

An essay on natural labours / by Thomas Denman, M. D. licentiate in midwifery of the College of Physicians.

Contributors

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A N
E S S A Y

O N

NATURAL LABOURS.

By THOMAS DENMAN, M. D.

LICENTIATE IN MIDWIFERY OF THE COLLEGE OF
PHYSICIANS.

Naturæ Numen ubique præfens cernitur.

HARV.

Printed for J. JOHNSON, No. 72, St. Paul's Churchyard.

M DCC LXXXVI.

E S S A Y



By THOMAS DENMAN, M.D.

LICENTIATE OF NEWCASTLE COLLEGE
PHYSICIAN

Printed by J. ...

Printed for J. ...

TOgether with this Essay, it was my intention to have published that on Difficult Labours, which is now in great forwardness: But as it is a subject of the first consequence, and must necessarily contain the history of what has hitherto been proposed or done in Labours of that Class, it is deferred for the present; that I may have time to give it the consideration due to a matter of such great importance.

August 6th, 1786.

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O N
L A B O U R S.

C H A P. VII.

S E C T I O N I.

HAVING given a description of all the parts concerned in parturition, and enumerated the principal alterations produced in the constitutions of pregnant women; and having taken notice of all the previous changes, we come in the next place to the consideration of a *Labour*. This term is generally used to signify every act performed with difficulty or pain, but by long established custom, it has been appropriated in this and many other countries, to parturition, the circumstances of which it is well suited to describe.

Before we proceed to the history of labours, it is requisite that we should divide them into classes

or kinds; and though objections might be made to a very strict arrangement, some appears to be both convenient and necessary, for the purpose of enabling us to convey our sentiments with perspicuity to others, and for real use in practice.

With these intentions, labours may be divided into the four following classes:

- | | |
|---------------|-------------------|
| 1. Natural. | 3. Preternatural. |
| 2. Difficult. | 4. Anomalous. |

Under one or other of these distinctions, every kind of labour which can occur, may be reduced.

S E C T I O N II

Natural labours, which have had their denomination from their frequency, from the regularity of the manner in which they proceed, or from their being completed by the unassisted efforts of the constitution, form a standard by which we are to judge of every other class. It is therefore necessary that we should give as precise an idea of them as the subject will allow. We will then say that every labour shall be called *natural*, if the head of the child presents, if it is completed within twenty-four hours, and if no artificial assistance is required.

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Should any of these three leading marks of the definition of a natural labour be wanting, it must come under some other denomination. Thus, if any other part except the head should present, the labour would be *preternatural*; if it should be prolonged beyond twenty-four hours, it would be *difficult*; and if artificial assistance were required, though the labour might be completed within one hour, it would be *anomalous*, or must be referred to some other class.

The presentation of the head of the child constitutes an essential part of the definition of a natural labour, yet this may happen in various ways. The most common position of the head, and that in which it is expelled with the greatest facility is, when the hind head is disposed to turn towards the *pubes*, and the face towards the hollow of the *sacrum*. But the face is sometimes inclined towards the *pubes*, and the hind-head towards the hollow of the *sacrum*; or there may be an original presentation of the face; or one, or both arms may descend together with the head. These differences in the position of the head do not create labours of another class, but they are to be considered merely as varieties of natural labours; experience having fully proved, that in any of these positions, or with these circumstances, the head may be expelled by the natural efforts, with perfect safety to the mother and child, though not with such ease

and expedition, as if the hind-head were turned towards the *pubes*. It must also be observed, tho' another part of the definition be taken from time, that it is possible for one woman to make greater efforts, and to undergo more pain in two hours, than another may in twenty-four. Then the definition will be imperfect; as almost all general distinctions must be, when they come to be examined and tried by individual cases.

A natural labour was the last thing well understood in the practice of midwifery, because scientific men not being formerly employed in the management of common labours, had no opportunities of making observations upon them. Practitioners were then engaged in qualifying themselves for the exercise of their art, whenever they were called in to give assistance; and not in making nice distinctions, or investigating the particular cases, in which only it might be necessary to exercise it.

S E C T I O N III.

We have before given an account of the changes which precede labours, and are now to give a detail of the symptoms which accompany them.

The first symptom which indicates a present labour is anxiety; apprehension of danger, or
doubt

doubt of safety. This does not seem to be confined to the human species, but to be common to all creatures, as they universally shew signs of dejection and distress at this time, though they suffer in silence; and even those animals which are domesticated, strive to conceal themselves, and refuse all offers of assistance. This anxiety, which is probably occasioned by the first changes made upon the *os uteri*, and by the consent between the vital organs and that very irritable part, is often exceedingly increased by an original timidity of disposition, especially with first children; or by the discovery of untoward accidents happening to other women under the same circumstances, with whom a similarity of situation is the cause of a most interesting sympathy. From motives of humanity as well as professional propriety, it is therefore at these times necessary, by steady conduct, and by arguments suited to the patient's own notions, or the peculiar cause of her fears, to remove her apprehensions; and by soothing and encouraging language, and by attention to her complaints, though not indicative of any danger, to afford her every consolation in our power. This anxiety is greatest in every woman in the beginning of labour, for the sharp pains which attend its progress, excite other sentiments in her mind. But we are at all times to be on our guard, that her supplications for relief, do not prevail with us to attempt to give assistance, when

when our interposition is not required, and when it must necessarily be productive of mischief.

2. At the commencement of labour, and sometimes on the return of every pain, women have frequently one or more *rigors*, with or without a sense of actual cold. These are not to be considered as signs of the accession of disease, but as the effects of an increased irritability spread through the whole frame; or, perhaps, as proofs that all the powers of the constitution are summoned to contribute towards the important process which is carrying on. These *rigors* are void of danger, and they are most apt to occur when the *os uteri* begins to dilate, and when it is fully dilated. But in the course of a labour, when there is one strong and distinct *rigor*, it is often followed by some disease, dangerous either to the mother or child.

3. When the head presents, and scarcely in any other position of the child, women have generally some degree of strangury in the latter part of pregnancy; and this symptom is increased on the approach of labour, by the pressure of the descending head upon the *cervix* of the bladder. Should the pressure be very great, or of long continuance, a suppression of urine may be occasioned, before, or in the time of labour. To prevent the inconveniencies which might arise from a distention of the bladder, either to the part itself, or by obstructing

structing the passage of the head, it is necessary to urge the patient to void the urine frequently, and in case of a suppression, to give relief by introducing the catheter. On the other hand, should the pressure by the head be made upon the *fundus* of the bladder, there will be an involuntary discharge of the urine; or if there should be any extraordinary agitation from a cough, or any similar cause, there will be the same consequence, which is very troublesome but not dangerous.

