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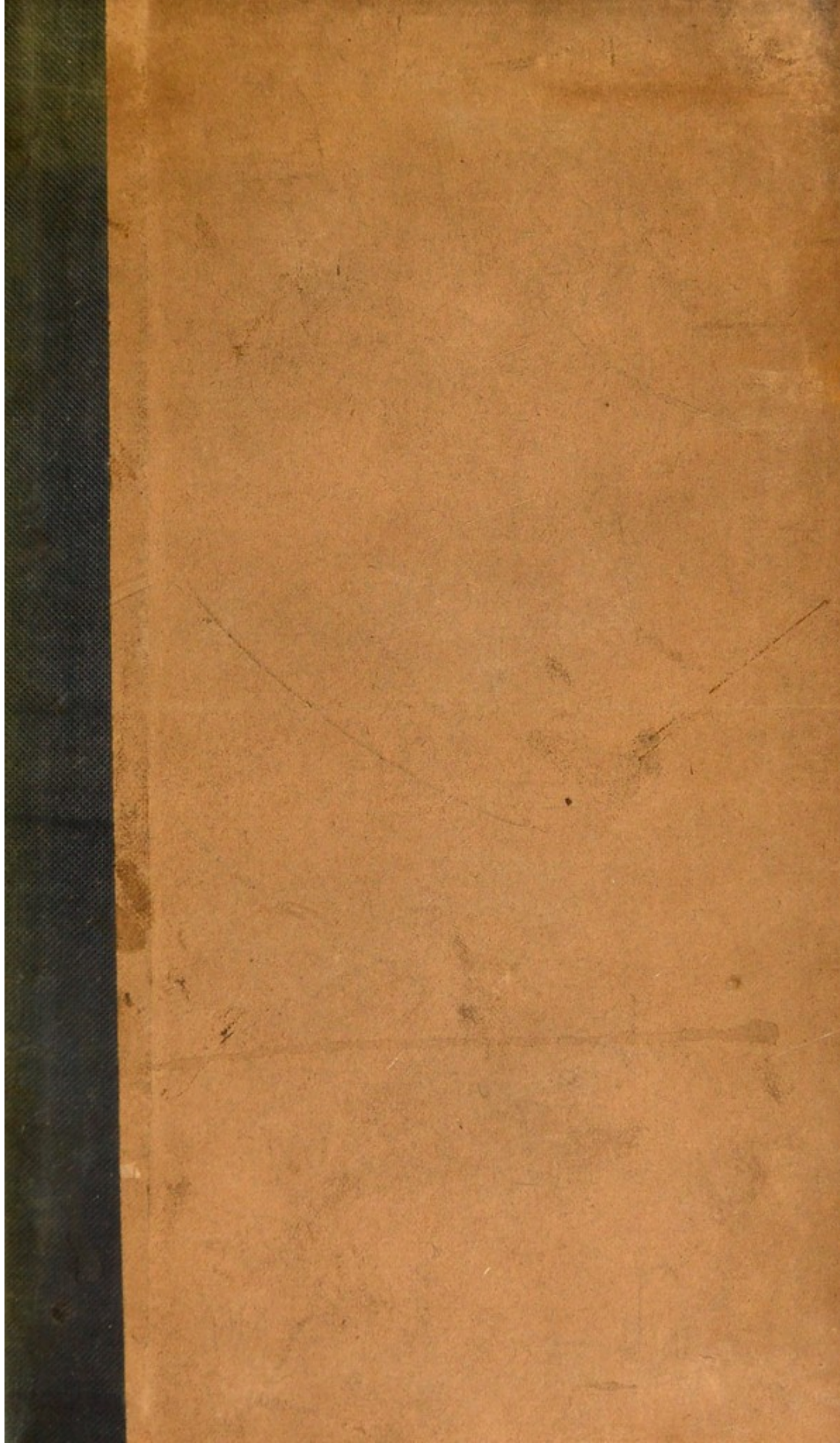
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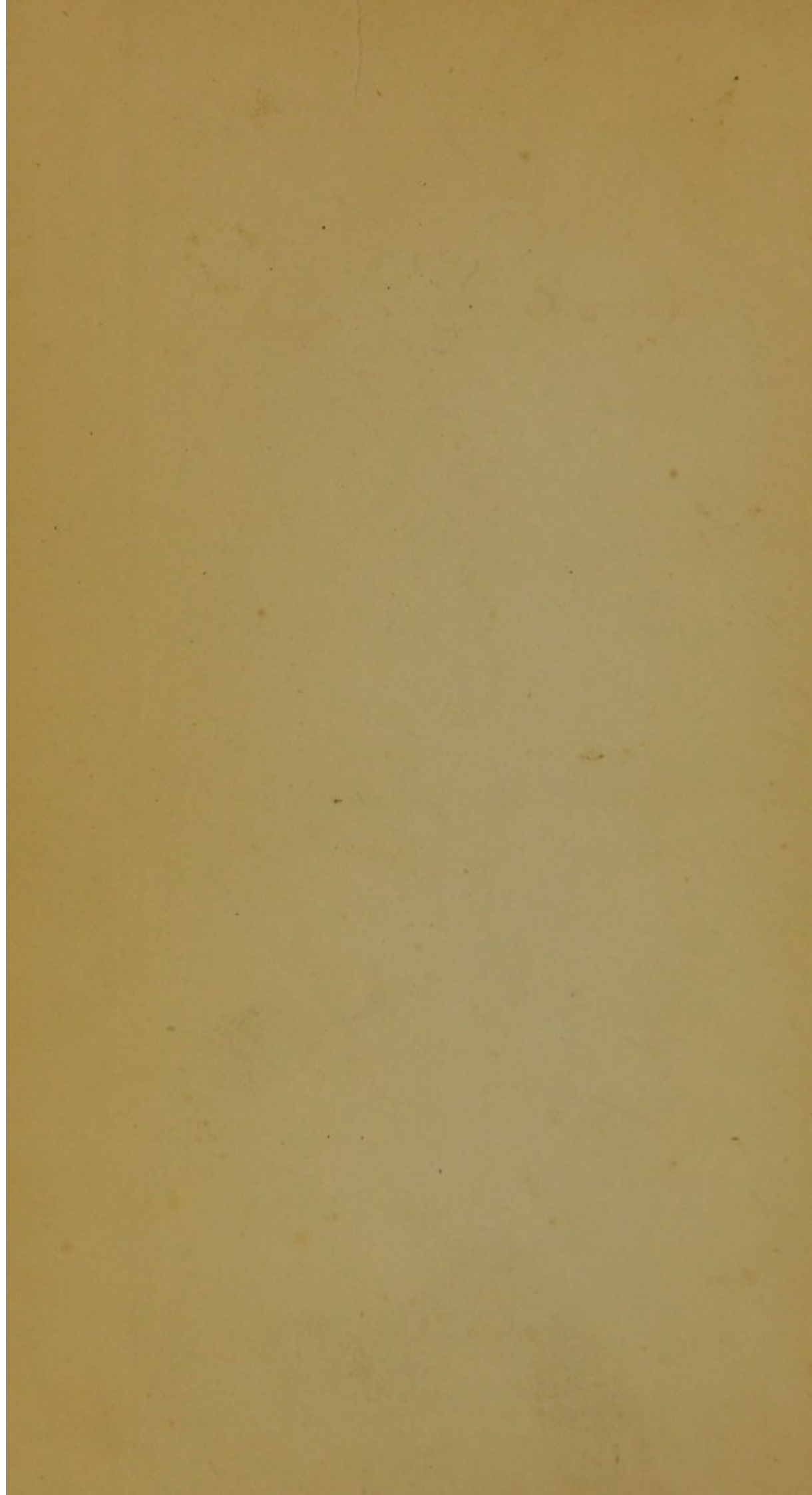
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