour, for the reaſons mentioned under the laſt clauſe, which are in this perhaps increaſed. But the child may be born without any injury, though the face will ſometimes

times be ſwelled in an aſtoniſhing manner, and the external parts of the mother being infinitely more diſtended than in a natural poſition, greater care is neceſſary to prevent their laceration.

If after the long continuance of the labour we are convinced that extraordinary aſſiſtance is required, then the ſame obſervation may be made with regard to the uſe of the *forceps* or *vectis* as in the preceding article; but of the peculiar conduct which it may be neceſſary to purſue, we ſhall ſpeak hereafter.

7. *Head preſenting with one or both Arms.*

Though the head ſhould preſent with one or both arms, experience hath fully proved that a woman may be delivered by the natural efforts with ſafety to herſelf, and without prejudice to her child, if the *pelvis* be well formed. But as a part of the cavity, which ſhould be appropriated to the head, will be filled by the additional bulk of the arms, there will be an evil ſimilar to what would be produced by a ſmall, or by a ſomewhat diſtorted *pelvis*. Should the *pelvis* be barely of ſufficient dimenſions to allow the head of the child to paſs through it, then the additional bulk of the

arms may render the paſſage of the head impoſſible; or the labour may be ſo much retarded as to make it what is properly called difficult.

In the beginning or in the courſe of a labour of this kind, the practitioner will often be able to return the preſenting arm or arms beyond the head, without any detriment; at all events, he muſt be very careful not to ſolicit the deſcent of the arm before the head, leſt he ſhould change the whole ſituation of the child, and convert that which would have been only a variety of a natural, into a preternatural labour.

In ſome caſes we are enabled to feel the head, a foot, and an arm at the ſame time, and it will then be expedient to graſp and bring down the foot, and to deliver in that manner. But it behoveth us to diſtinguiſh very cautiouſly between a hand and a foot, becauſe the miſtake would lead us to the neceſſity of turning the child, an operation which would otherwiſe not have been required.

In preſentations of the head, together with one or both arms, unleſs there ſhould be any particular reaſon for wiſhing to turn the child, the propriety of which muſt reſt upon the judgment

judgment of the practitioner, we are to be prepared, and wait with patience for the expulsion of the child by the natural efforts. When we are convinced by their failure or ceſſation, that theſe are not equal to the effect, ſuch aſſiſtance is to be given as the nature of the caſe may require; and whatever the inſtruments which it may be neceſſary to uſe, are, their action muſt be nearly the ſame, as if the arms had not been in the *pelvis*.

Whether theſe caſes are completed by the natural efforts, or by the aſſiſtance of inſtruments, the arms of the child will be very much tumefied or bruiſed, and the child is for a certain time as unable to uſe them as if they were paralytic. But by the help of fomentations and poultices, if needful, and by moderate motion and gentle friction, their natural appearance and uſe are recovered in the courſe of a few days; at leaſt I have not ſeen an inſtance of any permanent miſchief from this cauſe.

When the extremities preſent at the time of birth, there is often a doubt whether the child be living or not, unleſs it can be perceived to move. Now the fact may be aſcertained by the conſequences of any violence, as no part of a dead child can either tumefy or

change its colour, however compreſſed it may be, and only ſhews one effect of violence, that of ſolution of continuity.

SECTION VII.

ON THE FOURTH ORDER,

OR,

Labours rendered difficult by Diſeaſes of the ſoft Parts.

1. *Suppreſſion of Urine.*

THE various affections of the urinary bladder during pregnancy, have been already mentioned. On the commencement of labour, it was ſaid that an involuntary diſcharge of the urine might be occaſioned; but there is more frequently an inclination and difficulty in voiding it, and ſometimes there is a total ſuppreſſion. The inconveniencies thence ariſing will be according to the quantity of urine retained, and to the length of time that the bladder may continue diſtended. The firſt will hinder the proper action of the *uterus*, and will be an impediment to the paſſage of the head of the child, occaſioning

occaſioning a leſs ſpace for it to paſs through, and projecting it alſo out of its proper direction. By the latter the bladder itſelf may be injured in conſequence of the preſſure which it undergoes from the repeated actions of the *uterus*, cauſing inflammation terminating in partial gangrene; and in ſome caſes in which relief was not given, the bladder has even been ruptured, the patient being thereby deſtroyed*.

In the beginning and courſe of labours, eſpecially of thoſe which are expected to be tedious or difficult, great attention is therefore to be paid to the ſtate of the bladder; the patient is to be frequently admoniſhed to void the urine, and in all caſes of doubt we are not to confide in any repreſentation made to us, but we are to be ſatisfied only with ſeeing the quantity of urine which has been diſcharged; error being often committed by confounding the water of the *ovum* with the urine. By the application of the hand to the *abdomen* of the patient, it is often an eaſy matter to diſtinguiſh between the tumour of the *uterus*, and the flattened but circumſcribed tumour of the bladder,

* See Chapman, page 143; ſee alſo Medical Obſervations and Inquiries, vol. iv.

which lies below and before that formed by the *uterus*. The patient herſelf is frequently capable alſo of diſtinguiſhing that pain which is the conſequence of the action of the *uterus*, from that which is occaſioned by the preſſure upon the diſtended bladder.

To remove the obſtacle to the paſſage of the child, which may be produced by the diſtention of the bladder; and to prevent any injury to the bladder itſelf, it is neceſſary to draw off the urine with the catheter, whenever it is retained beyond a certain time or degree. In ſlighter caſes the common catheter will anſwer the purpoſe; but when the head has been long wedged in the *pelvis*, there is not ſufficient room for that to paſs, even though the head be elevated or preſſed towards the hollow of the *ſacrum*. But in ſuch caſes the flattened catheter, contrived by my very worthy and ingenious friend Dr. *Chriſtopher Kelly*, will often paſs with eaſe and convenience; though the elaſtic catheter is often to be preferred even to this. But whatever catheter it may be found expedient to uſe, or however neceſſary it may be to draw off the urine, we are to take care not to introduce the inſtrument with violence, becauſe we may do as much

much poſitive miſchief with the inſtrument, as we aim or wiſh to prevent. In ſome caſes, though we are aſſured that there is a great quantity of urine in the bladder, the head of the child is ſo immovably locked in the *pelvis*, that we cannot poſſibly introduce any catheter, and are therefore obliged to ſubmit to the inconveniencies which may follow the diſtention of the bladder. But if care was taken in the beginning of labour, this does not often happen; nor is it always attended with the evils we might dread, the head of the child being at length preſſed ſo low as to allow the urine to eſcape, though very ſlowly. But in all ſuch caſes it will be prudent and neceſſary to introduce the catheter before or ſoon after the expulſion of the *placenta*, that we may prevent the miſchief which might be expected to follow the diſtention of the bladder, if that was to remain many hours after the delivery,

2. *Stone in the Bladder.*

If a woman ſhould have a ſtone in the bladder, there would be no reaſon why ſhe ſhould not be with child, and proceed through her pregnancy without moleſtation. Nor, if it

was

was of a ſmall ſize, would it be any impediment to her delivery; though if it was large, the head of the child could not paſs through the *pelvis*, or not without much trouble and inconvenience. Of this caſe I have never met with an inſtance in practice, and may therefore be allowed to conſider it as very rare, though there does not appear to be any reaſon for judging it impoſſible. I have reflected upon the caſe, and upon the conduct which it might be neceſſary to purſue, if it had occurred to me; and though it behoves me to ſpeak with reſerve, and to be ſatisfied if little confidence be placed in what I advance, it is better on the whole to give my opinion, than to leave the matter without conſidering, or making mention of it.

In the beginning of labour, ſuppoſing there is a ſtone of a large ſize in the bladder, one of theſe conſequences muſt follow; the head of the child muſt advance before the ſtone, or the ſtone muſt be protruded before the head of the child. If the former ſhould be the caſe, we might preſume that the labour would proceed in a natural way, as if the ſtone did not exiſt; there would, at leaſt, be no demand for the aſſiſtance of art, and no room to exerciſe it.

But

But if the ſtone ſhould be protruded before the head of the child, our conduct muſt be regulated by the circumſtances. It ſeems reaſonable that we ſhould firſt attempt to raiſe the head in ſuch a manner, and to ſuch a degree as to allow us to return the ſtone beyond the head. But if that ſhould be found impracticable, either becauſe the head of the child was too far advanced, or firmly locked in the *pelvis*, we muſt then weigh the evils to be apprehended, from the compreſſion of the ſoft parts, that is, of the anterior part of the *vagina*, and the poſterior part of the bladder, between the head of the child, and the ſtone in the bladder; beſides the diſtraction of the parts which muſt be neceſſarily occaſioned. Whatever conduct we might purſue muſt be attended with ſome evils, and as it is only in our power to chooſe the leaſt of theſe, it ſeems better even in the time of labour, to ſuffer the evils which might follow the performance of the operation for extracting the ſtone, than to ſuffer thoſe which may be occaſioned by the compreſſion and probable laceration. With regard to the operation, there is both leſs difficulty and danger in it to women than to men, though theſe will in ſome meaſure

depend

depend upon the ſize of the ſtone. In ſome caſes alſo in which the ſtone is contained in a diſtinct cell of the bladder, and could not therefore be graſped or extracted by the *forceps* when introduced; it has been propoſed to make an inciſion through the anterior part of the *vagina*, directly upon the ſtone. This operation, which may in ſome caſes be eligible, has been performed twice, by two ſurgeons of great ability and eminence in the country, and as I was informed, without occaſioning the effect to be apprehended; that of leaving a fiſtulous opening by which the urine would have been voided for the remainder of the patient's life.

3. *Excreſcences of the* Os Uteri.

Excreſcences of the *os uteri* are uſually combined with ſome degree of ſcirrhous diſpoſition of that part. It was before obſerved that theſe excreſcences do not prevent conception, or diſturb pregnancy; but according to their ſize and ſituation, they muſt neceſſarily be obſtacles at the time of labour. The following caſe, which was curious in the circumſtances attending, as well as the nature of the complaint, I may be permitted to tranſcribe, as it was an example

example of an excreſcence of the largeſt ſize I have ever ſeen.

In June 1770, I was deſired to ſee a patient in the eighth month of her pregnancy, who in the preceding night had a profuſe hemorrhage. Her countenance ſhewed the effects of the great loſs of blood ſhe had ſuſtained; and from the repreſentation of the caſe given me by the gentleman who was firſt called in, I concluded that the *placenta* was fixed over the *os uteri*. On examination I felt a very large fleſhy tumour at the extremity of the *vagina*, repreſenting and nearly equalling in ſize the *placenta*, which I judged it to be. Had this been the caſe, there could not be a doubt of the propriety and neceſſity of delivering the patient ſpeedily; and with that intention I paſſed my finger round the tumour, to diſcover the ſtate of the *os uteri*. But this I could not find, and on a more accurate examination, I was convinced that this tumour was an excreſcence growing from the *os uteri*, with a very extended and broad baſis. I then concluded that the patient was not with child, notwithſtanding the diſtention of the *abdomen*, but that ſhe laboured under ſome diſeaſe which reſembled pregnancy, and that the hemorrhage

rhage was the conſequence of the diſeaſe. A motion which was very evidently perceived when I applied my hand to the *abdomen*, did not prevail with me to alter this opinion.

It was of all others a caſe in which a conſultation was deſirable, both to decide upon the diſeaſe, and the meaſures which it might be neceſſary to purſue; and ſeveral gentlemen of eminence were called in. That ſhe was actually pregnant, was afterwards proved to the ſatisfaction of every one; and it was then concluded, that ſuch means ſhould be uſed as might prevent or leſſen the hemorrhage, and that we ſhould wait and ſee what efforts might be naturally made for accompliſhing the delivery.

No very urgent ſymptom occurred till the latter end of July, when the hemorrhage returned in a very alarming way, and it was thought neceſſary that the patient ſhould be delivered. There was not a poſſibility of extirpating the tumour, and yet it was of ſuch a ſize as to prevent the child from being born in any other way than by leſſening the head. This was performed; but after many attempts to extract the child, the patient was ſo exhauſted, that it became neceſſary to leave her

to her repoſe, and very ſoon after our leaving her, ſhe expired.

We were permitted to examine the body. There was no appearance of diſeaſe in any of the abdominal *viſcera*, or on the external ſurface of the *uterus*, which was of its regular form; and when a large oval piece was taken out of the anterior part, the child, which had no marks of putrefaction, was found in a natural poſition. An inciſion was made on each ſide of the *cervix* to the *vagina*, and then a large cauliflower excreſcence was found growing to the whole anterior part of the *os uteri*. The *placenta* adhered with its whole ſurface; ſo that the blood which ſhe had loſt muſt have been wholly diſcharged from the tumour.

The propriety or advantage of a practice by which the life of neither the parent nor child was preſerved, ought to be conſidered; but ſuch caſes occur ſo rarely, that there is always room for animadverſion, when they are concluded. Yet the general principle of its being ever our duty to preſerve both their lives, if poſſible; or to preſerve that of the parent; or, if ſhe cannot be preſerved, then to ſave the child, if it is in our power; would have been

a better guide on this occaſion, than that which was followed.

Excreſcences of a ſmaller ſize are not unfrequently met with in practice; and as even theſe are uſually accompanied with ſome degree of ſcirrhous diſpoſition of the *os uteri*, more time is required for the completion of the labours. It is to be remarked, that in caſes of this kind, there is often a long continuance of the pains without any ſenſible effect; but all at once, the rigid *os uteri* yields and dilates ſpeedily and unexpectedly, or perhaps in ſome inſtances is lacerated. In ſome caſes alſo, the excreſcences are of ſo tender a ſtructure, that they are cruſhed by the paſſage of the head over them, and entirely deſtroyed. During labours of this kind, and after delivery alſo, the great object is to guard againſt all cauſes of inflammation, at firſt perhaps local, but afterwards extending to other parts, connected or readily conſenting with the *uterus*, and more immediately neceſſary for the functions of life.

4. *Cicatrices in the* Vagina.

From diſeaſes of the ſoft parts, eſpecially thoſe ariſing from violence ſuſtained in former

hard

hard labours, the *vagina* may have become ulcerated; and when care was not taken to prevent the ſurfaces from abiding in contact with each other, the oppoſite ſides might adhere in different degrees, according to the depth and extent of the ulceration. When the ulceration is ſlight, and the inflammation is not ſo great as to bring the tumefied parts into contact, after a certain time they heal; but cicatrices being formed, the diameter of the paſſage is leſſened, and the part is left with a diſinclination to yield on any future occaſion. In ſome caſes a ſuperficial ſlough has been thrown off from the whole internal ſurface of the *vagina*, and cicatrices of an irregular kind formed from the *os uteri* to the external orifice. In other caſes there has been a cicatrice only at one part, and if this ſhould happen near the external orifice, the contraction has been ſuch as to mimick an unruptured *hymen*.

Amidſt a great variety of caſes of cicatrices in the *vagina*, I have not met with one example in which they were able to withſtand the preſſure of the head of the child, if the pains were of the cuſtomary ſtrength. The labours have indeed been retarded, but they have terminated favourably. But when the

difficulty ariſing from this cauſe has been combined with other cauſes, it muſt of courſe have added to the trouble which the patient would otherwiſe have undergone. Or, if the pains ſhould ceaſe before the labour is completed, then ſuch aſſiſtance muſt be given as the caſe may require; being on our guard that we do not offer aſſiſtance before there are proofs of the neceſſity, and are aſſured that the difficulty cannot be overcome by the natural efforts.

5. *Adheſion of the* Vagina.

Adheſions of the *vagina* are occaſioned by an increaſed degree of the ſame cauſes as thoſe which occaſion cicatrices. There may be an adheſion in women who were never pregnant, or it may be the conſequence of a ſlough thrown off after a former labour, with or without the uſe of inſtruments *. Caſes of adheſions of this kind are commonly mentioned as of very eaſy management, nothing more be-

* I have been informed of the caſe of a patient who was in the hands of a very ſkilful practitioner, in whom, after her delivery, which was not attended with any circumſtances of peculiar difficulty, the whole internal ſurface of the *vagina*, and all the external parts, entirely ſloughed away.

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ing required, it is ſaid, than to ſeparate the united ſurfaces with a knife, and to prevent their re-union by the introduction of a tent or canula for that purpoſe. It is true, when the adheſion has taken place near the external orifice, that it is in general managed without difficulty; but when the parts adhere high up in the *vagina*, then it appears from the ſtructure that there is need of the greateſt circumſpection, leſt on the one hand we perforate the bladder, or, on the other, the *rectum*, all theſe parts being drawn cloſe together.

In ſome caſes the adheſion is of ſuch a kind, as not to admit or juſtify any attempt to ſeparate the parts with the knife; but even in theſe, by ſuffering the menſtruous diſcharge to be collected, after a certain time, the part, where an inciſion or puncture with a trocar may be ſafely made, will ſometimes be pointed out, and this being gradually dilated, a cure may be effected.

It is poſſible for an adheſion to take place after a woman is become pregnant; of courſe when labour ſhould come on, the contents of the gravid *uterus* would be impelled againſt the adhering part, which would either ſeparate, or reſiſt the excluſion of the child. In

the former caſe nothing would be required to be done; but in the latter, it would be neceſſary to divide the united parts by an inciſion with great care, and to a certain degree, leaving the full ſeparation to be made by the membranes containing the waters, or by the head of the child.

6. *Steatomatoſe Tumours.*

Of this cauſe of difficult labours I have never met with an inſtance in my own practice; but the following caſe was communicated to me by a gentleman whoſe authority is unexceptionable.

A lady, after the birth of her eighth child, fell into a ſtate of bad health, with many painful and troubleſome ſymptoms, but no marked diſeaſe. Theſe were by ſome phyſicians conſidered as nervous, by others as ſcorbutic, and by others as rheumatic, or of a gouty nature. A variety of medicines were given, and means tried for her relief, but without any good effect. At the expiration of two years ſhe became again pregnant. All her former labours had been very eaſy and natural; but when Dr. *Hunter* was called at the commencement of this, he found an obſtruction at the

ſuperior

ſuperior aperture of the *pelvis*, which he believed could only be occaſioned by the projection of the loweſt lumbar *vertebræ*, or the upper part of the *ſacrum*. It was then ſuppoſed that ſhe had the *oſteoſarcoſis*, of which her complaints had been the ſymptoms. It was impoſſible for her to be delivered in any other way than by leſſening the head of the child. She died on the fourth day after her delivery. Leave was given to open the body, and when the *pelvis* was examined, the tumour, which was imagined to be a projection of the bones, was found to be an excreſcence of a firm, fatty ſubſtance, ſpringing from one ſide of the upper part of the *ſacrum*, and paſſing acroſs ſo as to fill up the greater part of the ſuperior aperture of the *pelvis*.

It is probable that the preceding complaints of this lady were occaſioned by the preſſure of this tumour upon the *uterus*; and had the real ſtate of the caſe been known before the time of labour, or even during her labour, it does not appear to have been proper, or within the bounds of art, to have attempted or to have afforded her any other aſſiſtance.

7. *Enlargement of the* Ovaria.

Diſeaſes of the *ovaria*, both of the ſcirrhous and dropſical kind, eſpecially the latter, are known to be very frequent. Either of theſe muſt generally prevent conception; but as one of the *ovaria* may be very much diſeaſed, when the other is in a perfectly healthy ſtate, inſtances ſometimes occur of women becoming pregnant under ſuch circumſtances, and then the enlarged or diſeaſed *ovarium* may produce inconveniences during pregnancy, or become an obſtacle to the progreſs of labour.

With the hiſtory of two caſes of this kind, I was many years ago favoured by Dr. *John Ford*, a gentleman of great ſkill and experience. In the former he was ſurpriſed to find a large and firm tumour lying between the *rectum* and *vagina*, and filling up all the concavity of the *ſacrum*, and a conſiderable ſhare of the cavity of the *pelvis*. Being convinced of the impoſſibility of the child paſſing by this tumour, which did not yield or diminiſh by the force of the pains, it was determined in conſultation, that the patient ought to be delivered by leſſening the head of the child. The operation was performed with great care, but the patient died at the end of three weeks.

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When the body was opened, the tumour was found to be an encyſted dropſy of the *ovarium*, in which there was a conſiderable quantity of hair.

In the latter caſe, which in all its circumſtances reſembled the former, inſtead of leſſening the head of the child, a trocar was paſſed through the poſterior part of the *vagina*, directly into the tumour. A large quantity of water was immediately diſcharged, the tumour ſubſided, and a living child was born without any further aſſiſtance. This patient recovered from her lying-in, but ſome time after becoming hectic, ſhe died at the end of about ſix months, though from the ſymptoms it did not appear that the fever was occaſioned either by the diſeaſe or the operation. This patient was not examined after her death.

Having related theſe two caſes, I have ſaid all which I had to advance on the ſubject, except that I have met with more than one inſtance of a circumſcribed tumour on one ſide of the *pelvis*, which I at firſt ſuſpected to be a diſeaſed *ovarium*. But as theſe tumours have always given way to the preſſure of the head of the child, the paſſage of which they have only retarded for a ſhort time, I have concluded

they were formed either by ſome ſoft fatty ſubſtance collecting there, or were cyſts containing lymph caſually effuſed, and forming to itſelf a cyſt from the cellular membrane. But on taking an examination after delivery, the tumours were found to have again acquired their primitive form and ſize.

8. *Rupture of the* Uterus.

The human *uterus* is found to retain its original thickneſs during the time of pregnancy, notwithſtanding its diſtention; or to become ſomewhat thicker than it was in the unimpregnated ſtate. This thickneſs, we have therefore reaſon to think, is conſequent to ſome principle acquired, and coeval with conception. But if the whole, or any part of the *uterus*, ſhould be deprived of this principle, or affected with any diſeaſe deſtructive of its operation, then the whole *uterus*, or the part ſo affected, would be mechanically diſtended, and become thinner in proportion to its diſtention; and at the time of labour, when the action exerted might be greater than the unthickened part was able to bear, the *uterus* would be of courſe ruptured. Or if the *uterus* which had acquired its proper thickneſs, became affected with

with inflammation or any other diſeaſe, weakening its power and ſpeedy in its progreſs, the texture of ſome part ſo affected might be deſtroyed, and the *uterus* ruptured by its own action in the time of labour. Or, independently of diſeaſe, the *uterus* may be worn through mechanically, in long and ſevere labours, by preſſure and attrition between the head of the child and the projecting bones in a diſtorted *pelvis*, eſpecially if they be drawn into points or a ſharp edge. Or the *uterus* may be ruptured by violent accidents happening to the mother in the advanced ſtate of pregnancy. It may alſo be ruptured by attempts to paſs the hand for the purpoſe of turning a child, if it be ſtrongly contracted; but in this laſt caſe a rupture could only happen when the force with which the hand was introduced was combined with the proper action of the *uterus*; for no perſon has the power to force his hand through an healthy and unacting *uterus*. The part of the *uterus* which commonly gives way, whether poſterior, which is moſt common, or anterior, or lateral, is uſually near the union of the *cervix* with the *vagina*, in which ſuch a change is made

made at the time of labour that the diſtinction between them is loſt.

Some of the cauſes of the rupture of the *uterus*, are unavoidable; for it is not within the ſphere of human abilities, to give to any part the principle by which it has the diſpoſition or power to perform any function; though art may excite the power to action if dormant, or repreſs it when too vehement. Nor is it poſſible to diſcover or prevent the degree of preſſure or attrition which ſome particular part may undergo in a difficult labour, before the effect is produced. But the two other cauſes, that which is preceded by inflammation, or that which may be occaſioned by attempts to turn the child, may be corrected or avoided, by abſtaining from the uſe of all ſuch means as are likely to act as cauſes of inflammation, or by proper treatment when it does exiſt, or from making ſuch attempts as may be neceſſary for the purpoſe of turning a child, when the action of the *uterus* is ſtrong.

The rupture of the *uterus* is accompanied with a ſenſe of ſomething giving way internally, always perceptible by the patient, with an inſtant vomiting of brown fluid, and an abatement

abatement or a total ceſſation of the pain. After theſe ſymptoms, by the application of the hand to the *abdomen*, the limbs of the child are ſo eaſily diſtinguiſhed through the integuments, as to leave no room to doubt of the accident; and if the head of the child be not locked in the *pelvis*, it immediately recedes, or even goes out of the reach of a common examination. The death of the patient uſually follows ſoon after the accident, though I have ſeen a caſe in which there was reaſon to believe that the patient walked a conſiderable diſtance, and lived ſeveral days after a rupture of the *uterus*.

There is certainly little chance of the patient ſurviving a rupture of the *uterus*, and it might be doubted whether it would be more eligible to ſuffer the patient to die without giving her further trouble, or whether it was our duty, hopeleſs as the caſe muſt be, to paſs the hand into the *uterus*, to turn and deliver the child by the feet; or with the *forceps* or *vectis*, or in any way the caſe would allow. Whatever were the ſentiments of practitioners formerly, is not to us very material; for beſides ſome few others of which I have been informed, or which are recorded,

corded, a caſe has occurred to my very worthy, able, and experienced friend Dr. *Andrew Douglas*, in which though the *uterus* was ruptured, he turned the child, the patient recovered, and had afterwards children. If no other caſe had ever occurred, I apprehend that this would be of ſufficient authority, to render it in future the indiſpenſable duty of every practitioner to act in a ſimilar manner; and bad as the chance of the patient is, to be ſtrenuous in uſing all the means which art dictates, to extricate her, if poſſible, from her danger, or to preſerve the child. But for further information on this head, I refer the reader to the Eſſay on the rupture of the *uterus*, publiſhed by Dr. *Douglas*.

SECTION VIII.

These cauſes of difficult labours I have enumerated in this order, with the hope of pointing out a more uſeful method of arranging the knowledge we poſſeſs, of increaſing that knowledge, and of removing ſome part of that obſcurity in which the practice of midwifery has been involved, and by which its further improvement hath been hindered. Two things appear in the general reſult; firſt, that the evils attending parturition are more frequently adventitious, than unavoidable or of neceſſity; and ſecondly, that the native powers of the conſtitution, when not interrupted, are not only ſuperior to the common obſtructions of the proceſs, but in general, to the various kinds and degrees of deviation from the natural courſe of labours. Yet with every prudential regard to our own conduct, and the moſt judicious regulation of that of our patients, we ſhall in practice certainly meet with caſes in which, either from the debility of thoſe powers which commonly exiſt, and

which are generally exerted; or, from the greatneſs or ſtubborneſs of ſome obſtructing cauſe; or, from ſome cauſe actually produced by the labour itſelf, we ſhall be compelled by neceſſity to give artificial aſſiſtance, or the mother, or child, or both, will be loſt.

Before we proceed to the conſideration of the various means which have been contrived for the relief of women in caſes of difficult parturition, it may be again obſerved, that the cauſes of difficulty are generally combined; and as there are very few inſtances of a diſeaſe, according to the ſimple definition of it, in noſological writers, ſo there are few examples of difficult labours produced or attended by one ſingle cauſe. Together with the dribbling of the waters, there will often be a retraction of the head of the child from the ſhortneſs of the *funis*; and with great rigidity of the parts, or a ſmall *pelvis*, there may be a weak action of the *uterus*, and ſo on to an almoſt endleſs variety. One cauſe will however predominate, and of courſe become the principal object of our attention. But when by time, or art, that cauſe is removed, we muſt apply ourſelves to the removal of that which is important in the next degree; and ſometimes

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the ſame means may be properly uſed for the removal of difficulties proceeding from ſeveral different cauſes.

But beſides the cauſes already mentioned, there is one much more frequent than the reſt, which is the derangement of the order of the labour by an officious interpoſition, or by improper management. Upon this ſubject it would be unpardonable to make an aſſertion which is not ſupported by experience; but I am fully convinced that the far greater number of really difficult labours to which I have been called, and I muſt not conceal the truth on this occaſion, ſome of thoſe which have been originally under my own care, were not of that denomination from unavoidable neceſſity, but were rendered ſuch by improper management. Nor does the diſturbance of the order of a labour, depend upon the practitioner alone; for the intractability of the patient herſelf *, or of her friends and attendants, which though it may be founded in affection and compaſſion to her ſufferings, may

* De la part de la mere c'eſt quelquefois ſa mauvaiſe humeur, ſon impatience, ſon indocilitè, la violence et la irregularité des mouvements.

Peu la Pratique des Accouchments.—Livre II. Cap. 1.

alſo

alſo ariſe from many other motives, is too frequently productive of the ſame effect.

In the management of difficult labours there is required much previous knowledge and preſent judgment on the part of the practitioner, to diſtinguiſh in caſes of great difficulty, which of them may demand the aſſiſtance of art, and which may be reſigned to the efforts of nature; and there is no ſituation in which there is occaſion for greater addreſs to procure the confidence and co-operation of all the parties concerned; or for more firmneſs in the purſuit of the negative conduct, which it is abſolutely neceſſary to follow. Whatever may be the reſolution of particular women, and whatever may be the general eſtimation of natural labours, every woman is impreſſed with the opinion, and the opinion is often well founded, that in difficult ones, her life is to be preſerved by the ſkill and judgment of the practitioner, under whoſe care ſhe is placed. If therefore her confidence is ſecured, the delay to give aſſiſtance will be conſtrued into a proof that none is required, and of freedom from danger,

The diſtreſs and pain which women often endure while they are ſtruggling through a difficult

difficult labour, is beyond all deſcription, and ſeems to be more than human nature is able to bear under any other circumſtances. The great principle of all their patience and reſolution, is perhaps that deep-rooted affection of the parent to the offspring, implanted in the female mind. But the principle of ſelf-preſervation, though varying in its operation, will recur, and demand its ſhare of regard. In long continued labours it is therefore proper, by frequent alluſions to the child, to encourage and ſtrengthen the former principle, for its power is leſſened or overcome by the weight of their preſent diſtreſs; their love for their child is conquered; and the proſpect of diſtant pleaſure is not able to ſtand in competition with the evils of the preſent moment. With the firmeſt determination to do what is right, they willingly perſuade themſelves that the child is dead; that the object for which they ſhould perſevere, no longer exiſts; and the practitioner in oppoſition to his own feelings, and againſt the ſolicitations of thoſe who confide in him, is often the only advocate for the child. But his deciſion to act in caſes in which the life of a child is concerned, muſt ſtand upon a better principle than conformity

to the inclinations of others; for though he might avoid preſent cenſure, or even gain preſent credit, by giving artificial aſſiſtance unneceſſarily, when the caſe comes to be reviewed, and it always is reviewed, the blame of acting precipitately in caſes which do not terminate fortunately, will be caſt upon him, and their ſatisfaction will be eſtabliſhed by the diſcovery of ſome cauſe of blame in his conduct. In the exerciſe of the moſt hazardous part of a profeſſion, perhaps in general more ſubject to cenſure than any other, it behoves us to be particularly circumſpect: and though events are often beyond the power of human controul, we may always act with intelligence, with prudence, and firmneſs; and no man's character can long be ſupported, if he is not governed by the determination to do what is right, to the beſt of his own judgment and power.

But however averſe the practitioner may be to the uſe of ſuch means as may be dangerous to, or even deſtructive of the child, caſes muſt occur in which the aſſiſtance of art will be abſolutely needful, and the uſe of inſtruments juſtified. As correct a judgment muſt alſo be exerciſed, and equal care taken that he

does

does not delay that aſſiſtance which may be neceſſary, ſo long, that it cannot anſwer the end for which it was given; or while he is endeavouring to preſerve the life of the child, he may loſe that of the mother alſo, which certainly is of more value.

The intentions in the uſe of inſtruments may be of three kinds. Firſt, to preſerve the life both of the parent and child: ſecondly, to preſerve the life of the parent; and thirdly, to preſerve the life of the child. The inſtruments contrived to anſwer the firſt intention, are the *fillet*, the *forceps*, and the *vectis*. Of each of theſe, together with all the collateral circumſtances which demand our regard, we ſhall ſpeak in their turn, and then proceed to the conſideration of the other intentions.

CHAPTER XI.

SECTION I.

ON THE FILLET, FORCEPS, AND VECTIS.

WHEN men, firſt collected into ſocieties, had provided for their ſubſiſtence, they would endeavour to amend their ſtate, by removing ſuch evils and inconveniencies as were moſt urgent, either from their importance or frequency. Next to thoſe arts by which the means of ſupport were acquired, that of medicine would be of principal conſideration, as from the nature of their employments, hunting, fiſhing, paſtoral or agricultural, men muſt have been liable to diſeaſes and to injuries, which, by accident or trial, they would learn ſome method of relieving; and he that ſhould have acquired the greateſt collection of knowledge, or the moſt dexterous method of applying it to uſeful purpoſes, would have become a phyſician. But the origin and progreſs

greſs of that branch of medicine of which we are treating would be ſomewhat different. When the cuſtoms and manners of life were ſimple, and not much diſpoſed to produce diſeaſes, difficulty or danger in the parturition of women would ſeldom occur; and notwithſtanding the diſtreſs with which they might ſometimes be accompanied, the general termination of labours would be eaſy and ſafe. In the very few caſes which might require more than ordinary aſſiſtance, there were none to afford it; and thoſe women who could not bring forth their children by their own efforts, were ſuffered to die without any attempts being made to relieve them, according to the relations which are given of the people of ſome countries, even at this day.

As mankind advanced in civilization, the evils attending parturition would probably increaſe, though ignorance or inability to give relief might long continue; but the ſupplications for aſſiſtance, and the affections of men, would not permit them to remain unconcerned or inactive ſpectators of the miſery of thoſe, to whom they were indebted for the chief part of their happineſs. They gave ſuch aid

as their information or ingenuity enabled them to deviſe, and this, in the firſt inſtance conſiſted of ceremonies and amulets, or medicines *, to which ſome myſterious properties were attributed, as the ſkins and ſome other parts of ſerpents, the eagle ſtone, the blood-ſtone, the ſtony ſubſtance found in the head of a ſhark, with many others of the like kind; and ſuch things might ſuccour the minds of women, ſtrongly impreſſed with a ſenſe of their utility, in a ſtate of actual danger, overwhelmed at the ſame time with extreme pain and apprehenſion. In times more enlightened, for every kind of diſtreſs religion offered its conſolations, by ſoothing the mind, by teaching mankind, when oppreſſed with difficulties, to uſe their own endeavours, the neceſſity of ſubmitting to evils

* It is extremely curious to ſee the many ancient cuſtoms preſerved by *Ovid*, in ſeveral parts of the Metamorphoſes.

——— Nec habent ſua verba dolores:
Nec Lucina poteſt parientis voce vocari.
Conſtitet ad ramos mitis Lucina dolentes;
Admovitque manus; et verba puerpera dixit.
Reddit onus; vagitque puer, quem mollibus herbis
Naiades impoſitum, lachrymis unxîre parentis.

METAMORPHOS. Lib. x. Fab. x.

which

which could not be prevented or avoided, and by encouraging with the hope of happy events. After the diſcovery of the mechanic arts, theſe were applied to the exigencies of every occaſion; and when the ſufferings of women in child-birth could no longer be endured, attempts were made to relieve them by extracting, without regard to its ſafety, the head of a child which could not be expelled by the efforts of the mother; and for this purpoſe the firſt kind of *forceps* was invented and uſed. The ſame motives of compaſſion or affection, which led to the wiſh of relieving women, would readily extend to children; and, to combine the intereſts of both, fillets and the *forceps*, now in common uſe, were contrived. When the head of a child was found to be too large to paſs through a very ſmall or a diſtorted *pelvis* with the help of ſuch contrivances, there was no relief to be obtained except the head of the child was leſſened, and for this purpoſe, perforators and crotchets of various kinds were invented. The intrepidity of ſome man ſeeing no other way of giving relief, or the deſperate reſolution of ſome woman frantic with her ſufferings, might lead to a more ſummary

way of obtaining it*; and, with a determination to free her from the cauſe of her miſery, or to put an end to her exiſtence, a child might have been extracted through a wound made into the part which contained it, and the manner of performing the Ceſarean operation would be ſhewn.

In ſome times and countries in which the *forceps* and other inſtruments of that kind were not known, or their uſe not fully underſtood, and afterward, in ſome caſes not thought ſuitable for their uſe, it became a cuſtom in many difficult labours, by whatever cauſe produced, to return the preſenting head, to paſs the hand into the *uterus*, to turn and deliver the child by the feet. But this operation of turning could only be performed under very limited circumſtances; for if the head of the child was very low in the *pelvis*, or the *uterus* ſtrongly contracted round its body, it could not be done, or not without defeating the very purpoſe for which the operation was perform-

* See London Medical Journal, No. in which there is a curious hiſtory of a Negro woman who performed this operation upon herſelf; given by Mr. E. Home.

ed,

ed, producing at the ſame time great danger to the parent. Yet caſes may occur in which by turning the child, the chance of ſaving its life is greater than can be gained by the uſe of any inſtrument, of which the following is an example.

Many years ago I attended a patient in two labours, in both of which there was a neceſſity of delivering with inſtruments, on account of the ſmallneſs and diſtortion of the *pelvis*, and neither of the children could be preſerved. In her next pregnancy I made a propoſal to bring on premature labour, to which ſhe and her friends would not conſent, and I was diſmiſſed from my attendance. In the courſe of twelve or fourteen years ſhe had five more children, not one of which was born living. In the forty-ſixth year of her age ſhe proved with child, and again applied to me. When her labour came on, the firſt ſtage was ſuffered to proceed without interruption, but when the membranes broke, I without delay paſſed my hand into the *uterus*, and eaſily brought down the feet and body of the child; but the head being ſtopped by the narrowneſs of the ſuperior aperture of the *pelvis*, I was obliged to exert, and to continue much force before

fore it could be extracted. The child was born with very little or no appearance of life; but by the ſtrenuous uſe of the common means recommended for that purpoſe it was recovered. On the left parietal bone there was a depreſſion of conſiderable extent, and to my apprehenſion of full one inch in depth, occaſioned by the projection of the *ſacrum*; but the depreſſed part gradually roſe, in the courſe of a few months the bone regained its natural form, and the child was for ſeveral years in good health. The woman recovered without any untoward circumſtance.

But the ſucceſs of ſuch attempts to preſerve the life of a child is very precarious; and the operation of turning a child under the circumſtances before ſtated, is rather to be conſidered among thoſe things of which an experienced man may ſometimes avail himſelf in critical ſituations, than as ſubmitting to the ordinary rules of practice.

SECTION II.

ON FILLETS.

THE fillet uſed in the practice of midwifery is a ſingle band intended to be fixed upon the head of a child detained in its paſſage through the *pelvis*, for the purpoſe of extracting the head.

It has been ſuppoſed that fillets were uſed in the practice of midwifery as early as the time of *Hippocrates*; but whenever they were invented, they have ſince undergone a variety of changes, by which it was intended to gain ſome advantage, or to avoid ſome inconvenience. Fillets were conſtructed of ſilk, cotton, linen, or leather of divers kinds, ſtrengthened or rendered more commodious for application, by the addition of cane, whalebone, wire, or very thin and narrow plates of iron, variouſly braided and worked together according to the opinion or judgment of the contriver.

The manner of applying the fillet was, by conducting it with the finger or an inſtrument

contrived

contrived for the purpoſe to ſome fixed point, as the chin, or round the circumference of the head of a child, as high up in the *pelvis* as could be reached; then, after twiſting the two ends together to acquire a firm hold, we were taught to extract, in a proper direction, with all the force the fillet enabled us to uſe, or the neceſſity of the caſe might require.

The peculiar advantages expected to be derived from fillets were theſe. They were ſuppoſed to be applicable with great facility in every direction of the head, or when this was too high to allow of the uſe of any other inſtrument recommended with the ſame intention; to ſupply us with ſufficient power to extract the head when detained an unreaſonable time, by any cauſe, to the hazard of the mother or child; and to do leſs injury to either, on account of the ſoftneſs and pliability of the materials of which they were compoſed.

But experience has fully proved that a fillet of any kind could not be ſafely applied without much difficulty and trouble; that when applied it was very apt to ſlip; that when it remained fixed, it was often inadequate to the purpoſe of extracting the head; that it created new difficulties, or added to thoſe which before

fore exiſted, by changing the direction of the head; and that the injury done to the mother or child was not in proportion to the hardneſs of the materials of which inſtruments were conſtructed, but according to the violence with which they were uſed.

For theſe reaſons fillets of every kind gradually declined in eſtimation, and they are now wholly neglected. They may be conſidered among the firſt attempts of art to give relief, which have been ſuperſeded by other contrivances, equally ſafe and more efficacious.

SECTION III.

ON THE FORCEPS.

THE *forceps* uſed in the practice of midwifery, is an inſtrument compoſed of two equal parts, each part conſiſting of a blade and handle, ſo formed that, when applied ſeparately upon the head of a child obſtructed in its paſſage through the *pelvis*, they may be connected

connected together, and used as two alternate or conjoined levers, for the purpose of extracting it.

Forceps have been made of wood or silver, but generally of iron properly tempered, with wooden handles, and when used, should be covered with smooth and thin leather, which without any significant increase of bulk, renders their introduction more easy, and takes off, both in appearance and reality, the asperity of the instrument. Each blade must be introduced separately, but in such directions, that when introduced they may be antagonists to each other; and there have been different contrivances or locks to keep them fixed together.

It would be difficult to determine the time when *forceps* were first used, but we have very early accounts of two kinds, with one of which it was intended to extract the child, without regard to the injury which might be done to it, and with the other to extract and preserve its life. The first was armed with teeth or sharp protuberances on the internal surface which grasped the head; but those of the second kind had no protuberances, and when used, were clothed with linen or some soft

ſoft material, to prevent their doing any injury to the child. The firſt are never uſed at the preſent time, and would have been forgotten, except for the patterns which are preſerved in the collections of thoſe who have taught the art. Of the latter kind there is an endleſs variety, but every variety regards one or other of theſe conditions; their length, their ſtrength, or their different degrees, or kinds of curvature.

From the length of the *forceps* formerly made, we may conclude that it was uſual to apply them before, or as ſoon as the head of the child had entered the ſuperior aperture of the *pelvis*; and from their ſtrength, that it was thought neceſſary to provide for the exertion of great force. The common curvature was varied according to the opinion entertained of the form and dimenſions of the head of a child at the time of birth; but the lateral curvature was given for the accommodation of the inſtrument to the form of the *pelvis*, or for leſſening the preſſure upon, and of courſe the danger of lacerating, the external parts, while the child was extracting. As the *forceps*, though well applied, ſometimes ſlipped from the head when brought into

action, a groove, with a ſlight eminence on each ſide, was propoſed to be made on that part of the internal ſurface which embraced the head, to prevent that accident, and to allow of a change in the manner of acting, by admitting of ſome degree of rotation.

Forceps have alſo been contrived in ſuch a manner that one blade received the other, and theſe were called male and female. They have alſo been made with hinges or joints between the handle and the blade of each, anſwering no other purpoſe than that of concealing them, that there might be an opportunity of performing the operation with them in a clandeſtine manner. But as the reaſons for uſing the *forceps* will juſtify the operation to the moſt ſevere examiner; and as theſe may be explained without adding to the terror or diſtreſs either of the patient or her friends, there never can be occaſion for concealment, which, in theſe caſes ought to raiſe a ſuſpicion of the judgment or integrity of thoſe who ſhould attempt to practiſe it. There is, in truth, at the preſent time, more frequently a neceſſity for reſiſting the ſolicitations both of patients and friends, urging us to the uſe of inſtruments, than of perſuading them to comply with

with our propoſals when we really think them needful.

Beſides the different kinds of *forceps* which conſiſt of two blades, others have been contrived with three. By thoſe who ſuppoſed labours to be chiefly obſtructed or rendered difficult by the inflection of the *os coccygis*, a third blade was added for the purpoſe of raiſing the head of the child over that part. But thoſe who ſuppoſed difficulties to be occaſioned by the *ſacrum* jetting, and of courſe projecting the head of the child over the *ſymphyſis* of the *oſſa pubis*, added a third blade for the purpoſe of bringing back the head thus projected, into a right line with the cavity of the *pelvis*, before any attempt was made to extract it with the other two blades. Whatever credit may be due to the authors of theſe contrivances for their ingenuity, the third blade has certainly been added on erroneous principles; and *forceps* thus conſtructed, would not only be embarraſſing in practice, but in every caſe, as far as can be judged, uſeleſs or injurious*.