4. It is not unusual for patients to have a *tenesmus*, or one or two, or more loose stools in the beginning or course of a labour. Both these symptoms may be occasioned by the consent between the *os uteri* and the *sphincter* of the *anus*, or by the pressure made upon the *rectum*, as the head passeth through the *pelvis*. There is in the minds of all women a popular prejudice and unreasonable dread of complaints in the bowels, through every stage of pregnancy, parturition, and childbed; and of course there is never any objection, but on the contrary, a willingness to use such means as are advised to suppress them, or restrain any disposition to a *diarrhæa*. The error has arisen from confounding the looseness which often accompanies the last stage of the puerperal fever, with that which proceeds from any other cause. The *diarrhæa* which attends the beginning or course of a labour, is so far from occasioning or from proving any danger, that

that the patient is evidently relieved by it ; a greater freedom being given to the action of the *uterus*, more room made for the passage of the child, and any feverish disposition thereby removed or prevented. If therefore the patient should not at that time have stools spontaneously, it is very sound practice to direct one or more emollient clysters for the beforementioned purposes. Nor are those the only good ends which are answered by clysters, for they soothe the parts when too much or improperly irritated, and serve as a fomentation, which by its warmth and moisture, may give or amend their disposition to dilate. In very slow labours, when the head of the child has dwelt for a long time in one position, it is not unusual for the patient to have one or more loose stools immediately before the advancement of the head, after which the labour is soon concluded.

5. The uncoloured mucous discharge which pretty generally occurs before labour, on its accession, is usually tinged with blood, or a small quantity of pure blood is discharged. This sanguineous discharge which varies in quantity and appearance in different women, is popularly called a *show*, and it happens more particularly at two periods of a labour ; when the *os uteri* begins to dilate, and when it is finally dilated. In the first instance it is probably occasioned by the separation of a few of those vessels by which the membrane which connects the *ovum* to the *uterus*,

was

was originally bound; and in the second, by the effusion of some blood before extravasated in the substance of the *os uteri*; for this part in some cases acquires an uncommon thickness from that cause, independent of any edematose or inflammatory tumefaction. In many cases there is no coloured discharge in any period of a labour, and then the dilatation generally proceeds more slowly; for the discharge is not only a sign that the parts are in a state disposed to dilate, but it also improves that state. It is not only in colour or quantity that there is found much difference in this discharge, but also in consistence and tenacity; it being in some cases thin and watery, and in others thick and extremely viscous.

6. But all these symptoms are not positive proofs of the existence of labour; for we cannot consider a woman as being in actual labour, unless she has the usual pains. Nor does all pain in the region of the *uterus*, certainly prove that a woman is in labour, because such pain may be excited towards the conclusion of pregnancy, by various causes, besides the action of the *uterus*. These pains are therefore distinguished into two kinds, *true* and *false*; but the seat, the manner, and the degree of these pains, often resemble each other so nearly, that it is very difficult, or impossible to distinguish them, and we are obliged to wait for the event, before we are able to decide.

The *true* pain of labour usually begins in the loins, or lower part of the back, surrounds the *abdomen*, and terminates at the *pubes*, or upper part of the thighs; and it sometimes observes a quite contrary direction. In some cases the pain is confined to one particular spot, as the back, *abdomen*, thighs, or inferior extremities; in others, the pain is seated in some part far distant from the *uterus*, as in the knees, heels or feet. In some, the stomach is affected; in others, though very rarely, the brain, and then convulsions, or some derangement of its functions are brought on. In short, the varieties of pain are innumerable, and these are explained by what we really do know, or fancy we know, of the influence of the nervous system.

The pain attending a labour is periodical, with intervals of longer or shorter duration, according to the action of the *uterus*, on which it depends; and the more the pains are multiplied, the better it is for the patient. For if an effect of great importance to the constitution is to be produced, the more slowly it is made, provided the slowness of the progress does not depend on any morbid cause, the more gradual will be the change, and of course the danger which sudden violence might produce, be avoided or lessened; the division of the pain being equal to the diminution, nearly in the same proportion, as rapidity is an addition to force. It is an old observation confirmed by daily experience, that

that after the completion of slow or lingering labours, patients usually recover better than after quick ones; not to mention, that they are less liable to the untoward accidents which precipitation may immediately produce.

Those who endure any kind of pain, express their suffering by some peculiarity of manner, or by some tone of voice, which to a nice observer, will generally discover the part affected, together with the kind and degree of pain. Sharp pain is universally expressed by an interrupted and acute tone of voice; obtuse pain by a continued and grave tone; unless the expressions are controlled by an acquired firmness of mind, which on particular occasions, may enable it to rise above the infirmities of the body. The expressions of pain uttered by women in the act of parturition, may be considered as complete indications of the state of the process, so that an experienced practitioner is as fully master of the state of his patient, if he hears her expressions, as by any other mode of examination. He must however understand and make allowances for the peculiarities of different patients, or he will be deceived; because in tender constitutions, the sensations being quick, and the resolution faint, the mode of expression will be according to the sense, and not in proportion to the degree of absolute pain.

In the first stage of a labour, the change consists in the dilatation of the parts. Forcible or quick dilatation gives a sensation similar to that produced by the infliction of a wound, and it is equally expressed by an interrupted and acute tone of voice. These are popularly called *cutting* or *rending* pains. When the internal parts are dilated, and the child, or contents of the *uterus* begin to descend, the patient is, by her feelings, obliged to make an involuntary effort to expel; and the expressions are then made with a continued and grave tone of voice, or she is mute. These are called *bearing* pains. But there is an intermediate period of a labour, in which there is in the first instance some degree of dilatation, and afterwards an effort to expel; and then there will be the expression which denotes sharp pain, combined, or immediately succeeded by a graver tone of voice. When the child first begins to press upon and to dilate the external parts, the expression becomes again acute and vehement; and lastly, the expulsion of the child is accompanied with an outcry of suffering beyond what human nature is able to bear; or, the pain is endured with silence. The knowledge of these circumstances, though apparently trifling and contingent, is really of some importance in practice, and permanent; as far at least as the freedom, or restraint of the breathing can operate. If, for example, on any principle, the patient was induced
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in the beginning of labour, to retain her breath, and to make strong efforts to expel, the order of the labour would be inverted; as it would also, when the parts were dilated and the expulsoy power wanted, if she should exclaim:

The pains of labour or childbirth, and the action of the *uterus*, are terms used synonymously, but they are not exactly the same thing. The action of the *uterus*, by which its contents are compressed into a less space, and would be excluded, if there was any opening for their passage, first takes place as a cause; and this does not seem to be attended with pain. When some part resists the passage of the contents of the *uterus*, the exclusion of which is the effect to be produced, there will then be pain, proportionate to the action—to the sensation of the resisting part—and the resistance made. There is no way by which we can estimate the degree of force, but by the resistance; nor the resistance, but by the pain attending it; nor the pain, but by the expression. Judging by induction of the force exerted, by the expression of the pain, we say in common language a weak pain, a strong pain, or a woman is delivered by her pains; and the purpose of conveying our meaning is answered, though the expressions are not strictly legal. We may suppose the parts through which the child must pass, so perfectly disposed to dilate, that they would make little or no resistance to the excluding force,

force, and then a woman would be delivered with very little or no pain. This observation will not only discover the reason of the great advantage obtained, by a labour being slow and lingering; why some women are delivered comparatively without pain; but, with this perfect disposition to dilate, if the patient should be asleep when the action of the *uterus* came on, the possibility of her being delivered, before she was quite awake.