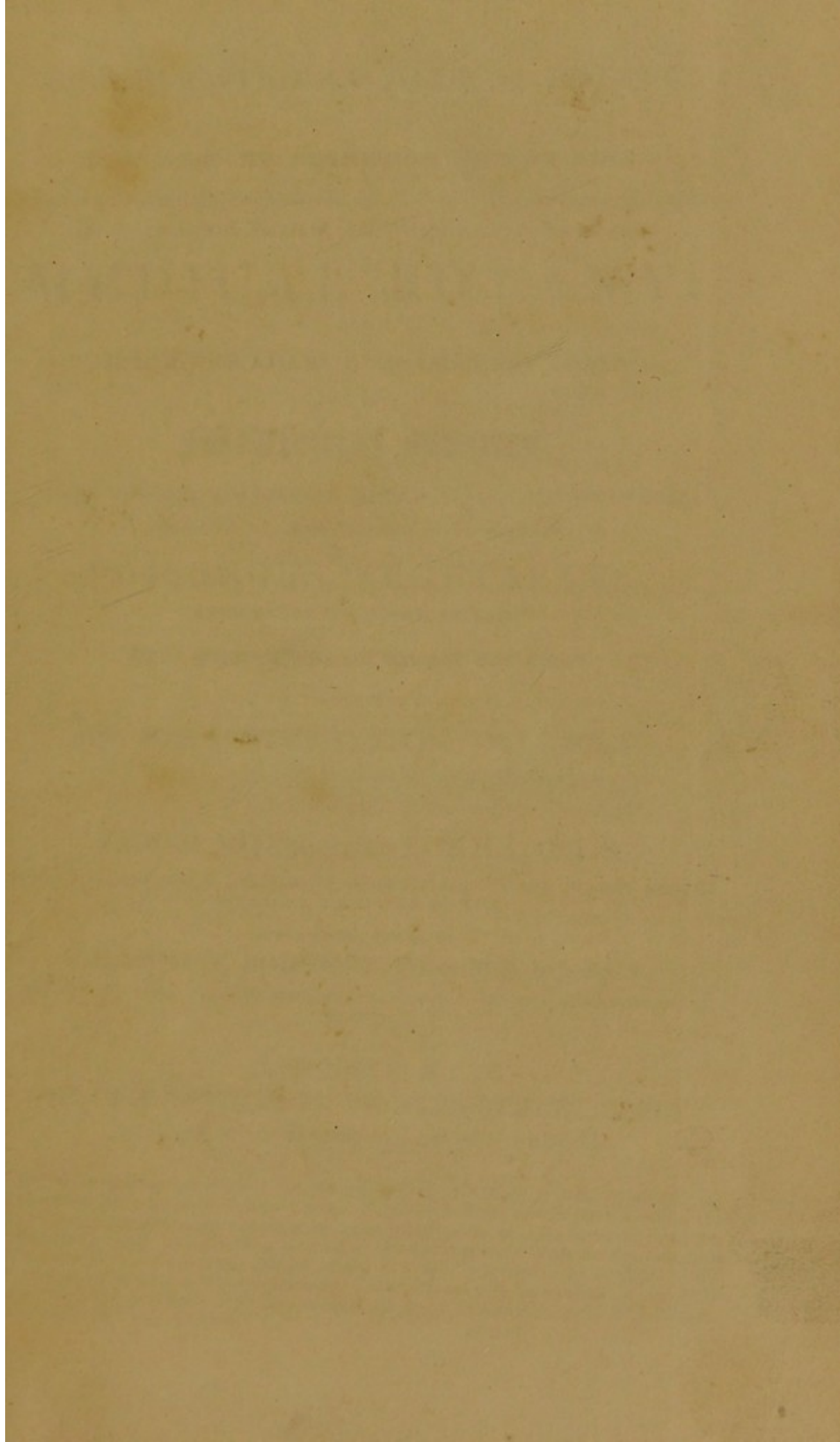
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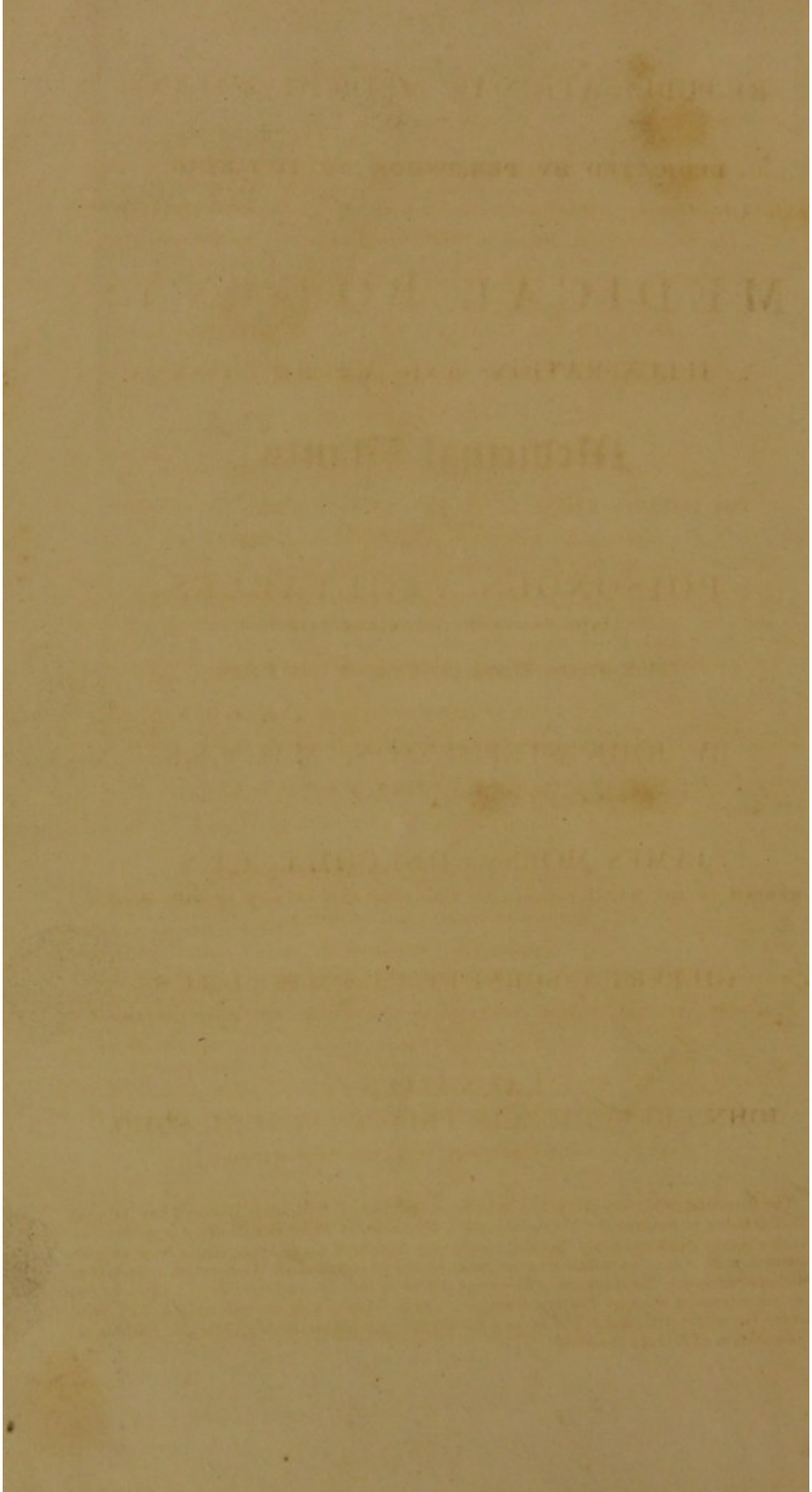
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P R E F A C E