* See *Chapman*.

It is remarkable that *forceps* were made of an unneceſſary length, when we were forbid to apply them before the head of a child had deſcended very low into the *pelvis*; and they were made very ſtrong, when it was well underſtood that far leſs force than they enabled us to uſe, could be exerted with propriety or ſafety. They were however by degrees made ſhorter and leſs cumberſome, and about the year 1748, Dr. *William Smellie*, who was eminent in practice, and as a teacher of midwifery in *London*, altered them, and brought into general uſage a kind of *forceps*, more convenient than any before contrived. Theſe before they are curved do not meaſure more than twelve inches from the end of the handle to the extremity of the blade; and, when properly curved, little more than eleven inches, of which the handle meaſures near five inches. The wideſt part of the blade meaſures about one inch and five eighths, and this gradually declines towards the handle, preſerving at the ſame time the flatneſs of the blade till it meets the handle. Being ſimple in their conſtruction, applicable without difficulty, and equal to the management of every caſe in which the *forceps* ought to be uſed, I have

adapted

adapted the following rules to them. But if *forceps* of any other kind ſhould be preferred, though the principles will hold good, the rules muſt be varied, according to the diſcretion of the perſon who may perform the operation.

SECTION IV.

GENERAL OBSERVATIONS.

It has been long eſtabliſhed as a general rule in this country, that the uſe of inſtruments of any kind ought not to be allowed in the practice of midwifery from any motives of eligibility *. Whoever will give himſelf time to conſider the poſſible miſtakes and want of ſkill in younger practitioners, and the in-

* Non niſi ſumma neceſſitate illud exigente atque tum demum educendis ex utero infantibus admovenda eſſe ferramenta, quum nihil omnino ſpei reliquum eſt fore, ut ſolarum manuum ſubſidio extrahere ipſos liceat.—*Heiſter.* Capt. Liij. ix.

ſtances of preſumption in thoſe who by experience have acquired dexterity, will be ſtrongly impreſſed with a ſenſe of the propriety of this rule, as well as from the general reaſon of the thing. But when, from any cauſe, the parent becomes unequal to the expulſion of the child, the aſſiſtance of art, by whatever means it can be afforded, is juſtifiable by neceſſity; becauſe without ſuch aſſiſtance the parent would die undelivered, and with her life, that of the child would alſo be inevitably loſt. Yet it behoveth every perſon who may uſe inſtruments in the practice of midwifery, to be well convinced of this neceſſity before they are uſed, and to be extremely careful in their uſe; that he does not create new evils, or aggravate thoſe which might be exiſting. But though it be our duty to avoid, if poſſible, the uſe even of thoſe inſtruments which are intended to be employed without injury either to the mother or child, it would, on the other hand, be abſurd to defer their uſe till the child were dead, and the mother reduced to a ſtate, not of apprehended, but of real danger; or, which is worſe, that if ſhe ſhould ſurvive, her life would be rendered miſerable from the

conſe-

conſequences of miſchief done before the inſtruments were uſed.

When it is propoſed to deliver women with the *forceps*, the intention is, to ſupply, by their means, the total want, or deficiency of the natural pains of labour; in other words, to extract the head of a child which cannot be expelled by the efforts of the mother. But ſo long as theſe efforts continue with any degree of vigour, there is always reaſon to hope that they will ultimately accompliſh the effect of expelling the child without any artificial aſſiſtance. We are moreover to recollect, that in labours of long continuance there will often be an abatement, or even a temporary ceſſation of the pains, without any apparent reaſon or alarming ſymptoms; but that ceſſation of the pains, which is the conſequence of long continued, fruitleſs action, and of great debility, is to be conſidered as the only juſtification of the uſe of the *forceps*.

Before the completion of the firſt ſtage of a labour, that is, before the *os uteri* be completely dilated, and the membranes broken, the uſe of the *forceps* can never come under contemplation. Becauſe the difficulties before occurring may depend upon cauſes which do not require their uſe; or, if required, they

could not be applied with ſafety or propriety before thoſe changes were made.

There is infinitely greater difficulty in deciding upon the proper caſe and time when the *forceps* ought to be applied, than in applying or uſing them; but it is univerſally agreed, that the lower the head of the child has deſcended into the *pelvis*, the eaſier will their application be, and the operation with them more certain and ſucceſsful. With a view to this obſervation, a practical rule has been formed, that the head of a child ſhall have reſted for ſix hours, as low as the *perinæum*, that is in a ſituation which would allow of their application, before the *forceps* are applied, though the pains ſhould have ceaſed during that time. This, with other rules, was intended to prevent the raſh or unneceſſary uſe of the *forceps*, and certainly time is, in theſe caſes, a very good corrector of practice.

The *forceps* ought to be applied over the ears of the child, becauſe when thus placed, there is the leaſt likelihood of doing injury to the child, and they enable us to act with the greateſt advantage and ſafety to the mother. It muſt therefore be improper to attempt to

apply

apply them before an ear can be felt, either becauſe the head is too high to allow us to reach that part, or becauſe it is ſo cloſely locked in the *pelvis*, that there is not ſufficient room to paſs the finger for that purpoſe between the head of the child and the *pelvis*. If an ear of the child can be felt, the caſe is always manageable with the *forceps*; but when the queſtion, whether they ought to be applied, comes under conſideration, the ears are not turned to the ſides of the *pelvis*, but that ear which is to guide us will be found towards the *pubes*. However we are always to remember that the *forceps* are not to be applied becauſe we have the power of uſing them, but becauſe the neceſſity of the caſe is ſuch as to require their uſe. But caſes ſometimes occur in practice in which we may deſpair of the ability of the mother to expel the child; and which, though not ſuch as have been ſtated as perfectly ſuitable for the uſe of the *forceps*, become ſuitable, merely by waiting a certain number of hours, and a repetition of the ſlight efforts of the parent. In that deſponding ſtate with which every tedious and difficult labour is accompanied, I have alſo found the patient very much encouraged

by having ſome diſtant time held up to her when ſhe ſhould be aſſiſted, if the labour were not before concluded: as this encourages her, by giving to her imagination a period to her ſuffering.

Every change in the poſition of the head, and every alteration in the conſtruction of the *forceps* from thoſe already ſtated, will require ſome difference in the manner of applying and uſing them. But the preference, which ought in reaſon to be given, of one kind of *forceps* to another, is merely becauſe one inſtrument may be more handy and convenient than another, for an intelligent and ſkilful man would be able to apply and uſe thoſe of any form or ſize, in ſuch a manner that they ſhould anſwer his purpoſe; as an expert ſurgeon would be able to amputate a limb with a knife of any kind. No conſideration or advantage to be gained by inſtruments of any particular ſtructure ought to leſſen our attention, as the ſucceſs of every operation muſt neceſſarily depend upon the juſtneſs of the idea entertained of it in the mind of the perſon who may perform it, and the dexterity with which the inſtrument may be guided by his hands.

When we have determined on uſing the *forceps* according to the preceding obſervations, corrected by our own judgment; and when we have repreſented our opinion, and explained the reaſons for it to the friends of the patient, as is cuſtomary in all other operations, we muſt prepare for this in the following manner. The patient is to be placed upon her left ſide, acroſs, and very near the edge of the bed on which ſhe is laid, with her knees drawn up to the *abdomen*, and a pillow placed between them, that we may be able to reach the patient with all convenience, and poſſeſs the free and uninterrupted uſe of our own hands. The inſtruments, being warmed in water, and ſmeared with ſome unctuous application, are to be ſo placed that they can be readily taken hold of by ourſelves, or handed to us by an aſſiſtant.

SECTION V.

ON THE APPLICATION OF THE FORCEPS.

THE firſt part of the operation conſiſts in paſſing the fore-finger of the right hand between the *oſſa pubis* and the head of the child to the ear; then taking the part of the *forceps* to be firſt introduced, by the handle, in the left hand, the point of the blade is to be ſlowly conducted between the head of the child and the finger, till the inſtrument touches the ear.

There can be no difficulty or hazard in carrying the inſtrument thus far, becauſe it will be guided, and in ſome meaſure ſhielded, by the finger. But the farther introduction muſt be made with a ſlow ſemi-rotatory motion, keeping the point of the blade not rigidly, yet cloſely to the head of the child, by raiſing the handle towards the *pubes*. In this manner the blade muſt be carried gently along the head, till the lock reaches the external

external parts near the anterior angle of the *pudendum*.

The point of the blade, while introducing, ſometimes hitches upon the ear of the child, and then it requires a little elevation, which is given by depreſſing the handle. But when it has paſſed the ear, and is beyond the guidance of the finger, ſhould there be any check to the introduction either of this or the other blade, it ſhould be withdrawn a little, to give us an opportunity of diſcovering the cauſe of the obſtacle, which we muſt never ſtrive to overcome with violence, though we muſt proceed with firmneſs. When the firſt blade is properly introduced, it muſt be held ſteadily in its place, by preſſing the handle towards the *pubes*, and it will be a guide in the introduction and application of the ſecond blade.

Let the ſecond blade be introduced in this manner. Keep the blade firſt introduced in its place, with the two leſſer fingers of the left hand, and carry the fore-finger of the ſame hand between the *perinæum* and head of the child, as high as you can reach. Then take the ſecond blade of the *forceps* by the handle, in the right hand, and, conveying the point between the finger placed within the

perinæum,

perinæum, and the head of the child, conduct the inſtrument with the precautions before mentioned, ſo far that the lock ſhall touch the interior part of the *perinæum*, or even preſs it a little backwards. In order to fix the two blades thus introduced, that which was placed towards the *pubes* muſt be ſlowly withdrawn, and carried ſo far backwards, that it can be locked with the ſecond blade retained in its firſt poſition: and care muſt be taken that nothing be entangled in the lock by paſſing the finger round it. When the *forceps* are locked, it will be found convenient to tie the handles together, with ſufficient firmneſs to prevent them from ſliding or changing their poſition, when they are not held in the hand, but not in ſuch a manner as to increaſe the compreſſion upon the head of the child.

Should the blades of the *forceps* be introduced ſo as not to be oppoſite to each other, they could not be locked; or if when applied the handles ſhould come cloſe together, or be at a great diſtance from each other, they would probably ſlip, or there would be a failure of ſome kind in the operation, as the bulk of the head would not be included, or they would be fixed on ſome improper part of the

the head; though allowance is to be made for the difference in the ſize of the heads of children. But if a caſe be proper for the *forceps*, if they be well applied, and we were to act ſlowly with them, there would not be much riſk of failure or diſappointment.

The difficulty of applying the *forceps* is moſt frequently occaſioned by attempting to apply them too ſoon; or by paſſing them in a wrong direction; or by entangling the ſoft parts of the mother between the inſtrument and the head of the child, againſt all which accidents we are to be on our guard.

SECTION VI.

ON THE ACTION WITH THE FORCEPS WHEN APPLIED.

It was before obſerved that the *forceps*, when applied, and fixed upon the head of a child, might be conſidered as a compound inſtrument which allowed of a ſeparate action with either of the parts of which it was compoſed; or of a conjunct action, as if the two parts formed one inſtrument. The ſeparate action with either part will be on the principle of the lever; but that with both the blades will be ſimple traction. Yet in practice we ſhall find very few caſes in which it will not be neceſſary to exerciſe or to combine both theſe kinds of action.

As it is the intention, when the *forceps* are uſed, to ſupply with them the total want or inſufficiency of the natural pains of labour, the whole power or force which the inſtrument enables us to uſe, ought not to be exerted in the firſt inſtance, but ſuch a degree

as any individual caſe may require; firſt trying a moderate degree of force, and increaſing it ſlowly and deliberately, according to the exigence of each caſe. Becauſe the impediment may not be great, and the point of obſtruction may exiſt only at one part, and that being ſurmounted by one, or a few actions with the inſtrument, there would be no cauſe for acting any more. In ſome caſes alſo, though the pains had entirely ceaſed, they will return with force ſufficient to expel the child, from the irritation made by the mere application of the inſtrument. But when the *forceps* have been applied, they ſhould not be removed before the head is expelled, though their aſſiſtance be not required, leſt the pains ſhould ceaſe, and we ſhould be again obliged to apply them.

The effects of the *forceps*, or the conſequences which reſult from their action, are theſe; compreſſion of the head, deſcent of the head, inclination of the face to the hollow of the *ſacrum*, extraction of the head. As the deſcent of the head precedes the inclination of the face to the hollow of the *ſacrum*, it would be improper to attempt to change the poſition of the head before it has deſcended,

and

and it is afterwards unneceſſary. Becauſe if the action with the *forceps* be ſlow, and, according to the direction of the handles, the poſition of the head becomes altered in proportion to its deſcent, without any aim on the part of the operator, and without his guidance.

When the *forceps* are firſt locked, they are placed far backwards, with the lock cloſe to, or juſt within the internal ſurface of the *perinæum*; and they can have no ſupport backwards, except the little which is afforded by the ſoft parts. The firſt action with them ſhould therefore be made by bringing the handles, graſped firmly in one or both hands to prevent the inſtrument from playing upon the head of the child, ſlowly, towards the *pubes*, till they come to a full reſt. Having waited a ſhort interval with them in that ſituation, the handles muſt be carried back in the ſame ſlow but ſteady manner to the *perinæum*, exerting, as they are carried in the different ſituations, a certain degree of extracting force; and after waiting another interval, they are again to be carried towards the *pubes*, according to the direction of the handles. Throughout the operation, eſpecially the firſt part, the

action

action of that blade of the *forceps* originally applied towards the *pubes*, muſt be ſtronger and more extenſive than the action with the other blade, this having no *fulcrum* to ſupport it, and chiefly anſwering the purpoſe of regulating the action with the other blade. If there were any labour pains when the operation was begun, or ſhould they come on in the courſe of it, the *forceps* ſhould only be acted with during the continuance of the pains; the intention being not only to ſupply the want or inſufficiency of the pains, but to follow them and imitate alſo the manner in which they return.

By a few repetitions of this alternate action and reſt before deſcribed, we ſhall ſoon be ſenſible of the deſcent of the head; and it will be proper to examine very frequently, to know the progreſs made, that we may not uſe more force than needful, nor go on with more haſte than may be expedient or ſafe. In every caſe we ought to proceed ſlowly and circumſpectly, not forgetting that a ſmall degree of force, continued for a long time, will in general be equivalent to a greater force haſtily exerted, and with infinitely leſs detriment either to the mother or child. But after ſome

time, ſhould we not perceive the head to deſcend, the force hitherto uſed muſt be gradually increaſed, till it be ſufficient to overcome the obſtacles to the delivery of the patient.

It was before obſerved, as the head of the child deſcended, that the face would be accordingly turned towards the hollow of the *ſacrum*, without any aim or aſſiſtance on our part. Of courſe the poſition of the handles of the *forceps*, and the direction in which we ought to act with them ſhould alter; for they becoming firſt more diagonal or oblique, with reſpect to the *pelvis*, and then more and more lateral, every change in their poſition will require a differently directed action, becauſe the handles ſhould ever be antagoniſts to each other. In proportion alſo to the deſcent of the head, the handles of the *forceps* ſhould approach nearer to the *pubes*; ſo that in the beginning of the operation, though we acted in the direction of the cavity of the *pelvis*, towards the concluſion we ſhould act in that of the *vagina*. When we feel that we have the command of the head by its being cleared of the *pelvis*, and the external parts begin to be diſtended, we ought to act yet more ſlowly, eſpecially in the

caſe of a firſt child, or there would be great danger of a laceration of the ſoft parts; and this can only be prevented by acting very deliberately, and in the direction of the *vagina*; by giving the parts time to diſtend; by duly ſupporting the *perinæum*, which is the part chiefly in danger, with the palm of the hand; by ſoothing and moderating the hurry and efforts of the patient; and, in ſome caſes, by abſolutely reſiſting for a certain time the paſſage of the head through the external parts. When the head of the child is born the *forceps* are to be removed, the delivery being completed as far as their aſſiſtance was required, and the remaining circumſtances are to be managed as if the labour had been natural.

On the whole it appears that neceſſity alone, and not any ſenſe of eligibility or expediency, will juſtify the uſe of the *forceps*; that when ſuch neceſſity exiſts, their uſe is not only juſtifiable but highly advantageous; that with care they may be ſafely applied; that ſlowneſs and ſteadineſs in our action with them will effectually ſecure both the parent and child againſt untoward accidents; but that no ſkill or knowledge can prevent miſchief or diſappoint-

ment, if the operation with them be performed with hurry or violence.

SECTION VII.

ON THE APPLICATION OF THE FORCEPS, UNDER VARIOUS CIRCUMSTANCES.

We have before conſidered the manner of applying and uſing the *forceps*, when the head of the child preſented in the moſt natural way, that is, with the face inclining towards the *ſacrum*. But they may be equally neceſſary in other poſitions of the head, that eſpecially which is in the next place moſt frequent, when the face is inclined towards the *pubes*. This poſition is diſcoverable by the readineſs with which we can feel the greater fontanel in a common examination, by the direction of the ear, and often by feeling diſtinctly the features of the face tending towards the *ſymphyſis*.

It was before obſerved, that this poſition of the head only conſtituted a variety of natural labours, as far as poſition was concerned in the definition. We are not therefore to be guided

guided in our opinion of the propriety of uſing the *forceps* by any poſition of the head of the child, but by the neceſſity of any caſe, proved by the abſolute inability of the mother to expel the child. Should ſuch neceſſity exiſt with this poſition of the head, the *forceps* are to be applied, in the manner before deſcribed, over the ears of the child. But when they are applied we muſt act with them with the greateſt caution; for, having a different and leſs perfect hold of the head, they are apt to ſlip, and, acting with leſs advantage, the operation, in this poſition of the head, muſt be more precarious. But if we ſucceed, when the head, thus ſituated, is brought ſo low as to diſtend the external parts, there will of courſe be greater danger of laceration, if we are ever ſo much upon our guard; becauſe, in extracting the head, the chin of the child ſhould be cleared of the *oſſa pubis*, before the hind head is ſuffered to ſlide over the *perinæum*, which will very much increaſe the diſtention, and produce the ſame effect as if the arch of the *oſſa pubis* was too ſmall to receive the head of the child.

The ſame obſervations are alſo generally true when the face of the child preſents; or

when, together with the head, there are one or both arms. For though in ſuch caſes there might be a neceſſity for, and a propriety in uſing the *forceps*, the operation with them would neither be ſo certain or eaſy as in the poſition of the head firſt ſtated.

In labours attended with convulſions, or dangerous hemorrhage; or when from any other urgent cauſe it may be neceſſary to haſten the delivery of the patient, to free her from immediate danger, ſhould the *forceps* be uſed, the general rules will be ſufficient to guide us, varying and ſuiting our conduct to the exigence of any particular caſe.

Laſtly, when there are ſigns of imminent danger, however averſe we may be to the uſe of inſtruments, we may be induced to try the *forceps*, though a caſe might not be altogether ſuch as we might chooſe for their application; merely to take an indifferent chance of ſaving the life of a child, which muſt otherwiſe be inevitably loſt. In ſuch caſes we muſt advert to the general principle, and make our attempts in a manner conſiſtent with the ſafety of the parent; and, from motives of prudence, prepare the friends for that diſappointment which it may not be in our power to prevent.

SECTION VIII.

ON THE VECTIS.

THE *vectis* uſed in the practice of midwifery is an inſtrument conſiſting of one blade, ſlightly curved, and a handle, ſomewhat larger, but ſimilar in form to one of the blades of the *forceps*.

The true origin of this inſtrument, or time when it was firſt diſcovered, is not known; but before any accounts of the *vectis* were publiſhed, ſome difficult caſes were recorded, in which women had been delivered with one blade of the *forceps*, which might then be well conſidered as a *vectis*, though not called by that name. But when only one blade of the *forceps* had been uſed, the operation was mentioned as ſomething extraordinary, to ſhew perhaps the judgment or ſkill of the perſon who performed it, and not as leading to the uſe of a particular inſtrument, or to a rule of practice. It is probable that the inſtrument uſed by the *Chamberlens* in the laſt century

was the *vectis*; but this is conjecture, for, after much inquiry, I have not been able to diſcover that any of them left either a pattern or deſcription of the inſtrument which they uſed. In the ſecond volume of *Heiſter*'s Surgery there is a delineation of a true *vectis*, recommended to him by *Palfyn*, a ſurgeon of eminence at *Ghent*; but neither this inſtrument nor its deſcription engaged much attention, nor was the *vectis* generally known before the year 1750. For though it had been uſed before that time by *Rhonhuyſen*, a ſurgeon at *Amſterdam*, after whoſe name it has been ſince called, it was reſerved by him with great ſecrecy, to his own credit and advantage; and, after his death it became the property of his only daughter, from whom it was purchaſed by *De Bruyn*, an eminent ſurgeon of the ſame place. It appears that *De Bruyn* concealed the ſecret with as much caution as *Rhonhuyſen*; or that he inſtructed ſtudents in the uſe of the *vectis* at a conſiderable price, and with an obligation not to divulge to others what he taught them. The names of other gentlemen who changed or improved the inſtrument ſoon became known; and, annexed to a paper written on this ſubject by the celebrated

brated profeſſor *Camper*, in the fifteenth volume of the Memoirs of the Royal Academy of Surgery, is a plate repreſenting the *vectis* uſed by *Rhonhuyſen*, *Boom*, and *Titſing*.

The advantages ariſing from the uſe of the *vectis* in the hands of *De Bruyn*, oſtentatiouſly urged, appearing to be very great, *Viſcher* and *Vander Pol*, two *phyſicians* at *Amſterdam*, from motives of pure benevolence, purchaſed the ſecret from *De Bruyn*, in the year 1753, and immediately publiſhed a deſcription of the inſtrument, with directions for uſing it; but none of the papers printed on this ſubject in the Dutch language have ever been tranſlated into our own. While the *vectis* remained a ſecret, the reports of the benefits obtained by it were probably much exaggerated, eſpecially thoſe of *De Bruyn*, though *Van Swieten* ſays he was an honeſt man; but, when it was divulged, and the poſitive and comparative merits of the *vectis* ſtrictly examined, it retained its credit and eſtimation, in the opinion of many competent judges, in different parts of Europe.

When the *vectis* was very much uſed, and highly eſteemed at *Amſterdam*, as an invaluable improvement in the practice of midwifery, the

the *forceps* was the favourite inſtrument in this country, eſpecially as altered by *Smellie*, who was then the principal teacher of the art in *London*. But the chief practice in this city was ſucceſſively in the hands of Dr. *Bamber*, *Middleton*, *Neſbit*, *Cole*, and *Griffith*, ſome, if not all of whom, preferred the *vectis* to the *forceps*. To thoſe gentlemen ſucceeded Dr. *John Wathen*, a man of great ingenuity and moſt pleaſing manners, who reduced the ſize of the *vectis*, and frequently uſed it with a dexterity that has aſtoniſhed me. In the year 1757, that moſt excellent charity for delivering poor women at their own habitations was eſtabliſhed, and Dr. *John Ford* was the firſt phyſician appointed to conduct it. On every occaſion which required inſtruments of this kind, Dr. *Ford* uſed the *vectis*; and his coadjutors and ſucceſſors, Drs. *Cooper*, *Cogan*, *Douglas*, *Sims*, *Denniſon*, *Squire*, and *Croft*, with many others, have followed his example. From the deſerved reputation of theſe gentlemen, who have at all times expreſſed their approbation of the *vectis* in preference to the *forceps*, many have been induced to try it, and the general opinion of its utility has increaſed. At the preſent time, all who are engaged in the

the practice of midwifery would consider themselves as deficient, if they were not acquainted with the structure and manner of using the *vectis*; and some who, from education or habit, continue to use the *forceps*, are very willing to allow the equal, if not superior value of the *vectis*.

SECTION IX.

ON THE DIFFERENT KINDS OF VECTES.

The first *vectis* of which we had any knowledge was that of *Palfyn* before mentioned. The instrument purchased by *Vischer* and *Vander Pol* was made public in a pamphlet written in the Dutch language. In the account given by *Camper*, there appears to be some difference in the form, length, manner, and degree of curvature of the *vectes* used by *De Bruyn*, *Boom*, and *Titsing*. But if the power of the instrument was preserved, and the general principle of using it followed, it is probable that all those who preferred the *vectis* thought themselves

themſelves at liberty to alter its form or to vary its dimenſions.

When the *vectis* was firſt known in this country, that deſcribed by *Heiſter* was preferred to thoſe recommended by the ſurgeons at *Amſterdam*. The *vectis* uſed by Dr. *Cole* was like one blade of the *forceps*, ſomewhat lengthened and enlarged. That of Dr. *Griffith* was of the ſame kind, with a hinge between the handle and blade; and that of Dr. *Wathen* was like *Palſyn*'s, but with a flat handle, and a hook at the extremity of the handle, which prevented its ſlipping through the hand, and might be occaſionally uſed as a crotchet. Many other changes have been made in the conſtruction of the inſtrument, but the *vectis* generally uſed is of the following dimenſions:

The whole length of the inſtrument, before it is curved, is twelve inches and a half.

The length of the blade, before it is curved, is ſeven inches and a half.

The length of the blade, when curved, is ſix inches and a half.

The wideſt part of the blade is one inch and three quarters.

The

The weight of the *vectis* is ſix ounces and a half.

The handle is fixed in wood.

From this deſcription any perſon acquainted with the *forceps* could find no difficulty in forming a juſt idea of the *vectis*, or an artiſt in making it. It appears alſo that a ſingle blade of the *forceps* might, in many caſes, be uſed not inconveniently, inſtead of any other *vectis*, and would generally anſwer the purpoſe without the trouble of introducing the ſecond blade, as I have often experiencéd.

With reſpect to the part of the blade of the *vectis* which ought to be curved, and the degree of curvature, there has been ſome difference of opinion; but this muſt relate either to the caſe of introducing, or the advantage of acting. With a ſmall degree of curvature, diffuſed through the blade, the inſtrument may be moſt eaſily introduced, nor can the degree of curvature required, on any principle, be very great. But if, together with the power of the lever, we aim at acquiring much extracting force, the curvature ſhould be ſomewhat increaſed; becauſe the two centres, on which the force uſed would reſt, would be at thoſe parts of the head on which the inſtrument

ment might bear, and the part on which it would reſt, whether the ſides of the *pelvis* or the hand of the operator.

For rendering the introduction of the inſtrument more eaſy, and for preventing all the inconveniences which might ariſe from the difference of curvature, Dr. *Aitkin* of *Edinburgh* contrived a *vectis*, which he has fancifully called the *living lever*. When this is at reſt it is quite ſtraight; but while it is introducing, by turning a ſcrew in the handle, the blade is jointed in ſuch a manner as to bend gradually forwards as the inſtrument is advanced, ſo that the extremity of the blade is always kept cloſe to the head of the child, of whatever dimenſions that may be. There is infinite ingenuity in the contrivance; but of the effect in practice I cannot ſpeak, having never tried this inſtrument. But a gentleman informed me that in a trial he made, the chain, on which the mechaniſm chiefly depends, broke, and he was obliged to finiſh the operation with a common *vectis*.

To leſſen the preſſure made by the inſtrument, when in action, upon the parts of the mother, on which it might bear, ſome perſon contrived two holes on a part of the blade,

near

near the handle, through which a ſtrong ribband or tape was to be paſſed, which being afterwards tied and pulled firmly, when the inſtrument was acted with, was ſuppoſed to confine it firmly to the head of the child, and prevent or leſſen the preſſure which might otherwiſe be made upon the parts of the mother; but it appears that the ſame end may be anſwered better by the dexterous management of the inſtrument than by this contrivance.

SECTION X.

ON THE COMPARISON OF THE VECTIS WITH THE FORCEPS.

The general principle of practice, that the uſe of no inſtrument is to be allowed, except in caſes of abſolute neceſſity, ought not to be infringed, becauſe we entertain a high opinion of any inſtrument, or becauſe we may have acquired dexterity in uſing it. That principle, founded in common ſenſe as well as medi-

cal

cal knowledge, and confirmed by daily experience, muſt be held inviolable. The real value of any inſtrument will be ſhewn by its efficacy to anſwer the purpoſe for which it may be uſed, and by the convenience with which it can be managed, when its uſe becomes abſolutely neceſſary.

There has been much verbal diſpute among thoſe who vindicated the ſuperiority of the *vectis* to the *forceps*, and thoſe who maintained the long eſtabliſhed credit of the *forceps* againſt the encroachments of the *vectis*: but the compariſon between the two inſtruments has never been brought fairly to an iſſue, which might have been done by a diſcuſſion of the two following queſtions.

Is it poſſible to deliver a woman, ſafely, with the *forceps*, in any caſe not manageable with the *vectis*?

Is it poſſible to deliver a woman, ſafely, with the *vectis*, in any caſe not manageable with the *forceps*?

We may take it for granted, and I believe it is true, that in far the greater number of caſes which occur in practice, either of theſe inſtruments may be uſed indiſcriminately, with equal ſafety, advantage, and eaſe, allowing

ing for the dexterity which may have been acquired by the habit of uſing either inſtrument. But I do not recollect that thoſe who have preferred the *forceps* have aſſerted that they could deliver a woman, in any caſe of difficulty not manageable with the *vectis*; and, as far as my experience enables me to judge, ſuch a claim in favour of the *forceps* could not be ſupported. The debate on this point of the queſtion has not turned upon the ſuperior efficacy, but upon the greater ſafety and facility with which the *forceps* might be uſed; though one ſolitary caſe of very late occurrence, not candidly, not judiciouſly ſtated, hath been brought forward to prove the ſuperiority of the *forceps* to the *vectis*. But I have not heard of any well authenticated inſtance, in which after being foiled with the *vectis*, any operator who had acquired a commonly dexterous uſe of that inſtrument, was able to ſucceed with the *forceps*; though it is worthy of notice, that thoſe who are accuſtomed to the uſe of the *forceps* only, think themſelves at liberty to depreciate the *vectis*, and thoſe who do not uſe them, ſpeak of the *forceps* in terms bordering on contempt.

With reſpect to the ſecond queſtion, we will take the facts and relinquiſh the argu-

ments, uſed by thoſe who have preferred the *vectis* to the *forceps*; which I allow ſometimes to have been extravagant, as is not unuſual with thoſe who are the introducers of novelties to public notice. If any confidence is to be placed in medical reports, it appears that many caſes have occurred in which, after the introduction of the firſt blade of the *forceps*, it has been extremely difficult, or impoſſible, without the hazard of miſchief, to introduce the ſecond blade, and the operation has been performed with the ſingle blade, uſed as a *vectis*. Of this I have known and been informed of ſeveral inſtances. It appears alſo, that before the head of the child has been ſo low down as was ſtated to be eligible for uſing the *forceps*, that the *vectis* has ſometimes been readily applied, and effectually uſed, with ſafety both to the mother and child, when the neceſſity of ſome particular caſe required it. When the head of a child has not only been high up, but locked alſo in the *pelvis*, when there was not ſpace ſufficient to admit the two blades, or more force perhaps been required than the *forceps* enabled us to exert, and we ſhould otherwiſe have been compelled to leſſen the head, it has been feaſible to apply the *vectis*, and the patient has been ſafely deliver-

ed, with a probable chance of preſerving the life of the child; but of this I have not myſelf known any inſtance. Moreover, in all the deviations from that poſition of the head, which is moſt natural, as when it is turned with the face towards the *pubes*, or when the face preſents, in which it is allowed that the *forceps* cannot be uſed with the utmoſt advantage or certainty; in all ſuch caſes, I know, the *vectis* may be applied and uſed both with ſafety and efficacy. From this ſtatement it may be preſumed, that the *vectis*, prudently uſed, is, in every caſe, an equally ſafe and efficacious inſtrument with the *forceps*, and a better adapted inſtrument in many caſes which occur in practice. It is with this perſuaſion that ſeveral teachers of the art of midwifery in London, at the preſent time, never uſe the *forceps*, or ſpeak of them in their lectures; while others, to whoſe judgment I owe much reſpect, continue to uſe the *forceps*, and think I have advanced more than experience will juſtify, in favour of the *vectis*. But theſe different opinions reſpecting the preference due to the *forceps* and *vectis* prove to my mind, that in the generality of caſes, either inſtrument may in expert hands be uſed with equal ſafety and advantage. I may alſo be permitted farther

to obſerve, that I know ſeveral gentlemen of eminence, in the early part of their lives, accuſtomed to uſe the *forceps*, who diſcovering by accident or trial, that they were able to afford every aſſiſtance with a ſingle blade, have abandoned the *forceps*, afterwards never uſing more than a ſingle blade, or the *vectis*; but I never knew an example of any perſon who, having been accuſtomed to the *vectis*, relinquiſhed its uſe and reſorted to the *forceps*. The reader will obſerve, that in giving my opinion of theſe inſtruments, I do not ſpeak of their abuſe, but of their uſe on really neceſſary occaſions; and will be aſſured that I conſider diſputes about the preference of inſtruments among the frivolous and moſt unworthy occupations of men of underſtanding.

SECTION XI.

ON THE MANNER OF USING THE VECTIS.

By the firſt accounts it appears that the *vectis* was recommended, not only in ſuch caſes as were thought fit and ſuitable for the *forceps*, but to ſuperſede the neceſſity of leſſening the head of the child; it was, in ſhort,

ſhort, aſſerted, that no other aſſiſtance could, in any caſe, be required, beyond that which we were enabled to give with the *vectis*. But if thoſe accounts were allowed to be true, they would prove the miſerable ſtate of the principles and practice of midwifery at the time, and in the country in which they were written, in much ſtronger terms than they would deſcribe the excellence of the inſtrument.

The general condition and circumſtances of labours before ſtated, as requiring the uſe of the *forceps*, will hold good, and with equal propriety, when the *vectis* is intended to be uſed; and the rules already given for the *forceps* will ſhorten what we have occaſion to ſay reſpecting the manner of uſing the *vectis*. For though this inſtrument might be uſed when the head of the child was high in the *pelvis*, or even when that was firmly locked in the *pelvis*, in caſes of great emergency, ſucceſs in the management of ſuch caſes depending upon much previous knowledge and experience with the inſtrument, I dare not attempt to form a preciſe rule for the extent of our conduct with the *vectis*. But when, without regard to the facility with which the *vec-*

tis may be introduced, or any other conſideration except the neceſſity of the caſe, under the circumſtances before ſtated, we have determined upon uſing this inſtrument, the patient being placed in the ſame ſituation, and every thing prepared as when the *forceps* are to be uſed, the operation is to be performed in the following manner:

Paſs two fingers, or the forefinger of the right hand to the ear of the child, and introducing the *vectis* between the fingers and the head of the child, conduct it ſlowly forwards till the point of the *vectis* reaches the ear, wherever that may be. Then advancing the inſtrument as if it was a blade of the *forceps*, carry it on till, according to your judgment, the extremity of the blade may reach as far, or a very little beyond, the chin of the child; when the line of the head, on which the inſtrument reſts, will be in a ſtraight direction from the *vertex*, over the ear, to the chin of the child; and this is the moſt favourable poſition in which it can be placed. Then graſping the handle of the inſtrument firmly in the right hand, wait for the acceſſion of a pain, during the continuance of which, raiſe the handle of the inſtrument gently but firmly towards

wards the *pubes*, at the ſame time exerting a ſmall degree of extracting force. When the pain ceaſes let the inſtrument reſt, and when it returns repeat the ſame kind of action; and every time of acting endeavour to leſſen the preſſure on the ſoft parts of the mother, with the two fingers, or the ſide of the palm of the left hand placed in ſuch a manner as to form, in ſome ſort, a cuſhion on which the inſtrument may play, or be ſupported. By a repetition of this action during the continuance of the pains, the head of the child will ſoon be perceived to deſcend, and the face to turn gradually towards the hollow of the *ſacrum*. But ſhould the very moderate force we have recommended be found inſufficient to bring down the head of the child, that muſt be gradually and cautiouſly increaſed till it is ſufficient to anſwer the purpoſe; and this may be done conſiſtently with the ſafety both of the mother and child. When the *vertex* begins to fill and protrude the external parts, it is probable there may be no farther occaſion to act with the inſtrument; or, if further action be required, it muſt be extremely gentle, taking all poſſible care, by turning the handle

towards the *iſchia* or ſide of the *pelvis*, by ſupporting the *perinæum*, and by ſlow proceeding, to guard againſt a laceration of the parts.

During the operation, the *vectis* being confined to that part of the head where it was originally placed, muſt, as the head deſcends, neceſſarily change its relative ſituation to the mother, and be gradually turned from the *pubes* to the ſide of the *pelvis*, as was before remarked of the handles of the *forceps*.

It is alſo to be obſerved, though from the name of the *vectis* it might be ſuppoſed we had the power of acting with it as a *lever* only, that it will be found to poſſeſs a conſiderable degree of extracting force even when the curvature is but ſmall; and that we are able, at the time of uſing it, to direct with convenience, and in various ways, the head of the child as it deſcends.

In uſing the *vectis* ſome have directed us to apply it towards the hollow of the *ſacrum*; but I have perſuaded myſelf that the opinion which could lead to this practice was erroneous, that the inſtrument would then be worked with leſs efficacy, and there would be a greater hazard of doing miſchief to the mother and child.

It may laſtly be obſerved, that ſome gentlemen have, by frequent practice, acquired ſuch wonderful dexterity in the uſe of the *vectis*, as to finiſh the operation of extracting the head of a child with one ſingle ſtroke of the inſtrument. But as I only pretend to deſcribe a method of uſing the inſtrument with ſafety and efficacy, I may be excuſed from commenting upon all that has been affectedly or oſtentatiouſly advanced upon this ſubject.

CHAPTER XII.

SECTION I.

ON LESSENING THE HEAD OF THE CHILD.

HAVING finiſhed all the obſervations we had to make on the uſe of thoſe inſtruments which have been contrived to anſwer the firſt intention in practice, that of preſerving the lives of both the mother and child, we come to conſider an operation yet more important, though the neceſſity of performing it far leſs frequently occurs. In this operation, being convinced that under certain circumſtances it is impoſſible that both their lives ſhould be preſerved, we feel ourſelves juſtified in acting as if the child were already dead, as the only meaſure by which the life of the mother can be preſerved.

This operation has ever been eſteemed of the utmoſt conſequence with regard to its principle and practice. The right or equity

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of taking away one life for the preſervation of another being doubted, the queſtion was referred to divines, as the moſt competent judges of the caſe; and by them it was decided to be unlawful to take away one life, on any account, for the preſervation of another*. The reference of the queſtion may perhaps be conſidered as a proof that this operation had been performed too frequently, and the deciſion ſeemed actually to forbid it altogether; but, as far as the general determination could be ſuppoſed to relate to this operation, there was ſophiſtry in the ſtatement of the queſtion, if not in the reply. For by the firſt it was preſumed that the child was always living when this operation was to be performed, though that could ſeldom be the caſe; and by the latter it was allowed, that the authority of the deciſion might be ſuſpended, if there was reaſon to believe that the child was already dead. It was for this cauſe that all the ſymptoms of a dead child, certain and equivocal, were collected and diſtinguiſhed by authors with great aſſiduity and circumſpection, becauſe they

* *Peu*, in his *Pratique des Accouchements*, has preſerved the forms of the deciſions upon this ſubject by the Doctors of the Sorbonne.

were

were the authorities for, and juſtification of practice.

In caſes of dangerous parturition the prerogative of deciding upon the life or death of the mother or child, was ſuppoſed by ſome to be inherent in the huſband. This opinion is contrary to the rights and intereſts of ſociety, and never could have ſatisfied the mind, or juſtified the conduct of any perſon who ſhould have ſubmitted to be governed by it. Nor do theſe caſes admit of ſuch election, for if the huſband had preferred the child, his wiſh of preſerving it at the expenſe of the life of the mother, could not have been gratified; he at leaſt could be no competent judge of the neceſſity of the caſe, and could claim no peculiar dominion over the lives of either of them.

True religion and the common ſenſe of mankind appear to have nothing contradictory. The doctrine they teach of its being our duty to do all the good in our power, and to avoid all the miſchief we can, is applicable to the exigencies of every ſtate, and we may be eaſily reconciled to it on the preſent occaſion. In ſome caſes of difficult parturition it is not poſſible that the lives both of the mother

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and child ſhould be preſerved. Of the life or death of the mother we can, under all circumſtances, be aſſured; of the life or death of the child there is often reaſon to doubt when we are called upon to decide and to act. The deſtruction of the mother would not, in the generality of caſes, which may bring the operation of which we are ſpeaking under contemplation, contribute to the preſervation of the child; but the treatment of the child as if it were already dead, with as much certainty of ſucceſs as is found in other operations, ſecures the life of the parent. It then becomes our duty, and is agreeable to our reaſon, to purſue that conduct which will give us the moſt probable chance of doing good; that is, of ſaving one life when two lives cannot poſſibly be preſerved.

I forbear to inquire into the comparative value of the lives of an adult and a child unborn, becauſe that does not ſeem to me to be the preſent queſtion; and the ſubject has been in that view well conſidered*. Nor does it ſeem neceſſary to our purpoſe to diſcuſs another queſtion which has been lately agitated, whether a child unborn has any feeling, be-

* See Dr. *Oſborn*'s Eſſay on Laborious Parturition.

cauſe

cauſe the fact of their having feeling may be clearly proved by any one who will obſerve the effect of irritating the ſoles of the feet of a living child when theſe preſent, or the palm of the hand when that preſents, the body and head being yet retained in the *uterus*. But there is an argument to be drawn from the circumſtances which ſometimes occur in caſes of laborious parturition, which applies with greater force towards juſtifying this operation in preference to any other, which might prove more hazardous to the mother, than any abſtract reaſoning. In all difficult labours, properly ſo called, eſpecially ſuch as are occaſioned by diſproportion between the head of the child and a ſmall or diſtorted *pelvis*, one of the firſt effects of long-continued and ſtrong pains, is the death of the child. The head of a dead child collapſing and admitting of preſſure into a form more ſuitable to the dimenſions of the *pelvis*, than a living one, will frequently be expelled through a ſpace too ſmall to allow that of a living child to paſs. But after this change, which follows the death of the child, ſhould the head remain too large, putrefaction advancing, the integuments of the head begin to decay, and the bones to looſen from each other.

other. By the continuance of the action of the *uterus* upon the child the integuments of the head at length burſt, and the bones being ſeparated, the brain of the child may be evacuated through the opening. The bulk of the head thus leſſened may be excluded by the force of the pains, and the body, impaired by an equal degree of putrefaction, may readily follow, and the labour terminate without the aſſiſtance of art. All theſe changes may be, and ſometimes have been gone through with perfect ſafety to the mother; ſo that the artificial opening of the head of a child is, in fact, no more than an imitation in one caſe of what happens ſpontaneouſly in another, and ſuch imitation is the true ground on which the whole practice of ſurgery has been founded. It may alſo be obſerved that the reſources of nature, in every thing which relates to parturition, are infinite and conſtantly exerted for the preſervation of both the parent and child; yet when the two objects are incompatible, the life of the child is almoſt uniformly yielded to that of the parent.