In the conversation of those who attend labours, it is often surmised, that women have much unprofitable pain. This statement is not only unfair as to the fact, but the language is very dispiriting; and it is often assigned as a reason, for an interposition altogether unnecessary, and often injurious to the mother or child. No person in labour ever had a pain which was in vain. It may not be equal to the accomplishment of the effect we want, at the time we wish, but every pain must have its use, as preparatory to, or absolutely promoting the effect; and as we are not able to comprehend every possible cause of every state, by endeavouring to remove what appears to be one slight ill, it often happens, that we occasion many, and those of greater consequence.

Though the pains of labour return periodically, the intervals between them are of different continuance. In the beginning, they are usually slight in their degree, and have long intervals; but as the

the labour advances, they become more violent, and the intervals are shorter. Sometimes the pains are alternately strong and weak, or two feeble and one strong; and there is reason to think that every variety has its advantage, by being suited to the apparent, or internal state of every individual patient. In every circumstance which relates to natural parturition, it is impossible not to see, and not to admire the wisdom and goodness of Providence, in ordaining the power and fitting the exertion to the necessities of the situation, with a marked respect to the safety both of the mother and child. This perfect coincidence between the cause and effect should afford a lesson of patience, to those persons who when in labour become intractable, and by losing their self-possession add to the unavoidable evils of their situation; and to those practitioners, who being led away by popular errors, aim to add to the strength of the pains, or to quicken their returns, and act as if they thought there was no other evil but that of a slow labour; an opinion, which in its consequence has done more mischief, than the most skilful practice ever did good.

S E C T. IV.

Though it was said that pain was properly speaking, a constituent part of a labour, it was also observed, that all pain in the region of the *uterus*, though periodical in its returns, was not a positive proof of the existence of a labour. For whatever disturbance is raised in the constitution, especially in those parts connected, or readily consenting with the *uterus*, towards the conclusion of pregnancy, is very apt to induce the symptoms of labour, in a manner which makes it difficult to distinguish between *true* and *false* pain. Yet the good of the patient, as far as relates to the proper conduct of the ensuing labour, may depend upon the justness of the distinction; for if the pain which is *false*, be encouraged or permitted to continue, the action of the *uterus* would follow, and premature labour be occasioned.

The causes of *false* pain are various; as fatigue of any kind, especially too long standing; sudden and violent motions of the body; costiveness, or a *diarrhæa*; general feverish disposition; agitation of the mind, and a spasmodic action of the abdominal muscles. Very frequently also the irregular and strong movements of the child, in irritable constitutions, occasion pains like those arising from the action of the *uterus*. In some cases, there is such a close resemblance between *true* and *false* pains, that they cannot be distinguished without an examination

tion *per vaginam*. If, during the continuance of a pain, no pressure upon, or dilatation of the *os uteri* can be perceived, we may conclude that the pain is not the consequence of the action of the *uterus*; and whatever likeness it may have, that it is not *true* pain. But if there should be pressure upon, or dilatation of the *os uteri*, during the continuance of the pain, we may consider it as proceeding from the action of the *uterus*, and be persuaded that the patient is really in labour. In a few cases, I have known the action of the abdominal muscles so regular and strong, that the whole volume of the *uterus* has been heaved up and down alternately, in such a manner that it was scarcely possible to distinguish between this strange succussion, and the proper action of the *uterus*.

The means to be used for the relief of *false* pain, must be guided by the cause. When it is occasioned by fatigue of any kind, immediate ease will often be gained by a short confinement in an horizontal position. In plethoric habits, or with a feverish disposition, it will be necessary to take away some blood, and when the patient is costive, to procure stools by emollient clysters, or gently opening medicines. In every case, when means adapted to the apparent cause have been used, it will be proper to give an opiate proportioned to the degree of pain, or to repeat it in small quantities at proper intervals, till the patient shall be composed.

S E C T. V.

It has been thought equally incumbent upon the practitioner to promote the power and effect of *true* pain, as it was to quiet that which was *false*. This opinion is perhaps more universally popular than any other throughout medicine, and having infected the minds of practitioners, it has been as injurious as it is general. From this source may be traced the opinion of the necessity, and the abominable custom of giving assistance, as it is called, by dilating the internal and external parts artificially; of giving hot and cordial nourishment during labour, even in plethoric habits and feverish dispositions, by which the nature of the principle which should actuate the *uterus* is changed, the pains are rendered disorderly and imperfect, and the foundation of future mischief and difficulties is laid. Hence also was derived the doctrine of the necessity of patients helping themselves, as it is called, by urging with all the voluntary force they are able to exert, beyond the dictates of nature; as if a labour was a trick to be learned, and not a regular process of the constitution. Women should be informed, that the best state of mind they can be in at the time of labour, is that of submission to the necessities of their situation; that those who are most patient actually suffer the least; that, if they are resigned to their pains, it is impossible for them to do wrong; and that attention is far more frequently
 required

required to prevent hurry, than to forward a labour. In every thing which relates to the act of parturition, Nature, not disturbed by disease, and unmolested by interruption, is fully competent to accomplish her own purpose. She may be truly said to disdain and to abhor assistance. Instead therefore of despairing and thinking they are abandoned in the hour of their distress, all women should believe, and find comfort in the reflection, that they are at those times under the peculiar care of Providence; and that their safety in child-birth is insured by more numerous and powerful resources, than under any other circumstances, though to appearance less dangerous.

S E C T I O N VI.

In order to give a full and distinct view of a natural labour, it is expedient to divide the process into three periods or stages. In the first will be included, all the circumstances which occur, and all the changes made, from the commencement of the labour, to the complete dilatation of the *os uteri*, the rupture of the membranes and the discharge of the waters; in the second, those which occur from that time to the expulsion of the child; and in the

third, all the circumstances which relate to the separation and exclusion of the *placenta*.

In the beginning of labour, the *os uteri* is found in very different states, in different women. In some it is extremely thin, and in others of considerable thickness; in some, it is rigid and closely contracted, but in others, it is much relaxed and somewhat opened, for several days, or even weeks, previous to the accession of labour; in some cases, the *os uteri* remains so high that it can with difficulty be reached, in the center of the superior aperture of the *pelvis*, projected backwards, or on either side; whilst in others, it is spread thin, and pressed very low, before it begins to dilate. There is in short every variety of state and position, which a part constructed and connected like the *os uteri*, can be thought capable of undergoing.