MY intention in collecting these observations, was to have given a short history of the practice of midwifery, and to have marked the several stages by which it has arrived at that perfection it seems at present to have attained. And as the introduction of instruments, particularly of those now usually resorted to, made a part of my plan, I proposed making some remarks upon Dr. Osborn's account of the comparative utility of the forceps and lever; in order to see how far his censures on the latter instrument were founded on observation and reason, how far on the force of prejudice: and this was all the notice

I then thought of taking of the Essays on the Practice of Midwifery *.

On attentively perusing what the author has written upon this subject, I could not help noticing, that instead of recurring to experiments and observations, he supports his opinion principally by speculative notions, drawn from a consideration of the nature and properties of different species of vectes or levers. This seemed the more remarkable, as his residence in London, and his situation as physician to a lying-in hospital, and as a teacher of midwifery, not only gave him opportunities of making trial of the lever, but of learning the degree of estimation in which each of the instruments is held, from gentlemen on whose skill

* Essays on the Practice of Midwifery, by Dr. Osborn, 1792.

and integrity he must have had the most perfect reliance.

Finding how little the author's conclusions on this subject, were entitled to the name of demonstrations, which he has given them, I was induced to read over the remainder of his book, with more attention than I had before bestowed upon it. I soon observed that his opinions on some of the most material points of practice, differed considerably from principles which I had been accustomed to consider as universally admitted, and tended to overturn many essential improvements that had been made in the art.

An inquiry into the grounds of these alterations, and into the new notions the author had advanced, seemed to extend far beyond the plan which I had originally

ginally proposed; and, indeed, if his ideas on these subjects had proved to have been just, the greater part of the observations I had made, would have been nugatory. But although the author everywhere dignifies his arguments with the title of demonstrations, yet the reader must take care not to affix to that term any very strict signification, as in general it seems, through the course of the essays, to mean no more than a proposition having some degree of probability, or even of possibility. Of this an instance occurs at the beginning of the volume: the author there says, he has demonstrated the “ inevitable physical
 “ necessity of the tediousness, difficulty,
 “ and danger of human parturition, as
 “ dependent on the form and structure of
 “ the body.”

Now the reader, unacquainted with the
 sense

sense in which the term demonstration is here used, might imagine, that the author had actually proved, that all women must necessarily have tedious, difficult, and dangerous labours; but as this is contrary to what is well known to be the fact, many women having extremely easy, and expeditious labours, it is evident he could only mean, that women are so constituted and formed, as to be liable, on any accidental derangement, to tedious, difficult, and dangerous labours. And in the same manner many other terms used by the author must be modified and softened, of which abundant examples will be found in the course of these pages.

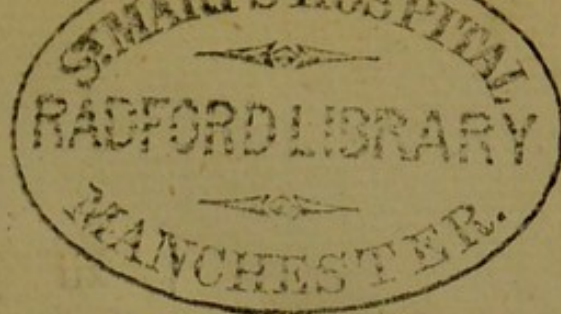
To obviate therefore the ill impressions that such doctrines might make, and in particular to prevent their influence on the minds of young practitioners, I have
endea-

endeavoured to analyse the principal precepts contained in the essays: not confining myself, however, entirely to them, but occasionally interspersing short dissertations on other matters, that seemed not foreign to the subject; and which I thought might relieve and amuse, whilst I was labouring to elucidate and explain. With the same view also of diverting the attention of the reader, I have sometimes indulged myself in deviating from that serious and grave style, in which arguments of this kind are usually couched; but not in such a manner as to lose sight of the principal aim and intention; and I have only used these liberties, where the question was not of very material importance in practice.

To the author I shall only say, that although our opinions are in opposition, more frequently than could have been well imagined

gined on practical subjects, yet I am not conscious of having petulantly or wantonly attacked any of his arguments. I have not sedulously looked for objects for contention, but have confined myself to such as were too prominent to pass unobserved. And in my remarks, I hope I have not lost sight of that respect, that is due to a writer who, however he may in some things have been mistaken, certainly deserves the commendation of having intended to communicate instruction.

I have not yet received your letter of the 11th inst. in relation to the matter of the purchase of the land for the purpose of building a school house. I have not yet had time to look into the matter, but I will endeavor to do so as soon as possible. I hope I will be able to give you a satisfactory answer in a few days. I am, Sir, very respectfully,
 Your obedient servant,
 J. W. Smith



INTRODUCTION.

NO part of physiology is more interesting, or has excited greater attention, than that which treats of parturition; and physicians very early began to investigate the causes of the difficulty and danger which were found sometimes to attend that operation. The most obvious appeared to be, a rigidity of the vagina and os uteri, and too close an union of the bones that compose the pelvis: for as those bones were found to be easily divisible in young animals, and were even observed to separate spontaneously, when long exposed to the air, it seemed natural to imagine, that they were intended to disunite during parturition. Hence the practice of bathing, anointing, and fumigating, in order to relax
the

the integuments, and to produce a more easy separation of those bones. And as it was not possible to know *a priori*, whether labour would be easy or difficult, this practice in time became general: and that it might not fail in its effects, it was usual to commence the operations some days, and where the party could bear the expence, some weeks, before the approach of labour.

“ Women should use,” says Hieronimus Mercurialis*, “ warm baths in which
 “ emollient herbs have been boiled, and
 “ should anoint their loins, groins, &c.
 “ with softening, relaxing liniments; and
 “ this course should be entered on a month,
 “ or twenty-five days at the least, before
 “ the time of parturition.”