From the number of ſigns of a dead child given by authors, and by the context of their writings, it appears to have been the practice, whenever

whenever the death of a child was aſcertained, to uſe the means of extracting it; or to have given medicines to excite and aid the conſtitution for expelling it, without any reaſon drawn from the preſent ſtate of the mother, but to prevent remote and ſuſpected danger. This practice correſponded with the theory of the ancients, that a living child was born by its own efforts, but a dead child, being deſtitute of all power, muſt be excluded or extracted by art. But no fact is more clearly proved than that of a dead child remaining in the *uterus*, inoffenſively, for ſeveral weeks before the acceſſion of labour, and being then expelled in a manner perfectly natural. No injurious abſorption takes place, nor does the *uterus* ſuffer by being in contact with it. The certainty of the death of the child would not therefore indicate the neceſſity of the operation we are conſidering *; but the reaſons for, and juſtification of it, muſt be deduced from the ſtate of the mother; and that ſtate muſt be ſuch as to prove her abſolute

* Si ſub ipſis partûs doloribus ac laboribus infans emoritur, nec tamen minus decenter, ſed naturaliter compoſitus eſſe deprehenditur, non ſtatim, quamdiu ſcilicet de morte non ſatis certi ſumus, unci vel alia admovenda ſunt inſtrumenta. HEISTER, Cap. CLIII.

inability

inability to expel the child, and the impoſſibility of extracting it by any of thoſe means which have been contrived for the purpoſe of delivering women, giving at the ſame time a chance for preſerving the lives of children; together with the uſeleſſneſs and danger of delay. But as the ſigns of a dead child, if deciſive, would, on many occaſions, have their influence on practice, and might at leaſt induce the moſt cautious and prudent man to haſten the time of performing this operation, which he might otherwiſe defer; and as the knowledge of theſe ſigns will lead to a more full inveſtigation of the ſubject, it is proper to enumerate them, and to inquire at the ſame time how far each of them may be allowed to determine the fact which they are adduced to prove.

SECTION II.

ON THE SIGNS OF A DEAD CHILD.

I. RECESSION OF THE MILK, AND FLACCIDITY OF THE BREASTS.

SHOULD the child die when a woman is far advanced in her pregnancy, and before the commencement of labour, theſe ſigns are ſeldom wanting. But if they were to be offered as proofs of the death of a child deſtroyed by the ſeverity of a labour, it would have been needful to have compared the ſtate of the breaſts at two ſpecific times; firſt, on the acceſſion of labour, when the child was living and they might be turgid; and, ſecondly, in the advanced ſtate of labour, when the child was dead, and they might have become flaccid. But as it is not cuſtomary to inquire into the ſtate of the breaſts before ſome ſuſpicion is entertained of the death of the child, and as thoſe of no two women, under any circumſtances, exactly reſemble each other, all indications,

cations, taken from the ſtate of the breaſts, muſt be uncertain, and any judgment founded upon ſuch indications, extremely liable to error.

2. COLDNESS OF THE ABDOMEN.

When children die towards the concluſion of pregnancy, women not unfrequently complain of coldneſs of the *abdomen*, and, at the inſtant of its death, there is uſually one violent ſhivering. But when women in labour ſpeak of this coldneſs, there is not actually external coldneſs, but a ſenſe of it felt by the patient. A ſuppoſition that a dead child is colder than a living one, is the principle which gives to this ſign its chief importance. But whether a child has been dead for a ſhort or a long time, it is generally found to be of the ſame degree of heat with the *uterus* in which it was contained, and it is even hotter than the *uterus* while it is in the act of putrefying. The principle being fallacious, the inferences muſt often miſlead, and a child is often born living, though the mother, before her delivery, complained of this coldneſs; which may be produced by ſome contingent circumſtance, as the great heat of the room when ſhe is in a

a profuſe perſpiration, or the ſudden admiſſion of cold air under the bed-clothes in winter. Little ſtreſs is to be placed on this ſign alone, but when accompanied with others, it may increaſe our ſuſpicions of the ſtate of the child.

3. MECHANICAL WEIGHT OF THE UTERUS.

If a woman in labour, or in the latter end of pregnancy, ſhould feel the *uterus* fall with a ſenſe of increaſed or unreſiſted weight, when ſhe turns from one ſide to the other or changes her poſition, it is often ſurmiſed that the child is dead; the bulk of the child being diminiſhed, and all that reſilition obſerved to exiſt in every living body being loſt. But this ſenſe or effect may be explained in a more ſatisfactory manner from other cauſes, eſpecially when a woman is in labour. Should the waters of the *ovum* be ſuddenly diſcharged, the *uterus* will contract till it comes into contact with the body of the child. But the integuments of the *abdomen*, not contracting with equal celerity, and the *uterus* wanting that ſupport which they afforded when it was fully diſtended, muſt of courſe fall to whichever ſide the woman may turn. Should the waters

waters be diſcharged ſlowly, or ſhould the head of the child drop into the *pelvis* immediately after their diſcharge, there would not be this ſenſe of unſupported weight whether the child were living or dead; becauſe in one caſe the *uterus* would be held firm by the general contraction, and in the other, the child would be prevented from that kind of motion by its poſition.

When a child dies in the latter part of pregnancy the flaccidity and ſubſidence of the *abdomen* are conſiderable; but it is from a very great degree of theſe one is led to ſuſpect either the death or waſting of the child, ſuch ſubſidence being one of the natural changes which precede labours.

4. WANT OF MOTION OF THE CHILD.

The kind and degree of motion which may be cauſed by the child varies in different women, and at different periods of pregnancy. By ſome the child is ſcarcely ever perceived, and with others it is ſcarcely ever at reſt, but it is often quiet a few days before, and in the time of labour. By the motion of the child

its living ſtate is aſcertained; but the want of motion does not prove that it is dead, nor would it, for that reaſon, be juſtifiable to perform any operation which might be injurious to it, if living.

Some pregnant women have never been able to perceive the motion of the child through the whole time of pregnancy. Others have aſſerted that they have felt the motion of the child, though the event has proved that they were not pregnant. Others have not doubted of the life of the child, though, after its birth, there were certain marks of its having been long dead. In long and very ſevere labours natural affection may be overcome by preſent ſuffering and diſtreſs, and women might conceal their knowledge of the motion of the child from the hope of a more ſpeedy delivery. Every allowance muſt be made and every conſideration had for human nature, humbled by infirmities and miſery. The fears and affection of friends will alſo warp their judgment; but our greateſt tenderneſs and the propriety of our conduct will be ſhewn, not by a compliance with requeſts and ſolicitations, but by following the dictates of our own reaſon

ſon and judgment, for we are not to be governed or alarmed by apprehenſions of danger, but with its actual exiſtence.

5. FOETOR IN THE APARTMENT OF THE PATIENT.

The putrefaction of the child would be an indubitable mark of its death, and might create a very offenſive ſmell in the apartment in which the patient was confined; but every putrid child does not yield an offenſive ſmell, and ſuch ſmell may be occaſioned by ſeveral other circumſtances. If a child ſhould die in the *uterus* from external injury, or any internal cauſe, and become putrid before the membranes of the *ovum* were broken, it would have a peculiarity of ſmell, but not that *fœtor* which every animal ſubſtance emits, while it is in the act of putrefying under the influence of the open air. The *fœtor* to which we now allude, can only appertain to a child which was living in the beginning of labour, and died in the courſe of it, after the diſcharge of the waters; and in ſuch caſes, when putrefaction does begin, it is commonly

very rapid in its progreſs. The general ſmell of putridity in the apartment of a perſon in labour, is to be admitted with very great caution as a ſign of a dead child; for if the room be ſmall, or crowded with company, or kept hot and uncleanly, or the common offices of life are performed in it, as is uſually the caſe among people of the lower claſs, a ſimilar effect would be produced as when the child is dead and become putrid.

6. FOETOR AND ILL APPEARANCE OF THE DISCHARGES.

The *fætor* here meant is alſo ſuppoſed to ariſe from the putrefaction of the child, and the ill appearance to proceed from a mixture of *meconium*, ſanious, or other matter which might be ſuppoſed to flow from a putrefying child, with the common uterine diſcharges. But the appearance of thoſe diſcharges naturally varies in different women, according to their conſtitution, and to the qualities of the waters of the *ovum*. They become altered likewiſe by contingent circumſtances, as the caſual retention of the diſcharge, the mixture

ture of a ſmall quantity of blood, or ſlight inflammation of the parts, which in ſome caſes give a ſtrong ſcent to them, hardly to be diſtinguiſhed from putrid *fætor*. With every appearance of the uterine diſcharges, children have been born living and healthy; and when they have been long dead, thoſe have in many inſtances been ſo little changed, as not to raiſe any ſuſpicion in the minds of very experienced men. The propoſal of any operation which would be injurious to the child, if living, would not therefore be juſtifiable, merely on account of the ſmell or appearance of the diſcharges, without other collateral proofs of its death.

7. EVACUATION OF THE MECONIUM, WHEN THE HEAD OF THE CHILD PRESENTS.

Should a child preſent with the breech or inferior extremities, the evacuation of the *meconium*, which is an abſurd name given to the excrements of the child at the time of its birth, is one of the proofs of ſuch preſentation. But when the head preſents, if the labour be very ſevere or tedious, the waters will be tinged of a greeniſh colour, or pure

meconium

meconium may be forced away, and, with ſuch appearances, the child is often ſuppoſed to be dead; from a preſumption, that if it was living, the *ſphincter* of the *anus* would act with power ſufficient to prevent any diſcharge. But by experience it is fully and frequently proved that a child may be born living, though the *meconium* ſhould come away when the head preſents, its evacuation proving no more than the weakneſs of the child, or the degree of compreſſion it has undergone. The diſcharge of the *meconium* may alſo depend upon the quantity contained in the bowels, or ſome caſual preſſure upon the *abdomen* of the child. We may however, in general, conclude, when the *meconium* comes away in a natural preſentation, that the ſtate of the child is not void of danger; and for many years I never ſaw a child born living, when the *meconium* had come away more than ſeven hours before its birth. But at length, I met with a caſe, in which the *meconium* was diſcharged for more than thirty hours, at the end of which time, though the woman was delivered with the *forceps*, the child was born healthy and ſtrong.

8. EDEMATOSE, EMPHYSEMATOSE, OR OTHER PECULIAR FEEL OF THE HEAD OF THE CHILD.

In many caſes in ſurgery, information may be gained, and the judgment aſſiſted by what is called the *tactus eruditus*, or that faculty which enables us to perceive and diſcriminate by the touch, with greater accuracy than by any evident or deſcribable marks. It has alſo been ſaid that we may decide in many doubtful caſes, by the feel of the head, whether a child be living or dead. But as we know that in ſurgery, the moſt diſcerning and expert in this faculty are often miſtaken, when they deſert common evidences, ſo, opinions formed on ſuch ground, would not authorize an operation to which they might be ſuppoſed to lead, in the queſtion on which we are now ſpeaking. For the integuments of the head of a child often become edematoſe to a conſiderable degree, from preſſure in its paſſage through the *pelvis*; and ſometimes emphyſematoſe from a continuance or increaſe of the ſame preſſure, when the child may, in all other reſpects, be perfectly well. If the integuments

are ſqueezed into a ſmooth, round form, that is ſaid to be unfavourable; but when they are corrugated, the tumefaction, though equally great, is thought to be of leſs conſequence; the former being ſuppoſed to prove the abſolute ſeparation of them from the *cranium*, and the latter, that their attachment remains. The original connexion of the bones of the head is ſuch, as to allow of their being preſſed cloſe to, or over, each other with ſafety to the child; yet when this has been long dead, and their natural connexion deſtroyed, they may be perceived to be looſe and diſtinct. The ſtate of the bones is frequently ſuch as to leave no doubt of the death of the child, as well as the abraſion of the cuticle or the falling off of the hair; but proofs of things ſelf-evident are not wanted in practice, but ſuch as will guide us in doubtful caſes. Probably I have before obſerved, that whenever children die in the *uterus*, the greater the degree of putrefaction in which they are expelled, the more favourable is the indication to the mother; ſhewing, I ſuppoſe, that the health and vigour of her conſtitution in general, and of the *uterus* in particular, are not impaired. But if a child ſhould remain dead in the *uterus*, for any

length of time, without becoming putrid, this circumſtance might be conſidered as a proof that the powers of action in the mother were reduced to a ſtate of dangerous weakneſs; as food remaining unchanged in the ſtomach would be a proof of the debility of that part.

Many ſigns of a dead child have been mentioned by authors, under the denomination of equivocal, as the livid paleneſs of the countenance of the mother, the offenſive ſmell of her breath, and ſeveral others. But if it appears that thoſe ſigns which have been called certain are in fact doubtful, it will follow, that very little reliance ought to be placed in thoſe which are acknowledged to be equivocal. If, however, the propriety of performing this operation ought not to be decided by the certain knowledge of the death of the child, but by the circumſtances of the mother abſolutely requiring it for her preſervation; then, the conſideration of the life or death of the child becomes of leſs importance. Becauſe if the operation, when really neceſſary for her ſafety, were not to be performed, the life of the child would not be preſerved, and that of the parent would be inevitably loſt.

SECTION III.

ON THE CAUSES OF THE DEATH OF THE CHILD.

THE death of a child in the *uterus* may be occaſioned by various cauſes independent of the mother, as by local inflammation or other diſeaſe of ſome part eſſentially neceſſary to its life; by ſome original imperfection in its ſtructure which may prevent its acquiring more than a certain ſize, or exiſting beyond a certain time; by the ſmallneſs or morbid ſtate of the *placenta*, hindering the proper communication between the child and the *uterus*; by a partial or total ſeparation of the *placenta*; or, by the rupture of ſome of the large veſſels which run upon its ſurface: by the veſſels of the *funis umbilicalis* becoming impervious; by the circulation through them being obſtructed by the caſual tying of a knot; by untoward preſſure of the body of the child upon the *funis*; or by this becoming dropſical or otherwiſe diſeaſed.

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The child may alſo be deſtroyed by affections or diſeaſes of the mother, as by the ſudden and violent impreſſion of fear, joy, or other tumultuous paſſion; by the irregularity of the parent's life; by fever; by improper or unwholeſome diet; by any cauſe capable of depriving the child of a proper quantity of nutriment, or depraving the quality of that with which it may be ſupplied; or by accidents which produce ſome poſitive injury upon the body of the child, through the integuments and parts with which it is inveſted and naturally defended. Some of theſe are beyond the power of art to prevent or remedy, though others might by proper care and management be obviated or relieved; but at preſent we want only to diſcover thoſe cauſes, of the death of a child, which may occur in the time of labour.

To the inconveniencies and danger which may ariſe in the courſe of a labour from the diſproportion between the ſize of the head of a child and the dimenſions of the *pelvis*, we muſt ſubmit; as no judgment or ſkill can do more than teach us to wait patiently for the effect to be derived from the efforts of the mother, and the accommodating conſtruction

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of the head of the child. And, though the degree of compreſſion which this may undergo in a very tedious or difficult labour might be judged inconſiſtent with the ſafety of children, they will often be born healthy and vigorous, and the parents recover more ſpeedily and perfectly, after ſuch labours, than after thoſe which were natural and ſhort. The ſame obſervation will alſo hold good of the reſiſtance made by the ſoft parts to the paſſage of the child through the *pelvis*, unleſs their rigidity ſhould proceed from local inflammation. But ſhould the natural efforts be interrupted or ſubdued by fever, debility, or any other adventitious cauſe, or ſhould there be local diſeaſe, the ſtate of the patient would require the aſſiſtance of medicine or of art, according to the circumſtances which might ſupervene. Yet it is in common obſervation, that far the greater number of thoſe labours which have been conſidered as difficult, and which really were ſuch towards the concluſion, were not in fact occaſioned by the abſolute ſtate of the patient, but by interpoſition, and the deſire of accelerating labours, which in their nature required a certain time for their completion. This interpoſition has chiefly conſiſted of two points

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of practice, both extremely reprehenſible; the artificial dilatation of the *os uteri*, and the premature rupture of the membranes. By ſuch practice the order of the labour becomes diſarranged, and there often follow occaſions to exerciſe art, for the relief of thoſe evils which were originally cauſed by the improper uſe of art, to the great hazard of the parent or child. So long therefore as labours proceed naturally, they may be proper objects of our reaſon and judgment, but cannot be conſidered as the objects of art. But when they are proved to be beyond the efforts of nature to accompliſh, the aſſiſtance of art becomes juſtifiable becauſe it is neceſſary, and we may be reconciled to the fate of the child, if the life of the mother cannot poſſibly be preſerved by any means conſiſtent with its ſafety.

SECTION IV.

ON THE INSTRUMENTS USED IN THIS OPERATION.

THE inſtruments with which this operation was anciently performed, do not appear to have been well calculated to anſwer the intention of the operator, effectually or ſafely. They conſiſted chiefly of hooks, differing in form and length, which were fixed upon any part of the head with the view of extracting it forcibly. It being ſometimes found impracticable to fix a hook firmly upon the head, other inſtruments were invented and uſed to make an opening in which a hook might be fixed, but without any intention of leſſening the head. All theſe inſtruments it would be uſeleſs and tireſome even to enumerate; but it is remarkable that *Mauriceau*, a man of great experience and ability in his profeſſion, ſhould complain of difficulties in this operation which he could not ſurmount, from the want of proper inſtruments.

Perhaps

Perhaps there is no operation in ſurgery which admits of a more preciſe diſtinction, than this of leſſening the head. It conſiſts of three parts; perforating the cranium; evacuating the brain and *cerebellum*; extracting the head; and three inſtruments were commonly uſed for theſe purpoſes. The firſt was the ſciſſars uſed by *La Motte*, altered and improved by *Smellie*; the ſecond was in the form of a large ſpoon with ſerrated edges; the third was a hook or crotchet, ſtraight or curved, to be uſed ſingly, or in pairs like the *forceps*.

Many years ago, *Savigny* the inſtrument maker, at my requeſt, prepared two inſtruments which I ſuppoſed to be fully ſufficient for this operation, the evacuation of the brain not requiring a ſeparate inſtrument. The firſt was a *perforator* in the form of *Smellie*'s ſciſſars, the blade being ſlightly curved in the manner of the ſciſſars uſed for extirpating the tonſils, but without any cutting edge, which is ſomewhat dangerous and altogether uſeleſs; the ſecond was a crotchet with a little degree of curvature and a very ſmall hook. The *perforator* meaſures about nine

inches in length, and has a ſtop on each blade one inch and a quarter from the point. The crotchet, which has a wooden handle and a flat ſtem, ſhould, when properly curved, be of an equal length with the *perforator*. Theſe inſtruments, which are now almoſt in general uſe, are found to be very convenient and fully adequate to every purpoſe in the performance of this operation; and as the intention is well underſtood, and the inſtruments ſimplified, both the difficulty and danger of the operation are infinitely leſſened.

SECTION V.

ON THE MANNER OF PERFORMING THE OPERATION.

Much conſideration is required before we determine to perform this operation; but when we have decided upon the neceſſity of its being done, beſides great circumſpection in the manner of doing it, there is occaſion for our

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 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.

SECTION 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, 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 it not be completely 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 which 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

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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 ſemirotatory motion the handle of the inſtrument. This motion of the inſtrument, care being taken 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; and we are to try occaſionally, by advancing the inſtrument, whether the bone be perforated or not. 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, we ſhould ſeparate the handles of the inſtrument 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 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; ſecondly, that we be not alarmed at the diſcharge which follows the perforation of the integuments of the head, as that is to be expected; thirdly, that the point of the inſtrument

ment does not ſlip while we are perforating; and fourthly, 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 conſidered as 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 ſerrated ſpoon, appear to be unneceſſary and dangerous; unneceſſary, becauſe the texture of the brain and *cerebellum* being broken

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 catched on the ſoft parts of the mother. Any ſmooth inſtrument of a proper ſize and length, ſuch as the handle of 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 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, more eſpecially if there ſhould be a loſs of much blood, before, or after the excluſion of the *placenta*. 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 from the natural pains, 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 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

* The papers of my 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

practice originated with him, that he had left the head of a child, after the evacuation of its contents, for more 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 a late writer *, 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

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.

* *Essay on Laborious Parturition, by W. Osborn, M. D.*

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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 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

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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 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 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

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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 for our purpoſe, the reſiſtance gradually diminiſhing, and the force 5 remaining. In the repetition of 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 principal 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

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, or by acting haſtily or violently. 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. In ſuch caſe it 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 importance to fix the crotchet on the outſide 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,

But, if the diſtortion of the *pelvis* will not allow the hand to paſs into the *uterus*, or if there be reaſon to apprehend miſchief to the *uterus*, from the jagged or looſened pieces of bone, 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 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 will 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 the operator, after all his difficulties, if he has acted cautiouſly, 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 which will be given in the chapter 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

bent 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.

SECTION 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 chil-

dren, 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) that there ſhould be none, or very 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.

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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.

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

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 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

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 on that account. 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

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, and as the head of a child before it is born can never be accurately meaſured, 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;

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

ſerved 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 diſcharged, that the time when the action of the *uterus* may come on will be very different; this happening in ſome inſtances in twelves hours, and in others not 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.

SECTION XI.

ON THE SECTION OF THE SYMPHYSIS OF THE OSSA PUBIS.

It was before obſerved that an opinion of the gradual and ſpontaneous ſeparation of the *ſymphyſis* of the *oſſa pubis* previouſly to the commencement of labour had generally prevailed*; though ſome had denied both the fact itſelf, and the advantages that would accrue from the ſeparation if it were actually made. With a ſtrong perſuaſion or conviction however of thoſe advantages at the time of parturition, ſome rude attempts were formerly made to promote or increaſe the ſeparation beyond its common degree; but the practice, probably never frequent, had for very many years fallen into total diſuſe. Latterly this idea has been reſumed, and among others, *Camper*, a celebrated anatomiſt and profeſſor at *Amſterdam*, in order to try the effect of the ſeparation and diſcover its conſequences, had, in

* See Vol. I. Chap. 1. Sect. 3.

animals,

animals, divided the *ſymphyſis* without much apparent injury. But in the year 17 *M. Sigault*, a ſurgeon at *Paris*, firſt performed this operation on the human ſubject, in the time of labour, the patient recovering, and the life of the child being preſerved. Some credit might have been due to M. *Sigault* for the ſpirit of enterprize which ſuggeſted the operation, and for his reſolution in performing it; but the applauſe given to him by many of the faculty at *Paris* (though, if I miſtake not, the Royal Academy refuſed to give any teſtimony of their approbation) and by the nation at large, was beyond all meaſure extravagant; a medal was ſtruck to perpetuate the fact, and there could ſcarcely have been greater exultation had he invented a method by which the whole human race ſhould in future have been freed from the pains and dangers of parturition. The influence of vanity was at leaſt as ſtrongly marked in theſe proceedings as the dictates of humanity, and the ſteps that were taken to aggrandize the merits of the operation, then ſupported only by a ſingle fact, and of the Surgeon who performed it, were too haſty and too enthuſiaſtic, not to raiſe a ſuſpicion of error or deceit in

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the eſtimate of the operation, or in the account given of it. But the conduct of the French extended its influence on the Continent, where the operation was ſeveral times performed with various ſucceſs.

Immediately after the accounts of the operation were brought into this country, wiſhing, as a matter of duty, to underſtand the ground of the ſubject, I had a conference with the late Mr. *John Hunter*, in which we conſidered its firſt principle, its ſafety; and after the moſt ſerious conſideration it was agreed, that if the utility could be proved, there appeared from the ſtructure of the parts, or from the injury they were likely to ſuſtain by the mere ſection of the *ſymphyſis*, no ſufficient objection againſt performing it. Of its real utility it was however impoſſible to decide, before many experiments had been made on the dead body, to aſcertain the degree of enlargement of the capacity of the *pelvis* which could be thereby obtained. Such experiments were ſoon made, and their reſult publiſhed by the late Dr. *William Hunter*, and theſe proved on the whole, that in extreme degrees of diſtortion of the *pelvis*, the advantage to be gained was wholly inſufficient to allow the

head of a child to paſs without leſſening its bulk, and in ſmall degrees of diſtortion, that operation was unneceſſary, ſuch caſes admitting of relief by leſs deſperate methods. They proved moreover that irreparable injury would be done in attempts to increaſe the common advantages gained by the ſection of the *ſymphyſis*, by ſtraining or tearing aſunder the ligaments which connect the *oſſa innominata* to the *ſacrum*, and to the ſoft parts contained in the *pelvis*, particularly to the bladder. For the reaſons advanced by Dr. *Hunter*, the operation was never (excepting in one unhappy caſe) performed in this country, and ſo perfectly were the minds of men ſatisfied of its impropriety and inſufficiency, that I do not believe the ſection of the *ſymphyſis* ever came into contemplation in any one caſe of difficult parturition, with any of the gentlemen who practiſe midwifery in this city. But as accounts of the operation were frequently brought from the Continent, and as active meaſures were purſued for ſupporting the celebrity with which it had been firſt brought into notice, Dr. *William Oſborn* examined all the caſes then publiſhed, ſtated with preciſion the little advantages gained,

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the injuries occaſioned, and the general reſult of the operation, and proved both by facts and arguments, the cruelty and futility of it, in an eſſay written profeſſedly on the ſubject.

Here the matter might for ever have reſted, but in writing on the practice of midwifery, as well as any other art, it ſeems neceſſary to record not only what has been propoſed and done with ſucceſs, but the trials that have been made of things propoſed, though unſucceſsful; otherwiſe there might be at different times a repetition of the ſame trials and of the ſame misfortunes. Perfectly convinced though I am of the impropriety of this operation, and hoping that no attempts will ever be again made to bring it into general practice, it ſeemed neceſſary to give this ſhort account of it, and I cannot refrain from making the following obſervations.

It is proved in the firſt place, that ſome enlargement of the capacity of the *pelvis* is actually obtained by dividing the *ſymphyſis* of the *oſſa pubis*.

Secondly, That the evils which have followed this operation, have been very much occaſioned by endeavours to increaſe that en-

largement of the capacity of the *pelvis*, beyond the degree which naturally follows the diviſion of the *ſymphyſis*.

Thirdly, That many women who have undergone this operation have recovered, though of thoſe who recovered, many ſuffered very ſerious complaints for a long time, or for the remainder of their lives.

Fourthly, That ſome children were born living when this operation was performed.

We may therefore preſume to ſay, that if a caſe could be ſo preciſely marked, that there ſhould only be a deficiency of juſt ſo much ſpace as would be ſupplied by the ſimple diviſion of the *ſymphyſis*, the operation might in that particular caſe be conſidered.

We may alſo ſay, that this operation is not ſo certainly fatal to thoſe women on whom it may be performed, as the Ceſarean operation; nor ſo certainly deſtructive of children as that of leſſening the head.

We may then be allowed to ſuppoſe a caſe, and ſuch a one is more than poſſible, in which a perſon of very high rank, the life of whoſe child might be of the greateſt public importance, could not be delivered without the deſtruction of the child, or her child be pre-

ſerved

ſerved but by the Ceſarean operation at the expence of her life; and that ſhe through human frailty might refuſe to ſubmit to the Ceſarean operation, and the policy of the nation might forbid the deſtruction of the child. Of courſe both the mother and child would be inevitably loſt. Should ſuch a caſe occur, which, as I ſaid before, is more than poſſible, then the ſection of the *ſymphyſis* of the *oſſa pubis* might be propoſed and performed, as it would in ſome meaſure meet both their intereſts, being leſs horrid to the woman than the Ceſarean operation, and inſtead of adding to the danger, give ſome chance of preſerving the life of the child.

But, from the ſtatement of this caſe, or any thing before advanced, I hope it will not be concluded that I mean to inſinuate a wiſh, or to advance an argument, in favour of this operation, in the caſes for which it was originally propoſed.

CHAPTER XII.

SECTION 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 in which a knife was uſed *; by others, that it had its name from the extraordinary courage of the perſon on whom, or by whom,

* *A cæſo matris utero.*

it

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*. It was not thought reſpectful that men who in the courſe of their lives proved extraordinary ſhould have been preſumed even 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 un-

* *Auſpicatius, enecta 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*, according to *Suetonius*, was living at the time of her ſon's expedition to *Britain*.

acquainted with it, when, in all probability, had it been performed, they would have 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. *Rouſſet* †, 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

* *Plin. loco citato.*

† *Bauhin*, in the appendix to *Rouſſet*, 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 the 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.

ſome have been miſrepreſented; that ſome are fictitious, and were alleged to anſwer other purpoſes, as was the ſuppoſed one of lady *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 has been 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.

SECTION II.

By the firſt writers on this ſubject many circumſtances are recited which were ſuppoſed 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 ſtraightneſs or cloſure of the natural paſſages, from *cicatrices* or adheſion, 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.

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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 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 ſhould 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

SECTION III.

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

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 if not ſole advantage, the hope

of

of preſerving the life of the child; the chance of preſerving the parent being much leſſened 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 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 Ceſarean 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 and purſued 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 follow 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 conſider-

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 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

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 have been 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, from reaſon and experience, that difficulties ariſing from ſuch cauſes muſt admit of relief by leſs deſperate means. It may be aſſerted

in

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*, which 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 head of the 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 natural

bulk,

bulk, without deſtruction of its 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 putrefied, 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, of which examples have ſometimes occurred, 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

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

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.

SECTION V.

In every caſe in which the Ceſarean 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

quence of the ſtate to which they were reduced from the occurrences of labour, before 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 exceſſive or long continued ſuppuration. 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 ſunk 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 probably 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 prediſpoſed 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 for whom the Ceſarean operation can be propoſed to 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 and ought to 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 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 Ceſarean 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

* 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.

being ſupported by pillows, and her legs hanging down. The belly appeared prominent 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.

rhage. With precaution, therefore, an aperture 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 ſmall

in quantity) and made the *gaſtroraphy* or ſuture of the belly.

" I made four ſutures 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 ſuture, 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.

CLASS THIRD.

PRETERNATURAL LABOURS.

CHAPTER XIII.

SECTION I.

THE technical terms which are uſed to ſpecify all the other claſſes of labours, relate to ſome circumſtance in which the mother is wholly or partly concerned. But the term *preternatural* applies merely to the poſition of the child; and this kind of labour may occur in a woman in perfect health, when all the changes incidental to the ſtate of parturition are made in the moſt favourable manner, and in whom there is the beſt poſſible formation. In ſhort, there may be no deviation or irregularity of any kind, excepting only that the head

head of the child does not preſent. Should the preſentation of another part be combined with an hemorrhage, or any other circumſtance of importance, either to the mother or child, the title of *preternatural* is generally loſt, and the labour is referred to ſome other claſs.

The preſentation of children at the time of birth may be of three kinds: firſt, with the head; ſecondly, with the breech, or inferior extremities; thirdly, with the ſhoulder, or ſuperior extremities. With the firſt of theſe the labour is called natural; but with the two latter preternatural. Preternatural labours have been ſubdivided, by ſyſtematic writers, into a much greater number and variety; but as all diſtinctions are to be made and regarded according to their utility in practice, and as no poſſible advantage can be derived from their multiplication, but on the contrary much confuſion, it will be found expedient to abide by theſe diſtinctions only. For though there may be a difference in one reſpect or other in every labour, and of courſe a neceſſity for ſome change in our conduct, yet notice cannot poſſibly be taken of every alteration; and theſe diſtinctions will be found

found ſufficient for all the general purpoſes of practice.

Great pains have been taken to diſcover the cauſes of the preternatural preſentation of children, and with the beſt intention; that of pointing out the errors and irregularities by which they were ſuppoſed to be produced. On this part of our ſubject, though there have been many different opinions, I think it has been generally preſumed, that preternatural preſentations happen more frequently to women in the lower ranks of life, than to thoſe in more affluent condition; the accidents and exertions, to which the former are more liable, being conſidered as the cauſes. Before we conſent to the inference, it would however be neceſſary to examine into the truth of the aſſertion. I believe it has never been ſatisfactorily proved that preternatural preſentations are really more common in the lower than in the higher ranks of life; the number of the former being, almoſt beyond any compariſon, greater than of the latter. No ſtation of life is exempt from theſe preſentations, though they rarely occur in any, eſpecially thoſe of the ſecond order; and it is wonderful, that thoſe women who have had

ſuch

ſuch accidents, at different periods of utero-geſtation, as would be deemed moſt likely to produce them, have not had them. But though preternatural preſentations ſeldom occur, when they are dreaded and expected, it is remarkable that ſome women are peculiarly ſubject to them; not once only, which might be conſidered as the effect of ſome accident, but exactly to the ſame preſentation, whether of the ſuperior or inferior extremities, in ſeveral ſucceſſive or alternate labours. It ſeems doubtful therefore whether we ought not to exclude accidents as the common cauſes of theſe preſentations, and ſearch for the real cauſe from ſome more intricate circumſtance; ſuch as the manner after which the *ovum* may paſs out of the *ovarium* into the *uterus*; ſome peculiarity in the form of the cavity of the *uterus* or *abdomen*; in the quantity of the waters of the *ovum* at ſome certain time of pregnancy; or perhaps in the inſertion of the *funis* into the *abdomen* of the child, which is not in all caſes confined to one preciſe part, but admits of conſiderable variety.

SECTION II.

ON THE SIGNS OF PRETERNATURAL PRESENTATIONS.

SEVERAL preſumptive ſigns of the preternatural preſentation of children have been mentioned; ſuch as an unequal diſtention of the *abdomen* during pregnancy; ſome peculiarity in the motion of the child; the ſudden riſing of the child, when the woman is in a recumbent poſition, ſo as to affect her ſtomach, or to incommode her breathing; the ſlow progreſs of the firſt ſtage of a labour; the early rupture of the membranes; or the elongated form which the membranes containing the waters aſſume, while the *os uteri* is dilating. But theſe ſymptoms and appearances will be found very uncertain; nor can we confide in any mark or indication, until we are able to feel and diſtinguiſh the part which really preſents. It will often be in our power, before the membranes are broken, to

diſcover that the preſentation of the child is preternatural; and ſometimes, though not conſtantly, to ſay what the preſenting part is. But when the membranes are broken, a ſmall ſhare of ſkill and circumſpection will enable us to determine what that part is; eſpecially if we have accuſtomed ourſelves to handle the limbs of new-born children. By its roundneſs and firmneſs, the head may be diſtinguiſhed from any other part; the breech may be known by the cleft between the buttocks, by the parts of generation, and by the diſcharge of the *meconium*, though the laſt circumſtance does not happen even when the breech preſents, till the labour is far advanced, and ſometimes occurs likewiſe in preſentations of the head. The foot may be known by the heel and the want of a thumb; and the hand by its flatneſs, by the thumb and the length of the fingers. In ſome caſes I have found the hands and the feet lying together; but this cannot create much embarraſſment to an intelligent practitioner; though there is reaſon to believe that an error or miſtake in judging a ſuperior to be an inferior extremity, has ſometimes been productive of miſchief. I do not mention the marks by which the

back,

back, belly, or ſides might be diſtinguiſhed, becauſe theſe, properly ſpeaking, never conſtitute the preſenting part; that is, though they may ſometimes be felt, they never advance foremoſt into the *pelvis*.

SECTION III.

ON THE MANAGEMENT OF THE FIRST ORDER OF PRETERNATURAL LABOURS.

In the firſt order of preternatural labours may be included, the preſentation of the breech, of a hip, of the knees, and of one or both legs.

When a labour is ſo far advanced that the *os uteri* is fully dilated, if no part of the child can be felt, it will be prudent to watch carefully when the membranes do break, as there is a chance that the preſentation may be of ſuch a kind as may require the child to be immediately turned. But if no part of the child

child can be felt, by a common examination, after the membranes are broken, it will be juſtifiable to aſcertain the preſentation by the introduction of the hand. Should the head, or inferior extremities, be found to preſent, the hand may be withdrawn, and we may ſuffer the labour to proceed without any further interference; but if it ſhould be that kind of preſentation which requires the child to be turned, we ſhall have an opportunity of performing the operation, before there is any natural contraction of the *uterus*.

In the firſt order of preternatural labours, two very different methods of practice have been recommended. By the favourers of the firſt method, we have been directed, as ſoon as the preſentation was diſcovered, whatever might be the ſtate of the labour, to dilate the parts, then to paſs the hand into the *uterus*, and to bring down the feet of the child. Or if theſe were originally in the *vagina*, to graſp them and extract the child with all poſſible expedition, making the labour wholly artificial, without waiting for the efforts of the conſtitution. Would it not argue a want of humanity, ſay they, to leave the woman for many hours, perhaps a whole day, or even a

longer

longer time, in pain and anxiety, when we have the power of extracting the child in a very ſhort ſpace of time, by which the violence of the pain would be leſſened, or its duration, at leaſt, very much ſhortened? Others, on the contrary, have conſidered this practice as founded on a vulgar and moſt pernicious error, which makes no diſtinction between the ſlowneſs and the danger of a labour; and theſe have conſidered the preſentation of the breech and inferior extremities as generally ſafe, and have taught us that ſuch caſes ought, and with ſecurity may be left to the efforts of the conſtitution, no kind of aſſiſtance being required; in the firſt ſtage of the labour, the mother certainly not ſuffering more than in a preſentation of the head. Of the ſuperior advantage of theſe two methods, it is only poſſible to judge by the general event of caſes of this kind; and if this ſhould prove, which I believe is ſcarcely to be doubted, that leſs injury is done to the mother, and that there is a better chance of ſaving the life of the child, by ſuffering it to be expelled, than by artificial delivery, there can be no heſitation to which of the methods preference ſhould be given; for the charge of want of

humanity cannot be properly laid againſt a proceeding which terminates happily for both. From the manner of expreſſing the directions for the introduction of the hand, for the purpoſe of bringing down the feet, in preſentations of the breech, we might conclude that it would be done with much eaſe. But on trial it is often found impoſſible without the exertion of very great force; and when this is done, or if the feet were originally in the *vagina*, though the firſt part of the extraction might be eaſy, we ſhould in the progreſs find an increaſing difficulty, which would bring the life of the child into great hazard. The thighs would advance more ſlowly than the legs, and the breech than the thighs; there would be ſome delay with the body, then with the ſhoulders, and laſtly, when the arms are brought down, with the head. Theſe little difficulties and embarraſſments, ſeparately conſidered, may not be of much conſequence, but collectively they occaſion a compreſſion of the *funis*, continuing long enough to bring the life of the child into great danger, if notto de ſtroy it; and this can only be prevented by a hurry in the extraction of the child, which may lacerate or do much injury

injury to the parts of the mother. If, on the contrary, we ſuffer the breech, eſpecially with the legs turned upwards, to be expelled by the natural pains, the diſtention of the parts thereby occaſioned is ſo ample, that the body and head follow immediately, or are readily extracted. In caſes of the preſentation of the breech or inferior extremities, it is therefore become an eſtabliſhed rule with men of the firſt abilities and reputation, to ſuffer the breech to be expelled by the pains, and then to give ſuch aſſiſtance as the exigencies of the caſe may require.

In every labour, in the progreſs of which we cannot feel the head of the child preſenting, or do feel any other part, the membranes being unbroken, we muſt be particularly careful on no account to break them prematurely, that is, before the *os uteri* is fully dilated; becauſe, whatever the preſentation may be, the child is in no danger, till the waters are diſcharged; and a natural is always preferable to an artificial dilatation, however carefully made. But when the membranes break ſpontaneouſly before the *os uteri* is dilated, and we can diſcover the preſentation of the breech or inferior extremities, it is proper to

leave the dilatation to the natural efforts, though it will be effected ſlowly and more awkwardly, than if it was done by the membranes containing the waters, or by the head of the child. The preſentation of the breech is ſometimes ſo untoward, that the *ſcrotum* and *penis* of the child intervene, and are the parts which are preſſed upon the *os uteri* during its dilatation. In conſequence of this preſſure, which is unavoidable, theſe parts become prodigiouſly tumefied, and when the child is born, appear in a gangrenous ſtate. In a few inſtances I have known the ſkin of the *ſcrotum* or prepuce ſlough away, but by the aſſiduous uſe of fomentations and cataplaſms, farther miſchief has always been prevented.

Though it may be proper, and is perfectly agreeable to the moſt reſpectable modern practice, to leave the child to be expelled by the pains, when the breech or inferior extremities preſent, unleſs the circumſtances of the mother ſhould require more ſpeedy aſſiſtance: yet this reſignation of the labour is only to be underſtood as proper, till the breech is expelled through the external parts, giving time for their dilatation, and guarding them

them with as much care as when the head preſents. For after that time, as there is great danger of the child being deſtroyed by the compreſſion of the *funis*, though of no long continuance, the labour muſt be accelerated by the practitioner, but with ſkill and judgment. That compreſſion is alſo to be leſſened, or any other injury prevented, by drawing the *funis* ſomewhat lower down, in ſuch a manner that it may never be on the full ſtretch. In ſome caſes, however, after the expulſion of the breech, the continuance of the pulſation in the *funis* very ſatisfactorily proves that no compreſſion of importance has taken place; the child of courſe being in no danger, there is not occaſion to hurry the delivery.

When the breech or inferior extremities have paſſed through the external parts, great attention is to be given to the poſition which the child bears with regard to the mother. Whatever that might be, the child would be extracted with equal eaſe till we came to the head; but if the face were turned towards the *pubes* of the mother, the head could not then be brought away, or its poſition conveniently changed, without much additional difficulty. As ſoon therefore as the breech is expelled,

if the back of the child is not turned towards the *abdomen* of the mother, it will be neceſſary that the practitioner, while he is extracting, ſhould give ſuch an *inclination* to the body, that when it is wholly extracted, the hind part of the head of the child may be turned toward the *pubes*, though not with a ſudden motion or violence, leſt the child ſhould be thereby injured or deſtroyed. The directions given on this occaſion are, that we ſhould make the turn beyond the mere reduction of the back of the child to the *pubes*, and then revert it to a certain degree, by what may be ſuppoſed equivalent to a quarter turn. But ſuch rules being very complex, are more apt to create confuſion than to be of uſe, and are not founded on practical obſervation, but on an erroneous opinion that the head of the child could be extracted only or moſt commodiouſly, when the face of the child was turned toward the *os ſacrum* of the mother. But it is now well known, that the head of the child will paſs through the *pelvis*, with one ear to the *pubes* and the other to the *ſacrum*, or in different degrees of diagonal direction regarding the cavity, and that it is not found to proceed exactly alike in any two labours.

When

When the child is brought down as low as the ſhoulders, it has been eſteemed by ſome as a very injudicious practice, to bring down the arms of the child; theſe being turned along the head, preventing, in their opinion, that contraction of the *os uteri* round the neck of the child, which would be an impediment to its delivery. Others have conſidered this ſtep as abſolutely neceſſary in all caſes, the arms, according to them, occupying a portion of that ſpace, which ſhould be filled up by the head only. If the extraction of the head with the arms turned up, be tolerably eaſy, there is clearly no occaſion to bring them down; but if the head ſhould remain fixed in ſuch a manner as to reſiſt the force which we think can be ſafely or prudently exerted, then the arms ought to be brought down; but very circumſpectly, leſt they ſhould be fractured or diſlocated, or come along with ſo ſudden a motion as to endanger the laceration of the *perinæum*. Nor is there afterwards found to have been any reaſon for apprehending inconvenience from the ſpaſmodic contraction of the *os uteri* round the neck of the child; at leaſt it is not pro-

duced by this cauſe ſo commonly as by hurrying the firſt part of the delivery.

When the arms are brought down, ſhould there be much difficulty in the extraction of the head, it will be of great uſe to paſs the fore-finger of the left hand into the mouth of the child, and to preſs down the jaw, but not to pull by it, in order to change the poſition of the head, which may be eaſily done, and the extraction be thereby much facilitated; but of this difficulty we ſhall ſpeak more fully when we conſider the inconveniencies produced in this kind of labour, by the diſtortion of the *pelvis*.

In the extraction of the child, the body is converted into a lever or inſtrument for that purpoſe, and this will act in different caſes, or different periods of the ſame caſe, with greater advantage, by changing the direction in which it is uſed. Accordingly in ſome caſes, greater progreſs is made by acting alternately from ſide to ſide, and in others from the *pubes* to the *ſacrum*, or in the oppoſite direction; and that way is to be purſued, in which we obtain the greateſt advantage. When the head is paſſing through the external parts, theſe may be ſupported with the

fingers

fingers or palm of the left hand ſpread over the *perinæum*, while we are extracting with the right. As the head advances, the body muſt be turned more and more towards the *pubes*, and we muſt finiſh the operation very deliberately, or the parts will be lacerated; an evil rendered ſometimes by precipitation and imprudent management, of almoſt as much importance as the loſs of the child or mother.