The first part of the dilatation is generally made very slowly, the action of the *uterus* on which it depends, being feeble in its power and slow in its returns; but the more perfect the state of relaxation is, with the greater facility the dilatation will be made. This is at first effected by the simple pressure of the contents of the *uterus* upon the *os uteri*; but when the dilatation is made to a certain degree, the membranes containing the waters of the *ovum*, are insinuated within the circle of the opening *os uteri*, and form a soft pillow, which at the time of every pain, acting upon the principle of a wedge, operates

operates with increasing force according to the size it acquires; in consequence of which, the latter part of the dilatation usually proceeds with more expedition than the former.

There is no possibility of prognosticating how long a time may be required for the complete dilatation of the *os uteri*; yet a tolerable conjecture, subject however to many deviations, may be formed by a person who has had much experience. If, for example, after a continuance of the pains for three hours, the *os uteri* should be dilated to the size of one inch; then two hours will be required for dilating it to two inches, and three hours more will be necessary for dilating it completely, provided the action of the *uterus* should proceed with regularity, and with equivalent strength. But in some cases, the *os uteri* will abide in nearly the same state for several hours; and when the dilatation begins, it will soon be perfected. In others, after a certain degree of progress, the action of the *uterus* will be suspended for many hours, and then return with great vigour.

With first children, this stage of a labour often makes the most tedious and important part of a labour, both on account of the time requisite for completing the dilatation of the *os uteri*, and because the accompanying pain is more sharp and harder to bear, than that which is attended with the effort to expel; which never fails to inspire the
 patient

patient with the hope of being freed from the misery which she endures. When the parts are to our apprehension in the same state, there will be a wonderful difference in the manner of, and the time required for dilatation, in first and subsequent children. There might be much difficulty in exploring and ascertaining the cause of this difference, but we may presume that a part which is accustomed to perform an office, or undergo a change, acquires a disposition to the office or change, according to the number of times it has performed that office, or undergone that change. Something of the kind may be observed in newborn infants, in which there is often a tardiness to execute what may be considered as the common functions of the body.

As a labour advances, the intervals between the pains become shorter, and their force is increased. At the time of each pain, the patient is restless and solicitous for the event; but when it ceases, by a happy oblivion, she soon forgets it, and is unmindful of its return. In some constitutions, the labour, instead of adding to the irritability of the habit, and exciting its powers to action, occasions a degree of insensibility; or the patient falls into a sound sleep, the moment the pain begins to abate, from which she is awakened by its return. In others, the power exerted by the *uterus*, aided by that of the abdominal muscles and diaphragm, being

ing insufficient for the purpose of dilating the *os uteri*, or that part becoming unusually irritable by the frequent impressions made upon it; then, by its consent with the stomach, extreme sickness or vomiting is brought on, sometimes after every pain, by which the labour is very much forwarded; one fit of vomiting, according to popular observation, doing more service than several pains. But when the *os uteri* is dilated, patients have very seldom an inclination to vomit, from any natural cause. Vomiting very often attends the passage of a stone through the *ureters*, or the *gall-ducts*, from the same cause, and with the same effect.

By regular returns of pain, or with the varieties before mentioned, with many others which it is impossible to enumerate, the *os uteri* becomes at length wholly dilated. Whether a short or a long time be required for this purpose, it is the duty of the practitioner to abstain from interfering in this part of the process. It may sometimes be necessary to pretend to assist, with the intention of giving confidence to the patient, or composing her mind. But all artificial interposition contributes to retard the event so impatiently expected, by changing the nature of the irritation and the action thereon depending; by inflaming the parts, and rendering them less disposed to dilate; in short, by occasioning either present disorder, or future disease. For these reasons, we must be firm, and resolved to
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withstand the intreaties which the distress of the patient may urge her to make, as we must also the dictates of vehemence and ignorance. Others may be impatient, but we must possess ourselves, and act upon principle. The event will justify our conduct; and though there may be temporary dislike and blame, if we do what is right, there will be permanent favour and reputation.

During the continuance of a pain, the membranes containing the waters are turgid, pressed upon, and within the circle of the *os uteri*, according to the strength of each pain, by which the further dilatation is promoted; but in the absence of a pain, the membranes become flaccid, and seem to be empty. These different states of the membranes are readily explained by the observations before made, by our knowing that when the *uterus* is in action, its cavity is lessened, and of course its contents are compressed; but that on the cessation of the action, the cavity of the *uterus* is again enlarged, and the compression removed. Hence it becomes necessary, when an examination *per vaginam* is made during the time of a pain, that we should be cautious not to break the membranes; and if any accurate investigation is needful, either of the state of the parts, or of the position of the child, that it ought to be made in the interval be-

between

tween the pains, or protracted till the pain has ceased.

In a short time after the *os uteri* is wholly dilated, the membranes are usually ruptured by the force of the pains, and the waters of the *ovum* are discharged in one large gush or stream. But in many cases, the membranes break spontaneously long before this period, without any material inconvenience. In some they are not ruptured when the dilatation of the *os uteri* is completed, but are protruded by each successive pain lower down into the *vagina*, and then within the *os externum*, which they also dilate; and at length a small bag of water is formed without the *os externum*, which can serve no farther purpose.

It is a commonly received opinion among the lower class of people, that the child should be born speedily after the rupture of the membranes and the discharge of the waters. This opinion is not founded in prejudice, but in sound observation, and was probably first entertained by those who were engaged in the care of breeding cattle, in which this is the usual course of parturition; and I believe it would often happen in the human species, if the progress of the labour was not, by some means or other, disturbed or interrupted. But it has been a custom, which at the present time is not unfrequent with practitioners, urged by the distress and suffering of those whom they are

attending, or by the concern of friends, or by a persuasion of its propriety and advantage, and sometimes perhaps by their own impatience, to break the membranes before the *os uteri* is dilated. If these are ruptured spontaneously, or artificially before the *os uteri* is dilated, the child cannot possibly follow immediately; and all that is gained, is by bringing the head of the child, instead of the membranes containing the waters, into contact with the *os uteri*. This cannot be considered as any advantage, as it changes a very soft and accommodating medium, provided by Nature for the end of preventing any undue violence upon a very tender part, for the hard and unaccommodating head of the child. Nor is this the only ill consequence which follows: by this proceeding, we occasion a general derangement of the order of the labour, which is never done with impunity, as it may afterward become the cause of a laceration of the external parts, or even of an unfavourable separation of the *placenta*. Moreover, by this premature rupture of the membranes, we often defeat our own purpose, and by disturbing, protract instead of hasten the labour. Let us therefore agree in establishing it as a general rule for our own conduct, that the membranes shall never be ruptured artificially, before the *os uteri* is fully dilated; and be persuaded, that it is afterwards unnecessary, unless there should be

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some cause more important, or some reason of more weight, than those which have been commonly assigned.