* Vide Prælectiones de Morbis Mulier. lib. 2, cap. 3.

This doctrine, which Mercurialis borrowed from the ancients, continued to influence the practice of midwifery to a very late period; and although it was at length obliged to give way, experience having shewn its entire futility, it was succeeded by others equally uselefs, although less tedious and troublesome; I mean smearing the vagina and os externum, with lard or some other ointment, and dilating and distending the passage with the fingers, during the labour pains, in order to make room, as it was said, for the child: a custom which, although discarded in simple and easy labours, by the more intelligent and rational practitioners, is still too generally used. To this has been lately added, that of guarding the perinæum, while the head of the child is passing through the os externum, to prevent that part from being torn or injured.

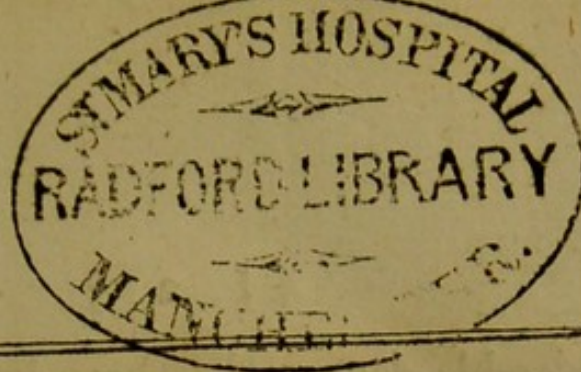
If

If these practices had been only useless or insignificant, they might have continued to pass without censure; but besides that when improperly or unskilfully used, they may be productive of much mischief, they have the effect of intimidating and alarming the minds of women, and making them consider labour as an operation full of difficulty and danger. And as we know that labour is very much influenced by the affections of the mind, this apprehension cannot fail to be frequently productive of the most serious consequences,

This doctrine is carried farther by the author of the *Essays on the Practice of Midwifery*, than by any other writer I have seen: and he seems to have been led into an opinion of the necessity of attending to it, from having persuaded himself, that it is the intention of nature
that

that human parturition should be difficult and dangerous. To examine therefore this position, and to endeavour to confute an opinion which, if allowed to prevail, would be likely to put a stop to all improvement in the art of midwifery, seems to be an object of the first importance: I shall therefore commence my investigation with that part of the Essays which treats of this subject,

that human nature is capable of
and dangerous. To examine the
position, and to endeavor to explain
of which it is allowed to prevail, would
be likely to put a stop to all improvement
in the art of education, it seems to be an
object of the first importance: I shall
therefore endeavor to investigate with
that part of the subject which is of the
highest importance.



The first Essay alluded to is on the Difference between human and comparative Parturition ; and on the Importance of Midwifery.

“ THE intention of the author in this essay* is,” he says, “ to shew the inevitable and physical necessity of the tediousness, the difficulty, and the dangers of human parturition, as dependent on the peculiar form and position of our body ; and then to endeavour to obviate some objections deduced from a mistaken analogy of the same operation in other animals, and speciously applied to depreciate both the science and the practice of midwifery.”

That parturition is frequently tedious and difficult, and sometimes attended with con-

* Essays on the Practice of Midwifery, by W. Osborn, M. D. Preface, p. 1.

considerable danger, has been known and lamented in all ages. But that such difficulty and danger are peculiarly the lot of women; that they are the necessary and inevitable consequences of the structure and form of the human pelvis; the tax paid for the high pre-eminence of the erect position of the body, the *erectus ad sidera vultus*; and consequently that all women must suffer under this severe sentence, is a doctrine too humiliating and discouraging to be admitted, without much serious argument and careful examination.

It would have contributed much to the facility of investigating this doctrine, if the author had more perspicuously defined what we are to understand by the “tediousness, “difficulty, and danger of parturition;” perhaps it became him to shew, from calculation, what the proportion of such labours were, to those that were easy and expeditious. But this he has not done: he seems to have rested the proof of his proposition solely upon the structure and form
of

of the parts concerned in parturition: these, he thinks, are such as must necessarily make all labours tedious, difficult, and dangerous; certain it is, we shall find, from various passages hereafter to be cited, as well as from the proposition itself, that Dr. O. either absolutely disavows the possibility of labour being easy and expeditious, or infers that such labours, when they do occur, are in a manner unnatural, and mischievous in their effects.

But if he had considered how many circumstances there are totally independent of the form or structure of the pelvis, which retard parturition, and render it difficult and dangerous; and that notwithstanding the prevalence of these causes, generally speaking the fruit of irregularity and misconduct, and therefore not imputable to nature, labour is frequently, and, in some countries, almost invariably safe, easy, and expeditious,—he would certainly have formed a very different conclusion. * “ Non a priori, non a struc-

* Stahl *Ætiologia Physico-chymica*.

“ tura apparente adscribenda statim est re-
 “ bus efficacia, quam forte nostra opinione
 “ habere possunt; sed pervestigandi et atten-
 “ te pensitandi sunt effectus, quos ordinarie
 “ et actu edunt; non judicandum de partis
 “ cujusvis in se aptitudine ad aliquem ef-
 “ fectum edendum, sed experiundum qua-
 “ les effectus in socio concursu edat *.”

* Nothing can be more fallacious or improper than to pretend to limit the powers or intentions of nature, from observations on the structure of the parts alone. As all women have two breasts with one nipple on each, and there are two Fallopian tubes entering the uterus with corresponding ovaria, a speculative philosopher might insist, that it was the intention of nature that women should constantly, or generally at least, bear two children at a birth—*Natura nihil agens frustra*. Yet this is so far from being the fact, that not more than one woman in seventy or eighty has twins. Equally rash and contrary to experience it would be to assert, that women cannot have more than two children at a birth, nature appearing not to have provided for the sustenance of a greater number. As numerous instances occur of women having three, four, or five children at a birth; and the records of medical history abound with examples of women still more prolific.

Waving

Waving, however, these general reflections, I shall proceed to examine the arguments by which the author attempts to support his doctrine, and think I shall be able to shew that they are such as will by no means warrant the conclusions he has drawn from them.

* “ To understand,” says the essay writer,
 “ how the erect position of the human body
 “ necessarily operates in making natural labour in women more painful, tedious, and
 “ difficult, than in the quadruped, it is
 “ sufficient to observe, that in such a situation there is the general and powerful influence of gravity constantly to be counteracted, in a certain degree, during the
 “ whole period, but in a much greater
 “ towards the conclusion of utero gestation: for as gestation advances, the ability
 “ in the soft parts to support the weight of
 “ the contents of the uterus, and to resist
 “ the influence of gravity, regularly de-

* Essays, p. 10.

“ creases ;

“ creases; and thus, if not prevented, pre-
 “ mature labour would be very general, if
 “ not the inevitable consequence.

“ To guard against this accident, nature
 “ has attended to a variety of circum-
 “ stances in the structure of both the mother
 “ and child, which, while they answer
 “ the purpose intended, unavoidably create
 “ those very obstacles which delay and
 “ impede delivery.