Though children preſenting with the breech are commonly expelled by the efforts of the parent, it muſt ſometimes happen that theſe fail to produce their proper effect, and the aſſiſtance of art is required. But aſſiſtance is not to be given till, by the failure of the efforts, it is proved to be abſolutely neceſſary; that is, when having given full ſcope and time to the efforts, they are proved to be unequal to the expulſion of the child. Whenever artificial aſſiſtance is given in theſe caſes, it ought to be perfectly conſiſtent with the ſafety of the mother, and, if poſſible, with that of the child, which muſt be conſidered and treated as if we were certain it was, and would be born living. When therefore we are ſatisfied and convinced that the mother is

unable to expel her child preſenting with the breech, if the inferior extremities cannot be readily brought down, it will be proper, by hooking one or more fingers in the groin, to try whether we cannot give ſuch an addition to the force of the pains, as may be ſufficient to extract without injuring it. Should this force, though continued for ſome time, be proved unequal to the purpoſe, it will be found expedient to paſs a garter, or a tape or rib-band, over one or both thighs, one of which is uſually preſſed before the other, as the caſe will allow; and then taking both the ends of the ligature in the ſame hand, we ſhall have the opportunity of exerting great power, with leſs detriment to the mother or child than by any other means, with much convenience at the ſame time to ourſelves, and generally with ſucceſs. But if the breech ſhould be ſo high, that the ligature cannot be paſſed, or its power be inſufficient, and the neceſſity of delivering the mother ſhould be urgent, then a blunt hook or the crotchet muſt be fixed over the thigh or in the groin of the child, and we muſt manage as in other caſes of extreme difficulty and danger, as the circumſtances will allow, but perhaps without following

any

any general rule, and without regard to the child.

It has been ſaid that children preſenting with the breech are generally born alive, and ſome writers have even conſidered the preſentation of the inferior extremities, as natural, and preferable to that of the head; becauſe aſſiſtancé could be more readily given when it was required. It is true that the children will uſually be born alive, if they are ſmall, if the preſentation occurs to thoſe who have before had children, and the labour be not interrupted. But if it ſhould be a firſt labour, and the children large, or even of a common ſize, they will be more frequently born dead, in conſequence of ſome caſual but deſtructive preſſure of the *funis*, before the breech is expelled or afterward; and with reſpect to preſentation, that which is moſt common is, for that reaſon, to be eſteemed natural.

In all caſes in which the child is expelled or extracted by the breech or inferior extremities, the *placenta* is uſually managed without difficulty or danger, and it is generally excluded in a ſhorter time than after a natural birth.

SECTION IV.

ON THE DISTINCTIONS OF THE SECOND ORDER OF PRETERNATURAL LABOURS.

In the ſecond order of preternatural labours, the preſentation of the ſhoulder, or one or both arms, may be included; and whichſoever of theſe is the preſenting part, there is a neceſſity of turning the child, and delivering by the feet. In the management of preſentations of this kind, there is always leſs difficulty if both arms preſent, than if there ſhould be only one arm; it will therefore be neceſſary to ſpeak only of the preſentation of a ſingle arm.

In ancient times it was the cuſtom, in every kind of labour, except thoſe in which the head originally preſented, to return the part preſenting, and to bring down the head; and if this was found impracticable, directions were given to bring the child away by the feet, or in any manner its ſituation would allow, or the

the exigencies of the caſe might require. But we learn from *Ætius*, who lived probably about the fifth century, that *Philomenes*, whoſe writings, except thoſe preſerved by *Ætius*, are now loſt, diſcovered a method of turning and delivering children by the feet; and this method, with ſome alterations and improvements in the operation, has been practiſed ever ſince his time, and conſidered as the only one, by which the child could be extracted, and the life of the mother preſerved. But it was about twelve years ago my good fortune to diſcover, that in ſome of the worſt kinds of preternatural labours, thoſe in which the aſſiſtance of art is ſometimes found to be inſufficient and often unſafe, the powers of the conſtitution, if not impeded in their operation, are capable of expelling the child, with perfect ſafety to the mother, and without any additional danger to the child. Of the manner in which this delivery is accompliſhed by the natural pains, we ſhall ſpeak in its proper place.

Though the neceſſity for turning children and delivering by the feet, in this ſecond order of preternatural labours, be univerſally acknowledged, yet the circumſtances of the

women

women ſuffering them, are exceedingly different. With the view of preventing or leſſening the embarraſſment of the practitioner, it is therefore requiſite to make ſeveral diſtinctions, and we will ſay that it may be neceſſary to turn the child,

Firſt. When the *os uteri* being fully dilated, and the membranes unbroken, a ſuperior extremity is felt through them; or immediately upon the rupture of the membranes and the diſcharge of the waters, before there is any return of the pains, or any contraction of the *uterus* round the body of the child.

Secondly. When the membranes break in the beginning of labour, the *os uteri* being very little dilated, perhaps ſcarcely in a ſufficient degree to allow a hand or an arm of the child to paſs through it, or to diſcover that the preſentation is preternatural.

Thirdly. When the *os uteri* is fully dilated, the membranes having been long broken, and the *uterus* ſtrongly contracted round the body of the child, which is cloſely fixed at the ſuperior aperture of the *pelvis*.

Fourthly. When, under any of theſe circumſtances, there is a great diſproportion between the ſize of the child and the dimenſions of the *pelvis*.

Under each of theſe diſtinctions, a variety of other objects may require the attention of the practitioner, but of every one of theſe it is impoſſible to take notice in the deſcription of any ſtated caſe, as no two labours ever were in all points exactly ſimilar.

In the *practice* of every art, ſome advantages muſt remain beyond the power of any doctrine to teach or deſcribe. Theſe can only be obtained by the cultivation of our own minds, by experience, and by the acquiſition of that dexterity which frequent exerciſe muſt give to our hands.

SECTION V.

It is proper in the firſt place to ſpeak of the method of turning children in thoſe caſes which come under the firſt diſtinction, the management of them being more eaſy and ſimple, as there is only one object which demands

mands our care, that is, to change the poſition of the child.

Whenever there is a neceſſity of turning the child, the patient is to be placed in the ſame ſituation as in a natural birth, upon her left ſide, with her knees drawn up, acroſs the bed, and as near to the edge of it as poſſible. There have been many different directions and opinions reſpecting the advantages of particular ſituations, eſpecially that of turning the patient upon her knees. But as our aim, in the choice or preference of theſe, is merely to obtain the free and moſt convenient uſe of our own hands, the poſition of the child remaining the ſame, however the woman may be placed, the common ſituation will generally be found moſt convenient. Yet as that ſituation which ſuits one practitioner may be awkward to another, and as in the courſe of the operation changes may be expedient, every practitioner muſt make them when they appear neceſſary to himſelf. To many it is more convenient to turn with the left hand than with the right, and of theſe every perſon will of courſe chooſe the beſt.

Though in the caſe we are now ſuppoſing, the *os uteri* may be fully dilated, it is poſſible that

that the *os externum* may be in a rigid and contracted ſtate. For the purpoſe of dilating this, it will then be neceſſary with the fingers of the right hand, reduced into a conical form, to act with a ſemirotatory motion, and with ſome degree of preſſure upon the ſides and towards the *perinæum*. The artificial dilatation of all parts ſhould be ſlowly made, and in imitation of the manner in which they are naturally dilated; and we are not to be ſatisfied with ſuch a degree of dilatation as will barely admit the hand into the *vagina*, becauſe the contraction round the wriſt would be an hindrance in the ſubſequent parts of the operation.

When the hand is paſſed through the *os externum*, it muſt be conducted ſlowly to the *os uteri*, which we preſume to be fully or ſufficiently dilated.

If the membranes are unbroken, the hand may then be conducted into the *uterus*, and they will be eaſily ruptured by graſping them firmly, or by perforating them with a finger. The hand muſt then be carried very deliberately along the ſides, the thighs and legs of the child, till we come to the feet. If both the feet ſhould be lying together, we muſt

graſp them in our hand; but if they are at a diſtance from each other, we may commonly deliver with one foot without much additional difficulty; though as in ſome particular poſitions we cannot always turn the child, if it be large, by one foot, it is better to make it a general rule to bring down both feet together, if they are in our power.

Before we begin to extract, we muſt examine the limbs we hold, and be aſſured we do not miſtake a hand for a foot. The feet being held firmly in the hand, muſt be brought with a waving motion ſlowly into the *pelvis*. While we are withdrawing the hand, the waters of the *ovum* flow away, and the *uterus* being emptied by the evacuation of the waters and the extraction of the inferior extremities, we muſt wait till it has contracted, and on the acceſſion of a pain the feet muſt be brought lower, till they are at length cleared through the *os externum*. The operation may then, in one ſenſe, be ſaid to be completed, that is, what was originally a preſentation of the arm, is now become that of the feet, which conſidered as primary, might have been left to the efforts of the conſtitution in the manner before deſcribed. But as no perſon

who

who had undergone the operation of turning a child, with the expectation of a ſpeedy delivery, would have patience to wait for the expulſion of the child by the natural pains, it is incumbent upon us to finiſh the delivery, though there is no occaſion for hurry; and violence would be equally unneceſſary and improper.

In the firſt place then, obſerving the direction of the feet, and knowing if the toes of the child are towards the *abdomen* of the mother, that this poſition would be unfavourable when the head was to be extracted, we muſt gradually turn the body of the child during its extraction, in ſuch a manner that the back of the child may be placed towards the *abdomen* of the mother, before the head is brought into the *pelvis*. It was before obſerved that this turn of the child has been deſcribed with uſeleſs intricacy, and in a manner which can only ſerve to confuſe the practitioner, who will reap all the advantage to be gained by any kind of turn, if he remembers in general, that if the back of the child is to the *abdomen* of the mother, the head will paſs more commodiouſly than in any other direction. The opinion of the neceſſity of changing the poſition

of the child at this time has been ſo ſtrongly inculcated and ſo eagerly purſued, that I have more than once ſeen it attempted with ſuch a degree of force, as muſt have deſtroyed, or done very great injury to the child, had it been living, the operation being evidently more dangerous than the evil it was intended to remove. Nor is this the only caſe in midwifery, in which the means recommended for the purpoſe of preſerving the life of the child, are utterly inconſiſtent with its ſafety.

When the heels or back part of the child are turned towards the *pubes*, the feet wrapped up in a cloth are to be held firmly about the ancles, and when the pains come on, we muſt extract in a ſtraight direction, or from ſide to ſide, or from the *pubes* to the *ſacrum*; taking care that we do not by violence, or by too large a ſweep, run the riſque of hurting the child, or of lacerating the external parts of the mother. In the interval between the pains we muſt reſt, and in this manner proceed, aſſiſting the efforts of the mother only at the time of her making them, and not rendering the delivery wholly artificial. When the breech of the child is arrived at and begins to diſtend the external parts, we muſt

proceed

proceed yet more ſlowly, giving time for their dilatation, ſupporting and favouring any part which may be immoderately diſtended, and guiding the child in a proper direction, by turning it towards the *pubes* as it advances. The breech being expelled, the *funis* ſoon appears, and a ſmall portion of it muſt be drawn forth to prevent its being upon the ſtretch. Then wrapping a cloth over the body of the child, which muſt be held as cloſe to the mother as it conveniently can, and calling for her voluntary exertions, the child is to be ſpeedily extracted in the manner already deſcribed.

When both the arms are brought down, it is of ſervice to ſuffer the body of the child to reſt upon the left arm of the operator, his hand being ſpread under the breaſt, with a finger turned back over each ſhoulder. His right hand is to be laid in a ſimilar manner over the ſhoulders of the child, and theſe poſitions will give him great advantage in the extraction. But if the head ſhould not deſcend, the operator with his thumbs conducted into the *vagina* may preſs the head from the *pubes* to the *ſacrum*; or paſs the fore-finger of his left hand into the mouth

of the child, and extract as was before adviſed.

Proper attention muſt be immediately paid to the child, and of the management of the *placenta* we have already ſpoken.

SECTION VI.

In the ſecond diſtinction it was ſuppoſed, that together with the preſentation of a ſuperior extremity, there was at the time of the rupture of the membranes, very little dilatation of the *os uteri*, and ſome degree of contraction of the *uterus* round the body of the child.

The directions generally given on theſe occaſions are, that as ſoon as the preſentation is aſcertained, the operator ſhould ſit down and dilate the *os uteri* ſufficiently to allow the introduction of the hand, which ſhould then be paſſed with care and expedition into the *uterus*, and the child turned. But ſome practitioners have judged it more proper to wait

wait till the *os uteri* was dilated naturally, before any attempt was made to introduce the hand and turn the child. As in every caſe of the preſentation of the ſuperior extremities, there is a neceſſity of turning the child, the ſooner the hand can be paſſed for that purpoſe, the more ſafe and eaſy in general will the operation be, as there muſt of courſe be leſs contraction of the *uterus* round the body of the child. But as there is ſome hazard of doing miſchief by every artificial dilatation of the *os uteri*, I believe it is better to wait for the natural dilatation; at leaſt every attempt to dilate by art ſhould be made with great caution, and only during the interval between the pains. Yet we ought not to wait in theſe caſes, till there is a complete and abſolute dilatation of the *os uteri*, but always to conſider it as ſufficiently dilated when we preſume it will readily admit the hand, and then the child ſhould be turned without delay.

If the external parts are rigid and contracted, they muſt be dilated, but without violence, in the manner before directed; and the hand being paſſed into the *vagina*, muſt then be conducted into the *uterus*, on that ſide of the *pelvis* where it can be done with moſt

convenience; becauſe that will lead moſt readily to the feet of the child. It is generally better to conduct the hand between the body of the child and the *pubes*, than between it and the *ſacrum*, becauſe in theſe preſentations the feet lie moſt commonly towards the *abdomen* of the mother. In every caſe which comes under the preſent diſtinction there is ſome degree of contraction of the *uterus* round the body of the child, though trifling when compared with what occurs in the caſes to be deſcribed under the next ſection. If therefore we underſtand and are able to perform the operation of turning the child, in the eaſieſt and moſt difficult caſes, we ſhall certainly be competent to the management of all the intermediate ones; there being in theſe no new rules which we are required to follow, but merely an accommodation of rules already known, to the exigencies of any individual caſe.

SECTION VII.

UNDER the third diſtinction, we are to preſume, that together with the preſentation of a ſuperior extremity, there is the worſt poſſible ſituation of the child in all other reſpects; that is, an exceedingly cloſe contraction of the *uterus* round the body of the child, the membranes having been long broken and the waters diſcharged; to which may perhaps be added, very ſtrong pains.

In this caſe ſuppoſing the difficulty of turning the child as great as it poſſibly can be, it will follow that there is no occaſion for hurry or violence, as we can loſe nothing by delay. Before we proceed to the operation of turning, it will be therefore proper to repeat our examination, when we have taken a little time for the conſideration of the caſe, in order to prevent any error in the firſt deciſion we have made upon the ſubject, and to aſcertain the preciſe poſition of the child; and to reflect alſo, whether by ſome previous management,

nagement, it is not in our power to leſſen the impediments to the operation and the general evils of the patient's ſtate. In either of theſe views there are only two objects which can engage our attention; the wrong poſition of the child, and the ſtrong contraction of the *uterus* round its body. The firſt of theſe, in the account given of the caſes which came under the firſt diſtinction, was ſtated to be of little conſequence; that is, to be manageable without difficulty, and to be void of danger either to the mother or child. The principal inconvenience will then be produced by the contraction of the *uterus*, which muſt be our duty to remove or leſſen, before we attempt to perform the operation of turning the child.

The contraction of the *uterus*, under theſe circumſtances, may be of three kinds. There is, firſt, the continued or permanent contraction, in conſequence of the waters having been long drained off, and which to a certain degree takes place in all caſes, when there has been but little or no pain. This may in fact be conſidered as the exerciſe of that inherent diſpoſition in the *uterus*, by which its efforts are made to recover its primitive ſize and ſituation.

ation. There is, ſecondly, the occaſional or extraordinary contraction of the *uterus*, by which, whatever is contained in its cavity, is ultimately to be expelled, which returns at intervals, and is ſo conſtantly attended with pain, that the terms pain and action are uſed ſynonymouſly. Thirdly, there is an irregular action of the whole or ſome part of the *uterus*, which is ſometimes unfavourable to the expulſion of its contents, which produces effects according to its peculiarity, and this is called ſpaſmodic; a general term, not wreſted from its common meaning, but appropriated to every kind of morbid, irregular, or exceſſive action. Now the difficulty and the danger which attend the operation of turning a child, proceed either from the extraordinary or irregular action of the *uterus*, and in order to avoid theſe, as much as poſſible, it will be proper to eſtabliſh it as a general rule, never to attempt the operation when the patient has very ſtrong pains.

The conſternation of friends, and the ſufferings of the patient, muſt neceſſarily raiſe a ſuſpicion in her mind, that there is ſomething unuſual and dreadful in her caſe, and the ſolicitude thence ariſing will increaſe the unavoidable

unavoidable inconveniencies of her ſituation. The prudent and ſteady conduct of the practitioner will, on ſuch occaſions, very much contribute to remove the fears of her attendants, and to give a compoſure to the mind of the patient which will be productive of the moſt happy effects. If ſhe ſhould be much heated, it will be alſo proper to take away ſome blood, and to direct an emollient clyſter, for the purpoſe of emptying the *rectum*, and of ſoftening and ſoothing the parts which are in a very irritable ſtate. Even the time employed in theſe matters will give an opportunity for quieting the violent agitation of the patient's mind.

We are not at preſent in the poſſeſſion or knowledge of any medicine which we can depend upon, for ſuppreſſing or moderating the action of the *uterus*, when exerted unfavourably, or at any improper time. Almoſt the only medicine we ever think of having recourſe to on ſuch occaſions, is *opium*, and this given in two or three times the uſual quantity, will in many caſes of this kind anſwer our expectations; though it ſometimes has a contrary effect, and excites the *uterus* to ſtronger action. If the opiate ſhould fail to quiet the pains, and to compoſe the patient,

tient, we muſt wait till the *uterus* is wearied, or ceaſes to act of its own accord. But if the opiate ſhould produce the effect for which it was given, it will be in about twenty minutes after its exhibition, when we are to conſider the calm or diſpoſition to ſleep, as affording us the moſt favourable opportunity for turning the child.

Throughout the operation, it is neceſſary to bear in our minds the diſtinctions made between the different kinds of action of the *uterus*. The hand muſt be introduced with ſufficient force to overcome the continued or permanent contraction of the *uterus*, or the operation could never be performed; and the ſame may be obſerved of the irregular or ſpaſmodic action, but with perſeverance rather than violence. But if we * were to attempt to overcome the extraordinary action, either the hand would be cramped and we ſhould be unable to finiſh the operation; or if we had power ſufficient to overcome the contraction of the

* Qui enim urgentibus doloribus, manus intus dare, vel fœtum dirigere, vel aliquod membrum replicare audent, iis evenire poteſt, ut uterus rumpatur, mulierq. ſubita morte rapiatur, cujus partus poſt obitum in ventre reperiri ſolet.

Platneri Inſtitutiones Chirurgicæ, Pag. 1040.

uterus, there would be the greateſt hazard of its being ruptured. The deduction is therefore plain, that we ought not to attempt to introduce the hand, while the *uterus* is in extraordinary action.

By the examination of the child's hand which preſents, we ſhall be able to diſtinguiſh whether it be the right or the left; and which is of more conſequence, by its poſition, to which part of the *uterus* the feet of the child are turned. For unleſs the arm or body be unnaturally twiſted, the palm of the hand is always turned towards the inferior or extremities of the child.

It is in no caſe neceſſary, or in any wiſe ſerviceable, to ſeparate the arm of the child, previous to the introduction of the hand of the operator. In ſome caſes to which I have been called, in which the arm had been ſeparated at the ſhoulder, I have found a great inconvenience, there being much difficulty in diſtinguiſhing between the lacerated ſkin of the child, and the parts appertaining to the mother. The preſenting arm is never an impediment of any conſequence in the operation, and therefore ought not to be regarded, or on any account removed.

It ſometimes happens that the introduction of our hand is abſolutely prevented by the ſhoulder of the child, jammed at the ſuperior aperture of the *pelvis*. It will then be neceſſary to paſs the forefinger and thumb of the right hand in the form of a crutch, into the armpit of the child, puſhing the ſhoulder towards the head and towards the *fundus* of the *uterus*, at the ſame time firmly and ſteadily maintaining the advantage we gain as we proceed, till we have raiſed the body ſufficiently to allow the admiſſion of the hand into the *uterus*.

When we begin to make our attempts to introduce the hand into the *uterus*, though the patient might be in a compoſed ſtate, the irritation thereby occaſioned will diſturb her, and the extraordinary action of the *uterus* be brought on, which will be indicated by the conſequent pain. During the continuance of this action and pain, we muſt not proceed in our attempt, but wait till they ceaſe, laying our hand flattened in ſuch a manner, that no injury can be done by our efforts, or by the action of the *uterus* itſelf, upon any inequalities of the knuckles. When the action of the *uterus* ceaſes, our attempts to introduce our hand, muſt be renewed and ſteadily continued

tinued till that action returns, when we muſt again reſt. Thus proceeding, that is, alternately reſting and acting, we ſhall, by repeated and ſometimes long continued efforts, at length ſafely accompliſh the purpoſe of conducting the hand ſo far into the *uterus*, that we ſhall be able to lay hold of the feet of the child. In ſome caſes our attempts to introduce the hand are very diſcouraging, as we are ſenſible of little or no progreſs; but the hurry or violence are never to be increaſed on account of the greatneſs of the difficulty. We muſt perſevere, and be perſuaded that prudent attempts will not be fruitleſs, though they immediately fail to anſwer our expectations; as each apparently unprofitable attempt contributes at leaſt to the efficacy of the ſucceeding one.

The ſtrongeſt contraction of the *uterus* is ſometimes at the *cervix*, and when this is paſſed, ample room is afforded for the diſcovery of the feet towards the *fundus*, without much trouble. But the contraction of the *uterus* is very irregular, being in ſome caſes in the center, or uniform throughout; whilſt in others it is contracted into lines, as if a cord had been paſſed round it externally with great ſtrength, ſo as even to hurt the hand. In

ſome

ſome caſes the *uterus* is alſo contracted into a globular and in others into a longitudinal form. Theſe different contractions render ſome difference in our conduct neceſſary, but if we have a true general idea of the various kinds of contractions, as before deſcribed, the little increaſe or peculiarity of difficulty will be readily managed. In a globular contraction of the *uterus*, when our hand has paſſed beyond the *cervix*, there will be no trouble in coming at the feet, and the child will be turned very eaſily; but in the longitudinal contraction, the feet being at a great diſtance, there is more difficulty, though it is not always neceſſary to go up to the *fundus*; but when we come to the knees, theſe being cautiouſly bent, the legs and feet will be brought down together.

In whatever way we lay hold of the feet, we muſt examine them before we begin to extract; for though one arm be in the *vagina*, the other may be high up in the *uterus* and miſtaken for a leg. We muſt alſo remember that it is neceſſary to extract ſlowly; for if we attempt to hurry the operation, the feet may ſlip out of our hands, and immediately recede to the *fundus* of the *uterus*, or to

the part from which they were brought, and lay us under the neceſſity of returning with the hand to bring them down again. When we have laid hold of the feet, if we proceed ſlowly, the child commonly turns without much difficulty. But when the feet are brought into the *pelvis*, if the turning of the child be not perfected, it will be of great uſe to fix the nooſe of a garter or ribband round one or both ancles, which may be conveniently done by forming it upon our wriſt, and then ſliding it with the fingers of the left hand, over the right hand containing the foot or feet, without quitting our hold of them; and dexterity in forming and fixing this nooſe may be of great uſe in the ſubſequent parts of the operation. When the nooſe is fixed and drawn tight round one or both the ancles, we may pull by both the ends of it with either of our hands, at the ſame time graſping the feet and extracting with the other hand, till they are brought through the external orifice. Should there be much difficulty in the operation after the feet are brought low into the *vagina*, we may conclude that it is occaſioned by the body of the child being fixed acroſs the ſuperior aperture of the *pelvis*. To remove

move this impediment, it will be neceſſary to take the two ends of the nooſe into our right hand, and paſſing the finger and thumb of the left, in the form of a crutch, into the arm-pit of the child, we muſt extract with our right hand, and at the ſame time raiſe the body of the child with the left, till the child is diſengaged, and there is ſufficient room for the entrance of the hips into the *pelvis*. There will then be no further difficulty, and we muſt deliver as was directed under the Firſt Order of Preternatural Labours.

SECTION VIII.

In preſentations of the ſuperior extremities, when the waters have been long diſcharged, and the ſhoulder of the child is jammed at the ſuperior aperture of the *pelvis*, it was ſaid to be expedient and neceſſary, to paſs the finger and thumb in the form of a crutch, into the arm-pit of the child, in order to raiſe the body

towards its head and towards the *fundus* of the *uterus*; till it was ſufficiently moved out of our way, to allow of the introduction of the hand into the *uterus*. But in ſome caſes, the ſhoulder is ſo far advanced into the *pelvis*, and the action of the *uterus* is at the ſame time ſo ſtrong, that it is impoſſible to raiſe or move the child, which is ſo ſtrongly impelled by the pains, as to overcome all the force we are able to exert. This impoſſibility of turning the child has, to the apprehenſion of all writers and practitioners, left the woman without any hope of relief. But in a caſe of this kind which occurred to me about twelve years ago, I was ſo fortunate as to obſerve, though it was not in my power to turn the child, that by the mere effect of the action of the *uterus*, an evolution took place, and the child was expelled.

Of the firſt teſtimonies * which prove the poſſibility of this evolution, which I have called ſpontaneous †, the public has long been

* See the London Medical Journal, Vol. V. for 1785; and the Journal de Medecin de Paris, pour Avril et Septembre, 1785.

† I uſed the word *ſpontaneous*, though to ſome it appeared objectionable, but I could not fix upon one better ſuited to explain

been in poſſeſſion. The caſes in which it has happened are now become ſo numerous, and ſupported not only by many examples in my own practice, but eſtabliſhed by ſuch unexceptionable authority, that there is no longer any room to doubt of the poſſibility of its happening, more than there is of the moſt acknowledged fact in midwifery. As to the manner in which this evolution takes place, I preſume, that after the long continued action of the *uterus*, the body of the child is brought into ſuch a compacted ſtate, as to receive the full force of every returning action. The body in its doubled ſtate, being too large to paſs through the *pelvis*, and the *uterus* preſſing upon its inferior extremities, which are the only parts capable of being moved, they are forced gradually lower, till the body turning as it were upon its own axis, the breech of the child is expelled, as in an original preſentation of

explain my meaning. I only intended by it to ſay, that the ſeries of effects terminating in an evolution of the child were wholly independent of the practitioner; but not that this was procured from any impulſe or exertion in the body moved. In the ſenſe in which I uſe the term *ſpontaneous*, it ſeems to be proper according to its common uſe in *medical*, though perhaps not ſtrictly in *mechanical* language.

that part. Nor has there been any thing uncommon in the ſize or form of the *pelvis* of thoſe women to whom this caſe has happened, nor have the children been ſmall, or ſoftened by putrefaction, becauſe a child has been in this way born alive *. I believe on the contrary that a child of the common ſize, living or but lately dead, in ſuch a ſtate as to poſſeſs ſome degree of reſilition, is the beſt calculated for expulſion in this manner.

Yet the knowledge of this fact, however unqueſtionably proved, does not free us from the neceſſity and propriety of turning children preſenting with the ſuperior extremities, in every caſe in which that operation can be performed with ſafety to the mother, or give us a better chance of ſaving the child. Under ſuch circumſtances the inſtructions given by former writers, and the obſervations we have before made, muſt ſtill be conſidered as proper to guide our conduct. But when we are called to a patient with a preternatural labour, in which there is no room to hope for the

* Dr. *Garthſhore*, Conſulting Phyſician of the Britiſh Lying-in Hoſpital, informed me of a caſe of this kind, in which the child was born living; and Mr. *Martineau*, an eminent ſurgeon at *Norwich*, informed me of another.

preſervation

preſervation of the child, or in which we are aſſured of its death, or when the operation of turning cannot be performed without great danger and violence to the mother; then the knowledge of the probability of a ſpontaneous evolution will ſet our minds at eaſe, and diſengage us from the haſty conſideration of a hazardous operation, from which no poſſible good can be derived, except that of extracting a dead child, and which at all events might be effected by a much ſafer method.

The time required for the ſpontaneous evolution of the child, and the facility with which it may be made, will depend upon a variety of circumſtances, but chiefly upon the ſize of the child, the aptitude of its poſition, the dimenſions of the *pelvis*, and the power exerted by the *uterus*. If the child be very large, or much below the common ſize, the ſlower I believe will be the evolution, nor can it be made at all without a ſtrong action of the *uterus*. It is poſſible therefore, when we have conducted ourſelves on the ground of expectation that the evolution would be made, that the pains may fall off or be unequal to the effect, and we may be diſappointed. It might then be apprehended, that the difficulty

of extracting the child would be infinitely increaſed. But though the evolution was not perfected, I have not found this conſequence; for the child, though not expelled, has been brought into ſuch a ſtate, that I could afterwards paſs my hand with eaſe, and bring down its feet, though in an attempt to do this in the beginning of the labour I had been foiled. In one caſe, in which the evolution did not take place, I could not bring down the inferior extremities, but I had no difficulty in fixing an inſtrument upon the curved part of the body of the child, or in bringing it away with entire ſafety to the mother. It was before preſumed that the child was dead, and the ſole object was to free the mother from her danger, and with her ſafety, no appearances of the child, however diſagreeable, are to be put in competition. In caſes of this kind another mode of practice has been recommended, that of ſeparating the head from the body, with a blunt hook or other convenient ſafe inſtrument; but as I have never practiſed this method, I give the deſcription of it in a note *.

In

* Hoorneus ſæpe laudatus adhuc peculiarem novum, eumq; breviorem modum, fœtum mortuum cum brachio arctiſſimi

in

In the courſe of my converſation and correſpondence with medical friends, I have been informed of ſeveral inſtances of women who have died undelivered, their children preſenting with the arm, becauſe the practitioners were not able, by art or by force, to paſs the hand into the *uterus*, to turn the child and deliver by the feet. Theſe caſes have been mentioned to me as objections to the ſpontaneous evolution, but, I apprehend, without reaſon. The evolution is ſuppoſed to be the conſequence of the ſtrong and long-continued action of the *uterus*, uninterrupted. Now the firſt part of the operation of turning a child by art, conſiſts almoſt wholly in reſiſting this evolution; and if the attempts were perſevered in, would be an abſolute bar to its

in vagina uteri hærente, invenit atque deſcripſit: qui in eo conſiſtit, ut quando ad pedes pervenire nequit, collum, utpote quod in fœtibus valde adhuc tenerum eſt, vel ſcalpello a reliquo trunco reſecet, vel unco idoneo quam cautiſſimè auferat: hoc enim facto vel ſponte mox prorumpit ex utero fœtus, vel tamen, dum brachium propendens attrahitur, quod medico tunc loco habenæ inſervit, quam facillimè excutitur: caput vero deinde ſeorſim mox vel manu, vel aliis propoſitis artificiis, ſi manus parum eſſet, ejiciendum.

Heiſter. Cap. Cliij. *ſect.* ix.

taking

taking place. To give a full explanation of my opinion, I ſhould ſay, that a woman in a ſtate of nature, with her child preſenting in any manner, would not die undelivered, if no aſſiſtance was afforded to her. But if an equally healthful woman lived in a country ſomewhat civilized, in which the art of midwifery was in an imperfect ſtate, much would be thought requiſite to be done, and violence ſupplying the place of knowledge and ſkill, ſhe might periſh from the ungainly and rude exerciſe of art, rather than from the neceſſity of her caſe. In the moſt perfect ſtate of ſociety, all juſt and true knowledge being founded upon obſervation of the proceedings of Nature, and all ſound practice upon the imitation, the practitioner would return to the primitive ſtate; that is, he would do nothing unleſs it was abſolutely neceſſary for him to act, and then he would act in imitation of Nature. From a retroſpective view of the practice of midwifery in all former times, and in all countries, every intelligent perſon ſees, and is ready to acknowledge, that there has been too officious an interpoſition, and too great a readineſs to give aſſiſtance in various ways, for the relief of many difficulties attending parturition,

turition, which are not only fully proved to require no aſſiſtance, but which are alſo now allowed to be ſurmounted in a ſafer and more effectual way by the reſources of the conſtitution. This ſhould certainly put us upon our guard againſt haſty determinations upon what is poſſible or otherwiſe, or upon the uſe of any means which may be deſtructive to the child, or injurious to the mother *.

* In *America* and *Africa* the native women, whom we may preſume to be healthy, very ſeldom die in labour, or in conſequence of it. Properly ſpeaking, they have no midwives. The ſame may be obſerved of the women in *Lapland*, and other northern countries. Yet the *African* women, when tranſplanted to the *Weſt-India* colonies, not unfrequently die. They are attended by ignorant midwives. In the *Eaſt-Indies*, the midwives of the country are ignorant and daring, interfering prepetually, and often in the moſt outrageous manner, with the women in labour, many of whom die, or ſuffer grievous complaints for the remainder of their lives. In *England* the practice of midwifery is extremely reaſonable, and it is a rare thing for women to die in labour, or in conſequence of it, unleſs when there is ſome dangerous epidemic diſeaſe. In *France*, the practice of midwifery is more artificial, and there is, both in that and other countries on the continent, a very reprehenſible fondneſs for inſtruments and operations; and the abuſe of art produces more and greater evils than are occaſioned by all the imperfections of Nature.

Now

Now that I am ſpeaking of the ſpontaneous evolution in preſentations of the arm, it will not be amiſs to obſerve, that ſeveral other changes of the poſition of the child take place, at the time of birth, particularly the following, of which I have ſeen more than one inſtance. Having been called to women in the beginning of labour, and finding by an examination that the head of the child preſented, I have left them for ſeveral hours till the firſt changes were naturally made. When I have examined them on my return, I have found the arm of the child preſenting, the head being departed out of my reach. I do not know that any practical advantage is to be obtained by the knowledge of theſe caſes; but it is remarkable that the accident has always happened to women who were deformed. Such caſes however ſhould be recorded, and it is poſſible that, ſome time or other, the knowledge of them may be of uſe. It may lead to an explanation of one cauſe at leaſt of preternatural labours.

SECTION IX.

To the preternatural preſentation of the child and the circumſtances before mentioned, there may be added a diſtortion of the *pelvis*. As there is no occaſion to repeat the management which the other circumſtances may require, we may confine our attention to the peculiar difficulties produced by the diſtortion. Some diſadvantage may ariſe from this cauſe in the extraction of any part of the child, but it will be trifling if compared with that which attends the extraction of the head; we may therefore be allowed to ſuppoſe that the whole of the child is born except the head, which cannot be brought away in the uſual manner, or by the means before adviſed. The force with which we endeavour to bring down the head of the child muſt then be gradually increaſed, till we are convinced that a greater degree is inconſiſtent with the ſafety of the child.

The wiſh to extract the head of the child ſpeedily, is founded on the apprehenſion, juſtly entertained, that in this poſition the life of the

the child is in the moſt imminent danger, from the compreſſion of the *funis*. A vigorous pulſation proves, even at this time, that the child is not in any danger, and of courſe gives us an opportunity of acting with deliberation. But ſhould the pulſation which was at firſt lively and ſtrong gradually decline, and then altogether ceaſe, the head muſt be ſpeedily extracted, or the child will be inevitably loſt, there being no other way of removing the compreſſion, or of preſerving its life.

The extraction of the head may then be attempted with two views, either to ſave the life of the child, or merely to free the mother from any danger which might ariſe from its detention. When the firſt is our aim, the force with which we extract muſt be moderate, and conſiſtent with the ſafety of the child; it muſt be exerted in a proper direction of the *pelvis*; it muſt be uniform and commanded; and if there be any pains, it muſt accompany them. Should the head deſcend in ever ſo ſmall a degree, we muſt not act precipitately, and increaſe the force in order to finiſh the delivery ſuddenly, but we muſt proceed with circumſpection, or we ſhall add

to

to the danger which the child is already in, and run the riſque of doing injury to the mother. When the head begins to advance, there is ſeldom much difficulty, the cauſe uſually exiſting at one particular part of the *pelvis*. It has been ſaid, that children have been ſometimes born alive, when the ſtrongeſt efforts, and thoſe continued for many hours, have been made to extract the head detained in this poſition. But I have not been ſo fortunate as to meet with any ſuch inſtances, a ſhort ſpace of time having been ſufficient to fruſtrate my hopes, and convince me that the child was dead; though, ſometimes beyond my expectations, I have been agreeably ſurpriſed with the diſcovery of ſome faint ſigns of life, which, by the aſſiduous and careful uſe of the common means, have been improved, and the life of the child at length prefectly recovered.

But when we have abandoned all hope of preſerving the child, and have no other view but ſimply that of extracting the head, we muſt be particularly cautious, that through our conduct the mother does not ſuffer either any immediate injury, or that any foundation of miſchief be laid, which may ſhew itſelf

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at ſome future time. When we have in vain exerted all the force which we think reaſonable and proper, and which in ſome caſes muſt be more than any circumſtances would be thought to require, it will be expedient to reſt, for the purpoſe of gaining all the advantage to be obtained by the compreſſion of the head. On this account, the mother will actually ſuffer no more inconvenience, than would have been produced if the head had originally preſented, and been locked in the *pelvis*. After waiting ſome time, we muſt renew our attempts to extract, and thus proceed, alternately reſting, and acting with efficacy and reſolution, and if the hold we may have of the body or extremities of the child does not ſuit, a ſilk handkerchief or other band may be paſſed round its neck, and this will be found a very handy and convenient inſtrument.

The great impediment to the extraction of the head of the child exiſts in the diſproportion between it and the *pelvis*. Another of no little conſequence may be produced by the diſlocation of the neck, or the laceration of the ſkin, either of which would lead to the ſeparation of the body from the head; an accident

cident one would wiſh to avoid, as it would lay us under the neceſſity of uſing ſome awkward inſtrument, inſtead of the body of the child. Either of theſe inconveniencies is readily occaſioned by the impatience or deſpair of the practitioner, who is apt to twiſt the neck while he is extracting, or to pull with a ſudden motion, inſtead of the uniform one before recommended.

In theſe caſes of extreme difficulty, it will always be of ſervice, and often ſucceed when other means fail, if we can conduct our thumbs between the head of the child and the *pubes*, and preſs the head forcibly towards the hollow of the *ſacrum*. It would alſo be of ſervice if we were able to paſs a finger into the mouth of the child, to change the poſition of the head; but in the worſt caſes that is impracticable, the head being obſtructed ſo high, that the mouth of the child is beyond our reach. When all theſe means fail to anſwer our purpoſe, it will be neceſſary to leave the head a yet longer time, that it may undergo a greater degree of compreſſion and accommodation to the *pelvis*, and then to renew our attempts to extract it.

It muſt be a very great diſproportion between the head of the child and the *pelvis*, which is able to withſtand this method of proceeding, if we perſevere in it with prudence and ſteadineſs, becauſe the integuments of the head will burſt, or the bones be bent inwards in an extraordinary manner, or even broken. Sometimes, however, an hemorrhage comes on, or the ſituation of the mother will not allow us to take ſo much time, or proceed ſo ſlowly, as is generally propoſed, and we are compelled to the uſe of ſuch means as promiſe a more ſpeedy completion of the delivery. Different kinds of *forceps* have been adviſed for this purpoſe, but no inſtrument of the kind ought to be uſed on ſuch occaſions, becauſe the child is dead; and it would be impoſſible but that the mother muſt by their uſe undergo the chance of miſchief, without any equivalent advantage. It then only remains that we ſhould leſſen the head of the child, and the operation is as eaſily performed in this, as in the natural preſentation of the head. In the deſcription of this operation it was ſaid, that it clearly divided itſelf into three parts: 1. perforation of the head; 2. evacuation of the brain; and laſtly, extraction.

It

It will not be poſſible to make the perforation in the uſual place, but we muſt ſelect that which offers itſelf moſt conveniently. We muſt recollect that there is a ſmall fontanelle behind each ear in the head of a *fœtus*, which is a convenient place for the purpoſe; or it may be done at the baſis of the *cranium* through the mouth; or, in ſhort, in any part where we can fix and command the uſe of the perforator, except perhaps the occipital bone, where we might cut the ligaments which join the neck to the head, and when we thought to extract, we ſhould leave the head behind. When the perforation is made according to the rules before mentioned, and the brain evacuated, the head may be readily extracted, either by pulling by the body of the child, or by inſerting a crotchet in the opening made by the operator as in other caſes. But it would be ſcarcely believed how ſeldom this operation is neceſſary under theſe circumſtances, if we are not in a hurry, but act with prudence. Nor have I ever known any ill conſequences follow the compreſſion which the ſoft parts undergo, between the head of the child, and the ſides of the *pelvis*, if proper attention was afterwards paid to the ſtate of the bladder and *rectum*.

SECTION IX.

THOUGH with cautious management the head of the child is ſeldom ſeparated from the neck, and though with indiſcretion it could not often be produced, yet the poſſibility of the accident, when there is very great diſproportion between the dimenſions of the head and of thoſe of the *pelvis*, eſpecially in the caſe of a child ſome time dead, makes it neceſſary for us to be prepared for managing the caſe if it ſhould occur. It has moreover been ſurmiſed, that under peculiar circumſtances it might be eligible to ſeparate the head from the body, with the expectation of afterwards extracting the head with more eaſe; but this, however juſt in theory, will not, I believe, give us any advantage in practice, at leaſt ſo the accident ſeems to have proved, when it has unavoidably happened, in caſes of diſtortion of the *pelvis*.

When the head of the child has been left behind, the caſe was conſidered as frightful and exceedingly difficult to manage, becauſe the

pelvis

pelvis may be expected to be very ſmall in proportion to the ſize of the head, and becauſe it could not without great difficulty be fixed in ſuch a manner as to be conveniently ſubject to the inſtruments which it may be neceſſary to uſe. Of theſe there has certainly been a ſufficient number of almoſt every denomination. It is nevertheleſs evident to every practical man, that the greater part of them were contrived by ingenious men in their cloſets, and either could not be applied, or if applied, could not be of any ſervice in a caſe of real difficulty.

The chief obſtacle to the extraction of the head, muſt ariſe from the diſproportion between it and the cavity of the *pelvis*; and this diſproportion can only be removed by leſſening the bulk of the head. If this was fixed firmly in the *pelvis*, there would be no more difficulty in making the perforation, or in any part of the operation, than in a caſe in which the head originally preſented. But ſhould the head be diſengaged, and lying looſe at the ſuperior aperture of the *pelvis*, it would not make due reſiſtance to the point of the perforator, which would be apt to ſlide, we ſhould be foiled in our attempt, and incur the hazard of injuring the mother. To avoid this incon-

veniency and miſchief, external preſſure muſt be made either by the hands of an aſſiſtant, or with a napkin paſſed round the *abdomen* with ſufficient firmneſs to keep the head ſteadily fixed. Then the operation of perforating and leſſening the bulk of the head may be performed without any chance of failure or of miſchief. In the very few caſes of this kind to which I have been called, the difficulty has not by any means been equal to what I expected from the repreſentation of different writers. It is a caſe to be prevented or avoided; but when it does occur, there is neither that danger in the caſe, or that difficulty in the operation, which ought to terrify a practitioner who has common reſolution, and who gives himſelf time for a little reflection. It is however ſaid, that in ſome inſtances every attempt to extract the head has been in vain, and the patient has been reſigned to her fate. Yet even in theſe caſes, after a certain time, the action of the *uterus* has come on, and at length expelled the head; in one caſe, if I am not miſtaken, ſo late as the twentieth day after the accident had happened. The degree of diſtention of the *uterus*, occaſioned by the mere head of a child, would not indeed be ſo great as to make us apprehend

any fatal conſequences on that account; and if the *uterus* be in an healthy ſtate, a ſubſtance of that bulk and kind would be managed, either by common putrefaction, reducing its ſize, and dividing it into portions, or it would by repeated efforts be expelled.

CLASS FOURTH.

ANOMALOUS, OR COMPLEX LABOURS.

FOUR ORDERS.

ORDER I.

LABOURS ATTENDED WITH AN HEMORRHAGE.