S E C T I O N VII.

In the second period or stage of a labour, will be included all the circumstances attending the descent of the child—the dilatation of the external parts—and, the final expulsion of the child.

Notwithstanding the definition of a natural labour which was before given, this is not to be considered as a process going on in one unvarying line, and that every aberration is to be thought of sufficient importance to constitute a labour of another class. In this respect the definition of a labour may be compared to that of health, which however correct in general, if submitted to a critical examination, would not correspond, in all points, with the state of any individual person. In like manner, though a labour cannot come under the denomination of *natural*, without the three distinguishing features, yet we may probably never meet with any two labours, in all respects exactly similar. There are perhaps more frequent deviations in the first stage of a labour than in the rest, both with regard to the time and the manner in which the *os uteri* is dilated. Nor is the first stage concluded

either by the dilatation of the *os uteri*, or by the rupture of the membranes and the discharge of the waters, but by the concurrence of these circumstances; and the farther the labour is advanced before the membranes break, the better it afterwards terminates. For before that event there is less violence done to the mother, and less stress upon the parts; because they are without much suffering, acquiring every moment a better disposition to dilate; and till that has happened, whatever may be its position, the child undergoing no compression, is free from all chance of injury.

When the membranes break, if the *os uteri* be fully dilated, the child, though resting at the superior aperture of the *pelvis*, either sinks by its own gravity, if the patient be in an erect position, or is propelled by a continuance of the same pain by which they were broken; or after a short respite, the action of the *uterus* returns, and the head of the child is brought so low as to press upon the external parts; properly speaking, upon the internal surface of the *perinæum*. In its passage through the *pelvis*, the head of the child, which at the superior aperture was placed with one ear to the *pubes* and the other to the *sacrum*, or with different degrees of diagonal direction, undergoes various changes of position, by which it is adapted to the form of each part of the *pelvis*, with more or less readiness, according to its size, the degree of its
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offication, and the force of the pains. With all these changes, whether produced easily or tediously, in one or in many hours, the practitioner should on no account interfere, provided the labour is *natural*. If he attempts to correct and to regulate every slight deviation, or uses any artificial means for hastening the process, the events of his practice will convince him, that he has exercised his art on unnecessary and improper occasions. He will moreover be taught, though he may acquire momentary approbation, by endeavouring to remove every little present inconvenience, that diseases, then far distant, will be attributed to his misconduct, and sometimes not without reason. In this kind of labour, he may with confidence rely upon the powers and resources of the constitution, which will produce their effect with less injury either to the mother or child, and with more propriety than can be done by the most dexterous human skill.

When the head of the child begins to press upon the external parts, these yield in a shorter or longer time, and with more or less ease, according to their natural rigidity, the degree of disposition to dilate which they have assumed during the labour, and the number of children which the patient has before had. The prevention of any injury to the mother, when the child is passing through the external parts, being esteemed a circumstance wholly depending upon the care of the practitioner, this

part

part of our subject deserves a separate and particular enquiry.

S E C T. VIII.

When the head of the child first begins to press upon and dilate the external parts, every pain may be suffered to produce its full and natural effect, without the hazard of mischief. But when a part of the head is insinuated between them, and the *perinæum* is upon the stretch, they are liable to be injured by the violence of the distention. Any of these parts may be injured, but the *perinæum* in particular is subject to a laceration, which may not only extend so far as to occasion much present uneasiness, but very deplorable consequences for the remainder of the patient's life. It is therefore our duty to enquire into the merits of the different methods which have been recommended for the prevention of this accident, more especially as it admits of very imperfect relief, when it has happened.

* Yet it is very remarkable that none of the ancient writers either advise any method by which

* In the works of *Eros*, who lived in the 13th century, and which were published by *Spachius*, this accident is mentioned, and an awkward method of preventing it is recommended,

this

this accident may be prevented, or any means to be used for its relief; excepting such as were generally recommended for inflamed, ulcerated, or fistulous parts. We may therefore presume that it is an accident which did not frequently occur in their practice, or that it was esteemed of too little consequence to engage their attention. With respect to the former opinion, it may be observed, that whatever event is the consequence of any cause, must at all times be produced under the same circumstances, if that cause continues to exist and to act. But those who had not perfection in view, and formed no very nice rule for their own conduct, might not be sensible of deviations, and would not adjudge disagreeable consequences to their own error or mismanagement. They did not therefore advise any method of preventing this accident, because they were ignorant of the cause, or they undervalued it.

It may be further observed, that the oldest writers in midwifery lived before the Christian religion was established, and in countries in which polygamy was allowed; when the death or infirmity of one wife were comparatively of little importance to him who had many, equally, or in some degree, partaking of his affection. But on the establishment of the Christian religion, by which the bad dispositions of the human mind were corrected, and its better qualities exalted, one wife only be-
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ing allowed to one man, and she being supposed to possess the entire affections of her husband, every disease or infirmity which might render her person less agreeable to him, became of infinite consequence to their mutual happiness. Those only who in the present state of society, have had an opportunity of seeing the many evils which flow from this alienation of affection, the cause being perhaps unknown to the parties themselves, can be sufficiently aware of the importance of this and many other accidents to which women are subject; and which are often neglected and disregarded, because they are not attended with immediate danger.

Still the question remains to be decided whether women are, by any peculiarity of construction, naturally or necessarily subject to a laceration of the *perinæum*; or whether this accident be the consequence of opinions entertained, and of alterations in the frame occasioned by the peculiar manners of society, or of any adventitious circumstance whatever, at the time of delivery. * It was before observed, that none of the classes of animals are liable to a laceration of the *perinæum*; except when extraordinary assistance is given, in cases of otherwise insuperable difficulty; and it is well known that the laceration does not universally happen to those women who are delivered before proper

* See the Introduction, Chap. II. Sect. 2.

assistance can be given. It is also to be remarked, that as far as relates to the state of all the internal parts, the changes which they undergo at the time of parturition, are not only effectually, but most safely produced, by the instinctive efforts of the parent. From a general survey of the wisdom, order, and benignity, so clearly apparent in all the designs of Providence, in every circumstance particularly which relates to the propagation of the different species of animals; and the co-aptation, as it were, of that wisdom to the necessities of those of every kind, we might perhaps be justified in making this general conclusion, that women, in every circumstance which relates to their safety and well-doing in natural parturition, are not left in a more destitute state than animals. For though it were proved, that women are liable to greater natural evils and difficulties in parturition than animals; the proofs of these, would equally satisfy our minds, that they are also provided by nature with many peculiar resources, and with powers, which are limited only, by the degree of the difficulties which require their exertion.