“ First. That irregularly cylindrical ca-
 “ vity in the skeleton, called the pelvis,
 “ through which the foetus must pass at
 “ birth, is so placed in the human body
 “ that its axis is not perpendicular to the
 “ horizon: any thing, therefore, passing
 “ through it, cannot be within the imme-
 “ diate influence of gravity.

“ Secondly. Upon the same principle,
 “ and with the same view, nature has been
 “ obliged to vary nicely and minutely both
 “ the form and capacity of the pelvis,
 “ mak-

“ making it wide in one part, narrow in
 “ another, concave and deep behind, straight
 “ and shallow before, and with sides that
 “ converge to a considerable degree.

“ Thirdly. The upper and lower aper-
 “ tures of the pelvis do not at all corre-
 “ spond in shape, and have directly oppo-
 “ site diameters ; and the inferior aperture
 “ is so irregular, as hardly to admit of a
 “ comparison or illustration from any
 “ known form.

“ Lastly. To add to the more effectual
 “ support of the gravid uterus, all the soft
 “ parts are of a firm and rigid texture.”

From all which circumstances the author
 thinks * “ it is obvious that a passage so
 “ intricate, and under circumstances so
 “ complicated, must render the act of child
 “ bearing slow, difficult, and painful :”
 and in conclusion he adds, † “ he trusts

* Essays, p. 14.

† Ibid. p. 25.

“ that

“ that he has clearly demonstrated that the
 “ extraordinary difficulty and tediousness
 “ of human parturition are inevitable,
 “ even under the most favourable concur-
 “ rence of circumstances, because they de-
 “ pend on the peculiar form, structure,
 “ and position of the human body.”

Upon this demonstration, as the author
 calls it, I shall beg leave to make a few
 observations. The first is, that in this
 description of the human pelvis, he has
 forgot to mention that almost the whole of
 the sides of this “ irregular cylindrical
 “ canal, the pelvis,” and much of the
 hinder part of it, are composed, not of
 bone, as the reader might imagine, but of
 soft yielding substances, of membranes,
 muscles, ligaments, skin, &c., capable of,
 and intended by nature to yield with ease
 to the passage of the child. Consequently,
 however intricate or irregular the pelvis
 may appear in the skeleton *, its power in
 check-

* In forming this cavity, no more bone appears
 to

checking or preventing the passage of the head of the child is to be estimated by the capacity or size of the brim alone, that being the only part where the bone is continued through the whole circumference. This is universally and constantly the case when the bones that form that cavity are in their natural state, that is, when the pelvis is not misshaped or distorted *.

to have been employed than was necessary to afford a sufficiently strong basis for the support of the body: and instead of the pelvis being an entire cylinder of bone, large vacuities are left in some places, and considerable projections of the bone in others, which make the figure in the skeleton extremely irregular. But these vacuities are all filled up in the living body with muscles, membranes, skin, &c., so as to form together a tolerably complete cylindrical tube.

* When the pelvis is deformed, the ossa ischia frequently approach too near each other, and thence add to the difficulty of the birth. But when the pelvis is well formed, as soon as the basis of the skull of the child has passed its brim or upper aperture, all difficulty, as far as the bones of the pelvis is concerned, is over.

Labour

Labour is therefore rendered tedious, difficult, and dangerous, in consequence of the structure and form of the pelvis, only when that part is distorted, or too small, compared to the bulk of the head of the child. The first case, which is always occasioned by disease, does not occur oftener than once in two or three hundred labours. The latter may be occasioned, by a variety of causes, as by the peculiarly small and delicate make of the woman; a constitutional disposition in her to afford too great a portion of nourishment to the fœtus, which thence becomes too strong and lusty; or the peculiarly robust make of the man, which the child may inherit. Difficulty in parturition, therefore, arising from this cause, may occur as often as once in sixty or seventy times. But cases occurring so rarely, can never be adduced in proof of the inevitable and physical necessity of parturition being made tedious, difficult, and dangerous, from the structure and form of the pelvis.

Neither does the assertion, that labour is
ren-

rendered necessarily and inevitably tedious, difficult, and dangerous, in consequence of the rigid and firm texture of the soft parts*, rest upon a better foundation. For although it be acknowledged that the contraction of the vagina, and the firm and close texture of the cervix uteri, until the completion of the term of gestation, afford almost insuperable bars to the exit of the foetus, yet it is to be observed, that in all cases where the woman has attained her full time, and there is no disease, malconformation or disproportion between the head of the child and the canal through which it is to pass, this rigid, firm texture of the soft parts, often in the space of a few minutes, generally in that of a few hours, softens, relaxes, gives way, and the child passes with very little difficulty or pain.

* The resistance which the females, of almost every species of animals, make to copulating, is sufficiently indicative, not only of the sensibility of the vagina, but of the difficulty with which it is dilated. The firm texture of those parts, therefore, is not peculiar to women.

If

If such cases as these do frequently occur, and daily experience, and the history of human parturition in all ages and countries, as I shall shew hereafter, teach that they do; and if it shall appear that, when tedious and difficult labours do occur, they may, generally speaking, be referred to some known cause whereby nature has been violated; then, surely, these safe, easy, and expeditious labours should be considered as agreeable to the original intention of nature, notwithstanding that, from the apparent intricacy of the pelvis, it may be difficult to explain how it should be so. The other observation is, that it may reasonably be doubted, whether the peculiar form and structure of the human female pelvis, the variation of its axis, and its numerous eminences and depressions were contrived for the express purpose of supporting the pregnant uterus, and preventing abortion; which the author conceives to be the intention of them; or whether they were principally intended for those purposes, as the same form and structure is so adopted in the
 pelvis

pelvis of the males*, where there is no uterus. It seems more likely that this form of the pelvis was used, as best suited to the upright posture of the human body; and that nature, always provident of her means, and generally obtaining two or three points or advantages by a single agent, made it also subservient, as a secondary use, to the support of the uterus, and other purposes of gestation and parturition. This seems a more just as well as a more suitable way of arguing, than to suppose, with the essay writer, that nature has made use of a great variety of contrivances, in order to coun-

* The most material difference in the male and female pelvis is in the arch of the pubes, which in women is something larger than in men; doubtless for the purpose of allowing an easier passage to the head of the child. But the inequalities in the surfaces of the bones is equal in both, and serve principally for the origin and insertion of the muscles that move the spine and lower extremities. As the variation in the axis of the pelvis seems contrived for the purpose of articulating the thigh bones, in such a manner as to make an erect position easy and graceful.

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terbalance the disadvantages arising from the erect position of the body, and to obtain a safe and easy exit for the foetus, without being able to effect her purpose.

But it may be expected I should shew in what manner the pregnant uterus in women is supported, or by what means the power of gravity is counteracted, and abortion prevented.

This seems to be effected by various means. For, besides the contractility of the coats of the vagina, which I have mentioned before, which keeps that passage so close as not to admit the introduction of a finger without difficulty, and the four ligaments to the uterus which contribute their share, in keeping and supporting it in its situation, and preventing its descent, there is also another cause totally independent of mechanism, which inclines the uterus during the first five or six months, when it is so small that it might otherwise be perpetually in danger of dropping through the
pelvis,

pelvis, to mount upwards into the cavity of the abdomen. This principle seems to be imparted to the uterus at the moment of conception, and continues in vigour during the whole time, certainly until the seventh or eighth month, or until the uterus is become so large as to be enabled to rest upon the brim of the pelvis.