CHAPTER XIV.

SECTION I.

IT is neceſſary to premiſe, that no practical advantage can be derived from the arrangement of theſe labours into one claſs. It is merely of uſe for the convenience of doctrine, and to prevent the multiplication of claſſes; for there is not the leaſt reſemblance between the

the different orders of anomalous or complex labours, which do not therefore admit of any general character or definition.

Uterine hemorrhages, from different cauſes, very frequently occur in practice, and always require great attention; but thoſe which we are about to conſider in this place, are ſuch as depend upon the ſtates of pregnancy and parturition. Theſe have ever been eſteemed as conſtituting a very important part of the practice of midwifery, on account of the immediate and great danger with which they are often attended; and becauſe the ſafety of the patient, in theſe caſes, more frequently depends upon the judgment and ſkill of thoſe under whoſe care ſhe is placed, than in almoſt any other circumſtances. The ſubject therefore demands to be treated with the utmoſt circumſpection; and though much induſtry hath been employed upon it, there is reaſon to believe, that the knowledge of many things of which we are at preſent ignorant, is wanting for the perfection of the rules of practice. The knowledge however which we do poſſeſs, it is incumbent upon us to place in the moſt advantageous point of view, that it may be converted to uſe; that we may be enabled to do

what

what reaſon and experience dictate to be neceſſary and proper; that we may determine upon the proper time of doing it; and be warned moreover to avoid doing what is uſeleſs or hurtful.

The word hemorrhage does not apply with propriety to all diſcharges of blood from the *uterus*, ſome of theſe being natural or ſalutary. The menſtruous diſcharge is natural, but if it ſhould be exceſſive in quantity, or prolonged beyond its uſual time, it might be called an hemorrhage. Every diſcharge of blood which occurs during pregnancy, however ſmall, may be called an hemorrhage, becauſe it is not natural at that time. The ſame obſervation may be made of thoſe diſcharges which happen between the birth of the child and the expulſion of the *placenta*. But the diſcharges which happen after the expulſion of the *placenta*, cannot be called hemorrhages, unleſs they are exceſſive in their degree, becauſe ſome loſs of blood is at that time neceſſary and natural. We may then ſay that all effuſions of blood which are inordinate in quantity, or irregular in the time of their appearance, or in both reſpects, may be denominated hemorrhages; and theſe, which are the objects of our preſent

preſent conſideration, may be divided into four kinds.

1. Thoſe which occur in early pregnancy, or in abortions.

2. Thoſe which occur in advanced pregnancy, or at the full period of utero-geſtation.

3. Thoſe which happen between the birth of the child and the expulſion of the *placenta*.

4. Thoſe which follow the expulſion of the *placenta*.

Under one or other of theſe diſtinctions, will be included every kind of hemorrhage which depends upon pregnancy or parturition; and this arrangement will not only convey a clear idea of the ſubject, but be of uſe alſo in practice. Yet it is neceſſary to obſerve, that there may be a combination of the three laſt kinds, or any two of them in the ſame patient; but whether they are ſeparate or combined, the different modes of treatment may be applied with equal propriety and advantage.

Greater accuracy is nevertheleſs required in the deſcription of what is meant by early or advanced pregnancy, or we may entertain different notions of the ſame thing. Per-

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haps no exact line can be drawn for this purpoſe, as contingent circumſtances may cauſe a variation in different women; yet the beſt, which the nature of the ſubject admits, is to be taken from time. We will then ſay that all expulſions of the *fœtus*, before the termination of the ſixth month of pregnancy, may be called abortions; but all expulſions in the laſt three months, ſhall be conſidered as labours, premature or regular. There is a practical reaſon for this diſtinction, for before the termination of the ſixth month, theſe caſes neither require nor allow of manual aſſiſtance; but in the laſt three months, they admit of manual aſſiſtance, if it be required, though not with equal eaſe, for the longer the time which is wanting to complete the period of utero-geſtation, the greater the difficulty will be which attends any operation. It is alſo to be obſerved, that expulſions of the *fœtus* ſometimes happen ſo critically, as to render it an extremely difficult thing to decide, to which of the diſtinctions they ought to be referred; and in theſe, if we knew any method of treatment between that enjoined for abortions, and at the full period, it would be moſt eligible. But on this as well as many other occaſions,

there

there is room to obſerve, that when every doctrinal diſtinction has been made, no preciſe rule can be formed for the conduct of the practitioner, in every poſſible ſituation in which a patient may be placed; but he muſt ever be at liberty to exerciſe his own judgment.

It would be curious, and might be of ſome utility in practice, to aſcertain whether women, on account of their menſtruation, or their erect poſition, or the ſtructure of the *ovum*, or from any other cauſe, are naturally more liable to abortions than animals; or whether frequent abortion in women may not be conſidered as an attributive, either of habits, ſuperinduced by modes of living, or of accidents which might be avoided. There is great room to lament their frequent occurrence in the more civiliſed, perhaps luxurious ſcenes of life, and in thoſe conſtitutions which are extremely delicate. Yet in thoſe ſituations which might be preſumed to be moſt unfavourable to the ſex, among the loweſt ranks of life, abortions, except from violent external accidents, rarely happen; ſo that there is ſome reaſon for believing that women in a ſtate of nature would ſeldom ſuffer abortion.

According

According to the opinions nevertheleſs of many ſyſtematic writers on this ſubject, every action in common life has been aſſigned as the cauſe of abortion; and in general that, about which the patient was employed, when the firſt ſymptom appeared, is fixed upon as the particular cauſe, though probably ſhe was before in ſuch a ſtate, that abortion was inevitable. But if this opinion of abortion be juſt, then the event ought rather to be imputed to ſome previous indiſpoſition, or perhaps to the exceſs of ſuch actions, than to the exerciſe of the body on common occaſions. Greater practical benefit will be obtained, if we ſeek for the cauſes of abortion in the general infirmity of the conſtitution, or in ſome particular ſtate of the *uterus*, or its appendages, than by attributing it to theſe accidents. As far as the conſtitution may be altered, by the reduction of the general ſtrength, by plethora or febrile diſpoſition, ſo as to be unable to perform its functions, or to perform them with propriety and regularity, we may eſteem every cauſe capable of producing ſuch a ſtate, as a primary cauſe of abortion. It does not often happen that ſimple weakneſs is a cauſe of abortion; for women who prove with child, in

very

very weak and reduced ſtates of the body, particularly in conſumptions, in whom there is a great aptitude to conceive, have, of all women, the leaſt diſpoſition to miſcarry, yet a ſtate more feeble and more irritable could with difficulty be pointed out. But the weakneſs and irritability is then of a particular kind, not ariſing from, connected with, or influencing the *uterus*, which proceeds in the performance of its functions, as if the conſtitution was in a ſtate of perfect health. We may hence conclude that either weakneſs or irritability in general, are ſeldom cauſes of abortion, but ſome weakneſs or imperfection originating in, or affecting the *uterus* or its appendages; or a peculiar kind of irritability, thence proceeding, diſtinguiſhable enough in the female character, by a careful obſerver, which creates impatience of mind and reſtleſſneſs of body; in which every occurrence is the parent of fear and ſolicitude, and every office is performed with hurry and vexation. As an abundance of acrimonious, or ſome other humour, or ſome quality of the body, may tranſfer this ſtate to the mind, ſo the mind often reverberates this ſtate to the body, the continuance of which will often prevent the regular

gular performance of any proceſs. It is therefore often found of as much importance, to give compoſure and ſteadineſs to the mind of a patient, and to lead her to hope and cheerful expectation, by ſoothing and comfortable converſation, as it is to adminiſter medicines to the body.

With reſpect to the ſtate of the *uterus*, the opinion originally entertained and ſtill purſued, as far as can be collected from the medicines uſually preſcribed, was, that it failed to perform its office on account of its exceſſive lubricity, as if the *ovum* ſlipt out of the *uterus*; but this idea will not bear examination. It is remarkable that women who are in the habit of miſcarrying, go on in a very promiſing way to a certain time, and then miſcarry, not once, but for a number of times, in ſpite of all the methods which can be contrived, and all the medicines which can be given; ſo that there is often reaſon to ſuſpect that the *uterus* is incapable of diſtending beyond ſuch a ſize, before it takes its diſpoſition to act, and that it cannot be quieted till it has excluded the *ovum*. What I am about to ſay will not, I hope, be conſtrued as giving a licence to an irregularity of conduct, which may often be aſſigned as the immediate

mediate cauſe of abortion; or lead to the negligent uſe of thoſe means which are likely to prevent it. But from the examination of many *ova*, after their expulſion, it appears that their longer retention could not have produced any advantage, the *fœtus* being decayed, or having ceaſed to grow long before its expulſion; or the *ovum* being in ſuch a ſtate, that it was become wholly unfit for the office which it was deſigned to anſwer; ſo that if we believed there was an intelligence communicating with every part of the body, we ſhould ſay, it was concluded in council, this *ovum* can never come to perfection, and the ſooner it is expelled the better.

Conception probably depends upon the perfect ſtate of one or both *ovaria*, and will therefore ſometimes take place when the *uterus* is very much diſeaſed; but the progreſs depends upon the ſtate of the *uterus*, and chiefly upon that of the *fundus*; for I have known ſeveral inſtances, of women who had conſiderable excreſcences and induration about the *os uteri*, who have conceived, and gone on to their full time without any inconvenience. The imperfections obſervable in *ova*, are of different kinds, and found occaſionally in every part.

There is uſually a conſent between the *fœtus* and the ſhell of the *ovum*, as the placental part and the membranes may be called, but not always; for examples have occurred in which the *fœtus* has died before the termination of the third month, yet the ſhell being healthy, has increaſed to a certain ſize, has remained till the expiration of the ninth month, and then been expelled, according to the genius and conſtitution of the *uterus*. But if the ſhell becomes diſeaſed, then the *fœtus* being deprived of its nouriſhment, is of courſe deſtroyed, and both are expelled, as any other extraneous body would be, though not immediately on the acceſſion of the miſchief. The part of the *ovum* moſt commonly found diſeaſed, is not that which paſſes from the *ovarium*, but that production of the *uterus*, which is prepared for the reception of the *ovum* after its paſſage from the *ovarium*, and which may be called the connecting membrane of the *ovum*. Between this and the outer membrane of the *ovum* there is uſually a great effuſion of blood, which inſinuates itſelf through the cellular membrane of the *placenta*, and between the membranes giving to the whole *ovum* a tumid and unequal appearance,

ance, like that of a lump of coagulated blood. It is probable that either the connecting membrane is imperfectly formed, or there is some difficulty, and a failure in the completion of the union between it and the *ovum*; and according to this opinion the causes of abortions are to be sought for in the female only, contrary to what I formerly suspected.

All the means which can be advised with any prospect of success, in the treatment of abortions, whether the cause consists in the constitution or in the *uterus*, may be considered as preventative or curative. In either of these views we must chiefly recur to the constitution, as in the first case, it is the great object of our attention; and in the second, as the principal chance of producing any salutary change in the *uterus*, is through the medium of the constitution, on the improvement of which our success must depend.

As women with different constitutions and different states of health are subject to abortion, every mode of treatment must be accommodated to the constitution of each patient, and to the disease of which there may be any indication. In plethoric and febrile habits, it may be proper to bleed, soon after the sup-

preſſion of the menſtruous diſcharge, and occaſionally afterwards; to enjoin a ſpare diet, and to give cooling medicines; and perhaps in ſome habits, in which the *uterus* may be ſuppoſed unwilling to diſtend beyond a certain ſize, to preſcribe opiates in ſmall quantities often repeated, and ſometimes tepid bathing. In debilitated and languid conſtitutions, ſtrengthening medicines of every kind will be proper, as bark with elixir of vitriol, bitters of various kinds, and chalybeate medicines, in the officinal or extemporaneous forms, or mineral waters in ſmall quantities. The cold bath, ſea-bathing eſpecially, is pretty conſtantly recommended for the general purpoſe of improving the health, not only in thoſe who have a diſpoſition to abortion, but in thoſe alſo who are accuſtomed to bring forth dead children, or who are prone to hemorrhages at the time of delivery; and experience has ſhewn that it may be continued through the whole time of pregnancy with ſafety and advantage. For the great purpoſe of eſtabliſhing permanent ſtrength in thoſe who have had long continued ill health, or who are in a habit of theſe untoward accidents, nothing ſeems better calculated, or is found to be more uſeful,

uſeful, than travelling; not taking a haſty journey, but wandering about for many months, by which the evils which appertain to the refined ſcenes of civiliſed life are done away, the mind becomes ſoothed and compoſed, and the corporeal advantages of a natural ſtate are, in ſome meaſure, acquired.

When the health cannot be confirmed, ſo as to enable the conſtitution to bear the common exigences of life, it has been thought adviſeable to remove patients from them by confining them to their houſe, to a floor, or a ſingle room; or even to an horizontal poſition, throughout pregnancy. Some inſtances of advantage from this practice I have known; but if we conſider abortions as proceeding from weakneſs, or too great a degree of irritability, confinement to a room, or any treatment by which both thoſe evils are likely to be increaſed, ſeems a ſtrange method of preventing miſchief; and from what I have ſeen of the general iſſue of ſuch practice, much cannot be ſaid in its favour, the event being uſually deferred, but not hindered. In the management of ſome caſes of this kind, I have thought myſelf entitled to credit, but I muſt alſo acknowledge that I have been

more frequently diſappointed; yet for ſome reaſon, not obvious or eaſy to diſcover, the patient, wearied with the fruitleſs attempts of art, and deſerting all rules, has another time eſcaped the abortion, which I had before in vain attempted to prevent.

With reſpect to that ſtate of the *uterus* itſelf, which may be conſidered as the cauſe of abortion, ſhould there have been any indication from the diſcharges being irregular or profuſe, if they are of the ſanguineous kind; from their quality or degree, if of that kind which paſs under the general name of weakneſs, it is firſt to be determined whether they are ſymptoms indicating a certain ſtate of general health, or any morbid diſpoſition of the *uterus*. Should they even be of the latter kind, it is often by application to the conſtitution at large, that we have the power of making any material alteration in the ſtate of the *uterus*. Something may however be done by local applications of various kinds, but their activity muſt not be ſuch as to make too quick an alteration, by ſuppreſſing ſuddenly any kind of diſcharge to which the part itſelf, or the conſtitution, may have been long accuſtomed. For it muſt be obſerved, that diſagreeable as

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theſe diſcharges are, they are often of ſecondary uſe; that is, if we ſuppoſe a certain ſtate of the *uterus*, the diſcharge may be abſolutely neceſſary for its relief, while it remains in ſuch a ſtate, and the ſtate is to be changed previous to the ſuppreſſion of the diſcharge; or, inſtead of removing, we ſhall add to the diſeaſe. In ſuch ſtates of the *uterus* as diſpoſe to abortion, I have not dared to adviſe any more active application than the Bath or Buxton Waters, which may be injected into the *vagina*, in the interval between the two periods of menſtruation, or even for a longer time. I ſay into the *vagina*, becauſe I do not approve of the daily introduction of any inſtrument within the *os uteri*, on this account, or for the relief of any other diſeaſe.

The circumſtance attending abortions, and the ſymptoms by which they are threatened or accompanied, are very different, as are all the effects ariſing from uterine diſturbance. But there is generally pain in the back, *abdomen*, and inferior extremities, with a ſenſe of weight in the region of the *uterus*, frequent micturition, and a teneſmus; but the moſt certain ſign of an abortion, is a diſcharge of blood,

which proves that ſome part of the *ovum* is looſened from the *uterus*.

When ſuch diſcharge happens during pregnancy, eſpecially at an early period, it has been a received opinion that abortion was inevitable, becauſe it was preſumed that the ſeparation which it proved could not be repaired. It muſt be allowed that under ſuch circumſtances there is always too much reaſon to expect an abortion, yet experience has fully ſhewn, that women who have had not one, but repeated diſcharges, and ſometimes to a profuſe degree, have gone to their full time, without any imperfection in the child, or any detriment to the mother; the looſened part, by ſome operation beyond human ſkill, having been cemented and re-united to the *uterus*. There ſeems to be juſt ſo much chance of preventing an abortion, when there has been a diſcharge of blood, as to make it worth while to uſe the common means for that purpoſe, and to keep the patient cool and compoſed.

There is an almoſt endleſs variety in the manner in which abortion happens. Some women abort with ſharp and long continued pains; others with little or no pain,

the *ovum* gliding out of the *uterus* almoſt imperceptibly; ſome with a profuſe and alarming hemorrhage, others with very little diſcharge. In ſome, the *ovum* has been ſoon and perfectly expelled; in others, after a long time, firſt the child, then the *placenta*, whole, or in ſmall portions, or part of it diſſolved. But whatever other pain or trouble may attend, the hemorrhage is the only immediately alarming ſymptom; I ſay immediately, becauſe every practitioner muſt be convinced that either abortions occaſion local diſeaſes, or the time of abortion is an era, from which we may date the commencement of ſome dangerous diſeaſes of the *uterus*. It has alſo been imagined, that the ſafety of the patient very much depended upon the complete and ſpeedy expulſion of the *placenta*; and when it was retained, very active deobſtruent medicines were ſuppoſed to be neceſſary, and ſtrenuouſly given for the purpoſe of expelling it, leſt it ſhould become putrid, and ſome of the putrified parts be abſorbed into the conſtitution. I believe the whole ſuppoſition is groundleſs, having ſeen many inſtances of its being expelled in a very putrid ſtate, when the patient

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was in perfect health; and when the patient had a diſeaſe, the putridity of the *placenta* ſeemed the conſequence not the cauſe of the diſeaſe. At all events, much leſs miſchief may be expected from the retention of a putrid *placenta*, than from attempts to force it away by the medicines uſually given, or by manual aſſiſtance.

The degree of hemorrhage in abortions is not always in proportion to the period of pregnancy, but it depends upon the difficulty with which it may be expelled; ſometimes upon the cauſe, and perhaps upon ſome peculiarity in the conſtitution, as happens in the menſtruous diſcharge.

A notion of there being ſomething myſterious in uterine hemorrhages, different from thoſe from any other part of the body, has been entertained, and ſuppoſed to occaſion the neceſſity of a peculiar treatment. But it is now agreed, that the general principles which guide us in the treatment of hemorrhages, from any other part of the body, are with equal propriety applicable to thoſe from the *uterus*. We muſt however recollect, that in uterine hemorrhages, depending on pregnancy, there is an additional circumſtance, which

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we are ever to bear in mind; that they are ultimately to be ſuppreſſed by the action of the *uterus*, expelling whatever may be contained in its cavity.

Hemorrhages of all kinds are moderated, or wholly ſtayed, by the formation of *coagula* at the orifices of the open veſſels; or by the contraction of the coats of the veſſels themſelves, by which their orifices are leſſened or cloſed. The latter of theſe effects being ſtronger and more active in arteries than in veins, may be a reaſon for the common obſervation, that hemorrhages from arteries, though in an equal degree, are leſs dangerous than thoſe from veins, in which the power of contraction is wanting. It has been proved by phyſiologiſts, that both theſe effects, that is, the formation of *coagula*, and the contraction of the veſſels, are favoured when the blood circulates moſt ſlowly, as in fainting; not to mention the quantity of blood loſt in a given time, will depend upon the rapidity or ſlowneſs of the circulation, as well as upon the ſize of the veſſel opened. But in a ſtate of faintneſs, which ſpeedily follows all profuſe hemorrhages, the three effects are produced at the ſame time. During faintneſs, the advantage

vantage ariſing from the contraction of the *uterus* is likewiſe obtained; for this acts, or makes its efforts to act, in ſleep, during faintneſs, and ſometimes even after death. Fainting may then be conſidered as a remedy provided by nature for averting the immediate danger of all hemorrhages, and to prevent their return. Cordials or ſtimulants ſhould not therefore be given to thoſe who are faint from hemorrhages, till by the duration of the faintneſs we conclude there has been ſufficient time to produce thoſe effects which would prevent a renewal of the hemorrhage, or leſſen its danger if it ſhould return.

The *materia medica* abounds with articles under the claſs of aſtringents, many of which are given indiſcriminately in hemorrhages and profuſe diſcharges of every kind; nor does much diſtinction ſeem to have been made between thoſe which were found uſeful in hemorrhages as applications, and thoſe which were given internally. It has rather been concluded that what was found uſeful as an external application, would of courſe be profitable if given internally. It is however clear that aſtringent medicines properly ſo called, can have no immediate power of

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ſtopping hemorrhages from the *uterus* or any other part of the body, excepting the inteſtinal canal; but that every medicine which ſlackens the circulation of the blood, becomes eventually an aſtringent. If the patient therefore be plethoric or heated, it may be proper to bleed in an incipient abortion accompanied with an hemorrhage; though if the patient be reduced to a ſtate of great weakneſs, that operation would be uſeleſs and improper. The ſaline draughts with nitre, or nitre alone; or acids mineral or vegetable, may be given as frequently and in as large a quantity as the ſtomach can bear. Even the nauſea, which theſe and other medicines ſometimes produce, has, by no forced conſtruction, been conſidered as an artificial imitation of faintneſs, and found ſerviceable, and medicines have been given expreſsly for that purpoſe; the ſafeſt perhaps and not leaſt effectual of which is *Ipecacuanha*, in ſmall quantities, often repeated, ſo as to keep up a perpetual nauſea. Oil of *turpentine* has been recommended as a very powerful medicine in hemorrhages, but I think it is better ſuited to thoſe which are habitual than to thoſe which are inſtantly profuſe and dangerous. When the diſcharge is

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profuſe, cloths wet in cold vinegar may be applied to the *abdomen* and loins, and changed when they grow warm. In *Italy* and other hot countries, it is a cuſtom to ſprinkle ice upon the patient. On the ſame principle clyſters of cold water have been alſo adviſed. The patient ſhould be expoſed to, and ſuffered to breath, the cold air. In ſhort, every application and medicine, actually or potentially cold, the coldeſt water, even ice itſelf, if it can be procured, may be given and repeated with probable advantage, when the exigency of theſe caſes requires very powerful aſſiſtance.

Injections of cold or aſtringent fluids into the *vagina*, have been recommended as being of great ſervice for the ſuppreſſion of uterine hemorrhages. If we attempt to throw up the injections when the blood is flowing in a full torrent, they will be immediately rejected; and if they are uſed with the view of preventing a return of the hemorrhage which has already ceaſed, it is rather to be expected, by waſhing away the coagula formed and applied to the orifices of the veſſels, that they would occaſion it. The principal good that could be derived from them, probably is by their

their action upon the internal parts as a cold application, and in this view ice has been introduced into the *vagina*. Leſs objection may perhaps be made, and equal or rather greater advantage will attend the introduction of lint, or any ſoft ſubſtance, moiſtened with ſpirit of wine, into the *vagina*, which ſerves the purpoſe of forming coagula, and applying them to the orifices of the opened veſſels. But I have generally been ſatisfied with the application of a cloth wet with cold vinegar to the external parts, with ſo firm a preſſure, that the ſtream of blood ſhould be inſtantly retarded or ſtopped. This might have been originally done inſtinctively, to remove the immediate dread of the hemorrhage, and to give me a little time to reflect and determine how I ſhould proceed; but being perſuaded that this is of real utility, it is a cuſtom with me to do it, in the firſt inſtance, in every alarming or dangerous hemorrhage.

Opiates have been recommended in abortions, and in all caſes of uterine hemorrhage; but I ſeldom uſe them, unleſs with a view of moderating an uncommon degree of pain, or of quieting ſome tumult which attended or followed the accident; having reaſoned myſelf

ſelf into an opinion that they do not, in theſe caſes, deſerve the high commendation which has been given them. Some pain is neceſſary and unavoidable, whenever an effort is made for the excluſion of any ſubſtance out of the cavity of the *uterus*. The degree of pain proves the degree of action raiſed for this purpoſe, and we ſhould conſider how far by leſſening the pain we may leſſen the action, and by leſſening that action, by which the *ovum* would be expelled, whether we contribute to the ſuppreſſion of the hemorrhage, or to the more regular conduct of the abortion.

It was ſaid that no manual aſſiſtance was required in the management of abortions, and no rule can be more generally true; yet there are ſome exceptions. When, for inſtance, a woman who is miſcarrying, with a conſiderable, or an apparently dangerous hemorrhage, is ſo far advanced in her pregnancy, that it may be difficult to decide whether we ſhould deem it an abortion or a premature labour; it may not be ſafe to rely upon the uſe of thoſe means which were adviſed for hemorrhages in general, and yet the operation of delivering would be extremely difficult and hazardous. We may then determine upon an intermediate

intermediate method, which is to break the membranes. By the diſcharge of the waters of the *ovum*, which neceſſarily follows, the diſtenſion of the *uterus* is leſſened, of courſe the ſize of the open blood veſſels, by which the diſcharge had been made, is diminiſhed, and the hemorrhage is abated or ſuppreſſed. In conſequence alſo of the diſcharge of the waters, the *uterus* acquires a diſpoſition to act, and an ability to act with more energy, and the whole buſineſs is ſooner completed. At a more early period of pregnancy, when the hemorrhage is profuſe, liable to return, or of long continuance, on examination *per vaginam*, the *ovum* will ſometimes be found hanging in the *os uteri*, half or more of it voided out of the cavity of the *uterus*, yet enough remaining to keep up the hemorrhage. Then, by a little motion or ſlight impulſe in different directions, it will ſometimes be cleared of the *os uteri*, and drop into the *vagina*. But great caution is to be uſed in this operation, for if it be done with violence, it may occaſion an increaſe of the hemorrhage, or be a cauſe of future miſchief.

In abortions, dreadful and alarming as they ſometimes are, it is a great comfort to know that they are almoſt univerſally void of danger,

either from the hemorrhage, or on any other account. It is perhaps impoſſible to explain it, but the fact is undoubtedly true, that an equal loſs of blood, and with apparently equal effects, ſhould, in abortions, if properly managed, and the patient is in good health when they take place, not occaſion any danger; and yet at the full period of utero-geſtation be ſo dangerous, that one conſiders the patient who recovers as having a lucky eſcape. It is wonderful alſo to obſerve how ſoon women recover from the debility occaſioned by hemorrhages in abortions; and how long a time is often required for their recovery after the ſame circumſtance in advanced pregnancy. But though I reckon there is little or no danger from mere abortion, yet when the accident is in conſequence of acute diſeaſes, there is often extreme danger; for women abort becauſe they are already in great danger, and this is aggravated by the abortion. Without a more accurate diſtinction we may ſtill form an erroneous prognoſtic. It has been ſaid, for example, that women who miſcarry, or are delivered at the time of their having the ſmall-pox, univerſally die. Now if a pregnant woman ſhould, at any period of pregnancy,

nancy, expel her child in the commencement of that diſeaſe, perhaps from the violence of the eruptive fever, ſhe may not only eſcape the danger, but go through the diſeaſe with as much regularity as if ſhe had not miſcarried. But if that period of the diſeaſe be paſſed without abortion, and the patient ſhould go on to the time of the criſis, and then miſcarry, the general prognoſtic will be too true; at leaſt the death of the patient has followed in every caſe of this kind which I have ſeen. But ſince the firſt publication of theſe obſervations I have been informed of two caſes of early abortion which have proved fatal. In the firſt, the patient became paralytic immediately after the hemorrhage; but the death of the ſecond, though ſhe was only in the ſeventh week of her pregnancy, ſeemed to be occaſioned merely by the hemorrhage.

SECTION II.

UNDER this head will be included all the hemorrhages which occur in the three laſt months of pregnancy, becauſe from the danger with which they are attended, they require, and from the ſituation of the patient, they allow of a ſimilar treatment when required, though not with equal facility. Theſe hemorrhages are occaſioned, 1ſt. by the attachment of the *placenta* over the *os uteri*; 2d. by a ſeparation of a part, or of the whole *placenta*, which had been attached to any other part of the *uterus*. This ſeparation may be cauſed either by accidental violence, or by ſome morbid affection of the *uterus* or *placenta*, or by the approach of labour, and it ſometimes happens without our being able to aſſign any cauſe, equal to the ſuddenneſs and violence of the effect produced.

Hemorrhages ariſing from the firſt cauſe, have been conſidered, and generally are more dangerous, than thoſe from the ſecond; but theſe have nevertheleſs ſometimes proved fatal.

Hence in the eſtimate of the danger of uterine hemorrhages at the time of labour, it is neceſſary not only to diſcover the cauſe, and to regard the quantity of blood loſt, but, above all other conſiderations, to attend to the effect produced, which is infinitely greater in one conſtitution than in another, and varies in all. If any individual patient therefore be brought into a ſtate of danger by the loſs of blood, great or ſmall, it is incumbent upon us to put in practice all the means in our power for the removal of the danger. Any judgment formed upon the quantity of blood diſcharged, will be liable to great errors, as concealment or accident may deceive us; not to mention that caſes ſometimes occur, in which there may be a greater quantity of blood loſt, than can be known, either by its being locked up in the *uterus* beyond the child, when the membranes are broken, or by being effuſed into the *ovum*, when that has an appearance of being whole. This obſervation, of the neceſſity of judging principally by the effect of the loſs of blood, deſerves the moſt ſerious reflection, becauſe, the *time when* we are to execute what reaſon dictates, or experience authorizes us to do, will chiefly depend upon it. It is alſo of great im-

portance to recollect, that thoſe hemorrhages are far more dangerous, in which an equal quantity of blood is loſt ſuddenly, or in a ſhort ſpace of time, than if it flows away ſlowly. The immediate injury to the conſtitution is greater in the former caſe, the veſſels requiring ſome time to enable them to be accommodated to the quantity of blood remaining in them. A great and ſudden loſs of blood alſo creates a ſuſpicion that the return of the hemorrhage is to be much dreaded, becauſe if it ſhould be equally profuſe with that which has already happened, it may occaſion the death of the patient, before we have time to put in practice, or reap the advantage of what we ſuppoſe to be the only method of removing the danger.

In hemorrhages the danger is indicated by the weakneſs and quickneſs of the pulſe, or by its becoming and continuing imperceptible; by a general paleneſs and coldneſs of the body, and by a ghaſtly countenance; by inquietude, or by continual faintings; by a high and laborious reſpiration, and by convulſions. The two laſt are uſually mortal ſymptoms; yet when patients are reduced to a certain ſtate of weakneſs, they are liable to hyſteric affections

fections reſembling convulſions, that are equally alarming, but not dangerous.

When patients have ſuffered much from loſs of blood, they will often have a ſudden and violent fit of vomiting; and ſometimes under circumſtances of ſuch extreme debility, that I have ſhrunk with apprehenſion, leſt they ſhould have been deſtroyed by a return or increaſe of the hemorrhage, which I concluded was inevitable after ſo violent an effort. But there is no reaſon for this apprehenſion; for though the vomiting may be conſidered as a proof of the injury which the conſtitution has ſuffered by the hemorrhage, yet the action of vomiting contributes to its ſuppreſſion, and to the immediate relief of the patient; perhaps by ſome revulſion, and certainly by exciting a more vigorous action of the remaining powers of the conſtitution, as is proved by the amendment of the pulſe, and of all other appearances immediately after the vomiting.

A tolerably juſt opinion may be formed of the danger of uterine hemorrhages, in advanced pregnancy, by the pain with which they are attended. An equal hemorrhage without pain, is always more dangerous than if the pain be regular and acute, and the danger is leſſened

as the pain increaſes. In the moſt dangerous hemorrhages, there is no pain whatever, or none of conſequence, and patients have often died, or been brought into the moſt imminent danger, that is, into ſituations from which it was ſcarcely poſſible for them to recover, whilſt the practitioner was waiting for the acceſſion of the pains of labour. The reaſon was before mentioned. The pain proves the degree of the action of the *uterus*, and the action of the *uterus* proves that the powers of the conſtitution are not exhauſted. In very bad caſes there is an effort in the *uterus* to act before delivery, juſt ſufficient to cauſe a renewal of the hemorrhage; and immediately upon the diſcharge of a guſh of blood, the effort, together with the little pain attending, ceaſes; and in this manner patients would ſometimes proceed to the moment of their death, unleſs they were relieved by art.

SECTION III.

THOSE hemorrhages which are occaſioned by the attachment of the *placenta* over the *os uteri*, are firſt to be conſidered, becauſe they are attended with the greateſt danger, and becauſe ſome part of their treatment will apply in the other caſes to be deſcribed.

Though the *placenta* be attached over the *os uteri*, the woman uſually goes through the early part of her pregnancy without any inconvenience, or any ſymptom which denotes it. But when the *cervix* of the *uterus* is diſtended to a certain degree, or when the changes previous to labour come on, there muſt be an hemorrhage, becauſe ſuch diſtention, or change, neceſſarily ſeparates a part of the *placenta*. This hemorrhage is often, but not always, in proportion to the ſpace of the *placenta* attached over the *os uteri*, or to the quantity ſeparated, for women have ſometimes been in as great danger when the mere edge of the *placenta* was fixed upon the *os uteri*, as if the middle had been placed over it.

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When hemorrhages from this cauſe once come on, though all women would not die, they are never free from poſſible danger till they are delivered. As there is a very doubtful chance of the accompliſhment of the delivery by the pains of labour, and experience having fully proved the inſufficiency of all other methods, and how little reliance ought to be placed on them, though they ought always to be tried, it is a practice, eſtabliſhed by high and multiplied authority, and ſanctioned by ſucceſs, to deliver women by art, in all caſes of dangerous hemorrhage, without confiding in the reſources of the conſtitution. This practice is no longer a matter of partial opinion, on the propriety of which we may think ourſelves at liberty to debate; it has for near two centuries met the conſent and approbation of every practitioner of judgment and reputation, in this and many other countries.

There is much comfort in knowing and poſſeſſing a remedy to which we can recur, with a more than equal chance of ſucceſs, in any caſe of great and imminent danger. But though it ſhould be allowed that the artificial delivery of the patient, in every caſe of dangerous

gerous hemorrhage, in advanced pregnancy, is expedient and neceſſary for the preſervation of the life of the patient; and though the practitioner who ſhould neglect it would be very reprehenſible, yet that neceſſity, or that expediency which conſtitute the authority for the operation, and which is now clear and diſtinct to another, may not appear to me. Beſides, ſhould the neceſſity be acknowledged, and the practice approved, there may be much diſpute and difference of opinion about the *time when* the operation ought to be performed.

It would be of great advantage in practice, if ſome mark was diſcovered, or ſome ſymptom obſerved, which would indicate the preciſe time when women with hemorrhages of this kind ought to be delivered. But though we do not at preſent know any ſuch mark or ſymptom, and the determination of the time is to be made by the judgment of each individual practitioner, we may be permitted to ſtate what we do know in the moſt convincing point of view.

Admitting then, in the firſt place, that women having uterine hemorrhages from this cauſe, in advanced pregnancy, are not in ſafety till they are delivered; that the natural efforts

are generally, or often, unequal to the expulſion of the child; that the hemorrhage can only be ſtayed by the evacuation of the contents of the *uterus*, giving an opportunity to the veſſels to contract and to cloſe; that theſe ſalutary effects are produced by an artificial extraction, or by actual expulſion of the child; and if it be moreover true that the operation, though performed before it is abſolutely neceſſary, is not attended with danger, if it is performed with due care; but that if the operation be delayed beyond the proper time, it will not anſwer the purpoſe for which it is recommended; we may from theſe premiſes conclude, that a woman under the circumſtance of dangerous hemorrhage ought to be delivered by art, if the child be not expelled by the natural efforts; that it is better to deliver too ſoon, than to delay the delivery a moment too long; and that in every caſe of doubt, it is a proof of wiſdom to decide, and determine upon ſpeedy delivery.

It is however ſeldom neceſſary to deliver women on the firſt appearance of the hemorrhage, yet that will be ſufficient to awaken our apprehenſions, and ſet us upon our guard. Nor does it often happen that a ſecond

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or a third diſcharge obliges us to proceed to deliver immediately; becauſe each return may not be in ſuch a quantity, as by its violence to endanger the life of the patient, and ſuch an interval may paſs between the returns, as to give time and opportunity for the reparation of the miſchief done by one loſs of blood, before the return of the next. Nor is delivery by art neceſſary or uſually proper when the hemorrhage is abating. There are caſes however in which the quantity of blood loſt, the ſuddenneſs of the diſcharge, and the effect produced, is ſuch with one hemorrhage, as to make it evidently unſafe to truſt a return; and whenever the countenance, and other appearances, indicate that the conſtitution is much impaired, by repeated, though not profuſe diſcharges, the ſtrength is undermined, and danger creeps on certainly, though inſidiouſly. For we may preſume that every conſtitution is capable of bearing the loſs of a certain quantity of blood, without the inſtantaneous hazard of life, and this will depend upon the general ſtate of the body. Now the body may be reduced to ſuch a ſtate, that there is barely a ſufficient quantity of blood, or of powers, to carry on the buſineſs of life, upon

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a very nice balance, and of courſe the additional loſs of a very ſmall quantity, may altogether deſtroy the power of living, and the patient die of the hemorrhage, though the quantity of blood which ſhall immediately precede her death may be ſmall; but unfortunately ſhe was able to bear the loſs of none. We will therefore, though careful not to act raſhly and unadviſedly, not only be on our guard againſt the effect of rapid and profuſe diſcharges, but againſt thoſe which are productive of as much danger, on account of their returns, though leſs in degree at any one time; we will ever call to our mind the poſſible evil of delay, and recollect that there is no danger in a premature delivery, if the operation be performed with prudence.

In ſome caſes, in which it has been thought neceſſary to deliver the patient on account of the hemorrhage, the parts have been in ſuch a ſtate, that the operation could not, it was thought, be performed with ſafety. Whenever the caſe demands the operation, on account of the danger of the hemorrhage, the ſtate of the parts will always allow it to be performed with ſafety, though not with equal facility; and though it may often be neceſſary

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to determine ſpeedily upon the propriety of the operation, this ſhould not be performed raſhly, but always with the utmoſt deliberation, even though it admits of haſte. For in hemorrhages a woman may periſh from two errors in practice; from delaying the operation too long, and from the rude, violent, or improper manner in which it may be performed.

Sufficient notice hath been taken of the danger of precipitating as well as that of delaying the delivery in caſes of hemorrhage. With reſpect to the operation, the firſt part, that is, as far as relates to the poſition of the patient, the introduction of the hand, and the dilatation of the *os uteri*, has been already deſcribed under preternatural preſentations. When the *os uteri* is with great caution ſufficiently dilated to allow of the ready admiſſion of the hand, and we come to the *placenta* attached over it, it is of no conſequence whether we begin to ſeparate this till we come to an edge, and go up on the outſide of the membranes, which may be ruptured at pleaſure; or whether we perforate the ſubſtance of the *placenta*, and conduct the hand directly into the *ovum*, though by the latter method there is rather

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more danger of loſing the child. In either caſe, without regard to the poſition of the child, we muſt proceed to and lay hold of its feet, carefully diſtinguiſhing that they are the feet before we begin to extract them. Immediately on our beginning to withdraw the hand, which ſhould be done with a ſlow waving motion, the waters of the *ovum* flow away; and while they are flowing, we muſt bring the hand, graſping the feet of the child lower, till by ſlow degrees they are brought into the *vagina*. We are afterwards to wait till the *uterus* contracts, and then gently withdraw the hand and bring the feet through the external parts. It is not improbable but we may then have the power of finiſhing the operation very ſpeedily; but though the child were extracted, if the *uterus* did not act, and, as it were, follow the child, as there would be a chance of the hemorrhage returning, the child ſhould be withdrawn according to the degree of the contraction of the *uterus*, which will be known either by the application of the hand to the *abdomen*, or by the pain. Nor is there any occaſion at this time for hurrying the delivery, as the hemorrhage uſually ceaſes as ſoon as the child is turned, in conſequence

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of the compreſſion made upon the orifices of the veſſels, by the inferior parts of the child. If the labour-pains are at all efficient at this time, it would be proper to leave the breech of the child to be expelled by them; but if they are not ſufficiently ſtrong for this purpoſe, aſſiſtance muſt be given, extracting by the feet only during the continuance of a pain, not with force ſufficient to bring it away, but with the view of aiding the power exerted by the pains, imitating alſo the pains in the manner of extracting. When the breech of the child has paſſed through the external parts, the delivery muſt be haſtened, as there is then danger of the child being deſtroyed by the preſſure upon the *funis*. Yet under ſuch circumſtances there is often a better chance of preſerving the child, by leaving it to be wholly, or in a great meaſure expelled, than by extracting it with violence.

When the child is born, if the operation was ſlowly performed, there is not uſually any continuance or return of the hemorrhage, unleſs from the blood previouſly diſcharged, and locked up behind the body of the child; but if the hemorrhage ſhould return, the caſe muſt be managed, as will

be recommended, when we ſpeak of a hemorrhage with a retained *placenta*. If there be no hemorrhage, and the *placenta* be retained, we muſt be particularly cautious not to hurry it away; but in theſe caſes it is commonly expelled with great eaſe, and we have leſs occaſion to be ſolicitous, becauſe from the part where it was originally attached, it more readily admits of aſſiſtance if required.

Should nothing uncommon happen in the delivery, children will often be born alive, in caſes of hemorrhage, which were extremely dangerous to the mother; and there have been many inſtances in which the delivery being too long delayed, the child has been extracted alive, after her death. In all caſes of danger, theſe in particular, the ſafety of the parent, and the preſervation of the child, are events which give inexpreſſible ſatisfaction, and adorn the reputation of the practitioner.

SECTION IV.

It was before obſerved, that thoſe hemorrhages which are occaſioned by the ſeparation of a portion or of the whole *placenta*, originally attached to any part of the *uterus*, except the *os uteri*, were not generally ſo dangerous as thoſe laſt deſcribed. But if the ſeparation be extenſive and ſudden, they will be equally alarming, the real danger may be as great, and the ſame method of proceeding, that is, ſpeedy delivery by art, may be required. The ſeparation may be occaſioned by great violence from external accidents in the latter part of pregnancy; or in ſome intenſe fit of fainting or of laughter; and ſometimes the whole or a very large part of the *placenta* will be ſeparated ſuddenly, without any accident or ſymptom which could give warning or apprehenſion, that ſuch an event was to be dreaded. The ſeparation of the *placenta* may then happen previouſly to the commencement, and it is not ſurpriſing that it ſhould ſometimes occur during any period or ſtage of labour.

When ſudden and violent diſcharges of blood happen to women with child, in advanced pregnancy, from external accidents, if the patient be kept in a cool and compoſed ſtate, the diſcharge may ceaſe, and without any return, the patient may go on to her full time, and be delivered by her natural pains, as if no ſuch accident had happened; though the child will often be ſtillborn. Sometimes however the hemorrhage will return, or it may commence in any ſtage of a labour, and our conduct muſt be regulated by the degree and probable conſequences of it, and by the ſtate of the labour when it is firſt diſcovered.

If any conſiderable hemorrhage ſhould come on in the beginning of a labour, or previous to it, and if the treatment muſt in any meaſure depend upon the cauſe, it is neceſſary in the firſt place that we ſhould decide whether the *placenta* be attached over the *os uteri*, or be caſually ſeparated. Before there is ſome degree of dilatation of the *os uteri*, be the diſcharge ever ſo profuſe, and it may even at this time be exceſſive, I do not know that it is always poſſible to tell with certainty whether the *placenta* preſents or not. It may indeed be conjectured that the *placenta* is there attached,

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by the cuſhion-like feel of the *cervix*; and when the *os uteri* is ſomewhat dilated, inſtead of the membranes, the fleſhy ſubſtance of the *placenta* may be diſtinguiſhed. Yet every practitioner knows how very different the ſtate of theſe parts is in the beginning of labour, and how difficult it muſt be to diſtinguiſh between a firm *coagulum* of blood and the *placenta*; not to mention that ſo ſmall a part of the *placenta* may be attached over the *os uteri*, that unleſs we could paſs the finger completely round the circle, which is ſometimes almoſt impoſſible, it could not be diſcovered. Taking therefore into conſideration all the varieties occaſioned by either of the cauſes of hemorrhage, and knowing that neither the performance of the operation, nor the event, are materially different, whatever may be the cauſe, provided the diſcharge and its effect are equal, we muſt be careful that we are not deceived by attempts to make too nice diſtinctions.