Nevertheless, from the frequency of the laceration of the *perinæum*, when women are delivered without assistance, and from the difficulty with which it is sometimes prevented when the most judicious and skilful assistance is given; it is believed by many, that women must often be una-

voidably subject to it, and that the prevention must ever remain an object of human skill. Now, with respect to the first statement, that of the laceration happening when women are delivered without assistance, it does not follow, that it is inevitable; for even then it may be the production of error in the patient herself, or her friends. Because from the hurry and sollicitude of their situation, she may have been encouraged to make great voluntary efforts, when the head of the child was on the point of coming into the world, merely because she was not assisted; or, after the expulsion of the head, instead of waiting for the body to be expelled also, some officious person presumed to extract it without regard to time, or the direction of the *vagina*. As to the difficulty or impossibility of preventing the laceration in some cases, we are to consider that what may happen in a state of society, might not have happened in a state of nature; that the foundation of the accident may have been laid by something done in the preceding stage of the labour; and that it may be very much doubted, whether some of the methods practised for the prevention, may not in fact have been the cause of the accident.

But the conduct of the practitioner is not to be guided by reflections on what his patients might do or bear, with constitutions healthy and firm, and with minds untainted with prejudices; but by
 due

due consideration of what they are *now* capable of doing or bearing; and he must adapt his rules and his practice to the state in which he actually finds them. From some natural or acquired cause, the laceration of the *perinæum* certainly does very often happen; and as so much of the future happiness of a woman may depend upon its prevention, we will grant, what is in many cases true, that it is always to be prevented by our skill and care; as no harm can arise from the opinion, if it is erroneous.

In the beginning of a labour, especially with first children, it is not unusual to find the external parts closely contracted, and void of all disposition to dilate: yet in the course of a few hours, even when they have undergone no kind of pressure, but merely by a disposition assumed from their consent with the internal parts, they become relaxed and soft. The longer the time therefore which passes between the commencement of labour and the birth of the child, the less liable to a laceration will the *perinæum* be; for it is never lacerated in a very slow labour, whatever may be the size of the child. But if it was possible to hurry a labour in such a manner, that the head of the child should be brought into contact with, and pressed forcibly upon the external parts, before they had acquired the disposition to dilate, they would be universally torn, unless the accident was prevented by art;

and the chance of the accident would be according to the degree of precipitation, and many hours after the act by which the labour was hurried, was forgotten.

When the head of the child is insinuated within the external parts, if these do not easily yield to the occasion, it has been customary to dilate them artificially, under the idea of preparing them, to allow of the more speedy passage of the head. During every pain, it is obvious that the parts undergo as much distention as they are capable of bearing without injury; and this preparation irritating and causing an additional stress upon them, nothing is more clear, than that this method of proceeding contributes to their laceration. All artificial dilatation of the parts, all attempts to slide the *perineum* over the head of the child, are to be forborne and avoided as pernicious.

When the external parts are very rigid, we have been taught that it is of great service to anoint them frequently and unsparingly with some unctuous application, with the intention of giving, or improving that disposition to dilate which is wanting. If the parts are cloathed with their proper *mucus*, as the use of any application in the manner advised would wipe that away, we shall find ointments of any kind a very poor substitute for that *mucus*, and that there is little profit from their use. If the parts are heated and dry, the application

cation of flannel wrung out of warm water, and then some soft and simple ointment may be serviceable, by abating their heat, giving them a disposition to secrete their proper *mucus*, and of course favouring their dilatation.

In some constitutions the different parts concerned, are not equally inclined to dilate. Sometimes the internal parts dilate in the most kindly manner, when the external are in a contrary state; and sometimes the internal are very rigid, when the external have the greatest aptitude to dilate, yielding to the first impulse of the head. There is in all infinitely more difficulty with first than with subsequent children, not from rigidity only, but if we may be allowed the expression, from ignorance how to dilate; and from a certain degree of re-action in the parts during the continuance of every pain. It is therefore often observed that the head of the child advances more, and with greater safety, when the violence of a pain begins to abate, than during its continuance in full force; because the re-action of the parts is then the strongest.

During a pain there is often reason to expect that the head of the child would be excluded; but the moment the pain declines, the head is retracted a considerable way into the *vagina*, and the external parts close again. No other inconvenience arises from this cause, than a little prolongation

gation of the labour, which may be irksome, but cannot be injurious. If the parts do not distend favourably, should the head of the child abide within them in the absence of a pain, it may be expedient to repel it, in imitation of this natural occurrence, for the purpose of preventing the laceration.

When the head of the child is every moment expected to pass through the external parts, we have been advised by some, to forward the emergence of the head from under the arch of the *pubes*. Others have on the contrary assured us, that it is more eligible to prevent for a certain time this emergence, by which means, not only time is given for the parts to dilate, but the head of the child is brought to pass through them in its smallest *axis*, and less distention is thereby occasioned. Whoever has reflected upon this subject, would hesitate as much to believe, that in the general dispensation of Providence, it should have been left to human skill to guide the head of the child at the time of birth, in a direction different from that in which it most commonly presents, as that it could have been intended for the generality of children to have been brought into the world by instruments, or by any human invention. As far as my experience enables me to judge, neither of these methods ought to be followed, nor any other which requires a complication of artifice; for after
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a trial of them all, I am convinced that the most effectual method of preventing a laceration, or any injury to the parts, is to be founded on the single principle of retarding or hindering, for a certain time, the passage of the head of the child through them. This retarding may depend on the composure of the patient and the skill of the practitioner; and those errors of which the former might be guilty, the latter must obviate and correct.

When the head of the child is nearly born, the effort to expel is made instinctively, and it is usually vehement; the breath being retained for the purpose of strengthening that effort. The patient may also, from a persuasion of its being necessary and proper, or at the instance of her friends, strive with much voluntary exertion to add to the force of the pain, for the purpose of expelling the child more speedily. If we presume that the danger of injuring the parts, depends merely upon the rapidity with which the head may be expelled, and that these are only able to bear without injury so much distention as is occasioned by the instinctive efforts; then all the additional voluntary force is beyond what is either needful or safe. * It is therefore requisite that we should do away this voluntary force, by convincing the patient of its impropriety, and dissuading her from exerting her-

* See the Introduction, Chap. II. Sect. 2.

self;

self; or lessen at least the voluntary effort, by urging her to talk or cry out during the time of a pain, which will prevent her from retaining her breath; or if her sufferings are so great, that she cannot command her own actions, then the efforts she makes, must be resisted on our part by the application of some equivalent force, in the manner we shall soon consider. When the patient has been outrageous, and the danger of a laceration very great; I have sometimes gained a respite, by telling her suddenly in the height of a pain, that the child was already born.