Of the existence of this principle we have the most evident proof, from the uterus quitting the pelvis, where it always lies when empty, or not pregnant, and rising above the brim, so that the cervix uteri is reached by a finger passed into the vagina with more difficulty in the fourth or fifth months of gestation, than at an earlier period, or than when the uterus is empty.

What this principle is, or how it operates to produce this effect, I shall not attempt to explain. It must rest, with many other phænomena in nature, which we are daily witnesses to, but cannot account for. It is not more easy perhaps to explain how the
cavity

cavity of the uterus becomes enlarged to enable it to contain the foetus, without any diminution of the thickness of its sides; or, which seems more wonderful, how the uterus comes to be enlarged in women who have conceived, although the foetus is not contained in its cavity, but lodged in one of the Fallopian tubes, which is known to happen*.

But the tediousness, difficulty, and danger attendant on human parturition, are not only inevitable, our author seems to think, but are probably intended by the great Author of nature as a punishment for the transgression of our first parents. †“ If we admit,” he

* This circumstance, which is now well known to anatomists, was first noticed by Santorinus, who has described a case of the kind, and accompanied the account with an engraving, representing a foetus of two or three months lying in one of the Fallopian tubes, and the uterus cut open to shew its cavity, which is of the size it would have been, if it had received the foetus. Vide *Observ. Anatom.* I. D. Santorini, page 225.

† *Essays*, page 17.

says,

says, “ according to the Mosaic account of
 “ the creation of the world, that human
 “ parturition was distinguished by the se-
 “ verity of its pains, by its difficulties and
 “ dangers, from the same operation in other
 “ animals, as a curse annexed to the fallen
 “ nature of man; and, that in sorrow
 “ shalt thou bring forth children, was an-
 “ nounced to our first parents as a punish-
 “ ment, which it was the intention of the
 “ Deity should continue to afflict human
 “ nature as long as the world endured. It
 “ will serve to illustrate one principal sub-
 “ ject of this essay, may likewise gratify
 “ philosophical curiosity, and at least have
 “ a beneficial tendency, if not be a matter
 “ of much practical utility, to inquire by
 “ what peculiarity in the human physio-
 “ logy, this great natural evil has been so
 “ completely effected, and must continue
 “ to be so inevitably annexed to the human
 “ body.”

By this argument the author seems to
 intimate that some alteration was made in
 c the

the structure of the female pelvis after the fall ; which indeed his position requires. As his supposed inevitable physical necessity, that human parturition, even under the most favourable circumstances, must be tedious, difficult, and dangerous, but ill accords with that state of happiness, which we are told the human race were made capable of enjoying, and were intended to possess in paradise.

But we are neither authorized by scripture nor reason to believe that such an alteration was made, which is of itself an argument that no such necessity for difficulty and danger does exist. Milton, indeed, represents the Almighty, on the great change that was to take place in the course of nature in consequence of man's disobedience, commanding his angels

“ to turn ascance
 “ The poles of the earth twice ten degrees and more
 “ From the sun's axle ;

 “ else had the spring
 “ Perpetual smiled on earth with vernant flowers *.

* Paradise Lost, book X.

This is beautiful in poetry. But that the structure of the human pelvis was changed to induce laborious parturition, is not very philosophical to assert, and requires no common degree of credulity to believe.

The author, however, relinquishing the idea, that the pain and difficulty of human parturition were intended as a punishment, endeavours to console the sex by shewing them, that they are the inevitable consequences of the pre-eminence of their form, and that it is no more possible for an erect position of the body to enjoy the advantages of an horizontal one, than for a cart-horse to possess the swiftness of a racer;—in other words, that a woman can no more expect an easy labour, than an elephant can expect to fly.

* “ The erect position of the human
“ frame,” he says, “ that singular mark
“ of pre-eminence, exposes women to

* *Essays*, p. x.

“ pain and difficulty in natural parturition,
 “ from which the subordinate quadruped *
 “ is almost entirely exempted by the hori-
 “ zontal position of her body. The peculiar
 “ advantages of positions so different from
 “ each other, can no more exist in the same
 “ creature, than the strength of the draft-
 “ horse,” (the author might have said the
 ox or the elephant) “ and the fleetness of
 “ the racer can be united in the same ani-
 “ mal: for, as these depend on qualities
 “ incompatible with each other, and which
 “ cannot therefore exist together in the
 “ same subject, so those depend on cir-

* As well might the author affirm, that women
 are less adapted to suckle their infants, and more
 liable, from the make and structure of the parts, to
 tender nipples and inflamed breasts than animals;
 because, on inquiry, he found that women are
 very liable to those impediments and inconve-
 niences, from which animals are almost entirely
 exempt. But these accidents, as well as the diffi-
 culty attendant on parturition, arise from adventi-
 tious causes, such as, generally speaking, may be
 avoided, or their effects mitigated.

cum-

“ circumstances of structure, or physical
 “ laws equally incompatible, and utterly
 “ inconsistent.”

But there seems no analogy in this argument. Nature has given to different animals different qualities and propensities, and adapted their construction to their wants and destination. The ox was not intended for swiftness—he, therefore, has not the same conformation as the race-horse: but this is no imperfection in the ox. One principal office of woman is parturition; but her conformation, according to this author, is so ill adapted to this office, that in her most perfect state, and under the most favourable circumstances, “ labour is
 “ necessarily and inevitably a painful, tedious, difficult, and dangerous operation.” If this be true, nature has evidently failed in her design, which she has not done in denying swiftness to the ox or the draft-horse. But there seems no ground for entertaining such an opinion; and, on examining the usual progress of labour,
 and

and considering the causes of difficult parturition, when it does occur, we shall find we have little reason to arraign the wisdom or beneficence of Providence on this account.

As the enlargement or growth of the fœtus, and the consequent dilatation of the uterus are gradual, and this is common to brutes as well as to the human species, it seems consonant to reason to suppose that the emptying of the uterus, or the birth of the child, should not be instantaneous, but progressive. Accordingly, we find that a day or two previous to labour the head of the child sinks gradually into the pelvis; the os uteri relaxes and diffuses a mucous intended to soften the vagina and make it slippery; and when labour, properly so called, commences, the fœtus is not excluded at once, but by successive throes; the fundus uteri continuing to follow it, until its complete expulsion.

The process of labour, therefore, is
steady

steady and gradual ; and when the parts are in a natural state, and the woman has completed her term, neither the bones of the pelvis, nor the integuments, or soft parts, seem to offer any material obstacle to the passage of the child ; which continues advancing in a regular progressive manner until it is born.

The time in which this should be effected cannot perhaps be precisely ascertained, but from analogy, or comparing it with the same process in animals, and from considering what actually happens among women, and which we have numerous opportunities of observing ; it seems fair to conclude that it was the intention of nature, that it should always be completed in a small space of time ; in the space, perhaps, of one, two, three, or four hours.