From a caſual or ſpontaneous ſeparation of the *placenta*, an hemorrhage may happen in the beginning of labour, when the *os uteri* is not in any degree dilated; or when it is dilated to a third or half its extent, for example. If

the diſcharge ſhould be ſo great as to require ſome preſent meaſures for the relief of the patient, the common aſſiſtance for promoting the dilatation muſt be given, till we can feel diſtinctly the membranes of the *ovum*, which are to be ruptured. By the diſcharge of the waters the diſtention of the *uterus* will be leſſened, the ſize of the blood-veſſels of courſe diminiſhed, and the hemorrhage in general immediately removed or very much abated. By the ſuppreſſion or abatement of the hemorrhage, the action of the *uterus* will be rendered ſtronger, and the delivery often completed in a ſhort ſpace of time without farther aſſiſtance, eſpecially if the patient has before had children.

But if the hemorrhage ſhould come on in the ſecond ſtage of the labour, that is, after the full dilatation of the *os uteri*, and the rupture of the membranes, when the child's head has entered and in part deſcended into the *pelvis*; if the diſcharge be of ſufficient importance either to prevent the action of the *uterus*, or to bring the life of the patient into hazard, by its violence or continuance; then the aſſiſtance given muſt depend upon the progreſs which the labour has made, and the ſituation of the child, whether it ſhall be turned,

turned, as in preternatural preſentations, or delivered with the forceps; or when neither of theſe are practicable, and the exigency of the caſe juſtifies the operation, by leſſening the head of the child; that is, the life of the parent muſt at all events, if poſſible, be preſerved.

Hemorrhages of this kind are alſo ſometimes combined with preternatural preſentations of the child. Then little more will be required than what may be neceſſary on account of the preſentation, except that it be ſooner decided and more ſpeedily performed; remembering ever, that all operations in midwifery are intended to remove, leſſen, or prevent natural or adventitious danger, and not to add to that which before exiſted.

This method of proceeding, that of accelerating the labour by breaking the membranes, recommended in this kind of hemorrhage, ſeldom fails to anſwer the intention of moderating or ſuppreſſing the diſcharge, and of promoting the labour in ſuch a manner, as to remove the danger. The only inconvenience to be apprehended is, that if the hemorrhage ſhould continue in ſuch a degree, as to occaſion the neceſſity of artificial delivery, the operation would be rendered more difficult on

account of the previous diſcharge of the waters. But in reply to this objection it may be obſerved, that if the *uterus* ſhould contract round the body of the child, with ſo much force as to prevent the introduction of the hand to turn the child, that it will probably be expelled without any farther aſſiſtance, if we wait patiently for the return of the pains, which we may ſafely do when the hemorrhage is ſtayed. But if in common caſes there be not ſufficient force exerted by the *uterus* for the expulſion of the child, then there will be no great difficulty in paſſing the hand into the *uterus*. It muſt however be acknowledged that this is ſometimes amongſt the caſes for which no preciſe rule can be laid down, and in which the practitioner muſt act according to his own eſtimate of the danger and difficulty.

SECTION V.

It is often a mortifying reflection, whilſt we are conducting a patient through a labour rendered uncommonly tedious by the inactivity or irregular action of the *uterus*, that we can foreſee after the birth of the child, an unfavourable ſeparation of the *placenta*, which cannot

cannot be prevented. All that art has dictated to be done, in this caſe, is to ſuffer the body of the child to be wholly expelled by the action of the *uterus*, after the head is born; or in ſome caſes rather to retard its final expulſion, than to uſe any force or hurry in extracting it. Yet no method, nor any dexterity will be ſufficient in all caſes to prevent, after the birth of the child, a troubleſome, and ſometimes a dangerous hemorrhage, the proper management of which, often requires as acute an intelligence, and as determined a conduct, as any circumſtance which relates to the birth of the child. As the powers of the *uterus* or of the conſtitution are ſometimes not exerted, or fail to anſwer the purpoſe, and as no woman can be properly or ſafely left till the *placenta* is excluded, it is neceſſary to conſider this ſubject in a full and explicit manner.

From a review of what has been ſaid on the management of the *placenta* by *Hippocrates*, or in the writings contained in his works, it appears not to have been the general cuſtom to divide the *funis* before the *placenta* was expelled; that if this was retained beyond the common time, no means, or but very gentle ones, were uſed for the purpoſe of bringing

it away; and in caſes of its retention, it was uſual to introduce medicated ſubſtances into the *vagina*, and to give hyſteric medicines for the purpoſe of favouring its expulſion, which might happen on the fourth or fifth day, when it was in a putrid ſtate. The introduction of the hand into the *uterus* for the purpoſe of bringing away a retained *placenta*, had not been adviſed or come into conſideration. Whether this practice was gradually altered, or another haſtily aſſumed, it is impoſſible to ſay; but it is extraordinary that *Celſus* *, without expecting or relying upon the natural efforts made to eject the *placenta*, of which he ſeems indeed to have had no knowledge, ſhould have directed the practitioner to introduce his

* Medicus deinde ſiniſtra manu, leniter trahere umbilicum ita, ne abrumpat, dextraque cum ſequi uſque ad eas, quas Secundas vocant, quod velamentum infantis intus fuit: hiſque ultimis apprehenſis, venulas membranulaſque omnes, eadem ratione manu diducere a vulva, totumque illud extrahere, et, ſi quid intus prætèrea concreti ſanguinis remanet.

CELSUS, Lib. vii. Chap. xxix.

I may be permitted to obſerve, that many of the popular opinions, on medical ſubjects, are *now* the ſame in this country, as thoſe entertained by the Roman writers. It is probable that they were firſt introduced by thoſe Phyſicians and Surgeons who attended the Roman army in Britain, and not acquired by the ſtudy of their writings.

hand into the *uterus*, immediately after the birth of the child, to bring the *placenta* away, together with any *coagula* which might have been formed in the cavity of the *uterus*. Theſe two contrary methods have, in different times and countries, been adopted and recommended by ſucceeding writers, but unfortunately, the practice of *Celſus* prevailed more univerſally. The Arabians, though fond of the ſtudy of medicine, ſeem rather to have preſerved, than improved or extended the learning which they gained, when they plundered the eaſtern part of the Roman Empire. But in the fifteenth century, which may be conſidered as the era of the revival of learning, *Paré* publiſhed, among many valuable works, obſervations on the practice of midwifery, under the title, of the Generation of Man. *Paré**, who had an underſtanding to ſee, and to profit by the errors of others, ſeems deſirous

* Not having the French edition of *Paré*, I tranſcribe the following from the Latin tranſlation. *Molli* ſi fieri poteſt umbilici tractu ; quod ſi ſic non licet, obſtetrix oleo inunctum manum, *blande* in uterum immittat, ducem ſecuta umbilicum, ſicque comprehenſas, ſi adhuc hæreant utero, *leniter* hac et illac concutiat, et ſic concuſſas, *leniter* extrahat ; *non autem violentius* educat, ne unà ſequens uterus procidat.

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of avoiding all extremes; for with an injunction not to leave the *placenta* behind, he recommends, in ſtrong and repeated terms, the neceſſity of extreme caution, not to uſe violence, leſt we ſhould invert, or do other injury to the *uterus*; and there is no doubt but the opinion of ſo eminent a man muſt have had its influence upon the practice and writings of others, particularly of thoſe of his own country. In the latter end of the laſt, and the beginning of this century, *Ruyſch* was in high reputation as an anatomiſt at *Amſterdam*, and he was empowered by the magiſtrates to inſpect and regulate the practice of midwifery throughout that city. *Ruyſch* had great induſtry and abilities; and his purſuits in anatomy, and his office, as preſident of the Obſtetric College, leading him to the knowledge of many bad conſequences which followed the common method of managing the *placenta*, particularly the inverſion of the *uterus*, he laboured the point with great knowledge and ingenuity in many parts of his works; diſcountenanced the practice, and forbad the *placenta* to be extracted haſtily, chooſing clearly to run the hazard of the evils which might follow the imperfections of nature, rather than

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of thoſe which would be incurred by the harſh and violent methods then in uſe *. For many years after the time of *Ruyſch*, the practice of *Celſus* was followed in this country, by ſome even down to this time, but not univerſally; for in a large manuſcript, written on the ſubject of midwifery by Dr. *Percival Willoughby*, Phyſician at *Derby*, in the time of the Civil War, a copy of which came into my poſſeſſion by the kindneſs of my very able and intelligent friend, Dr. *Kirkland*, there is this obſervation; *the afterbirthe oft cometh of itſelfe, yet it is not amiſſe to aſſiſt nature for the producing of it. There bee ſome midwiues, that* never *offer to fetch the afterbirthe, but ſuffer nature to expell it, and their women have done well.* The

* Prudentius ergo relinquere placentam, donec natura hanc ſeparat, aut donec laxata, magiſque libera, manu evellere hanc detur, quam lethali feſtinatione occidere ægram. Putetne quis, boni quid contigiſſe trucidatæ mulieri, quod mortua ſit ſine placenta? Quæ cum illa poterat vixiſſe! RUYSCH. Adverſ. Anat. Dec. Secunda.—Some allowance is to be made for the arguments of *Ruyſch*, which were intended to overſet the bad practice of his time. For if the *placenta* was to be left entirely to nature in all caſes, there would not be wanting many examples of miſchief and fatal conſequences from the very method which he recommends.

practice

practice of extracting the *placenta*, immediately after the birth of the child, was nevertheleſs common in this country. It was taught in the ſecond ſchool of midwifery eſtabliſhed in *London* by *Chapman* in 1733; by Sir *Richard Manningham*, in the public eſtabliſhment ſet on foot for the purpoſe of teaching midwifery, in the *St. James's* Infirmary, in the year 1738; and by *Smellie*, who I think came to *London* in the year 1742. Soon after this time, in 1746, Dr. *William Hunter* began to give lectures in anatomy; as an appendage to which, he added a certain number of lectures, on the anatomy and phyſiology of the gravid *uterus*, interſperſed with many practical obſervations. With a mind compoſed and finely turned for obſervation, with a judgment exceedingly correct, and with unwearied application, Dr. *Hunter* ſoon acquired very high and deſerved reputation; and the great character he eſtabliſhed in the practice of midwifery, for which his perſon and manners were admirably well calculated, and in which he was ſoon and very much engaged, gave a more than uſual authority to what he advanced on the ſubject. *Being an aſſociate

* This account I had from Dr. *Hunter* himſelf.

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with Dr. *Sandys* for the care of the lying-in department in the *Middlesex* Hospital, he proposed to Dr. *Sandys* that they should try the event of leaving the *placenta* to be expelled by the action of the *uterus*, without attempting to give any assistance. After much consideration and some delay, from the dread of censure, they agreed upon the trial; and in the first instance, the *placenta* remained twenty-four hours. No ill consequence however followed; and the trials being repeated with success, it became a very frequent, and almost general rule to leave the *placenta* to be expelled without any assistance. Several untoward and some fatal accidents having followed this practice, it was altered; at least it became necessary to admit many exceptions; and after a variety of changes and observations, I believe we are at length arrived at a state of practice, with regard to the management of the *placenta*, that will with difficulty be improved; a practice founded on common sense and observation, that the *placenta* ought to be, and is generally expelled by the action of the *uterus*, in the same manner as the child; feeling ourselves at liberty, and called upon to assist, only, when that action

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is not equal to the purpoſe, or when dangerous circumſtances demand our aſſiſtance.

In the courſe of ten or twenty minutes after the birth of the child, ſooner or later, according to the condition of the patient at the time of her delivery, the action of the *uterus* returns for the purpoſe of expelling the *placenta* and membranes, which collectively have the common name of ſecundines, or *Afterbirth*. This action is indicated by pains in all reſpects like thoſe the patient had before the child was born, excepting their degree. When theſe pains come on, it is cuſtomary to take hold of the *funis*, by which if we pull ſlightly, the evacuation of the *placenta* out of the *uterus* will be forwarded, without the riſk of doing any kind of injury to the *uterus*. The *placenta* and membranes formed a complete lining to the *uterus*, but the *placenta* coming away firſt, and then the membranes, the whole is uſually expelled in an inverted ſtate; but not always, as the ſeparation of the *placenta* is in ſome caſes ſo ſpeedy, that it drops into the *vagina*, and puſhes the membranes before it. But though the *placenta* is generally expelled in a ſhort time after the birth of the child, and with the

return

return of a few pains, it is ſometimes retained, on account, 1ſt. of the inaction of the *uterus*; or 2d. of the irregular action of the *uterus*; or 3d. of a ſcirrhous adheſion of the *placenta* to the *uterus*. It may be retained beyond the uſual time, without any hemorrhage, but whenever there is a diſcharge of blood, the whole or a portion of it muſt have been previouſly ſeparated; and the hemorrhage may continue, or increaſe, or ceaſe and return in theſe caſes, till the *placenta* is extracted or expelled. Every diſcharge of blood at that time, properly ſpeaking, is an hemorrhage, but to this term, together with the other parts of the definition, one annexes the idea of ſuch a loſs of blood, as, by its continuance or degree, may be apprehended to occaſion danger.

A very long continued, and ſtrenuous exertion of all the powers of the conſtitution, is often required for the expulſion of the child. Theſe powers, though generally adequate to that effect, ſometimes fail before it is accompliſhed. But experience having ſhewn, that difficulties, to our apprehenſion inſurmountable, are to be overcome by the natural efforts, both reaſon and humanity diſcourage all haſty

determinations to purſue ſuch meaſures, as may affect the ſafety of the mother or the child. But as there is a leaven of imperfection in all human actions, animal as well as moral, we may ſometimes be led, by the moſt commendable motives, to defer that aſſiſtance, which any particular caſe may require, ſo long, that after the birth of the child the patient may be in ſuch an exhauſted ſtate, and the *uterus* ſo completely diveſted of all power of farther action, that it is neither diſpoſed nor able to ſeparate or eject the *placenta*; and ſhe is ſcarce able to ſupport the neceſſary conſequences of her delivery. The mere debility of the patient, is therefore often a reaſon why we ought to wait, without making any attempts to haſten the ſeparation or extraction of the *placenta*; as an immediate ſeparation, natural or artificial, would be an addition to the danger which ſhe was before in. Sometimes alſo, when a labour has gone on with great activity, there is, from the moment of the expulſion of the child, a total inaction of the *uterus*, for which no reaſon can be aſſigned. But if the time which paſſes between the birth of the child and the expulſion of the *placenta*, be employed in compoſing the pa-

tient's mind, in cooling her when overheated, or in recovering her when much fatigued and wearied with the preceding circumſtances, in ſhort, in reſtoring her to her natural ſtate, it generally happens, and we may reaſonably expect the action of the *uterus* to return, and make its efforts to throw off the *placenta* in the uſual manner, though more time may be required. But during this time of waiting, ſhould an hemorrhage come on, we muſt apply ourſelves to the uſe of thoſe means, by which the ſeparation and excluſion of the *placenta* may be forwarded; there being as juſtifiable a reaſon for the removal of the *placenta*, in a caſe of hemorrhage equally urgent, when that is retained, as there was for the extraction of the child with the ſame circumſtance. But every diſcharge of blood is not a ſufficient reaſon for the introduction of the hand, or for the artificial extraction of the *placenta*, as ſome degree of hemorrhage very frequently precedes and accompanies both its ſeparation and excluſion. We muſt therefore form a judgment of the neceſſity of extracting the *placenta*, by the opinion we entertain of the hemorrhage, being ſo profuſe as to endanger the life of the patient by its continu-

ance or probable increaſe. Sometimes alſo *coagula* are diſcharged in conſiderable quantities, which from their appearance may be ſuſpected to have been formed long before labour, by an effuſion of blood into the *ovum*, from the rupture of ſome veſſel which ran over the ſurface of the *placenta*; which *coagula* do not indicate any danger. It is not exactly in order, but it muſt nevertheleſs be obſerved in this place, that when I have been attending women who were prone to violent hemorrhages after the birth of the child in former labours, I have made it a rule to keep them in an erect poſition till the waters were diſcharged by the ſpontaneous breaking of the membranes, and the child was on the point of being born. By this method it appeared clearly to me, that the *uterus* acted more favourably, the *placenta* came away more naturally, and the quantity of blood loſt was very much diminiſhed.

When the *placenta* is not ſeparated or ejected in due time after the birth of the child, with or without an hemorrhage, means muſt be uſed for the purpoſe of its excluſion or extraction. If there be no hemorrhage, or none of importance, it is commonly better to wait than to interfere, becauſe ſlight attempts to extract the

placenta

placenta may be juſt ſufficient to occaſion or increaſe an hemorrhage, and not equal to the extraction of the *placenta*; and this conduct is a very frequent cauſe of a degree of hemorrhage which lays us under the neceſſity of introducing the hand into the *uterus*, in order to bring away the *placenta*, which operation would not otherwiſe have been required. But after a certain time, which is too indefinite a term if we were authoriſed to uſe one more preciſe, but certainly not within one hour after the birth of the child, unleſs we are compelled by hemorrhage or ſome untoward ſymptom, gentle means are to be uſed to favour its excluſion; and the moſt gentle muſt be firſt tried, as by giving ſome actually warm and temperate cordial, which may renew the diſpoſition in the *uterus* to act, by change of poſition, or, by making a moderate preſſure with the expanded hand upon the *abdomen* to aid the action of the *uterus*; or by pulling moderately by the *funis*, to try whether it is diſpoſed to come away. As the term *moderate* has no preciſe meaning, and what I call violent, may by another be called moderate, we will ſay that ſo much force is on no account to be uſed in pulling by the *funis*, as to incur the riſque of tearing it from the *placenta*, or of inverting the *uterus*;

and that it is better to make it a general rule to prefer the introduction of the hand into the *uterus*, to ſeparate and bring the *placenta* away, than to have the chance of either of thoſe accidents. It is however to be obſerved, that when the hand is introduced for that purpoſe, there is not always a neceſſity of acting; for the very irritation thereby occaſioned, will often excite the *uterus* to its natural action, and the *placenta* be both ſeparated and expelled, as will be recollected by every one accuſtomed to this operation. But the hand ought never, on any account, to be introduced into the *uterus*, except as a matter of neceſſity, and then with the utmoſt care and tenderneſs; and when introduced, ſhould never be withdrawn, till the end for which it was introduced is, if poſſible, accompliſhed.

To promote the ſeparation and excluſion of the *placenta*, the application of the half-cloſed hand to the *abdomen*, ſo as to make a moderate preſſure, is ſometimes of uſe by aiding the *uterus* in its contraction; but this aſſiſtance cannot be given in the worſt caſes, that is, when the *uterus* is not at all contracted, or contracted irregularly. The reſpiration of the patient has alſo an evident effect upon the

uterus

uterus and *placenta*, of which we ſhall be ſenſible, if we retain the *funis* in our hand, in the act of expiration, when it deſcends, and in the act of inſpiration, when it is ſomewhat retracted. By ſupporting the funis with juſt ſo much force as will prevent its retraction in the act of inſpiration, we ſhall ſoon be ſenſible that the *funis* is lengthened, which will prove that the *placenta* is deſcending; and the purpoſe of extracting the *placenta* will be completed, without the uſe of any other means: but this method requires much time and attention. Sometimes alſo the excluſion of a deſcending *placenta* may be favoured by preſſing it, with one finger carried along the *funis*, towards the *ſacrum*, in ſuch a manner, as to bring down an edge inſtead of the whole maſs.

In all caſes of dangerous hemorrhage, when the *placenta* is retained, it was ſaid to be equally juſtifiable and neceſſary to extract the *placenta*, as it was to deliver the woman of her child under the ſame circumſtances. But this general rule requires explanation, and ſome ſkill in the application. When there is a preſent hemorrhage, ſo important as by its violence or continuance to threaten danger, the *placenta* ought to be immediately extracted. This

is not an opinion, but a rule of practice. But if there has already been an hemorrhage, ſo profuſe as to occaſion danger, and the common conſequences of loſs of blood, as fainting and the like, have already followed; the *placenta* ought not then to be extracted, nor the patient diſturbed, nor any change made, till ſhe is revived from her extreme debility; as the danger would be thereby increaſed, and the patient die, during or immediately after the operation, as I have ſeen and known in too many inſtances. In other words, the extraction of the *placenta* is to be conſidered as a remedy for a preſent or an apprehended dangerous hemorrhage, but not for one which has already happened.

In caſes alſo in which there is no hemorrhage, if the *placenta* is not ejected, or if no efforts are made by the *uterus* for that purpoſe, a time will come, when we muſt determine upon its extraction, or leave it behind; and the latter being unſafe and unjuſtifiable, the mere retention will be ſufficient authority for us to extract it. Upon this point there can be no diſpute, except as to the time, and we will ſay, leaving the matter ſomewhat at large, that if the *placenta* is not expelled at the end of two hours from the birth of the child, that

it ought to be extracted. I can however recollect many examples of a retained *placenta*, without a hemorrhage, to which I have been called at any time within twelve or even twenty-four hours after the birth of the child, in which the *placenta* has been very eaſily managed.

Whenever we have determined upon the neceſſity and propriety of extracting the *placenta* by art, we muſt proceed in this manner. The patient being placed in a convenient poſition, as when we deliver with the *forceps* or *vectis*, and every thing in order, the *funis*, which is our guide, is to be held with a moderate degree of tightneſs. The external parts are uſually in ſuch a ſtate as not to require any dilatation; but if that ſhould be neceſſary, it muſt be done tenderly, and in the manner before directed with the right hand or left, as may be found moſt convenient. When the hand is in the *vagina*, the *funis* is to be ſlowly followed into the *uterus*, which though in a ſtate of total inaction before, may then be irritated to a ſufficient degree of action, to ſeparate and expel the *placenta*, without any farther aſſiſtance on our part. But if the ſpontaneous action of the *uterus* ſhould not come on, we muſt proceed with the hand to the *placenta*, which may

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either adhere with its whole ſurface, or it may be partly, or even wholly ſeparated and lying looſe in the cavity of the *uterus*. Should there be a total adheſion, we muſt ſearch for the edge of the *placenta*, on the outſide of the membranes, cautiouſly diſtinguiſhing between the *placenta* and the *uterus*. When the edge of the *placenta* is raiſed, the further ſeparation muſt be made with the blunt ends of the fingers, and the cloſer and firmer the adheſion, the ſlower the ſeparation is to be made; not proceeding raſhly or affecting dexterity, but giving our heads time to guide our hands, as if the operation was performed under inſpection. By ſlow proceeding, and by demurring a ſhort time if we meet with more than ordinary difficulty, the ſeparation will be perfected; or, when the greater portion is looſened, if we graſp it ſlightly in the hand, and bend it backwards, the remaining part will often peel from the *uterus*, without trouble. Whether on the introduction of the hand we found the *placenta* ſeparated, or whether it was neceſſary to ſeparate it, we are not to extract it immediately, but to wait till the *uterus* begins to contract, and then to withdraw the hand including the *placenta*,

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more quickly or ſlowly, according to the degree of contraction; for the hemorrhage may not be occaſioned becauſe the *placenta* was retained, but becauſe its retention, or ſome other cauſe, hindered the contraction of the *uterus*. If there be no action of the *uterus* whatever, it is of ſervice to throw the fingers gently backwards againſt the ſides or *fundus* of the *uterus*, to irritate and bring on its action, previous to our withdrawing our hand. When the *uterus* is perceived to act, then gently withdraw the hand, till the *placenta* is brought into the *vagina*. Whatever motive induced us to introduce the hand to ſeparate the *placenta*, when it is brought into the *vagina*, it ought to be ſuffered to abide there, till the patient is compoſed, and recovered from her fatigue, and till the *uterus* has had time to contract in ſuch a manner, as to prevent the return of the hemorrhage, at leaſt in a dangerous way. For many years I have made it a rule to leave the *placenta*, naturally or artificially ſeparated, to abide in the *vagina* one hour, after it was voided out of the cavity of the *uterus*; and I am convinced by this method, there is an infinitely leſs chance of an enſuing hemorrhage, on its coming or being brought away, and

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leſs afterpain. For the blood diſcharged in conſequence of the ſeparation of the *placenta*, uſually forms into *coagula*, which are collected in the membranes as in a net, and the *uterus* is left perfectly void of any thing which can become the cauſe of any conſiderable pain.

With regard to thoſe caſes in which the *placenta* is retained by the irregular action of the *uterus*, there is generally ſome degree of hemorrhage, and often a very profuſe one; tho' ſometimes there is no diſcharge, or none of importance, only a retention of the *placenta* beyond the common time of its expulſion. When all the parts of the *uterus* act with equivalent force at the ſame time, the united action contributes to the expulſion of whatever may be contained in its cavity. But if one part, the inferior for inſtance, ſhould act, when the other is at reſt, a contrary effect might be produced. The forms which the *uterus* may aſſume in conſequence of this irregular action, are innumerable, but the moſt common is the longitudinal, which is produced when all the parts, except the *fundus*, act; or the hour-glaſs form, when the middle of the *uterus* only acts, by which it is divided as

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it were into two chambers or cavities. When it was the cuſtom to bring away the *placenta* immediately after the birth of the child, two reaſons were aſſigned for the practice; firſt, that it was an extraneous maſs, which became pernicious every moment it remained; and ſecondly, that if not immediately extracted, it would be almoſt impoſſible to bring it away, the *os uteri* cloſing in ſuch a manner, as abſolutely to prevent the introduction of the hand for the purpoſe of extracting it. Both theſe opinions are proved to be groundleſs, for the *placenta* may remain many hours or ſeveral days without doing any miſchief to the *uterus*; and the opinion of the *os uteri* cloſing ſo ſoon after the birth of the child, is without foundation, as that ſeldom or never happens: what has been eſteemed the natural cloſing of the *os uteri*, being in reality an irregular contraction of ſome portion of the *cervix*, from which we are aſſured no harm and little additional difficulty can ariſe*.

When

* Scire enim eſt poſt natum infantem, in utero nullum reperiri tale os ut olim fuerat: ſed ita omnino ſe res habet, ut in burſa nummaria, quæ loris tranſmiſſis conſtricta, rugo-

ſum

When the *uterus* is contracted thus irregularly, as the *placenta* cannot be expelled, it muſt be extracted by art, whenever, on account of a hemorrhage, or of the time that is paſt, it may be thought expedient or neceſſary. There is no way of judging of this kind or degree of contraction, unleſs by the uncertain information we may acquire by the application of the hand to the *abdomen*, till we introduce our hand into the *uterus*. Before this operation it is always proper to try whether the *placenta* may not be diſpoſed to come away by any of the gentle means before recommended. On the failure of theſe, and being fully convinced of the neceſſity, the hand muſt be conducted in the manner before mentioned, till we come to that part which is partially contracted, whether it be at the *cervix*, or in the cavity of the *uterus*. The hand muſt then be reduced into a conical form, in the way directed for the dilatation of the *os uteri*, or external orifice. Should the ſpaſm

ſum os format; laxatis autem hinc vinculis, ubique æque lata eſt expanſa. RUYSCH. Adverſ. Anat. Dec. Secunda.

The tenth chapter of the ſecond Decade is full of uſeful obſervations regarding the management of the *placenta*, given in very honeſt and animated language.

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be in ſuch a degree as to make a perfect cloſure of the *uterus* round the *funis*, one finger muſt be firſt inſinuated along the *funis*, and this being turned with a ſemirotatory motion, will ſoon make room for a ſecond, and ſo on till all the fingers, in a conical form, may be admitted. The dilatation is ſometimes to be made in oppoſition to a very firm contraction, yet it muſt be done ſteadily and reſolutely, though not raſhly or violently. Before the hand is paſſed beyond the contracted part, this muſt be amply dilated, otherwiſe it will clip round the wriſt, and impede the ſubſequent part of the operation. When the contracted part is amply dilated, the hand muſt be carried forwards into what may be called the upper chamber of the *uterus*, in which the *placenta* is contained. Whether this be ſeparated wholly or partially, or be yet adhering, we muſt proceed according to the method before mentioned. Immediately upon the ſeparation of the *placenta*, the hand containing it is to be drawn out of the upper cavity, to that part of the *uterus* which was before ſo cloſely contracted, and held there, till by the preſſure behind, we are ſenſible of the action of the *fundus*. The hand containing

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the *placenta* is then to be withdrawn by ſlow degrees, till it arrives in the *vagina*, where the *placenta* muſt be ſuffered to remain for an hour; or we may wait till it is wholly expelled by the pains, in order to avoid the hazard of a ſubſequent hemorrhage.

When the *placenta* is either expelled by the action of the *uterus*, or extracted by art, it ſhould be a general rule to apply the hand to the *abdomen* afterward, that we may be aſſured the *uterus* is not inverted.

The natural attachment of the *placenta* to the *uterus* is of ſuch a texture and kind, as very readily to admit of ſeparation. But if that part of the *uterus* to which the *placenta* adheres, ſhould be in a ſcirrhous or morbid ſtate, the *placenta* will partake of the diſeaſe. On the examination of the *placentæ* of different women, there are not unfrequently found morbid appearances, ſome being diſpoſed to a putrid, others to a ſcirrhous or cartilaginous ſtate; while in others there is a degree of oſſification in the veſſels, and ſometimes perfect concretions. The adipoſe ſubſtance often found upon the *placenta* in large quantities is not of any importance. The difficulty of the ſeparation will depend partly upon the *placenta* itſelf,

itſelf, and partly upon the ſtate of the *uterus*. When there is found on the introduction of the hand into the *uterus*, an uncommonly firm adheſion of the *placenta*, a perfect ſeparation will be extremely difficult, and perhaps ſometimes impoſſible, without the hazard of doing injury to the *uterus*. There is no ſecurity in theſe caſes, but by taking time in the operation, confiding chiefly in ſlow proceeding, both for the completion of our purpoſe, and the avoidance of miſchief. It has been ſaid that it is more juſtifiable to leave a portion of the *placenta* behind than to continue very ſtrenuous efforts to bring the whole away, as theſe may give unbearable pain, and become the cauſe of immediate or ſubſequent injury. It muſt however be acknowledged that it is always a very deſirable thing, to bring away the *placenta* wholly and perfectly, not only for the ſatisfaction of friends, but for the real good and intereſt of the patient. Even the membranes ſhould be managed with caution, for though a portion or the whole of theſe might be left without danger, they occaſion a *fætor* in the diſcharges, and often ſo much pain as to create a ſuſpicion of diſeaſe. But without meaning to give authority to

negligence, or miſconduct, to raſhneſs, or violence, we may ſuppoſe a ſituation in which we muſt ſubmit to ſome evil, and in which all that is in our power is, to chooſe the leaſt. There can then be no doubt but that it is a leſs evil to leave a portion of the *placenta* behind, than to do any poſitive injury to the *uterus*, in ſtriving to bring it away. For it has been found when a portion of the *placenta* was left behind, that the hemorrhage has ceaſed and not returned, and that this portion far ſooner decays, or is more readily digeſted or expelled, than the whole. I once ſaw an inſtance of a whole *placenta* retained till the fifteenth day after the birth of the child, and then expelled with little ſigns of putrefaction except upon the membranes, the whole ſurface, which had adhered, exhibiting marks of a freſh ſeparation. The recovery of this patient was very fortunate, but I have ſeen ſeveral other caſes of the ſame kind terminate fatally. It is a concluſion generally made, though not always warranted, that if a woman dies with a portion of the *placenta* retained, that her death ought to be attributed to it; yet it ſhould be conſidered that there may have been previous diſeaſe in the *uterus*, and that the event may have been

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really occaſioned by violent, though unſucceſsful attempts to bring it away, and not by the retention. Sometimes the danger of theſe caſes is known to the practitioner only, who is obliged to act according to exigencies, for which he may not be particularly prepared; but if he has before acquired a juſt knowledge of the principles of the art, determines not raſhly, and proceeds ſlowly, he will not do any thing for which he can be juſtly blamed, and will generally be ſucceſsful.

The *funis* is commonly inſerted about one third of its ſpace from the edge of the *placenta*, ſometimes in the centre, and now and then the veſſels branch off before it reaches the *placenta*; and the eaſe or difficulty with which this may be brought away, ſomewhat depends upon the inſertion of the *funis*. The chance alſo of tearing the *funis* away reſts chiefly upon the force uſed to extract the *placenta* by it, yet if it is inſerted fully into the *placenta*, and is in a ſound ſtate, the force which it can bear, is infinitely greater than can be exerted without the hazard of inverting or doing other injury to the *uterus*. But if the *funis* is in a putrid ſtate, or if the veſſels branch off too ſoon, it may be torn away with a very ſmall

degree of force; and in the latter caſe it can only ſuſtain what a ſingle branch of the veſſels can bear. Hence in a cautious extraction of the *placenta*, one is ſometimes ſenſible of a ſudden yielding or jerk in the *funis*, which, if the ſame force be continued, will be repeated, till at length the *funis* comes away, and the *placenta* is left in the *uterus*. Great circumſpection and ſlow proceeding will uſually prevent this accident, but if it ſhould happen in our own practice, or we ſhould be called to aſſiſt others, we muſt determine whether the caſe will allow of further waiting, or whether there be a neceſſity of bringing the *placenta* away immediately, by introducing the hand into the *uterus*. If there ſhould be occaſion for the latter method, which, if conſiſtent with the ſafety of the patient, ought always to be avoided, we may conſider the inconveniencies produced by the want of the *funis*, which, when it remains, ſerves as a guide to conduct the hand, helps moreover to keep the *uterus* ſteady, and to bring down the *placenta* when ſeparated. The former of theſe will not be of much conſequence to a perſon accuſtomed to the operation, and the latter will be leſſened, if an aſſiſtant makes a judicious preſſure

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upon the *abdomen* with both his hands. Some diſadvantage will neceſſarily ariſe from this accident, we ſhould therefore be careful to avoid it when in our power; but though a little embarraſſment may be occaſioned, the importance of the diſadvantages produced by the ſeparation of the *funis*, has, I believe, been much over-rated.

SECTION VI.

The hemorrhage which follows the expulſion or extraction of the *placenta*, may be a continuation of that which came on before the birth of the child, or between the birth of the child and the expulſion of the *placenta*; or it may be unconnected with either of theſe, but merely a conſequence of the ſeparation and excluſion of the *placenta*. This has uſually been deſcribed by writers as an immoderate flux of the *lochia*, but is with more propriety arranged under the claſs of hemorrhages; and though not ſo generally dangerous as either of the varieties laſt deſcribed, it is often alarm-

ing, and, under particular circumſtances, has ſometimes proved fatal.

The diſcharge of blood which follows the ſeparation and excluſion of the *placenta*, varies in different women, being in ſome very ſmall, and in others there is, after every act of parturition, a diſpoſition to a very profuſe hemorrhage, which ſuddenly reduces the patient into a frightful ſtate. It is a popular opinion, that the greater theſe diſcharges are at the time of delivery, the ſafer women will be, from the chance of diſeaſes during childbed; and this opinion very much leſſens the terror of the bye-ſtanders, when diſcharges come on with great profuſion. But the practitioner who knows the poſſible effect of ſudden and violent hemorrhages at this time, eſpecially in patients who were before much weakened, cannot feel at his eaſe, though ſupported by the general experience of their being very ſeldom dangerous. Nor is the opinion true, that the greater the diſcharge, the ſafer the patient will be; for whatever weakens the patient extremely, muſt render her more liable to diſeaſes of various kinds in childbed.

It has often been a matter of great ſurpriſe to me, when I have ſeen a patient bear a ſudden

den diſcharge of an enormous quantity of blood, on the coming away of the *placenta*, without fainting or ſhewing any ſigns of the common conſequences of great loſs of blood; but it may be explained in this manner. Should every drop of blood which circulates in the *uterus*, be diſcharged in an inſtant, it would be of no immediate conſequence to the patient, the very exiſtence of the *uterus* not being neceſſary for her life. When all this blood is diſcharged, if the *uterus* ſhould contract ſpeedily, ſo that the veſſels ſhould be reduced to a ſmall ſize, there would not be a continuance or return of the hemorrhage, and the patient would exhibit no ſigns of ſuffering from that which had happened. But after the diſcharge of the blood contained in the veſſels of the *uterus*, as before ſtated, if there ſhould be no contraction of the *uterus*, then the veſſels remaining of the ſame ſize, and the communication between the body and *uterus* being preſerved open, as in pregnancy; the veſſels of the *uterus* would be repleniſhed from the conſtitution, and the ſame effect would be produced in the patient, as if it were really loſt. Should then this ſecond quantity of blood ſupplied to the *uterus* be

diſcharged, and another be claimed from the conſtitution, then, according to the quantity demanded, and the number of times the demand was made, would of courſe be the danger of the patient. In ſome caſes the hemorrhage does not follow the extraction of the *placenta* immediately, but comes on after a certain time; and then it may be ſuppoſed that the communication between the body and the *uterus* was cloſed, but not being confirmed, was opened again by ſome effort too ſoon made, or more violent than the ſituation of the patient could endure. Theſe circumſtances point out very clearly the neceſſity, in the management of uterine hemorrhages, of ever remembering, that the danger attending them is leſſened, and the ſafety of the patient ſecured, only, by a proper contraction of the *uterus*. Hence in hemorrhages of this kind, however vehement, the acceſſion of uterine pain immediately proclaims that the danger is paſt.

With reſpect to this variety of hemorrhage, two things are to be conſidered; 1ſt. by what method or means it is to be prevented; 2d. how it ſhall be remedied, when it does exiſt.

When

When the hemorrhage depends upon the imperfect or irregular action of the *uterus*, excited for the end of expelling the *placenta*, it may not be in our power to regulate theſe. But as far as relates to the force uſed in the ſeparation, or hurry in the extraction of the *placenta*, we may always act reaſonably and calmly, and proper conduct will generally inſure ſucceſs. It was before adviſed to leave the *placenta* in the *vagina* for one hour after its excluſion from the *uterus*, in common caſes, unleſs it were ſooner expelled by the natural efforts. Objections have been raiſed to this, becauſe it confines the patient to an uncomfortable ſituation for a long time; and it is ſaid to be cruel to leave her friends under anxiety, with the delivery incomplete, when we have the power of readily bringing the *placenta* away. Now, if we are ſpeaking of a caſe of real or preſumed danger, the argument of uncomfortableneſs is not to be put in competition with a conduct, on which the increaſe or diminution of that danger may turn; nor does the cenſure of a good action make it degenerate into a crime, or convert that, which is in its own nature honeſt and intelligent, to cruelty. On the contrary, it

may

may be the height of tenderneſs in me to encourage the patient to bear a ſmall degree of preſent pain or inconvenience, by which her ſafety is inſured, rather than by an officious interference, to add to the hazard, by complying with the ſolicitation of thoſe who are not qualified to judge. When the *placenta* is brought into the *vagina*, we have then the abſolute command of it at our pleaſure; but the very eaſe with which it could be brought away, is often a good reaſon why it ſhould be ſuffered to abide, as it proves that there is no natural contraction of the parts for its excluſion. In what other manner a *placenta* remaining in the *vagina* may contribute to the prevention of an hemorrhage, except that by the irritation made upon the *os uteri*, it urges the *uterus* to act, it may be hard to ſay; though I am convinced of the benefit thence derived. Nor have I been ſatisfied with leaving it one hour in that ſituation, when attending patients who have been prone to an hemorrhage in former labours, but have prolonged the time to two or more hours, unleſs it ſhould be in the mean while ejected by the pains, which proving the action of the *uterus*, would give an aſſurance of ſafety. Moreover, after waiting

ing ſo long, I withdraw the *placenta* very gently, not increaſing the force on account of every little obſtacle, but demurring and waiting longer. Even after the *placenta* is wholly excluded, if the membranes ſtick, I wait yet longer, and proceed more ſlowly, knowing that a few minutes occaſion a difference between the loſs of one, and ſeven or eight ounces of blood, which ſometimes may be of the utmoſt importance.

When we have the management, or are called to caſes of preceding or preſent hemorrhage, the *placenta* being extracted, it ſhould be an unfailing general rule to examine the patient, to be ſure that the *uterus* is not inverted; or perhaps by ſlight irritation about the *os uteri*, to bring on its action. Then all the means before recommended for the ſuppreſſion of hemorrhages, are to be put in practice, ſpeedily and ſtrenuouſly; and we are alſo to endeavour to promote the action of the *uterus*, if at reſt, or to ſtrengthen it if feeble, by moderate preſſure upon the *abdomen* with a very cold hand.

On the application of the hand to the *abdomen*, it is ſometimes clear, from the volume of the *uterus*, though contracted, that there

are large *coagula* contained in its cavity. We have been directed by gentle dilatation of the *os uteri*, to give theſe an opportunity of coming away, or even to introduce the hand for that purpoſe, as by their continuance, they are ſuppoſed to keep up the diſtention of the *uterus*, and to occaſion a continuance of the hemorrhage. This method may anſwer the purpoſe for which it is recommended, but it is not neceſſary; for I have never practiſed it, nor ever troubled myſelf with the ſtate of the *uterus*, unleſs it was inverted, after the *placenta* was brought away; but have left whatever *coagula* it contained, to be expelled by its own action.

The fainting which follows hemorrhages was conſidered, as an effect produced, or as a remedy provided for their ſuppreſſion. It was alſo ſaid that the medicines given, or the means uſed, did ſervice, according to the degree of chilneſs they occaſioned, and the ſlackneſs of the circulation which followed. We were cautioned not to remove this faintneſs by the exhibition of cordials, leſt with the return of the circulation, there ſhould be a renewal of the hemorrhage; at leaſt till we had given ſufficient time for the contraction of the veſſels and other circumſtances to take

place, before the patient revived. But when the patient becomes cold, and we preſume thoſe effects are produced, nouriſhment and mild cordials muſt be given in ſmall quantities often repeated*. The *Julap. Vitæ* of *Bates*, which is compoſed of warm wine and the yelks of eggs, with the addition of a few drops of oil of cinnamon, is an admirable medicine on theſe occaſions; but I muſt confeſs that the beſt and moſt general cordials are very cold air and cold water; and the ſtrongeſt ſtimulant in extreme caſes, is to ſprinkle the face repeatedly with cold water, which the patient, ſenſible of the benefit ſhe receives, would often require to be done with great earneſtneſs.

On the ſame ground on which theſe medicines are adviſed, opiates, though in ſome caſes they may prevent, were eſteemed improper, during the continuance of an hemorrhage, and they certainly ought not to be given too freely when the patient is reduced

* *Chapman* mentions a compliment paid him by Sir *Richard Blackmore*, in a caſe of this kind, which ſhews great accuracy of diſtinction. If, ſaid Sir *Richard*, you had uſed leſs cold applications, this patient would have died from the loſs of blood; and if you had continued them longer, you would have extinguiſhed the powers of life.

to a ſtate of great weakneſs. Above all, ſhe is not to be diſturbed, or raiſed to an erect poſition, but the ſmall portion of the principle of life is to be carefully huſbanded; and there is often a power of living in a quieſcent ſtate, or in a recumbent poſition, when the patient would be deſtroyed by the leaſt exertion. Whether an hour or a day be required for this purpoſe, after a profuſe hemorrhage, the patient ought not to be raiſed, or even moved, before ſhe is quite revived, and then with the utmoſt care and circumſpection; and through want of attention to this matter, ſudden death has ſometimes happened, when we were not ſuſpicious of danger. When patients have been reduced to a very low ſtate, I do not hold it proper either haſtily to repleniſh the emptied veſſels or to ſtimulate them to ſtrong action.

It is laſtly to be obſerved, that in the violent and pertinacious head-ache, and other nervous complaints, which follow profuſe hemorrhages, and ſometimes continue for many weeks, it will be of great ſervice to procure two or three ſtools every day previous to the exhibition of the *bark*, or other tonic medicines, though the patient be pale and in a weak

ſtate. For the relief of the head-ache, cold applications to the temples, as white of egg mixed with powdered *Bay* Salt, or crude *Sal Ammoniac*, keeping the feet and legs warm, will ſometimes alſo be very uſeful.