Every thinking man will carry the principles he has considered and approved, in his remembrance, through the whole course of his practice; but the methods by which his principles are pursued, must be carefully suited to the particular exigencies of every individual case. In the subject of which we are now speaking, there is a number of little circumstances, the knowledge of which can only be learned by reflection and experience. But it will generally be sufficient for the practitioner to resist the progress of the head of the child, during the time of a pain, by placing upon it the fingers and thumb of the right-hand, so formed that they may bear upon many points; or, to apply the palms of one or both of the thumbs in such a manner, that they shall at the same time support the *fourchette*, or thin edge of the *perineum*. But in first children,
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when from the vehemence of the patient, and the rigid state of the parts, there is great reason to apprehend a laceration of the *perinæum*; then, occasionally calling in the other means to our aid, we shall be able to give the most powerful and effectual support, by applying the palm of the left-hand, covered with a soft cloth, over the whole * temporary and natural *perinæum*; with a force sufficiently firm, to resist the exertions of the patient, during the violence of the pain. In this way we are to proceed, till the parts are sufficiently dilated, when the head may be permitted to slide through them, in the slowest and gentlest manner; and we are never to quit our attention, till it is perfectly cleared of the *perinæum*. Should there be any hesitation or awkwardness when the *perinæum* slides over the face, the fore-finger of the right-hand must be passed under its lateral edge, by which it may be cleared of the chin, before the support given by the left-hand is withdrawn. When the pains are exceedingly strong, and the patient impetuous in her efforts, the head will sometimes be expelled with wonderful velocity, in opposition to all the resistance we are able to make; but by this calm and steady proceeding, we may be assured that we shall, under all circumstances, wholly prevent, or greatly lessen all the evils to

* See the Introduction. Chap. II. Sect. 2.

which she would have been liable, if our conduct had been different.

It is necessary to observe, that these attempts to prevent the laceration of the *perinæum*, produce some effect upon the head of the child and upon the parts of the mother. In the application therefore of the resisting force, we must not only be careful that the position of the patient is proper, and such as will allow us to act with advantage; but that we do not make any injurious or partial pressure. It must be equally applied and uniformly exerted; and then there will be no more prejudice than what might be occasioned by the rigidity of the parts.

When the head of the child is expelled, perhaps the consequences of an instant transition from extreme misery, to total freedom from pain and to positive joy, are in no case to which human nature is subject, more conspicuous and interesting; though the delivery be not completed. It was formerly supposed necessary for the practitioner to extract the body of the child, immediately after the expulsion of the head, lest it should be destroyed by confinement in this untoward position. But experience has not only proved, that the child is not on that account in any particular danger; but that it is really safer and better, both for the mother and child, to wait for the return of the pains, by which it will soon be expelled; and a more favourable
 exclu-

exclusion of the *placenta* will also by that means be obtained. In the course of a few minutes after the expulsion of the head, the action of the *uterus* returning, the shoulders of the child advance, and the external parts of the mother being again brought upon the stretch, the practitioner must place the fingers of his right-hand on each side of the neck; and at the same time with the left, support the *perinæum*, with as much circumspection as when the head was expelled: he must then conduct the body slowly in the direction of the *vagina*, till it is wholly extricated.

The child is to be placed in such a situation that the external air may have free access to its mouth, its head being covered: care being then taken of the mother, we must proceed to tie the navel string in the manner recommended in the next section.

S E C T. IX.

The operation of tying and cutting the navel-string when the child is born, though in itself of no great importance, was formerly thought to require so much skill and judgement, as to give a professional name to those who are now called practitioners in midwifery. But every thing which re-

lates to the treatment of the mother, or child, is of some consequence; and even in trifling matters, there is a propriety of manner, the want of which may lessen the estimation of every person's character.

It seems to have been a practice with the ancients, to wait for a certain time after the birth of the child for the exclusion of the *placenta*, before the navel-string was tied or divided. If the child was born apparently dead, or in a very feeble state, the *placenta* was laid upon its belly, as a restoring, or comforting application. When the child revived but slowly, or when the signs of life declined, it became a custom to lay the *placenta* on hot embers, or to immerse it in hot wine, and the heat thereby conveyed, was supposed to stimulate the weak or decaying powers of life to more vigorous action. It has since been the practice to divide the *funis* immediately after the birth of the child, and the weaker this was, the more expedition was to be used; for the child being supposed to be in a state similar to that of an apoplectic patient, a certain portion of blood might by that means be discharged, and the imminent danger instantly removed. There is another method which I have seen practised, the very reverse of the former; for in this, the loss of any quantity of blood being considered as injurious, the navel-string was not divided, but the blood contained in its vessels was repeatedly stroked from
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the *placenta* towards the body of the child. In all these different methods, and many others founded on directly contrary principles, children have been treated in different times and countries, and yet they have generally done well; the operations of nature being very stubborn, and happily admitting of considerable deviation and interruption, without the prevention of her ends.

There is yet in all things a perfectly right, and a wrong method; and though the advantage or disadvantage of these may be overlooked, the propriety and advantage of the right method must be evidently proved by individual cases, and of course by the general result of practice. In this, as well as in many other points, we have been too fond of interfering with art, and have consigned too little to nature; as if the human race had been destined to wretchedness and disaster, from the moment of birth, beyond the allotment of other creatures.

Perhaps the changes which take place in the body of the child, immediately after its birth, at least the manner in which they are produced, are not perfectly understood at this time. * But we know if the child is in a healthy state, that it cries lustily and continually, when the air first rushes into

* See *Pen Pratique des Accouchments*, Livre I, Chapit. xii. 18.

And an Essay on the Treatment of Women in Child-bed; written by my very ingenious and indefatigable friend Mr. *Charles White*.

its lungs, which are thereby expanded. This cry, which does not seem to be occasioned by pain but surprize, is in its consequences extremely important; as it is the cause of an exertion of all the powers of the child, and enables it to acquire a new manner of living, inconsistent with, and very different from that which it possessed before it was born. But the change from uterine life, as it may be called, to breathing life, is not instantaneous, but gradual; and the uterine life continues, till the breathing life is perfected, as is proved by the continuance of the circulation between the child and *placenta*, for some time after it has cried. As the breathing life becomes perfected, the uterine life declines, and the manner of its declension may be proved by attending to the pulsation of the navel-string, which first ceases at the part nearest the *placenta*, and then by slow degrees; nearer and nearer to the child, till at length it entirely ceases; so that the whole of the circulating blood ultimately resides in the body of the child, and the navel-string becomes quite flaccid. It seems reasonable to believe that the continuance of the uterine life after the birth of the child, was designed for its preservation from the accidents of its state at that time; should the acquisition of its breathing life be by any cause, retarded or hindered. If then the practice of tying, or dividing the navel-string the instant the child is born, be followed, though
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it were before vigorous, it will in some cases immediately decline, and never acquiring its perfect breathing life, will in a short time die: Or, if the child were in a feeble or a dubious state, possessing only that life which it had during its residence in the *uterus*, as by tying and dividing the navel-string that life is destroyed before the breathing life is acquired, it must inevitably perish. We may therefore safely conclude, that the navel-string of a new-born infant ought never to be tied or divided, till the circulation in it has ceased spontaneously.