That labour is frequently protracted much beyond this term, and that it is sometimes extremely tedious, difficult, and dangerous, is readily allowed. But this does not derogate

rogate from the truth of the opinion I have here advanced, as there are many causes which may interrupt and retard that operation. Indeed, it is well known, that every thing that tends to impair the general health, or disturb the mind, may trouble and impede parturition. These causes I shall not particularise at present, but proceed to lay before the reader the circumstances upon which I have grounded my opinion: which, if they do not amount to a demonstration, have at least a degree of probability in them that approaches very near to demonstration.

We know that many women are safely delivered of full-sized children so suddenly, that they have scarce time to call for assistance: that, sometimes waking from their sleep with a slight pain, labour is hurried through in a few minutes, while the woman is almost unconscious of what has happened. Some women, again, have been taken in labour while walking, and have not even had time to be conveyed to any house or convenient place, but have
dropped

dropped their burthens, where they happened to be first seized. Others, while on a visit, at dinner, or in the midst of some amusements, have been surpris'd by labour, and have parted with their children with little pain or trouble. And these cases are so far from being rare and uncommon, that there is not a practitioner in midwifery but must have met with them, nor a family but has some friend to whom a similar accident has happened.

It seems reasonable, therefore, to call such labours, as I have here described, which are effected with ease, and without detriment to the constitution, natural labours; and to consider all labours that are protracted to any great length of time, or are attended with mischievous consequences, as unnatural: and, to conclude, that such delay and injury have been occasioned by some derangement of the health, or affection of the mind. This I consider to be certain, although the cause may not be so obvious as it is, that a perverse position
of

of the child, its too great bulk relative to the size of the pelvis, or the diminished size, or altered shape of the pelvis, will occasion difficult labours; which we all know to be a fact.

This opinion, that labour, to be denominated natural, should be easy and expeditious, is not new. Eucharis Rhodion, whose book, published in the beginning of the sixteenth century, was the first popular work on the subject of midwifery, says, * that, in order to constitute a natural labour, the birth should be easy and instantaneous, or in a single pain or two; or, as Raynald translates the passage, † “ If the
 “ byrth be natural, the delyverance is easye
 “ without longe tarryenge, or lokynge for
 “ it.” And I doubt not but he was fre-

* Quod ad naturalem modum pariendi attinet, hoc est ut in exitu partus longius non moretur, aut subsistat, sed statim et facile et ceu uno quodam impetu egeratur. Euch. Rhod. de Partu Hominis, Chap. II.

† The Byrth of Mankind, b. 2. fol. 48.

quently

quently present at such labours: and we shall find a similar account of the facility of parturition in many other authors.

It has, however, been fashionable to teach, that very hasty deliveries may generally be expected to be followed by some considerable mischief, by fever, by deliquia, inflammation of the uterus, &c. But although I can recollect having been called to many women, whose labours have terminated so suddenly, as to allow no time for the arrival of assistance, or to make the smallest preparation, yet I do not remember any illness or accident in consequence of such precipitance, unless what was occasioned by the carelessness or folly of the servants or attendants; which seems a strong argument that natural parturition was not intended to be a tedious process, as this author so strenuously contends. But this will be farther illustrated by considering what has been said upon the subject, by persons who, not being of the profession of physic, could have no bias to any particular system.

system: and although their knowledge was probably collected from popular report, not always, it must be confessed, the surest test of truth; yet, when those opinions are found to prevail in countries widely distant, and having no communication with each other, they must, even by the most fastidious, be allowed to have some weight.

We read, in Diodorus Siculus *, that in Corsica, no care or attention was paid to the lying-in-women; but, as soon as they were delivered, the husbands were put to bed and nursed in their place. Strabo †

* Infolens apud eos quam maxime est quod circa liberorum nativitatem accidit, nam mulieris enixæ nulla in puerperio geritur cura; sed maritus ejus velut æger decumbens et corpus male affectum habens per certos aliquot dies puerperæ vice lecto decumbit. Diod. Siculi Biblioth. Hist. fol. lib. 5. p. 341.

† Mulieres agros colunt et cum pepererunt suo loco viros decumbere jubent, iisque ministrant: interque operandum ipsæ sæpenumero infantes lavant et involvunt, ad alveum alicujus amnis acclinantis. Strabo Rerum Geograph. fol. lib. 3. p. 165.

gives

gives an account of a similar custom prevailing in his time in Spain.

It is beyond my purpose to inquire into the origin of a custom so contemptibly absurd; but the existence of it affords a proof that the women of those countries did not suffer greatly in their labours, which is what I mean to establish. Bruce, speaking of the women of the Galla, a nation on the confines of Abyssinia, says, they do not confine themselves even a day after labour, but wash and return to their work immediately*. Pittavellius† gives a similar account of the Abyssinian women, who retire by themselves, and are delivered with great ease and expedition.

* Travels to discover the Source of the Nile. Vol. II. p. 21.

† *Abissinas autem mulieres genu flexas absque alicujus adjutorio passim cito ac felicissime parere. Embryologia sacra F. E. Cangiamila, p. 113.* I have not seen Pittavallius, from whose works this passage is taken by Cangiamila.

The

The same simplicity, expedition, and freedom from danger, attend this natural process among the natives in most parts of Asia*, Africa, the West Indies, and America, that we are acquainted with; where the mode of living is, in general, more abstemious and simple, the occupations and habits of individuals more similar, and probably their stature and bulk more equal than in more civilized countries. “The Spaniards in Brasil,” says Hennepius†, “who perform the office of midwives to

* *Feliciores in hac parte, (speaking of the ignorance of the midwives in his country, he says,) sunt Indæ mulieres, quibus familiare est absque ulla obstetricis arte ac ministerio, imo pauco etiam cum dolore sanissime parere. Enib. fac. p. 114.*

Les femmes des Ostiacks n'ont aucune inquietude sur le temps de leur accouchemens. Elles accouchent par tout ou elles se trouvent, sans être embarrassées, et reprennent presque aussitôt leur occupations ordinaires, continuent leurs marches si elles sont en voyage. *Histoire Gen. des Voyages de l'Abbé Prevost. Tom. XVIII. p. 517.*

† Ceremonies and religious customs of various nations. Vol. III. p. 20.

“ their

“ their teeming comforts, receive the in-
 “ fant, tear the naval string, and wash and
 “ paint it. The lying-in woman does not
 “ meet with more indulgence than the in-
 “ fant; as soon as she is disburthened, she
 “ goes and washes herself, and immediately
 “ sets about her work, without suffering
 “ the least inconvenience from it.” In
 another place he says, “ The wives of the
 “ Livonian peasants, and the savages of
 “ North America, use the same custom.
 “ The women retire to some private place
 “ when the time of their delivery is at
 “ hand, and return immediately after to
 “ their work.” Which shews that this
 facility of bringing forth, is not occasioned
 by the warmth of the climate. Sagnier *
 and Briffon, in their account of their voy-
 age to the coast of Africa, observe that
 “ The Moorish women have no midwives,
 “ but are usually alone at the moment of
 “ delivery, laid on the ground under an
 “ indifferent tent. They have seen,” they

add, “ these women depart even on the
 “ day of their delivery, to encamp at the
 “ distance of fifteen or twenty leagues.”