Theſe obſervations I have written with great pleaſure, hoping they may be of ſervice; and I may recommend the method founded on them with ſome confidence, having in practice ſeen innumerable inſtances of its good effects.

ANOMALOUS, OR COMPLEX LABOURS.

ORDER II.

LABOURS ATTENDED WITH CONVULSIONS.

SECTION I.

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

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

which has been moſt generally 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 her impending danger. But according to the ſecond, it being preſumed that the convulſions appertained to the labour as ſymptoms, this, if natural in other reſpects, 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 quod cætera ſanus, relinqui poteſt. *Roederer*, Element. Art. Obſteric. Aphoriſm. 679.

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 intervals between the

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

Epilepſia—Muſculorum convulſio cum ſopore. CULLEN.

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

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

convulſions,

convulſions, which are of ſhorter or longer duration according to the advancement of labour, evidently depend upon the action of the *uterus*, and when they abate, the patients ſometimes ſeem as if they were awakened by ſurpriſe, and ſoon recover the uſe of their faculties; but, at others, they lie in the intervals 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 the 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.

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. *Jenner*.

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 may alſo be immediate cauſes capable of producing theſe convulſions in any ſituation. It has alſo been obſerved, that women are far more liable to puerperal convulſions in certain years and ſeaſons than in others.

The female conſtitution becomes infinitely more irritable than uſual 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 irritablity, when not exceſſive, and only affecting in one peculiar manner, parts not eſſential to the economy of the conſtitution at large, is ſo far from being injurious, that it proves eventually ſalutary 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 muſt often 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

by education, 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 the hiſtory of 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 con-

* 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.

vulſions, 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 tendency to labour has produced convulſions, which have continued till the child was born, or after its birth, unleſs 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

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 that 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 morbid irritability, and of courſe every cauſe capable of diſturbing that part beyond a certain degree,

* 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.

or

or in an unnatural manner, may affect the whole frame, according to the kind and degree of the original affection, or according to the previous diſpoſition. Yet all the parts of the *uterus* do not appear equally 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 often 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 that part in the courſe of labour, when it is unuſually rigid; or with an increaſed degree of irritability occaſioned by inflammation †.

It

* 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

It has been preſumed, that the preſſure made by the expanded *uterus* upon the deſcending 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 women of plethoric habits were univerſally leſs ſubject to convulſions of this kind than the feeble and irritable, 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

caſe of convulſions that I have ſeen, there was evidently, after delivery, a greater or leſs degree of abdominal inflammation.

children,

children without any tendency to 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 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 preg-

nancy, 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 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

* The lady of Captain C. who was at the full period of uterogeſtation, after complaining about twelve hours 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 convulſion; but theſe happen in labour frequently, thought not always, without

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.

I have not known any woman, who had frequent vomitings in the time of labour, fall into convulſions; nor do theſe 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.

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 he uſed, continued for twenty-five minutes, and then ſhe died. Her labour had been very ſlow, but was perfectly natural.

SECTION

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 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, be-

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

ſides 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 exiſt or 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, 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

When theſe ſymptoms have been preceded or 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, or exiſted, patients have been ſometimes wonderfully relieved by the operation of an emetic. 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

* A very ſhort time ago, a lady had many ſevere attacks of this violent pain in the head, in the latter 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.

the cuſtomary means, the warm bath may be adviſed, and from its occaſional 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 medicines of various kinds are uſually given on theſe occaſions, rather with the intention of procuring temporary relief than permanent advantage; and 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,

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

and

and in the occaſional uſe of the warm bath, we have the principal means which medicine affords, 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 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,

* *Mulieri ex partu convulſione tentatæ, ſi febris ſuccedat bonum eſt.*

Hippocrat. Lib. i. de Morbis.

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 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

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 convulſions †.

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

* 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 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.

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; and ſometimes they have increaſed the irritability.

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, 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

peated 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, in

* 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 baſon 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 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 a certain and ſafe method of treating convulſions; further experience convincing me that this often failed. It is however a ſafe remedy;

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

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.

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, or the manner in which they return, and they 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,

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 farther 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

* 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.

think, be juſtified in forming this general rule of practice, ſubject perhaps 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

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 *vectis*; 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

courage to declare his doubt of the propriety of ſpeedy delivery in all caſes of puerperal convulſions. The obſervation 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.

put

put in practice, the rules before 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, and great attention is to be paid to the *placenta*, which, I believe, ſhould not then be haſtily extracted. 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.

ANOMALOUS, OR COMPLEX LABOURS.

ORDER III.

LABOURS WITH TWO, OR MORE CHILDREN.

SECTION I.

THE common order of generation, or the continuance of the particular kinds of animals, according to the properties of each kind, is more frequently invaded by an extenſion than a failure of the principle: inſtances of unuſual increaſe being often found both in animals and vegetables, though theſe inſtances occur more frequently in ſome claſſes than in others.

With reſpect to generation, all animals may be divided into two claſſes, uniparient and multiparient. Of the multiparient the number of young produced at one birth ſeems to be

be indefinite and governed by accidental circumſtances, as the frequent intercourſe with the male, plenty or want of food, and perhaps by the caſual fixture of the firſt conception in the firſt chamber or partition of the *uterus*. It very ſeldom however happens, that animals multiparient by nature bring forth only one *fœtus* at a birth; and perhaps the uniparient do not more frequently bring forth more than one, though in every ſpecies there are exceptions to this general rule. As to the economy of this important end of the animal creation, it would probably be found that the female multiparient animals have no excluſive attachment to any individual male; but that the female uniparient have naturally ſuch an attachment.

In ſome ſpecies of animals, the propenſity to bring forth more than their common number of young, is greater than in others; in ſheep, for inſtance, more frequently than in cows, in theſe than in lions. Climate and ſtate or degree of civiliſation, ſeem to have their influence in this reſpect on human beings; for in the account of the women admitted into the Middleſex Hoſpital in this

city, in 8636 births, there were only ninety-three caſes of twins, and none of a greater number. Of this number there were 3263 boys; 310 were ſtill born, and of this number 180 were boys; and a ſomewhat greater number of the twins were boys. But in the accounts publiſhed by Dr. Clerke of Dublin*, the number of twins was in greater proportion to the births, and there were ſeveral examples of three children.

It has been ſuppoſed that there is a diſpoſition in certain families to this multiplied generation, which may be transferred either by the male or female; but if this be the caſe, there are no tokens by which this diſpoſition would be ſuſpected, either from the form, ſize, ſtrength, or other appearance.

It is not very uſual for women to have twins, though theſe are to common obſervation more frequent in particular years than in others, and it can ſcarcely be doubted but there is ſome relation in thoſe years, between the animal and vegetable creation. In the courſe of more than thirty years I have met with only one inſtance of three

* See Philoſophical Tranſactions for the year

children,

children, and never of more. I have been informed of ſeveral caſes of four children, and there have been publiſhed a few caſes of five children born at one birth, and beyond this number there is no well authenticated caſe upon record.

The ſize of children born at one birth is generally proportionate to their number, and with more than two, women ſeldom go to the full period of uterogeſtation. There muſt of neceſſity be ſomewhat more complex and ſometimes hazardous when there are two or more children than in a ſingle birth, but he who underſtands the proper management of a twin caſe will meet with no difficulty to embarraſs him, how many children ſoever there may be.

SECTION II.

ON THE SIGNS OF TWINS.

1. WOMEN are ſaid to be always of a greater ſize in the advanced ſtate of pregnancy when they are pregnant with twins, than when they have a ſingle child. This is a very uncertain ſign. But if a woman be unuſually large in the early part of pregnancy, and increaſes proportionably to the full period, there is good reaſon for ſuſpecting ſhe will have twins. But as the term *ſize* is indefinite, and what one, not much converſant in ſuch matters, may conſider as large, another may conſider as moderate, there can be no ſurprize if conjectures on this ſubject are often proved to be erroneous.

2. The *abdomen* of women with child is in general uniformly diſtended without any inequality. It ſometimes however happens, that the tendons which form what is called the *linea alba*, which leads from the navel to the

the middle of the *ossa pubis*, being less distensible than the sides of the *abdomen*, which are muscular, divide the *abdomen* as it were into two equal parts by a *raphe* or indentation through its inferior part. This presumed sign of twins is as ancient as the time when the human *uterus*, like that of quadrupeds, was supposed to be divided into *cornua*, a child being thought to be contained in each horn. But as the form of the human *uterus* is now well understood, and known to be equally distended by its contents, whatever the form of the *abdomen* may be, unless it be constrained by external means, less regard is paid to its form than its degree of distention, when we are judging whether it is probable that a woman be pregnant with more than one child.

3. In the course of a labour, sooner or later, according to the strength of the membranes and of the pains, the waters of the *ovum* are discharged at once, by one large, or a repetition of less discharges, when there is only one child. Mention is sometimes made of a second discharge of water, before the birth of the child, as a sign of twins. This second discharge may be occasioned by an imperfect

firſt diſcharge, or by water collected in a conſiderable quantity between the membranes, on the rupture of the ſecond membrane. When however a child is far advanced towards birth, a ſudden diſcharge from a part beyond the child does create a juſt ſuſpicion of there being another child, the membranes of the ſecond breaking by the efforts made to expel the firſt.

4. Extreme ſlowneſs of a labour, which has been conſidered as a ſign of twins, may be produced by a variety of other cauſes, as we have often mentioned, and of courſe this muſt be a very uncertain one. It is true, when there are twins, the labour is almoſt univerſally ſlow, and this ſlowneſs has been not unreaſonably attributed to the great diſtention of the *uterus*.

But our ignorance of the number of children of which a woman may be pregnant, fortunately does not lead to any errors in practice; becauſe if we knew with certainty that there were twins, our conduct with reſpect to the birth of the firſt child ſhould not be altered. It would then be our duty, as at all other times, to wait for the expulſion of the firſt child, if the labour were natural, and any

difference

difference in practice would only relate to the ſecond child.

After the birth of a child, it was formerly the cuſtom to introduce the hand into the *uterus* to bring away the *placenta*, and to aſcertain whether there was another child. This practice has been for many years juſtly held both unneceſſary and pernicious, the *placenta* generally coming away without any, or with very little aſſiſtance, and the application of the hand to the *abdomen* giving full ſatisfaction as to the other intention. By this method we can often feel diſtinctly if there be another child, its limbs and different parts through the integuments of the *abdomen*; but it is generally by its degree of diſtention after the birth of the firſt, that we judge there is a ſecond child. But on this principle I remember being miſtaken in a caſe in which a young woman with her firſt child had an *aſcites* during pregnancy; and the error muſt always be of that kind, to lead us to believe there are twins when there are not, but can never ſuffer us to overlook the caſe, or to leave a child remaining in the *uterus*, which through inattention or ignorance has ſometimes happened.

In twin caſes, priority of birth does not depend on ſuperior ſtrength but on convenience of poſition; that which is neareſt the aperture of the *pelvis* muſt firſt be born, whether it be ſtrong or weak, living or dead. When one child is beyond compariſon ſtrong, and the other feeble, it is not unuſual for the feeble one to be killed, ſo that one may come into the world fat and full grown, and the other may be ſmall, withered, and compreſſed. This diſſimilarity in ſize and appearance was once conſidered as a proof of the obſolete doctrine of ſuperfetation.

SECTION III.

ON THE MANAGEMENT OF TWIN CASES.

It is a conſtant rule to keep patients who have born one child, ignorant of there being another as long as it can poſſibly be done.

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In far the greater number of thoſe twin caſes which have occurred to me in practice, while I have been employed in tying the *funis*, or waiting for a pain to exclude the *placenta*, the patient has complained with more than ordinary eagerneſs. On examination, I have found the ſecond child on the point of being born, or the membranes protruding with great firmneſs, ſo that inſtantly on their breaking, the patient has been delivered with great rapidity, before I had time to give notice to the attendants to prepare for its reception. Of courſe, in labours like theſe, nothing particular could be required to be done, as they terminated with as little trouble as if there had been only a ſingle child. Our intelligence and care can then only be exerciſed on one or other of theſe occaſions.

1. Whatever may be the preſentation of a firſt child, and whatever method it may be found neceſſary to purſue for the delivery of the patient, theſe are to be preciſely the ſame, and there will be no greater difficulty than if there was only a ſingle child. One circumſtance alone demands attention, that if the preſentation of the firſt child be ſuch as to require the child to be turned, when we have

have introduced our hand into the *uterus*, we muſt be careful not to break the membranes of the ſecond child, if they be yet whole; or if we ſhould find them broken, we muſt take care to bring down the feet of the ſame child. In all other reſpects I think I have found this caſe leſs difficult when there were twins.

Should the ſecond child preſent with the breech or inferior extremities, there can be no ſolicitude about the caſe. We muſt act as was before adviſed in ſuch caſes, that is, we muſt wait for the expulſion of the child by the natural efforts if they are excited, or are equal to the effect, or we muſt give aſſiſtance.

The moſt fortunate preſentation of the ſecond child in a twin caſe is certainly with the inferior extremities, becauſe it may in that poſition be born without injury or difficulty, and if aſſiſtance be required, that may be given with ſafety and convenience.

In caſes of the ſecond child preſenting with the head, the ſame obſervations will hold good. That is to ſay, the child will probably be expelled by the natural efforts; or if farther aſſiſtance be requiſite, the forceps or vectis may be conveniently uſed. As to leſſening the head of the child, that

operation

operation cannot poſſibly be needful if there was room for the firſt child to paſs without diminiſhing its bulk.

2dly. When after the birth of the firſt child there is a ſuſpenſion of the pains of labour, and no efforts are made to expel the ſecond child.

The proceſs of the labour of the firſt child will have its effect on that of the ſecond. If we were compelled to make the firſt labour artificial, it might be neceſſary or expedient to deliver the patient of her ſecond on the ſame principle, unleſs the natural efforts ſhould be efficaciouſly made very ſoon after the birth of the firſt child; that is not the ſtatement I now wiſh to make. But when after the birth of the firſt child, expelled in a reaſonable time and by the natural efforts, from ſome cauſe which we cannot comprehend or counteract, no efforts whatever are made for the expulſion of the ſecond child, the patient being as much at her eaſe as if there had been no previous labour. This is a ſtate of great ſolicitude to every perſon careful of his patient and of his own character, as he muſt know ſhe will be liable to unpleaſant, and even to dangerous ſymptoms, till the ſe-

cond is alſo born, and the buſineſs completed. The rules of practice have been on this ſubject not only various, but directly oppoſite. By all the older writers we have been taught that it was neceſſary and proper, if the ſecond labour was not ſpeedily finiſhed, to extract the ſecond child, according to its poſition or the ſituation, by properly adapted artificial means. Others, on the contrary, averſe on every ſafe occaſion, from the interference of art, have adviſed us to wait patiently till the efforts to expel the child were renewed, unleſs ſome ſymptom ſhould ariſe, which ſhould call for more ſpeedy aſſiſtance. The latter appears to be a more judicious principle on which to act in general, and it is ſupported by ſome facts under the eye and direction of very able men, as well as by popular accounts; not to mention the guard it provides againſt the miſconduct of thoſe who may not be competent to give that aſſiſtance which they preſume to be required. Like all other general principles in practice, it requires nice diſtinctions to be made in particular caſes, otherwiſe the cauſe of danger will ſometimes creep on inſidiouſly, and come by ſurpriſe. No perſon can object to waiting for a certain time after the birth

birth of the firſt child, provided there be no preſſing occaſion for his interpoſition, before he determines on the extraction of the ſecond child by art. We can then only debate upon the length of time; and, as we ſay with regard to the *placenta*, it ſhall neither be ſo ſhort as to run the riſk of injuring the patient by hurry, or raſhneſs, nor ſo long as to increaſe the difficulty of delivering the patient, if we ſhould be at length obliged to uſe art for that purpoſe. Without regard to thoſe who are fond of ſpeculative opinions, or the determination of thoſe who are guided by practice alone, I have concluded that we may ſafely, and ought to wait for four hours after the birth of the firſt child, before we deliver the patient by art of the ſecond child; if there be no particular cauſe for delivering her ſooner. By this deciſion we ſhall certainly avoid many unneceſſary operations, without detriment to the patient, without increaſing our own difficulties, or hazarding our reputation.

The proper management of the patient after the birth of the firſt child is very obvious. There is no reaſon for alarming her fears, but the caſe will terminate more favourably by cheering her mind, and ſhe will go

on

on better by being aſſured that aſſiſtance ſhall be given if ſhe ſhould not be delivered naturally before ſome fixed time.

3. When an hemorrhage, convulſions, or other dangerous ſymptom come on, or are threatened, after the birth of the firſt, or before the birth of the ſecond child.

Though there may be many aberrations, every labour has its denomination from the moſt important circumſtance with which it is attended, and ſuch circumſtance principally governs the practice which it may be neceſſary to purſue. Among theſe, hemorrhages and convulſions ſtand in the firſt place, and, whatever may be the nature of a labour in other reſpects, they muſt be of ſecondary conſideration. In twin caſes, however proper or expedient it might be to wait, for a limited time, for the natural expulſion of the ſecond child, the appearance of convulſions, or hemorrhage, or other dangerous ſymptoms, would decide the matter, and put the propriety of waiting any longer out of the queſtion. The patient ought to be ſpeedily delivered by art. But I wiſh to confine the term *ſpeedy* to the determination to deliver; for under all circumſtances, the operation inſti-

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tuted for extracting the child, of whatever kind that may be, ought to be performed deliberately, or we ſhall add to the danger which before exiſted. Whether therefore we are compelled by theſe dangerous appearances, or after waiting a ſpecific time, four hours for inſtance, as was before ſtated, we have determined on the propriety of delivering the patient by art, we will bear in mind this rule, that we never ought to proceed with any degree of hurry or violence, if they can poſſibly be avoided. We will never forget that it is not the mere delivery of a woman which is of value, but as that may free her from the immediate danger ſhe is in, leaving her with the faireſt chance of a perfect recovery, at the ſame time preſerving, ſhould it be poſſible, the life of the child.

SECTION IV.

ON THE MANAGEMENT OF THE PLACENTÆ.

When there are twins, more difficulty is expected, but not always found, in the management of the *placentæ*, than in the case of a single child.

The number of *placentæ*, separate or connected, is usually in proportion to the number of children. Some deviations from this observation have been recorded, a single *placenta* and a single cord having been found in a case of twins, the latter of which branched off into two, after it had departed to some distance from the *placenta*.

When the *placentæ* are separate, that of the first child should not be extracted before the birth of the second child, as a discharge of blood must necessarily follow, and perhaps an hemorrhage.

When the *placentæ* are connected, they usually remain perfectly attached till after the birth of the second child.

When there has been a neceſſity of extracting the ſecond child by art, it is commonly, but not univerſally, neceſſary to extract the *placentæ* alſo by art.

But preſuming that two or more children have been expelled by the natural efforts, and that there is no hemorrhage or other cauſe of alarm, then there appears, and actually is, no more reaſon for giving aſſiſtance to bring away the *placentæ* than if there had been only one child, but we ſafely may and ought to wait for the expulſion of the *placentæ* by the natural efforts.

When we do give aſſiſtance, we muſt recollect that the two *placentæ* ought to be extracted together or in quick ſucceſſion, as the patient would not be freed from the hazard of her ſituation, if one of them was retained. When therefore we pull by the *funes*, we muſt be careful that each ſhall bear an equal ſhare of the force we think it expedient to uſe. Or if it ſhould be neceſſary to extract the *placentæ*, by introducing the hand into the *uterus*, that is not to be withdrawn till both the *placentæ* are looſened and ready to come away. The caſe will then require preciſely the ſame conduct as that of a ſingle

placenta, which we have no occaſion to repeat.

The *uterine* diſcharges are more copious in a caſe of twins than in that of a ſingle child, and they are in general of longer continuance.

ANOMALOUS, OR COMPLEX LABOURS.

ORDER IV.

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 this deſcent of the *funis*; but the rupture of the membranes, with a rapid diſcharge of the waters of the *ovum*, eſpeci ly if they be exceſſive in quantity, has been conſidered as the moſt uſual cauſe. This

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 very often 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 confined to the child. All our attention, and

every

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; or, 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 no pulſation can be perceived in the *funis*, 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.

OF 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 dilatability 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* be deſcended 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 the preſenting part 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

it may be out of the way of the 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*, where it can be more commodiouſly managed.

The late Dr. *Mackenſie*, than whom I have not known a man more intelligent in converſation, or more excellent in practice, informed

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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 encloſed 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*, encloſed 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 afterward 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 the head, till he met with the 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

* Mr. *Croft* informed me that, beſides the two caſes publiſhed in the London Medical Journal for the year 1786, he

cident in the ſucceſs of theſe different methods, but I ſhould believe, whenever it may have been 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.

1. 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 be-

he has met with other caſes in which he has been equally ſucceſsful.

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yond 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 from 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 the pains to act with more vigour, or by encouraging the patient to exert her efforts more ſtrenuouſly towards the concluſion, the child will ſooner be expelled, and its life be preſerved. But no attempts to ſave the child are on any account to be made, but ſuch as can be practiſed without the chance of injuring the mother.

2. When the head of the child preſents, and has advanced far into the *pelvis*, if the pains

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 *vectis*; 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 in this reſpect 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, 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,

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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 when the *funis* is the preſenting part.

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 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.

CHAPTER VII.

ON THE MANAGEMENT OF WOMEN IN CHILDBED.

SECTION I.

In the courſe of the obſervations which have been made on various parts of the practice of midwifery, occaſion hath frequently been taken to mark and to conſider thoſe reſources of the conſtitution, by which preſent evils were remedied and future danger prevented. Theſe reſources are ſo conſpicuous in all the circumſtances attending parturition, and ſo generally found adequate to the effect, that, notwithſtanding the long train of difficulties and diſeaſes we have enumerated, it is a popular, and I believe a true remark, that

the moſt healthful part of the lives of women is that in which they are employed in bearing and nurſing children. As it is however proved, that thoſe proceſſes which are apparently of little importance to the conſtitution, do ſometimes become the cauſes of diſeaſe, ſo it might be expected that thoſe which are of the utmoſt importance, ſhould, though generally exempt from danger, in particular caſes become the cauſes of peculiar accidents and diſeaſes. The laws of a religion, founded on principles of the moſt active benevolence, the feelings of humanity, and the common intereſts of ſociety, will not ſuffer us to be indolent ſpectators of the diſtreſſes of our fellow creatures, from whatever cauſe they may ariſe. But in the ſituation which we are now conſidering, the paſſions of men are deeply intereſted, and there is more than common tenderneſs mixed with our concern for thoſe who ſuffer on theſe occaſions. Much induſtry hath therefore been uſed for the diſcovery and eſtabliſhment of ſome method by which women might be conducted through the ſtate of childbed with the leaſt hazard of exciting thoſe diſeaſes, to which their ſtate was ſuppoſed to render them peculiarly liable;

or

or that ſo much pains ſhould have been taken to diſcover the ſafeſt and moſt efficacious method of curing thoſe diſeaſes when they actually exiſted. The intentions of all may have been commendable, but as the directions given for both theſe purpoſes have been various and contradictory, it is proper to inquire into the principles on which ſuch oppoſite practice has been adviſed, and then we may fix upon that which ſeems moſt reaſonable, or has been found moſt ſucceſsful.

By the earlieſt writers we are taught, that the treatment moſt proper for women in childbed was that which is now termed antiphlogiſtic, and without entering upon a minute detail, we were generally directed to confine every patient lately delivered, to the ſame ſtrict regimen as if ſhe actually had an inflammatory fever, or had received a wound of the moſt dangerous kind.

This abſolute reſtraint from every cuſtomary indulgence, was a mode of ſhewing tenderneſs, of the propriety of which it was difficult to perſuade the majority of people, eſpecially as this was not pretended to be neceſſary with a view to remove any preſent evil, but to prevent a danger which ſel-

dom exiſted. As no general plan of proceeding could poſſibly ſecure the well-doing of every patient, the failure of this ſtrict regimen in any individual caſe, was brought forward as an argument of its general impropriety.

The propoſal of allowing a diet more plentiful in quantity, and more cordial in quality, was founded on the preſumed neceſſity of guarding againſt the conſequences of that weakneſs, which was thought to be occaſioned by the circumſtances attending child-birth. Then was recommended the cuſtom of ſupplying to the conſtitution thoſe deficiencies which might be occaſioned by the uterine diſcharges, by plentiful living, and caudle was diſpenſed with an unſparing hand to remedy every temporary inconvenience.

A conſideration of theſe two different methods of proceeding, will explain all that has been ſaid by different writers, on the doctrine and practice of low and generous living in childbed. There have alſo been recommended a few inſtances, in other methods of treatment inſtituted according to the fancies or opinions of phyſicians who have applied themſelves to this ſubject, but of theſe I ſhall only mention two.

It had been obſerved that fevers of any kind were ſeldom terminated without an increaſed perſpiration or a profuſe ſweating. A fallacious inference was then drawn, that the ſame proceſs by which the conſtitution was freed from a diſeaſe, would, before the formation of ſuch a diſeaſe, become the moſt likely method of preventing it. On this ground the cuſtom of ſweating women for a certain number of days after their delivery was eſtabliſhed, and the greater the degree to which it was carried, and the longer it was continued, the greater ſecurity was preſumed to be given to the patients from the apprehended diſeaſes. Many inconveniencies followed this method of proceeding, eſpecially in checking the natural diſcharges, in reducing the ſtrength, and increaſing the irritability of the patient. But the practice was purſued, neither common ſenſe nor experience having power to extirpate deep rooted prejudice.

It was by ſome believed, that a woman lately delivered ought to be treated as if ſhe had been injured by a concuſſion or violent bruiſe of ſome internal part; and that the means to be adviſed for the relief of preſent inconveniencies, as well as the prevention of

future miſchief, were ſuch as might be proper under ſimilar circumſtances from any other cauſe. There is no occaſion to recapitulate all the means recommended upon this principle; but it may be obſerved that *ſperma ceti*, the moſt popular medicine given to women in childbed at the preſent time, was originally adviſed, becauſe it was eſteemed of ſovereign efficacy in the caſe of an internal bruiſe.

It is remarkable that the different and oppoſite modes of treatment have been enjoined to women in childbed, univerſally, without any diſcrimination of peculiarity of conſtitution, former habits of living, of diſpoſition to certain diſeaſes, or the kind of labour which the patient might have endured; and without any regard to the heat or coldneſs of the climate, or the ſeaſon of the year when the patient might be confined. General as the regulations were, all that was ſuppoſed neceſſary to be done, was to follow one or other of thoſe injunctions implicitly, and whenever a diſeaſe aroſe, it was attributed, often erroneouſly, and ſometimes very unjuſtly, to ſome irregularity or deviation from theſe.

It was obſerved that a ſtate of pregnancy was an altered, but not a morbid ſtate. The

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ſame obſervation may be made with equal propriety and truth of a woman in actual labour, and of women in the ſtate of childbed, which, though ſometimes accompanied with diſeaſes, cannot ſeriouſly be ſuſpected to be of neceſſity connected with them. One moment's conſideration and view of the happy and perfectly ſafe termination of labours in general among the maſs of women in this predicament, muſt convince us to the contrary. Before we therefore fix upon this or that method of treatment, it is worth our trouble to inquire, whether it be neceſſary to eſtabliſh any peculiar method.

When a woman is recently delivered, the attending circumſtances reduce her to the ſtate of a perſon who has had a profuſe evacuation of any other kind. The diſcharge of the waters, the expulſion of the child and of the *placenta*, together with the lochial diſcharge, and the great efforts ſhe may properly have made in the courſe of even a natural labour, muſt neceſſarily make a very great and immediate change in her conſtitution. From what does the change ariſe? from emptineſs and fatigue. Is it poſſible to fix

upon any better method of treatment than what would be judged right and proper under the ſame circumſtances from any other cauſe? Judging from events we certainly cannot, and after ſeeing much practice and trying various methods, I am fully convinced that thoſe patients will fare the beſt, and recover moſt certainly and ſpeedily, by whom the leaſt change from their former habits is made. Some difference of treatment muſt of courſe be required for the delicate and the robuſt, for the nervous and the plethoric, when there has been a long and difficult, or a ſhort and eaſy labour, in a hot or a cold climate, in ſummer or in winter, and in the ſame climate, in particular ſituations. Theſe muſt of courſe be left to the judgment of the medical attendant. But I am convinced that the general principle of making as little change as poſſible, either in diet or any other reſpect, will beſt anſwer his expectations.

Some years ago it was a general cuſtom to bind the *abdomen* very tight immediately after delivery, with the view of aiding the contraction of the integuments, and of preſerving the ſhape of the patient. In ſome countries,

India

India in particular, this is practiſed to a degree that one cannot think of without ſhuddering at the miſchief which muſt neceſſarily be occaſioned. In this country the practice has been very much diſcountenanced as uſeleſs and pernicious, and it is now wholly or nearly laid aſide, till five or ſix days after delivery; when a broad band, daily but very gradually drawn a little tighter, may be applied not only without injury, but with ſome advantage.

One of the firſt, and not an uncommon conſequence of delivery, is faintneſs. This may proceed from any of theſe cauſes, loſs of blood, fatigue of the labour, ſudden emptying of the *abdomen*, and its conſequent changes, or from great agitation of mind. The method to be purſued when it ariſes from the firſt cauſe has been fully conſidered when we ſpoke of uterine hemorrhages, and when it proceeds from other cauſes, wine or ſome other cordial is to be given, and the patient is to be kept perfectly undiſturbed till ſhe recovers. From the dread of any accident happening, I have long made it a general rule to wait with every patient for an hour after her delivery, not chooſing to put confidence in thoſe who

may not be well acquainted with what is neceſſary to be done on extraordinary occaſions.

Sometimes, but very rarely indeed, one of the *labia* becomes ſuddenly and enormouſly enlarged, either towards the concluſion of labour, or immediately after delivery, from an effuſion of blood in the cellular membrane of that part, and in a ſhort ſpace of time the ſkin burſts from the violence of the diſtention. This complaint was firſt deſcribed by Dr. *Macbride** of *Dublin*, and ſince that time I have been called to two inſtances. It occaſions very great pain, but the moſt important part of it is the ſurpriſe it occaſions, eſpecially when it is not well underſtood. But I believe it is void of danger, having never ſeen any ill conſequences from it, or ever found any thing neceſſary to be done, but to wrap the tumefied part in a flannel wrung out of warm water and vinegar, and when the coagula were diſcharged, to dreſs the little ſore with ſome ſoft liniment.

* Medical Obſervations, *London*.—See alſo Medical Commentaries, *Edinburgh*, No. xxi.

Few

Few women paſs through the ſtate of childbed without ſuffering more or leſs pain in the *abdomen*, and this may ariſe from various cauſes.

1. From coagula of blood formed and retained in the cavity of the *uterus*.

When pain ariſes from this cauſe, they are called after-pains *, and they return, though with longer intervals and leſs in degree, in the manner of thoſe of labour, being intended to exclude whatever *coagula* may remain in the cavity of the *uterus*. Women have ſeldom pains from this cauſe with firſt children, and they are ſuppoſed to have them in proportion to the number of children they have had, which is generally true. Very much of this pain may however depend on the manner in which the *placenta* is brought away, for if that be done in a hurry, there will ſometimes be formed many and large coagula; whereas if we wait for its excluſion by the natural action of the *uterus*, the cavity of

* Cum uteri cervix poſt partum ſeſe modicè contrahit, et propterea ſanguinis grumi cum difficultate aliqua prodeunt, doloreſque faciunt quos obſtetrices noſtræ enixus poſteros (after throws) vocant, &c.—See Harvey, page 567.

this gradually leſſens as the *placenta* deſcends.

The ſufferings of women from theſe pains are ſometimes very great, though they prove eventually ſalutary, and if we had it in our power, ſhould not be ſuppreſſed, till the end for which they are excited is anſwered. They may however be ſafely moderated by warm applications to the *abdomen*, and when extremely violent by ſmall doſes of the *Tinctura Opii*, though much clamour hath been raiſed againſt the uſe of this medicine for women in childbed. It will alſo be of ſervice, as ſoon as it can with propriety be done after delivery, to procure one or more ſtools, by an injection or ſome lenient medicine. The freedom from danger prevents all ſolicitude on this account, and we know when the *uterus* is cleared, pains from this cauſe will ceaſe.

2. When the *abdomen* has been greatly diſtended, the integuments, even before delivery, will be tender and often ſlightly inflamed, and the tenderneſs may be increaſed by the labour, and continue after delivery. A warm flannel well ſprinkled with any kind of ſpirit applied over the whole *abdomen*, and occaſionally

ally renewed, is the only thing I have found it neceſſary to do for this complaint.

3. From wind in the bowels.

On the excluſion of the contents of the *uterus*, a conſiderable change takes place in the poſition of many parts contained in the *abdomen*, and from many others the preſſure is wholly taken away. A greater freedom being given to every part, the change for the preſent often gives the ſame uneaſy ſenſation, as wind pent up or rolling in the bowels, though in a ſhort time it is generally removed by the accommodation of the parts to their new ſtate. Should there afterwards be reaſon to attribute the pain in the *abdomen* with which a woman may be troubled to this cauſe, inſtead of giving ſtrong aromatic or heating medicines, it will be proper to procure one or more ſtools by an injection, or ſome lenient purgative, the moſt efficacious and excellent of which is that in common uſe, prepared in the following manner.

℞. Kali Tartariſat. vel Natron. Tartariſat.
Syrup. Roſæ *āā* unciam dimidiam
Infus. Senæ Tartariſat. uncias quatuor
Tinct. ejuſd. drachmas ſex. M.

Capiat cochlearia iij. vel iv. ampla primum, et poſt tres horas cochlearia duo ſecundis horis donec alvus ſoluta erit.

After

After the operation an opiate in any proper vehicle may be given, and the patient will be free from the complaint.

4. From ſpaſm.

After delivery the *uterus* itſelf, or its appendages, or any of the contents of the *abdomen*, may be affected from this cauſe, with pain varying in degree, but ſometimes extremely ſevere. This may often be relieved by lightly rubbing the *abdomen* with a warm hand, or with ſome anodyne embrocation, or the application of warm flannels wrung out of ſome ſpirituous fomentation. If theſe fail, recourſe muſt be had to *Tinctura Opii*, at leaſt to *opium* in ſome form, in ſuitable doſes, according to the degree of pain, and repeated as may be neceſſary. Spaſmodic pains of the *abdomen* very often reſemble thoſe ariſing from inflammation, and I conſider it as one of the moſt difficult things in the practice of medicine, to diſcriminate them. In nervous habits the difficulty is much increaſed, as ſuch are extremely liable to painful ſpaſms, to have their pulſe quickened, heat excited, and the whole frame diſturbed in a manner very like to what happens in true fever or inflammation.

5. From

5. From inflammation.

This leads us to the conſideration of that diſeaſe now generally called the puerperal fever; not becauſe it is peculiar to the ſtate of childbed, but becauſe it is the moſt common ſpecies of fever to which puerperal women are ſubject, and certainly occaſions the death of much the greater part of thoſe women who die in childbed. This has been deſcribed by the ancient as well as modern writers, with perſpicuity ſufficient to diſtinguiſh it, but the methods propoſed for the cure have been leſs ſatisfactory. Evident diſadvantage hath ariſen from its having been attributed to a variety of cauſes, from the different opinions entertained with reſpect to the nature and qualities of the diſeaſe, and from its having been deſcribed under ſuch various appellations. It has been repreſented by ſome writers, as entirely owing its exiſtence to the undue ſecretion or ſubſequent depoſition of the milk, and therefore denominated, the milk fever; by others, to a ſuppreſſion of the *lochia*, and called by that name; while others have deſcribed it as the miliary fever. Some again have conſidered this diſeaſe not as a fever, but as an inflammation or

ulceration

ulceration of the *uterus* *, while others have contended that the inflammation was wholly confined to the *omentum*, the *peritonæum*, or the inteſtines, and that the *uterus* was not in anywiſe concerned. A contrariety of opinion of more importance, was produced by the interpretation of the word *Eryſipelas*, which was probably given by the ancients to this diſeaſe, without any intention to denote a ſpecific kind of inflammation; yet the early uſe of this term was of ſufficient conſequence to bind thoſe who attended to the nicer diſtinctions in noſology, to a particular mode of practice, according to the nomenclature †. With ſuch different notions regarding the cauſes of this diſeaſe, we might expect that the treatment would be different, and as it was contradictory, we may preſume that it muſt often have been hurtful. There is un-

* Uterus a placentæ ſeparatione, præcipue violenta, excoriatur, tanquam ulcus ingens internum, lochiorum liberiore emanatione detergitur et mundificatur. Ideoque per excreta de puerperæ ſanitate aut diſcrimine ſtatuimus.

Harv. page 556.

† Si mulieri pregnanti fiat in utero eryſipelas lethale eſt.

Hippocrates.

doubtedly

doubtedly much difficulty in forming a juſt idea of a very complicated diſeaſe, and in proportion to the difficulty, every attempt to make accurate diſtinctions is deſerving of commendation. But however ſymptoms may vary from affections of particular parts, or in particular conſtitutions, there is but one eſſential nature of the diſeaſe, and if we have a true notion of this, we have leſs reaſon to be ſolicitous about the cauſe, or the determination of the part originally or principally affected. For a ſimilar treatment may be enjoined with equal propriety, for an inflammation of the *uterus*, *omentum*, *peritonæum*, or inteſtines, or perhaps any of the contents of the *abdomen*; provided a fever is produced, and the influence of the diſeaſe, originally local, be extended to the conſtitution. It is however obſervable that inflammation of the *uterus* is far leſs dangerous than an equal degree of inflammation of any of the *viſcera* of the *abdomen*, eſpecially in the ſtate of childbed; becauſe the *uterus* readily admits of a return of the lochial diſcharge, which always affords relief, and ſometimes cures the diſeaſe. But in inflammations of any of the contents of the cavity which has no vent or outlet, the

effects

effects of the inflammation become an addition to the exiſting diſeaſe, or a cauſe of new diſeaſe.

The knowledge of the cauſes of this diſeaſe, whether occaſional or immediate, will be of ſervice rather in enabling us to prevent it, than in leading us to the cure when it is formed; for if a patient be brought into a certain ſtate, the peculiar cauſe of that ſtate will not demand any material difference in the treatment directed for her relief. There is but too much reaſon to lament that inconſiderate proceeding and the want of common care, frequently give riſe to the puerperal fever. But independently of the changes occaſioned in the conſtitution by particular modes of living, women, with a view to parturition, will not bear a compariſon with other creatures *. The erect poſition of the body, the different ſtructure of the *uterus* and *placenta*, and the paſſions, though neceſſary, and perfectly adapted to the rank in which Providence hath placed mankind, be-

* Mulieribus præ cæteris animalibus hæc contingunt, et præſertim delicatis, vitamque umbratilem et mollem degere aſſuetis: ut et iis quæ teneræ valetudinis ſunt et facile in morbos labuntur. HARV. *Exercitat. de Partu.*

come

come permanent cauſes of much pain, and eventually produce inconveniencies, and ſometimes danger; and for theſe reaſons women are alſo ſubject to ſo great a number of complaints during pregnancy, from which all other creatures are exempt. Some of theſe complaints are dangerous in their own nature *, while others indicate or produce a diſpoſition to diſeaſes, not formed in the conſtitution till after delivery; and the inflammatory appearance ſo often obſerved in the blood of pregnant women, may perhaps be juſtly eſteemed a mark of a ſtate particularly diſpoſed to fever. Some habits are naturally liable to diſeaſes of the bowels, proceeding from an exceſs in the quantity or an alteration in the quality of the bile, and ſuch will derive a new and temporary cauſe of them from irritation, and from the diſturbed ſecretions of the *viſcera*, by the preſſure of the enlarging *uterus*, or by the labour. Nor is it improbable but that by the ſudden removal of this preſſure at the time of delivery, a greater proportion of fluids than circulate even in a natural ſtate, may ruſh upon ſome particular part, and from a very ſlight obſtruction

* The retroverſion of the *uterus* for example.

cauſe a local plethora. Imprudent management at the time of labour, eſpecially rude treatment of the *os uteri*, and a violent or haſty ſeparation of the *placenta*, will often give riſe to this diſeaſe. In ſhort, every cauſe capable of producing either local inflammation or fever under any circumſtances, will at this time be followed by worſe effects; and any diſturbance raiſed in the conſtitution, will be invited as it were to parts already in a very irritable ſtate, from the violence which they have ſo lately undergone.

It is natural for women, eſpecially with their firſt children, to have ſlow and painful labours, which they will generally bear with reſolution, and if not miſmanaged, without danger. Inſtead therefore of hurrying and deranging the order of a labour, which is always improper, and ſometimes injurious, under the falſe and ill-judged notion of freeing the woman from her miſery, we ſhould conſider that the buſineſs was intended to proceed ſlowly, and ſhould be left entirely to the action of the *uterus*, and the efforts of the conſtitution*. When there are deviations from

* Increpandæ ſunt obſtetrices, præſertim juniores temerariæ; quæ, cum parturientes præ dolore ejulare opemque eflagitare

from the regular courſe of labours, the uſefulneſs of midwifery, as well as the ſkill and judgment of the practitioner, will be ſhewn, in deciding which of theſe require the aſſiſtance of art, and in chuſing the ſafeſt and the beſt means of giving relief.

There is not throughout nature an operation more wonderful than the act of parturition, and there is little reaſon to be ſurpriſed at the bad conſequences which ſometimes follow an alteration ſo important, though that alteration be natural. Judging from ſpeculative principles, they might be expected to occur more frequently, and though they are often occaſioned by bad management, under the moſt promiſing circumſtances, and with the greateſt care, they cannot always be avoided.

flagitare audiunt, ne imperitæ vel parum ſatagentes videantur, manus oleis oblinendo, locaque muliebria diſtendendo, mire tumultuantur; porrectiſque potionibus medicatis, facultatem expultricem irritant; atque moræ debitæ impatientes, dum accelerare ac facilitare partum cupiunt, eundem retardant potius et pervertunt, efficiuntque non naturalem et difficilem.—Melius profecto cum pauperculis res agitur, iiſque quæ furtim gravidæ factæ clanculum pariunt, nullius obſtetricis advocata opera: quanto enim diutius partum retinent et morantur, tanto facilius et felicius rem expediunt.

HARV. *Exercitatio de Partu.*

When a woman is delivered, it ſeems neceſſary to make a moderate and uniform compreſſion upon the *abdomen*, but binding it tight is certainly improper, and the general abuſe of bandages, as was before obſerved, has induced me to forbid it altogether till the ſeventh or eighth day after delivery. Women are certainly not ſo often attacked with this fever, after difficult labours, becauſe of the particular care with which they are then managed, whereas after eaſy ones they are more unguarded.

The time when women are chiefly ſubject to this fever, is uncertain. There are not wanting inſtances in which it has been evidently formed before delivery, or during labour, or at any intermediate time for ſeveral weeks afterward; but the ſooner from the time of delivery the patient is attacked, if in an equal degree, the greater is the attendant danger. But the moſt frequent time of its appearing is on the third or fourth day after delivery, when the patient is ſeized with a ſhivering fit, from the violence and duration of which we may generally eſtimate the danger of the ſucceeding diſeaſe. In ſome caſes however there has been no cold or ſhivering fit,

or

or none which was obſervable; and in others, the ſhivering fit in the ſtate of childbed has not been followed with thoſe ſymptoms which were to be apprehended. Before the ſhivering fit, the patients have been much debilitated, and complained of wandering pains in the *abdomen*, which very ſoon became fixed in the hypogaſtric region, where a ſwelling or fulneſs with exquiſite tenderneſs ſoon enſue. As the diſeaſe advances the whole *abdomen* becomes affected and tumefied, ſometimes nearly to its ſize before delivery, the woman herſelf being ſenſible of and deſcribing its progreſs. She alſo feels great pain in the back, hips, and ſometimes in one or both legs, and other parts affected in uterine complaints. She can ſcarcely lie in any other poſition than on her back, or on one ſide, with her body incurvated, and if the diſeaſe be confined to the *uterus*, the ſeat of the pain ſeems to be changed when ſhe alters her poſition. There is uſually either a vomiting of green or yellow bitter matter, or a nauſea and loathing of the ſtomach, with an offenſive taſte in the mouth. An inſtantaneous change both in the quantity and appearance of the *lochia* takes place, and ſometimes, though rarely,

they are wholly ſuppreſſed. The milk if ſecreted recedes, or is diminiſhed, and the taſte with the appearance are much altered. The urine is voided often, with pain, and in ſmall quantities, and is remarkably turbid. A teneſmus or frequent ſtools come on, and from the general diſturbance it is often manifeſt that all the contents of the *pelvis* are at once affected by the diſeaſe. The tongue becomes dry, ſometimes remains moiſt and is covered with a thick brown fur, but as the diſeaſe advances its appearance varies, and in ſome dangerous caſes it has been little changed. The patient immediately entertains the ſtrongeſt apprehenſions of her danger, and uſually labours under vaſt anxiety, her countenance bearing indubitable marks of great ſuffering both in body and mind.