With respect to the manner of tying the navel-string, there has also been much difference of opinion, whether there should be one or two ligatures, and in what part these should be fixed. Two ligatures were advised on the presumption, that by the end of the *funis* next the *placenta*, the maternal blood might be discharged, and the parent brought into great danger, as if there were two currents of blood circulating in the vessels; and by some it was also supposed proper to use two ligatures, for the purpose of retaining the blood; presuming that the *placenta* would be cast off more commodiously, in the manner of a gorged leach. On the contrary, one ligature has been recommended, that we might have an opportunity of draining away as much blood as possible from the *placenta*, by the divided end of the *funis*, which was supposed to produce an advantage equal to the
 dimi-

diminution of the bulk of the *placenta*. But if the custom of deferring to make the ligatures till the circulation in the *funis* ceases, be established, all this reasoning in favour of one or two ligatures will fall to the ground. Yet, as there is a possibility in the case of twins with a double *placenta*, of the child yet unborn, losing its blood by the divided *funis* of that which is born, and from the habit of using them, on the whole I prefer two ligatures; more especially as no harm can arise from them, even if one should be useless. As to the part where the ligature ought to be fixed, it is of no real consequence; because the future separation of the *funis* will not be made at the ligature, where-ever that is fixed, but at a line, evidently marked, and close to the belly of the child; and as to the materials used, provided they are not so thick as to be cumbersome, nor so thin as to cut the *funis*, it is all that is required.

In the course of ten or twenty minutes, and sometimes longer, after the birth of the child, the circulation in the *funis* having ceased, one ligature is to be fixed upon it about three inches from the belly of the child, and another at twice that distance, with so much force as to repress the circulation which may happen to return, and yet not so firmly as to divide it. The navel-string may then be cut with a pair of scissars between the two ligatures, and the child given to a careful assistant.

It

It was formerly the custom to divide the *funis* under the bed-cloaths; but having once known a very deplorable accident happen from this cause, I make it a general rule to withdraw the child, that I may have an opportunity of seeing, when I tie or divide the *funis*.

S E C T I O N X.

Soon after the birth of the child, it is proper to apply the hand upon the *abdomen* of the mother, to ascertain whether there be another child; or whether the *uterus* be contracting in a manner favourable to the separation and exclusion of the *placenta*. Both the doctrines and customs of practice, regarding the management of the *placenta*, have been exceedingly different, even in common cases; and though one method of proceeding may be more generally preferred and followed than the rest, there is much diversity in the conduct of individual practitioners; who may be suspected to act sometimes in a manner contrary to their own judgement, in compliance with the prejudices of those by whom they are employed. The minds of all women are full of solicitous fears, till the *placenta* is brought away; and the sooner this is done, after the child is born, the more they are gratified. But though the discovery of truth, and the fidelity of practice founded thereon, may not

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always

always be acceptable ; yet in all practitioners, however desirous of obliging, there must be some firmness of mind, some determination to act upon principle, or they will be perpetually involved in error ; and led to do what may be productive of immediate or distant mischief, in order to avoid the evil of present censure.

In the history which has been given of the former stages of a natural labour, it appears that all the passive changes which the parts undergo, and all the active powers exerted for producing these changes, are not only entirely independent of the will of the patient, but are fully equal to the end which they were designed to accomplish, without any assistance ; which is no more wanted for the purpose of forwarding a natural labour, than for any of the ordinary functions of the body. When we have seen a child safely expelled, by a process beautiful, and regulated by the greatest wisdom, there seems to be no reason why we should be apprehensive of error, or inability, in the separation or exclusion of the *placenta*, which is but an inferior and secondary part of the same process ; or, why we should not in this, as in all other cases of medicine, be first convinced of the necessity of using art, before we attempt to give assistance. On the proper management of the *placenta*, the life of the patient may depend ; and it is therefore fitting and necessary, that our conduct should be guided by the dictates of reason and experience.

After a natural labour, especially with a first child;

child, the pain which the patient has suffered, and the exertions by which the expulsion of the child was effected, will have occasioned a proportionate degree of temporary fever; and she will be in the same situation as if she had undergone some excessive fatigue. By the birth of the child she is freed from her suffering, and it must be our first employment to restore tranquillity to her mind, to calm the hurried circulation of the blood, and to bring her as soon as we can into a quiet and natural state. In the course of ten, and seldom of more than twenty minutes, the action of the *uterus* is again excited, which is indicated by pain, less in degree, but in other respects like that of which she complained, when the child was expelled. It seldom happens that the *placenta* is either separated or expelled by the first pain; but when that has ceased for a few minutes, it is again renewed, and on examination, the *placenta* is often found descended or descending into the *vagina*; where it may with safety and propriety be suffered to abide, till it is wholly expelled by a repetition of the pains. But if the *placenta* should descend very slowly, or the patient be much disturbed, the practitioner may take hold of the *funis**, and by gentle pulling in the time of a pain, and in a pro-

* When the young has been a short time expelled, carnivorous animals lay hold of the navel-string with their teeth, in order to extract the *placenta*. It is probable, that a woman in a state of nature, would, with her own hands, give something like the same assistance; and in the force I use to bring down the *placenta*, I always bear in mind this circumstance.

per direction, favour its separation and descent. But whether the *placenta* should descend into the *vagina* spontaneously, or be brought down by the assistance given, it should be suffered to remain there till it is excluded by the pains; at least, it should not be extracted, before the hurry occasioned by the labour is wholly composed, and the *uterus* has had sufficient time to contract in such a manner, as to prevent any alarming hemorrhage. The *placenta* seldom remains more than one hour in this situation; but if it should not be excluded at the end of that time, we may again take hold of the *funis*; and aiding the force of a pain, in the gentlest and slowest manner, bring the *placenta* through the *os externum*: we must be likewise cautious to bring down the membranes as perfectly as we can, that any *coagula* formed in the cavity of the *uterus*, may be enveloped in them, and one principal cause of after-pain be removed. Then the patient being put in a comfortable state, and as little disturbed as possible, may be left to her repose.

In this third stage of a labour, many inconveniences, and many impediments to the exclusion of the *placenta* may occur; some of which may require a longer time to be given, and others the assistance of art, for the removal or prevention of danger. But of all these difficulties, and the means of giving relief, we have already spoken very fully, in the *Essay on Uterine Hemorrhages*.