The progreſs of this diſeaſe is ſometimes extremely rapid, eſpecially in unfavourable ſeaſons and hot climates. Inſtances have occurred in which women have died within twenty-four hours of the firſt attack; and I have ſeen a few who never grew warm after the *rigor*. In ſome, death has followed quite unexpectedly, either from inattention, of from the ſcarcely perceptible, but inſidious

progreſs

progreſs of the diſeaſe, the indications not having been at all proportionate to the danger. In other caſes the ſhivering fit is ſucceeded by heat, thirſt, and other ſymptoms, according to the courſe obſerved in other fevers; but the pain which originated in the *abdomen* joined with theſe, is to be eſteemed the pathognomonic or chief ſign of this diſeaſe. It is neceſſary to enumerate all the ſymptoms which commonly attend this fever, though not in any individual patient, yet caſes will occur in practice, in which there will be much variation, depending on the degree of diſeaſe, the part affected, the conſtitution of the patient, and the period after delivery when the fever makes its appearance.

The pulſe has almoſt invariably in this diſeaſe an unuſual quickneſs from the beginning. It has often that ſtrength and vibration obſerved in diſorders of the moſt inflammatory kind, in robuſt conſtitutions, and yet is ſometimes exceedingly feeble and quick, beyond what might be expected from the concurring circumſtances. The latter is to be reckoned among the moſt dangerous ſigns, proving perhaps, that there is a great degree of diſeaſe, and that the powers of the

conſtitution are unable to ſtruggle with it, or to bear the operation of the medicines which may be neceſſary for its relief. There is much variation in the ſubſequent ſtages, but there is ſcarcely a worſe omen than a very weak and accelerated pulſe, even though the other ſymptoms may ſeem to be abated. But this quickneſs of the pulſe, if not attended with other ſigns of inflammation or fever, is not to be conſidered as indicating danger, becauſe nervous patients have ſometimes a very quick pulſe, unaccompanied with any other dangerous ſymptom.

The ſigns of inflammation, joined with thoſe of extreme irritability, continue for a few days, when thoſe of putridity appear, ſooner perhaps in this than in moſt other diſeaſes, which are originally of the truly inflammatory kind. The teeth very early collect a brown adheſive *ſordes*, and all kinds of food and drink are nauſeated, except ſuch as are agreeable from their coldneſs or ſharpneſs. A ſingultus attends, every return of which affects the *abdomen* in the moſt painful manner. *Petechiæ* or *vibices* are often found in unwholeſome ſituations and in ſome conſtitutions of the air, at a very early period of the diſeaſe,

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and there are frequently miliary eruptions; but the latter ſeem rather a conſequence of the method of treatment than of the diſeaſe, for they do not afford that relief which often follows their appearance in true eruptive fevers.

The bowels are in general very much diſturbed, and in ſome caſes a looſeneſs takes place immediately upon the acceſſion, in others three or four days after, or not till the laſt ſtage of the diſeaſe; but it very ſeldom fails to attend, nor can it be removed without the greateſt difficulty as well as danger before the diſeaſe is terminated. The ſtools often come away involuntarily, being always preceded by an increaſe of pain, and every evacuation gives momentary relief. They are uncommonly fetid, of a green or dark brown colour, and working like yeaſt. It is alſo remarkable that after the long continuance of the looſeneſs, when the patient has taken little or no ſolid nouriſhment, large and hard lumps of excrement will be ſometimes diſcharged, which one might ſuſpect to have been confined in the bowels for a long time before delivery. With regard however to this ſymptom, it is very neceſſary to obſerve, that great diſturbances of the bowels are frequently occaſioned by mere irritation.

There

There is a peculiarity in this fever which I believe has not hitherto been obſerved or mentioned. It is an eryſipelatoſe tumour of a duſky red colour, on the knuckles, wriſts, elbows, knees, or ancles, about the ſize of a ſhilling, and ſometimes larger. This is almoſt univerſally a mortal ſign, and on the inſpection of thoſe who have died with this appearance, the diſeaſe has been found to have affected principally the *uterus* or its appendages.

When this fever commences ſoon after delivery, and continues its progreſs with violence for a few days, our hopes of a favourable event will often be diſappointed, and the impending danger may uſually be foretold by the uninterrupted progreſs of the ſymptoms and by returns of the *rigor*. A looſeneſs immediately ſucceeding the attack, though in one ſenſe it may indicate the degree of diſeaſe, always contributes to its abatement, and ſometimes proves critical; as does likewiſe a ſpontaneous vomiting, ſometimes even towards the laſt ſtage, when all hopes of recovery were abandoned. The profuſe ſweat which follows the ſhivering fit has very often been completely critical. In ſome there has been a tranſlation of the diſeaſe to the extremities, where

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the part has inflamed, and a large abſceſs has been formed; a ſimilar abſceſs has alſo in ſome caſes been formed on one ſide of the *abdomen*, which has been healed by the moſt ſimple treatment. Freſh eruptions of the *lochia* are always a favourable ſymptom, and are to be reckoned among the moſt certain ſigns of amendment. A ſubſidence of the *abdomen*, after copious ſtools, and with a moiſt ſkin, is a fortunate alteration for the patient; but that circumſtance, without evacuations, and a dry ſkin, threatens the utmoſt danger. In the moſt ſevere degrees of this diſeaſe, which have reſiſted all the means of relief in the early ſtage, thoſe who have eſcaped, ſeem to have owed their ſafety to the vomiting before mentioned, or to a conſtitution happily ſtrong enough to bear the long contiuance of the looſeneſs, by which the effects of the diſeaſe were gradually drained away.

The ſwelling and tenderneſs of the *abdomen*, joined with a fever, were mentioned as the pathognomonic ſymptoms of this diſeaſe. But as theſe parts are often affected by the greatneſs of the diſtention during pregnancy, by after-pains, by flatulence, and by ſpaſms, as well as inflammation, we may be alarmed without reaſon, and miſtaken in giving the

name

name of a diſeaſe which does not exiſt, to complaints of infinitely leſs conſequence. On this principle, we may account for the ſlight manner in which ſome have mentioned the puerperal fever, while others have recommended methods of treatment foreign to its nature and inadequate to its cure. But with attention, this fever may be readily diſtinguiſhed from all other complaints, to which it bears any reſemblance. Violent ſpaſmodic affections of the *uterus* coming on ſoon after delivery, and extending their influence to various parts of the *abdomen*, if accompanied with great quickneſs of the pulſe, may give apprehenſions of this fever, though they will be almoſt immediately relieved, by a fomentation to the *abdomen* and the proper uſe of opiates. After-pains approach neareſt to thoſe pains of the *abdomen* which attend it, but though theſe are ſometimes attended with great tenderneſs of the *abdomen*, the intervals of perfect freedom from pain, which are never obſerved in this fever, notwithſtanding there may be conſiderable exacerbations, and the regularity with which, in after-pains, all other circumſtances proceed, will be evident and ſufficient diſtinctions.

About

About the time when this fever moſt frequently appears, eſpecially in its worſt form, a diſturbance is raiſed in the conſtitution by the ſecretion of the milk. The conſent between the *uterus* and breaſts is of ſo intimate a nature, that it is ſcarcely poſſible for them to be affected ſeparately, as the tranſition of the humours from one to the other abundantly demonſtrates. But though this diſeaſe has been very often imputed to the milk, the ſuppoſition is probably groundleſs; for if that ſecretion is not interrupted in its natural courſe, the inconveniencies ariſing from it, though they may be troubleſome, will not be attended with any danger. But thoſe who are unwilling or unable to give ſuck, or to whom ſuckling may on ſome other account be improper, are liable to various complaints from which nurſes are free. In ſuch caſes, I have found no method of preventing ſo effectually the ill conſequences likely to enſue, as by procuring ſtools before the ſecretion is completed, and for ſome days afterward with regularity. Should inflammations come on, and abſceſſes be formed in the breaſts, they are always much lamented, and conſidered as proofs of miſmanagement; but there is great

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reaſon to conclude that they ſometimes prevent more grievous and dangerous complaints, and that they could by no care have been obviated. It is remarkable that not one inſtance has been obſerved, of any woman, who had an abſceſs in the breaſt, being attacked with this fever; nor of one who, in conſequence of her labour, had ſuch an affection of the bladder as to occaſion a ſuppreſſion of urine. At another period of life, when the diſpoſition to cancerous diſeaſes exiſts in the conſtitution, their fixing upon the *uterus* or breaſts ſeems to be merely owing to ſome accidental cauſe.

A diſeaſe in which the ſymptoms come on with violence, proceed with rapidity, and of which the event has ſo often been fatal, cannot fail to alarm every man ſolicitous for the welfare of his patients, or who has a due regard for his own character; and under circumſtances ſo peculiarly diſtreſſing as are thoſe of women in childbed, humanity would urge us to exert our abilities for their relief with zeal and tenderneſs.

We ſhould in the firſt place endeavour to ſhorten the *rigor*, by hot applications to the extremities, and by giving warm diluents in

ſmall

ſmall quantities often repeated. A conviction of the neceſſity of ſpeedily removing the *rigor*, has induced ſome to give very active cordials for this purpoſe; but as the hot fit which ſucceeds will in ſome meaſure depend upon the means uſed, it does not ſeem proper to give ſpirituous liquors unleſs they are well diluted.

Bleeding has been adviſed in the beginning of violent diſeaſes, with the intention of ſuppreſſing the diſeaſe, of alleviating the ſymptoms, or of rendering the operation of the medicines which were afterwards to be given, more ſafe and effectual. For the cure of the fever now under conſideration, ſome have placed their whole confidence in the early and free uſe of this remedy, while others have expreſſed more than ordinary fears and apprehenſions with reſpect to it*. Perhaps it

* Equidem de ſanguinis miſſione multum controvertitur; nonnulli enim venam pluries tundendam eſſe arbitrantur, dum cæteri vel minimam ſanguinis detractionem averſantur.—— And afterward——Hæc (praxis) enim docet phlebotomiam, haud niſi caſu urgentiori et ſumma cautela eſſe celebrandam, pro rerum conditione. Cæterum multa de hac re lepide et dilucidè tradita, proſtant apud ſcriptores, quæ tamen inter praxim implicatiſſima deprehenduntur.

LIEUTAUD. *Synopſ. Univ. Pra. Med.*

may be impoſſible to form a rule of practice ſo general as to preclude the neceſſity of leaving much to diſcretion; for the treatment of patients differing in conſtitution, though labouring under the ſame diſeaſe, muſt vary, or the worſt conſequences will inevitably follow.

In the early part of my own practice, I had much doubt of the propriety of bleeding indiſcriminately for the cure of this diſeaſe, and I was long of opinion that it was not the moſt natural, ſafe, or effectual remedy. I conſidered that ſpontaneous hemorrhages were ſeldom critical in this diſeaſe; I ſuſpected that women in childbed ſuſtained bleeding worſe, than in almoſt any other ſituation; and from ſome defect in the remedy, or ſome error in the application, I often found myſelf diſappointed in my hopes and expectations when I relied upon it. It ſeemed alſo an obſervation of importance, that thoſe women who had loſt much blood at the time of delivery, were more liable to this diſeaſe, and that it was more commonly fatal to them. The conſequences alſo of erring by the too free uſe of the lancet ſeemed more to be dreaded, becauſe they were

harder

harder to be repaired, than thoſe which might ariſe from an oppoſite conduct.

But I am now convinced by manifold experience that my reaſoning was fallacious and my fears groundleſs, and that what I had conſidered as proofs of the inſufficiency or impropriety of bleeding in the true puerperal fever, ought in reality to be attributed to the neglect of performing it in an effectual manner, at the very beginning of the diſeaſe. In ſhort, if the firſt ſtage be ſuffered to paſs unheeded, bleeding will certainly then be injurious, the opportunity having been loſt; and the phyſician afterwards called in, however great his talents may be, will too often have the mortification of being a ſpectator of miſchief which he cannot then remedy, and of an event which he can only deplore.

It is in general abſolutely neceſſary to bleed in the beginning of the puerperal fever, and we may then avail ourſelves of the advantage which this operation affords, with equal ſafety and propriety as in any other inflammatory diſeaſe, under other circumſtances. With reſpect to the quantity of blood drawn, we are to be guided by the conſtitution of the patient and the violence of the ſymptoms,

being cautious not to err by bleeding unneceſſarily, or in taking away too large a quantity. But if benefit ſhould be derived from the firſt operation, and the violence of the diſeaſe ſhould require it, we ſhall be juſtified in repeating it at ſhort intervals; nor with a view of moderating or retarding the progreſs of the inflammation, but if poſſible of wholly ſuppreſſing it. For when the fever has remained for a very few days, the putrid ſymptoms advance very rapidly, and its continuance depends upon cauſes which cannot be removed, but will be increaſed by bleeding. When the attack is violent and the conſtitution feeble, it is always more ſafe and expeditiouſly ſerviceable to draw blood by ſcarification and cupping, or by the application of eight or ten, or even a greater number of leeches to that part of the *abdomen* which appears to be principally affected. In ſome countries the application of leeches to the hemorrhoidal veins has been conſidered as more effectual in this diſeaſe than any other mode of bleeding. I muſt acknowledge that the advantages which I have often ſeen derived from local bleeding, have given me the greateſt ſatisfaction and pleaſure.

But

But though women who have had profuſe uterine hemorrhages at the time of delivery, are particularly liable to the puerperal fever, from this or ſome contingent reaſon; and though it is ſeldom removed by ſpontaneous hemorrhages, yet theſe are ſometimes critical. The following caſe which was communicated to me by Dr. Joſeph Denman, of whom, as he is endeared to me by ſentiments of eſteem and regard more cloſely than by fraternal affection, I might be allowed to ſpeak in terms of high approbation, is an example of this kind.

"I was called in the middle of the night to go ten miles to a woman whoſe *placenta* had been retained many hours after the birth of the child. The want of courage to withſtand ſolicitation and the diſtance from me, were my reaſons for undertaking to ſeparate it. The *placenta* adhered ſtrongly, but the ſeparation was made very gently and without any conſiderable hemorrhage. On the third day, the patient was ſeized with a ſhivering and fever, which continued all night. From this ſhe was relieved by ſo large a diſcharge of blood from the *uterus*, that I was again ſent for on that account. There was no

ſwelling of the *abdomen*, but great tenderneſs, much pain in the head, conſtant thirſt, a little delirium, and ſhe had no ſtools. An increaſe of fever every evening, and the ſame profuſe diſcharge every forenoon, continued for ten days. She took occaſionally Teſtaceous Powders with Rhubarb, Saline Mixtures, Tincture of Roſes, Infuſion of Bark, and ſome doſes of Opium. She at length recovered."

The hemorrhages ſeem in this caſe to have been abſolutely critical, and my own practice hath ſupplied me with inſtances of a ſimilar kind in different ſtages of this fever, and many more have proved the great advantage of returning or free ſanguineous lochial diſcharges. Yet in theſe caſes I had ſufficient reaſon to preſume, that the diſeaſe had not only originated in the *uterus*, but was confined there, without extending to the abdominal *viſcera*.

Having finiſhed theſe obſervations on the uſe and advantages of bleeding, I beg leave to repeat, that when the puerperal fevers of a trite inflammatory nature exiſt, I feel aſſured I am right in the opinion I have advanced reſpecting bleeding. But as it is ſometimes extremely difficult to diſtinguiſh between

tween this fever and complaints proceeding from mere irritability, which far more frequently occur, eſpecially in very delicate habits, and as all the complaints ariſing from irritability would at this time be increaſed by bleeding, and rendered dangerous by a repetition of it; I recommend in the ſtrongeſt terms that we ſhould be accurate in our diſtinctions before we determine on a plan on the purſuit of which the good of our patient may ſo eſſentially depend.

When the attack of this fever is violent, a vomiting of bilious matter attends, there is often a multiplicity of ſtools, and the commencement is ſometimes not unlike a moderate degree of the *cholera morbus*. It has been an almoſt univerſal rule in practice, in other diſeaſes, to forward theſe evident intentions of nature, at leaſt not haſtily to obſtruct or ſuppreſs them, but in this, different meaſures have been purſued. It has been objected that a woman lately delivered, has ſuffered too much from her labour to bear with ſafety a method of proceeding found uſeful in other fevers, with the ſame indications; or that the parts affected would be too much agitated by the operation of an emetic. It has alſo

been conjectured that the vomiting and uneaſineſs of the ſtomach ought to be aſcribed to uterine irritation alone, and were hyſteric ſymptoms in the common acceptation of the word, and therefore not likely to be relieved by encouragement. But if in theſe caſes we conſider the appearance of the matter diſcharged, the great relief which the patient immediately receives from the evacuations, and the advantages which are found to reſult from it in the courſe of the diſeaſe, it ſeems impoſſible to fix upon circumſtances which more ſtrongly indicate the neceſſity of giving an emetic. Conſent has been given to an opinion that the vomiting of porraceous matter when an hyſteric ſymptom does not require evacuations; yet even in ſuch caſes it may be ſuſpected that the porraceous matter by its irritation upon the ſtomach, is the *materia morbi* which occaſions or increaſes the ſpaſms, and that the diſcharge ſhould then not be ſtopped while it is preternatural. It would be difficult to imagine a ſituation in which medicines of any kind were likely to do much ſervice, when the ſtomach is oppreſſed with vitiated humours.

But however unſatisfactory theſe reaſons may be, experience will ſupport me in aſſerting, that when ſuch complaints accompany the beginning of this diſeaſe, or occur during its progreſs, we ſhall loſe an opportunity of doing much ſervice if we are deterred from giving a vomit; and that the operation is not only perfectly free from danger, but certainly anſwers many other good purpoſes beſides that of cleanſing the ſtomach. It is nevertheleſs to be obſerved that an emetic was in this caſe firſt adviſed, chiefly for the relief of a ſymptom, without any expectation of thereby curing the diſeaſe. Yet there are advocates ſo ſtrenuous for the uſe of emetics in this diſeaſe, as to recommend the repetition of them every day, and who have aſſerted that they are the moſt powerful medicines for the abſolute cure of the puerperal fever. To the merit of having firſt recommended this practice I am not entitled, and perhaps not fully competent to judge of it; yet experience has in many caſes proved to me that emetics may be given and repeated in this diſeaſe with very great advantage.

I may in this place be permitted to make a digreſſion for the purpoſe of obſerving, that

it appears, from the records of medicine, that two different opinions were very early entertained reſpecting the treatment of fevers in general. The firſt and moſt prevalent of theſe was, that every fever was a proceſs eſtabliſhed by the powers of the conſtitution, for the purpoſe of altering and aſſimilating, or of ſeparating and rejecting ſome offending matter; or changing one ſtate of the body into another, better fitted for the performance of its functions. The proceſs was defined by the term generally, though not properly tranſlated, fermentation, by which the ancients underſtood the different ſtates of bodies whilſt they were in the act of changing into ſome new form or ſtate, or the proceſs by which they were changed; and not vinous, acetous, or any other fermentation, according to the modern uſe of that term. As this proceſs in fevers was expected to be ultimately ſalutary, it could not, according to this opinion, be diſturbed without miſchief, unleſs, on account of violence, irregularity, or ſome extraordinary deviation from its uſual courſe, it might be judged neceſſary to moderate it when too violent, to encourage it when too remiſs, or to obviate accidental ſymptoms. The ſecond opinion

was,

was, that in a fever excited by any cauſe, the body was in a ſtate adverſe to its wellbeing, and perhaps inconſiſtent with life; and that the fever ought therefore to be ſubdued by the expeditious uſe of all ſuch means as were likely to remove the cauſe, or to appeaſe the action of the powers of the conſtitution; or, by weakening the powers themſelves, to reduce the body into ſuch a ſtate, that it ſhould be unable to continue or maintain what might be called the feveriſh proceſs.

The marks of theſe opinions may be readily diſcovered to pervade every ſyſtem of fevers, and every method of treatment which has been offered to our conſideration, or recommended for our guide, even down to the preſent time. There is no doubt but that the knowledge of both theſe opinions will occaſionally be found of much uſe in practice, if we are not led to extremes. But the knowledge of a diſeaſe, or of a method of treatment, is of infinitely leſs value than the faculty of applying it, and conſtitutes in fact a ſmall ſhare of the excellence of a phyſician. He, by diſcovering the part principally affected, and by weighing its importance to the conſtitution; the nature of the diſeaſe, its preſent

ſent ſtate and probable conſequences; and by taking into conſideration all the collateral circumſtances, will clear his mind from perplexity and error, and form a rule for his own conduct far beyond the influence or power of any doctrine.

But in the treatment of the puerperal fever the difficulty has been much increaſed on account of the very great caution which, for reaſons before aſſigned, was judged neceſſary. It was alſo ſaid that by regulating the puerperal diſcharges, all the diſeaſes incident to that ſtate were to be prevented or moſt naturally cured, and all evacuations by which theſe were likely to be interrupted or ſuppreſſed were forbid. In ſhort, in this ſtate there was a ſuſpicion of ſomething ſacred or myſterious, with which we were not authorized to interfere; and neither common ſenſe nor obſervation had ſufficient efficacy to controul thoſe impreſſions which originated in ſpeculation and prejudice, and which are now fully proved to have been without foundation.

Many years ago, after much embarraſſment and repeated diſappointments in the treatment of this fever in the cuſtomary way, I gave the powder which was recommended by,

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and has acquired much reputation under the ſanction of the late Dr. *James*, and ſometimes the following medicine; and I was ſoon ſenſible of their good effects.

℞ Tartar Emetic. gr. ij.
Ocul. Cancror. pp. ℈ ij. *intimè miſceantur.*

Of a powder thus prepared, after bleeding, and if thought neceſſary, the exhibition of a clyſter, I have given from three to ten grains, repeating it as circumſtances require.

Should the firſt doſe produce no ſenſible evacuations, for on theſe only we are to rely, an increaſed quantity muſt be given at the end of two hours, and we muſt proceed in that manner, till the end we wiſh be obtained.

But if the firſt doſe ſhould occaſion a vomiting, purging, or profuſe ſweat, we muſt wait for the good effect of theſe operations; and we ſhall then be able to judge of the propriety of repeating the powder.

But when the evacuations are concluded, if any alarming ſymptoms ſhould remain, we need not heſitate to give the powder in the ſame quantity as was firſt uſed, though an equal quantity is not often neceſſary, if the firſt doſe has operated properly. We cannot reaſonably expect that a diſeaſe, which exhibits

hibits ſuch evident marks of danger, ſhould inſtantly ceaſe, even if the principal part of the cauſe ſhould be removed, or of the effect be abated. Yet we muſt be careful not to rely ſo far upon an abatement of the ſymptoms, as wholly to deſiſt from purſuing the method which produced the abatement; for no diſeaſe is more liable to returns, which are generally more violent than the firſt attack, and with accumulated danger. It muſt alſo be obſerved, that as the certainty of the cure often depends upon the due repetition of the powder, the cuſtom of giving it at ſtated hours is never eligible, and ſometimes improper.

If a ſickneſs, loathing of the ſtomach, or offenſive taſte in the mouth, attend the commencement of the diſeaſe, this medicine ſeldom fails to occaſion vomiting, and the patient, with a countenance ſtrongly expreſſive of the benefit ſhe has received, will atteſt the advantage of the method purſued. Nor does the medicine often fail to procure copious ſtools, which are uncommonly fetid, and, as was before obſerved, in the looſe ones, lumps of hardened *fæces* are intermixed. Their appearance ſhould in ſome meaſure guide us with reſpect

to

to the continuance of the evacuations, in proportion to which the *abdomen* becomes eaſy and ſubſides, and the other ſymptoms become more favourable. The urine is ſoon voided with more eaſe, and in larger quantities, a moiſture of the ſkin or profuſe ſweat ſucceeds, and the *lochia*, which were before brown or pale, fetid, and in ſmall quantities, increaſe and become ſanguineous. But we are to remember that the ſmall quantity of the *lochia* is never to be eſteemed as indicatory of diſeaſe, independently of other appearances, becauſe with reſpect to quantity they vary in every conſtitution.

At the ſame time that we avail ourſelves of the advantage to be obtained from the uſe of the antimonial powder, we muſt not neglect the uſe of thoſe means which contribute to procure immediate eaſe or relief to the patient. Emollient clyſters in caſes attended with violent pain, eſpecially if preceded or accompanied with coſtiveneſs, are neceſſary and proper. Clyſters have alſo been eſteemed of more importance than merely as the readieſt means of promoting ſtools, or as a temporary fomentation to the bowels; for ſome phyſicians of great experience have thought

thought they were able to remove a great part of the cauſe, or to prevent the continuance of the diſeaſe, by directing them to be adminiſtered ſo frequently, that they were at length returned without any mixture of *fæces*. Fomentations, or vapour-bathing, or even the warm bath, may ſometimes be uſed with advantage, but I think a folded warm flannel, well ſprinkled with brandy, and occaſionally renewed, is one of the beſt and moſt comfortable applications. When the pain is confined to one part of the *abdomen*, or remains after the abatement of the fever, a bliſtering plaiſter, applied directly to the part, may always be recommended with ſafety, and will ſometimes do much ſervice. Plentiful dilution being abſolutely neceſſary, the patient ſhould be carefully ſupplied with proper drink, in ſmall quantities often repeated. The moſt palatable, and generally the beſt, is chicken water, or very weak beef tea; or, if objections are made to theſe, barley water, thin gruel, milk and water, whey, and tea of almoſt any kind, may be drank at pleaſure.

In this manner I treated the wife of a ſoldier in the guards, whom I attended July 1, 1767, in a ſafe, but tedious labour. She was

of

of a very ſtrong habit of body, and upwards of thirty years of age. About thirty-ſix hours after the birth of the child ſhe was ſeized with a violent ſhivering, followed with ſevere pains in the *abdomen* and loins, and within a few hours from the attack of the diſorder, became nearly as big as ſhe had been before delivery. On the 3d I gave her four grains of the antimonial powder before mentioned, and finding no ſenſible effect, I repeated it in the ſame quantity after two hours. She puked twice, and had ſeventeen ſtools, like yeaſt in appearance, within ſix hours after the repetition of the powder. When the operation of the medicine ceaſed, the *abdomen* was almoſt wholly ſubſided, and the tenderneſs and fever much abated. As ſhe was much fatigued, I gave her a cordial draught, with a few drops of *laudanum*. She had ſome quiet ſleep in the night, and ſweated profuſely. There did not appear any neceſſity of repeating the powder, and ſhe recovered perfectly, without taking any other medicine except ſome ſaline draughts, and afterward the decoction of *bark* twice every day.

The

The event of this caſe, and of ſome others which occurred to me about the ſame time, were very flattering. I preſumed that I had at length diſcovered a method of treating this fever, and a medicine which would ſeldom fail to anſwer the moſt ſanguine expectations. But further experience has convinced me, that without previous or even repeated bleeding in ſome caſes, when the inflammatory ſymptoms are violent, this medicine will often fail to ſubdue the fever, and that it ſometimes is uncertain in its operation. It is perhaps to be reckoned among the ſigns of an unfavourable termination of the diſeaſe, when the medicine in proper quantities produces no ſenſible effects. I am however perſuaded that if we have an opportunity of giving it ſoon after the acceſſion of the diſeaſe, it will often do the moſt eſſential ſervice, and that too much cannot well be ſaid in favour of this method. And it were above all things to be wiſhed that phyſicians had the *early* care of patients in this diſeaſe, for the diſſections of thoſe who have died, have proved that very terrible miſchief is produced in various parts with amazing celerity. In a very great number of patients whom I have had an opportunity of examining

of examining, all or ſome of the following appearances were obſerved. The *uterus*, or its appendages, were in a ſtate of inflammation, or ſometimes one or both of the *ovaria* of a livid colour and altered in their texture, as if mortified. The general ſubſtance of the *uterus* was looſe and ſpongy, and it was leſs contracted than it ought to have been ſince the time of delivery. The *os uteri*, and that part of the *uterus* to which the *placenta* adhered, were diſcoloured and had a ſloughy appearance. Small abſceſſes were ſometimes found in the ſubſtance of the *uterus*, or in the cellular membrane which connects it to the neighbouring parts. The bladder was inflamed. The *omentum* was very thin, irregularly ſpread, and in a ſtate of inflammation. The inteſtines were inflamed chiefly in the peritoneal coat, adhering to each other, and much inflated. Inflammatory exſudation, and ſerum extravaſated in the cavity of the *abdomen*, have been found in various quantities; but theſe were in a leſs degree, when the patient had laboured under a long continued purging. In the cavity of the *abdomen* were likewiſe found large flakes of coagulable lymph, which have been often miſtaken for curdled milk, or for diſſolved portions of the

omentum. It muſt indeed be acknowledged that the information acquired in this ſearch, has not afforded any practical advantage, equal to the care or aſſiduity with which it has been made. What we have been able to learn has chiefly proved, that various parts are affected in different ſubjects; that when the diſeaſe has continued with violence for a few days, its effects will generally be beyond the reach of medicine, and that if the patient ſhould fortunately recover, her recovery will depend upon circumſtances which the phyſician cannot without great uncertainty and difficulty command*.

In the leſs violent degrees of this diſeaſe and more delicate conſtitutions, it will be neceſſary to purſue the ſame intentions, though with leſs activity. In ſuch caſes, after local bleeding with leeches or otherwiſe, as may be moſt convenient, and giving a proper doſe of Ipecacuanha, or waſhing the ſtomach with an infuſion of chamomile flowers, more

* We have been told that in the diſſections of ſome who are ſaid to have died of this diſeaſe, no appearances of inflammation have been diſcovered, but I ſhould ſuſpect that in ſuch caſes miſtakes had been committed as to the nature of the diſeaſe and probably in its treatment.

lenient

lenient medicines muſt be preſcribed. But they muſt be ſuch as will produce a certain and ſpeedy effect, for after the operation of an emetic, if ſtools are not procured, we ſhall neglect the means and loſe the opportunity of doing moſt effectual ſervice; for without them the relief obtained will not be permanent. An emollient clyſter may be firſt injected to remove any hardened *fæces* from the lower part of the *rectum*, and then the antimonial powder in ſmall doſes, or the ſaline draughts with a due proportion of the *Natron* or the *Kali Tartariſatum*, or with Rhubarb; or the following draught may be given every third or fourth hour.

℞ Natron Tartariſat.
Mannæ opt. a ʒ ii.
Infuſ. Sennæ, Aq. Ment. Sat. a ℥ i.
Tinct. Cardamom. gut. xxx. M.

Or two ounces of *Magneſia Vitriolata* may be diſſolved in a pint of thin gruel, and one or two large ſpoonfuls given every hour till due evacuations are obtained; and this medicine has been found to anſwer the intention when apparently more pleaſant medicines could not be retained.

In every caſe of diſeaſe which requires ſpeedy and repeated evacuations for its relief, particularly if attended with violent pain, it is neceſſary to give a reſpite to the conſtitution, by which it may be enabled to exert its own powers, or recover from the fatigue of the operations themſelves. For this purpoſe opiates are wiſely preſcribed when the operations are concluded. But opiates being given for the purpoſe of eaſing pain, or of quieting ſome agitation, if they are not given in a ſufficient quantity to produce the intended effects, are uſeleſs; for it is by their effects we are to judge of the propriety or advantage of their uſe. In ſome caſes alſo which were accompanied with violent pain at the commencement, it has been found neceſſary to give a large doſe of *Tinctura Opii*, immediately after the firſt bleeding, without waiting for any other evacuations by which the progreſs of the diſeaſe will be retarded. Nor is there ever occaſion to heſitate upon the uſe or repetition of an opiate at any period of this diſeaſe, when the violence of the pain requires it; for though the pain may originally be a conſequence of the diſeaſe, it becomes after a cer-

tain time a powerful cauſe of its continuance and increaſe.

In the inferior degrees of this diſeaſe, after bleeding once, if thought neceſſary, and the exhibition of an emetic, which can ſeldom be diſpenſed with, we ſhall find the ſimple method of exhibiting an opening draught for the purpoſe of procuring four or five ſtools every day, and an opiate every evening, produce the moſt happy effects. But it is not poſſible for me to expreſs my ſentiments of the advantage which may be ſometimes procured by daily purging, ſo clearly as by the relation of the following caſe which was lately under my care.

The wife of an eminent tradeſman was brought to bed of a living child after a very tedious and difficult labour. She was of a corpulent but relaxed habit, and this was her firſt child. About four hours after her delivery ſhe was ſeized with a purging, and the ſtools, which were of a dark colour and exceedingly offenſive, ſoon afterwards came away involuntarily. I ſaw her early the following morning, November 22d. She had conſtant but not exquiſite pain in the *abdomen*, which was tumefied, her ſkin was hot, her pulſe quick, and ſhe was thirſty.

Having voided no urine, I introduced the catheter, applied a flannel well ſprinkled with brandy to the lower part of the *abdomen*, and ordered an opening draught of the kind before mentioned. She had proper evacuations by ſtools all day, and in the evening took an opiate. On the 23d I found that the purging continued, and there was little alteration in the other ſymptoms. The opening draught was repeated in the morning, and the opiate at bed-time. On the 24th I was informed ſhe had got ſome refreſhing ſleep in the night. The pain in the bowels and feveriſh ſymptoms were abated, but the ſtools, which were yet very fetid, came away involuntarily. Both the draughts were repeated as on the preceding day. On the 25th, though the ſtools continued to come away without her conſent, the *abdomen* was ſubſided and the tenderneſs almoſt gone. On the 27th the purging ceaſed, and ſhe recovered without the repetition of the medicines. I was under the neceſſity of drawing off her urine twice every day till the eleventh after her delivery, when ſhe was able to void it without any aſſiſtance. But it is not to a ſingle caſe that I ſhould have occaſion to appeal in a matter of ſo much conſequence.

quence. A long and ſucceſsful practice hath convinced me that the purging which often attends this diſeaſe, is not only ſalutary, but frequently critical, and inſtead of being ſuppreſſed, that it ought to a certain degree to be encouraged. Nor would it be difficult for me to recollect many caſes in which fatal conſequences have ſpeedily followed inprudent attempts to ſtop the evacuations*.

As this diſeaſe paſſes into its more advanced ſtages it becomes more complicated and dangerous, and there is a neceſſity of being very

* Theſe remarks on the neceſſity of procuring ſtools, are to be conſidered as applicable only before the patient is reduced to a ſtate of great debility, or perhaps to fevers occaſioned by local inflammation of ſome of the contents of the *abdomen*. Experience has proved that in the advanced ſtate of fevers of the *typhus* claſs, coſtiveneſs is a moſt favourable ſymptom. *Sydenham* takes particular notice of this in his moſt excellent treatiſe on the fever of 1661; and in a principal hoſpital of this city, it is an eſtabliſhed rule, never to promote ſtools, or any weakening evacuation in fevers of this claſs, after the fourth day. But in the advanced ſtate of thoſe fevers, coſtiveneſs, *for a great number of days*, not only prevents an increaſe of the debility, but is the moſt promiſing ſymptom of a happy termination of the diſeaſe. It deſerves to be particularly noticed, whether patients, in the advanced ſtate of thoſe fevers, ever die while the bowels are conſtipated.

circumſpect in our endeavours to give relief. Bleeding, unleſs by ſcarification, or the application of leeches to the *abdomen* or hemorrhoidal veſſels, will very ſeldom be proper at this time, and if directed or repeated by the encouragement which the inflammatory appearance of the blood may afford, will generally haſten the fate of the patient, by reducing the ſtrength in a much greater degree, than it can abate the diſeaſe, as I have ſeen in many inſtances of this and other kinds of fever. It muſt therefore be omitted, or preſcribed with the greateſt caution. But if the ſtomach or bowels are much diſturbed, and an emetic was not given in the beginning, one may be given at almoſt any period of the diſeaſe with ſafety and advantage. Or if there be no looſeneſs, and ſtools have been procured ſparingly through the courſe of the diſeaſe, the general method of cure muſt be purſued, allowing for the reduced ſtrength of the patient. The frequent injection of gently purgative or emollient clyſters, will be extremely proper, and laxative medicines of the kind before mentioned, not omitting to give opiates to procure temporary eaſe, nor to neglect the uſe

of

of ſuch diet as will ſupport the ſtrength of the patient.

But when the ſtools are very frequent or involuntary, and all appearances threaten imminent danger, we muſt be cautious that our attempts to cure the diſeaſe are conſiſtent with the ſtate of the patient, though ſomething muſt be hazarded for her relief. Clyſters of chicken water, or flour and water boiled to a proper conſiſtence, or of a decoction of linſeed, often repeated, then conſtitute a very important part of the cure, by waſhing off ſome part of the offending matter which ſtimulates the bowels to frequent evacuations, and by acting as a fomentation. But if great care be not taken in their adminiſtration, the patient will ſuffer intolerable pain on account of the tenderneſs of the *uterus*, which I ſuppoſe to be the part principally affected, at leaſt in which the diſeaſe moſt commonly originates, and of the influence of which this part never fails to partake.

At this time it will alſo be uſeful to give very ſmall doſes of Ipecacuanha mixed with the opiate as a diaphoretic, or the *Pulv. Ipecacuanhæ compoſitus*, either in ſome cooling vehicle, as the ſaline draughts, or with cordials, as

the

the ſituation of the patient may require. But if the ſtomach or bowels ſhould be much diſturbed in the advanced ſtage, or if any new cauſe of diſturbance ſhould occur, the Ipecacuanha may even then be given ſometimes in ſuch a quantity that it may act as an emetic. The white decoction with a large proportion of Gum Arabic, or the common emulſion with Spiritus Ætheris Nitroſi, make at this time a proper and agreeable drink. If the ſtrength of the patient ſhould ſink, and great faintneſs come on, a neceſſary quantity of ſome cordial muſt be given in the interval between the draughts. I have alſo often in this ſtage given Camphor in ſubſtance, in Julep, or in the form of Emulſion, but have generally been obliged to diſcontinue its uſe, becauſe it ſoon became diſguſting to the palate, and offenſive to the ſtomach; nor have I ever found that advantage from the uſe of Camphor which ſome have taught us to expect in this diſeaſe, though in many inſtances the Camphor Julep has appeared to be an agreeable cordial and to moderate pain.

Under the moſt deplorable circumſtances, we ought never to deſiſt from uſing our endeavours with aſſiduity, to relieve and extri-

cate

cate the ſick from the imminent danger they are in, both from principles of humanity and prudence; for they will ſometimes recover very unexpectedly, when every prognoſtic is againſt them. Something always remains to be done which may be of uſe or contribute to their comfort; either with the view of obviating troubleſome or painful ſymptoms; or of ſupporting, by means adapted to their ſtate, their ſtrength; or of promoting ſome obſtructed ſecretion, eſpecially by regulating the ſtate of the bowels. On ſuch occaſions I have among other things been induced to try clyſters of various kinds, emollient, anodyne, and antiputreſcent, particularly of ſtrong decoctions of *Peruvian bark*; but the event obliges me to acknowledge, that I have not obſerved much advantage from them, beyond what may be derived from the domeſtic ones which are in common uſe.

Nor has the *bark*, though given in different ſtages of the diſeaſe, with remiſſions tolerably diſtinct, anſwered the intention as a febrifuge; though in a few caſes, in which the intermiſſions were complete, it has ſucceeded. As a ſupporter of the general ſtrength of the conſtitution, the *bark* has been likewiſe found of

leſs

leſs ſervice than might have been expected, becauſe of the diſturbed and very irritable ſtate of the bowels, which it tends to increaſe. Inſtead of this medicine, the Columba root, in powder or infuſion, has been given every fourth or ſixth hour; or the common bitter infuſion prepared with cold water, and joined with ſome aromatic; or a ſtrong infuſion of chamomile flowers, with the addition of a few cloves; and ſometimes the following medicine, eſpecially when the hiccup has been troubleſome.

℞ Spir. Ætheris Vitriolici ʒ ij.
Aqu. Puræ, vel Menth. ſativ. ℥ viij.
Sacchar. pur. q. s. fiat Miſtura cujus ſumat ægra uncias duas, tertia vel quarta quaque hora.

In other caſes *Æther* or *Hoffman*'s mineral anodyne liquor have been given, but they have often proved leſs agreeable to the ſtomach, and I believe not more efficacious than the *Spiritus Ætheris Nitroſi*, which I have ſubſtituted for them, and given with great freedom and advantage. It was before obſerved, that the hiccup was frequently an indication of a collection of offenſive humours in the ſtomach, and has generally preceded the ſpontaneous vomiting, which in the worſt

ſtate

ſtate has ſometimes proved critical; though the ſame ſymptom is alſo not ſeldom a proof of the progreſs of the diſeaſe, and a ſign of the utmoſt danger.

In the courſe of the diſeaſe, when the *abdomen* has been much diſtended, notwithſtanding the evacuations, I have recommended the application of the *Cataplaſma Cumini* moiſtened with brandy; and ſometimes directed clyſters compoſed of *Electarium e Baccis Lauri*, or a ſolution of *aſa fœtida* in ſimple peppermint water, and wiſh I was juſtified in ſpeaking more highly in their praiſe; but they are among the things which have occurred to me when I have ſcarcely known what to propoſe.

I have rarely attempted to inject medicines of any kind into the *vagina* or *uterus*, though from a conſideration of the probable ſtate of the parts, and of the fetid humours diſcharged, it is reaſonable to think that emollient or gently detergent injections might ſometimes be uſeful. But the helpleſs ſtate of the patient is ſuch as to render the operation itſelf very troubleſome; and if they are adviſed, great caution will be neceſſary both in their compoſition and adminiſtration; but

fomentations

fomentations to the external parts have, I think, ſometimes afforded comfort, and been of ſervice.

Theſe are all the obſervations I have made, and the opinions I have entertained on the puerperal fever in its ſimple ſtate, that is, conſidering it as a diſeaſe, originally, of the truly inflammatory kind, affecting one or more of the parts contained in the *abdomen*, extending its influence over the whole conſtitution, and ſpeedily aſſuming a putrid form with more or leſs virulence, according to its degree and treatment during the inflammatory ſtate. But when putrid diſeaſes are epidemic *, the puerperal fever may, at the commencement, partake of the reigning diſeaſe, (varying only in the affection of the parts concerned in

* The firſt account I have met with of a puerperal epidemic is in *Peu*. It appeared in the year 1664, in the *Hotel-Dieu*, at *Paris*. In this account there are ſome very curious obſervations. In this country we have very reprehenſibly neglected to preſerve any regiſter of the times when ſuch fevers have prevailed. But in the year 1788, an account of a puerperal epidemic, was publiſhed by my ingenious friend Dr. John Clarke, according to its appearance in one of the hoſpitals in this city, and, in ſome inſtances, in private practice.

parturition)

parturition) as the hiſtories of the Plague, in this and other countries, have ſufficiently proved. This diſeaſe may alſo be combined with a phrenſy or peripneumony, with ſymptoms multiplied and varying according to the combinations. Then our principal attention muſt of courſe be paid to the moſt urgent diſeaſe or ſymptom; but the event of ſuch caſes muſt be more dangerous, on account of the number and importance of the parts concerned.

Here I muſt conclude, deferring to ſome more convenient opportunity, the few remaining obſervations I have made on this ſubject, and on the diſeaſes of children.

FINIS.

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