This almost general testimony in favour of the natural facility and safety of labour will receive additional strength by the account Brydone gives of the Sicilian women, with which I shall close these extracts. * “ There are,” the author says, “ a number of particular conversations every night, and, what will a good deal surprise you, these are always held in the apartments of the lying-in ladies : for, in this happy climate, child-bearing is divested of all its terrors, and is only considered as a party of pleasure. This circumstance we were ignorant of until t’other morning. The Duke of Verdura, who does us the honour of the place, with great attention and politeness, came to tell us we had a visit to make

* Tour through Sicily and Malta, Vol. II. Letter 22.

“ that

“ that was indispensable. The Princess
 “ Paterno,” said he, “ was brought to bed
 “ last night; and it is absolutely incum-
 “ bent on you to pay your respects to her
 “ this evening. At first, I thought he
 “ was in joke, but he assured me he was
 “ serious, and that it would be looked
 “ upon as a great unpoliteness to neglect
 “ it. Accordingly, we went about sun-
 “ set, and found the Princess sitting up in
 “ her bed, in an elegant undress, with a
 “ number of her friends around her. She
 “ talked as usual, and seemed perfectly
 “ well. This conversation is repeated
 “ every night during her convalescence,
 “ which generally lasts for about eleven or
 “ twelve days. This custom is universal;
 “ and, as the ladies here are very prolific,
 “ there are, for the most part, three or
 “ four of these assemblies going on in the
 “ city at the same time.” This account
 serves to confirm the testimony of Strabo
 and Diodorus Siculus, of the customs and
 manners of those people in their time.

From these observations, and from the numerous instances of speedy and easy births that occur almost daily, and which every practitioner, as I have observed before, must have frequently witnessed, it is evident that the structure and form of the human pelvis have not that tendency to retard parturition, which this author imagines. Neither does the opinion, that women recover sooner* and with more certainty after lingering and difficult labours, than after those that are easy and expeditious, however much credited, rest upon a better foundation. I know it is not unusual to tell women suffering under the severity of tedious and difficult labour, that they may expect their recovery to be more speedy and cer-

* “ It must be obvious that, under the most favourable circumstances, it is the intention of nature that labour should be a slow, deliberate, and painful operation; and as it is an important process, producing material alterations in the constitution, most probably its safe termination, or the future security of the patient, depends very much upon those qualities.” *Essays on the Practice of Midwifery*, by W. Osborn, p. 49.

tain, in proportion as their pains are more severe and lasting. This may be proper, as it may have the effect of encouraging them to bear their affliction with perseverance and fortitude: but it is equally repugnant to reason and experience.

This doctrine and its counterpart, that quick and easy labours are injurious to the constitution, seem to be founded upon an idea, that rapid and expeditious births must be produced by very strong uterine contractions or pains; and consequently that the parts through which the foetus is propelled with such extreme rapidity and violence, must be exceedingly injured. But the reverse is the fact; the child in such cases being usually expelled with very little exertion and almost without pain. The parts concerned in parturition, being in a natural and healthy state, and perfectly disposed and prepared to dilate, make little resistance, and yield to the slightest impulse, consequently are in no danger of being lacerated or injured.

This is confirmed by what I have given at page 10, as the result of my inquiry into the proportion of easy and expeditious labours; where it is observed that such labours are generally attended with little pain and less danger. In fact, pain will be always found to be in proportion to the resistance made to the passage of the child.—When the child is too large, or presents itself perversely, or labour commences before the completion of the term of gestation, and before the os uteri and neighbouring parts are disposed to dilate, the uterine contractions will be strong, violent, and lasting: and, if such labours be not managed with skill and attention, there will not only be danger of great injury to the parent, but it is not impossible that both may perish. But in a natural position of the child, when the term of gestation is completed, and the parts concerned in parturition are in a sound and healthy state, the resistance will be inconsiderable, and the child will generally slide into the world almost without pain,

and

and without the smallest violence or injury to the woman.

But tedious, difficult, and dangerous parturition is not confined to women: it is not unfrequently the lot of animals. Farmers and those conversant in the management of cattle are frequently obliged to assist at the birth of their young, and often find great strength and a considerable portion of art necessary to effect the delivery. And we find domestic animals continuing in labour two or three days, and sometimes dying undelivered. This is very different from the account our author gives of comparative parturition. * “As the
 “first intention of this essay,” he says,
 “is to demonstrate an essential difference
 “between human parturition, and the same
 “operation in every other female, it will
 “be necessary to describe in what that difference consists; and then to shew by
 “what means it happens, that painful,

* Essays, p. 6.

“difficult,

“ difficult, dangerous, and even sometimes
 “ fatal parturition, should be the unhappy
 “ lot of women only, while all other
 “ creatures are, in a great measure, if not
 “ altogether, exempt from every untoward
 “ circumstance, which either accompanies
 “ or follows the act, and which constitutes
 “ the misery of child bearing.”

This account of the almost constant facility and safety of animal parturition is, as the reader will easily perceive, greatly exaggerated. But, as the author had laboured to shew that human parturition must inevitably be difficult and dangerous in consequence of the peculiar structure and form of the pelvis, it was necessary, according to this hypothesis, that the same operation in brutes should be easy, and free from danger; as both the pelvis and soft parts in them * are, he observes, of such a structure,

* “ In all quadrupeds the same, or very nearly
 “ the same, axis is given to the trunk, the pelvis,
 “ the vagina, and the os externum. Nature has,
 likewise,

ture, as to oppose little or no obstacle to the birth of the fœtus. Although the circumstances I have mentioned of the difficulty with which some animals bring forth their young must be well known, and might, perhaps, be thought a sufficient refutation of this general assertion, yet I was desirous of getting more particular information upon the subject. I, therefore, readily embraced an opportunity, afforded me by Dr. Cooper, of conversing with — Unthank, of Tothil-fields, Westminster, who having been employed many years in the nurture and management of cows, of which he has usually more than three hundred, was enabled to give me more accurate information relative to them, than could be

“ likewise, made the head of the fœtus proportion-
 “ ably small, compared with the capacity of the
 “ pelvis, so that it may readily pass through in any
 “ direction; and the soft parts, having nothing to
 “ support, are of a loose texture, easily yielding to
 “ the first pressure of the membranes or fœtus, and
 “ of course affording little resistance, and no im-
 “ pediment to delivery.” *Essays*, p. 15.

picked



picked up from casual observation. As the facts he related are curious, and involve many circumstances not, I apprehend, generally known, I thought it might not be unentertaining to the reader to have the whole account before him. It will be found also incidentally to confirm the opinion I have adopted, that difficult parturition among women is dependent principally upon irregular and improper customs and habits of living: as we shall find that those cows that are kept in London upon gross and improper food, with little exercise, have more frequently difficult labours, and suffer more in consequence of parturition, than those that live in the country, under less restraint, and in a manner more adapted to their nature.

The following is the account alluded to, which is taken from minutes I made of our conversation. * “ Many cows, we

* It is proper to say, that this account was given, and the minutes of it taken, in the presence of Dr. Cooper, of Norfolk Street.

were

“ were told, parted with their young in
 “ the space of a quarter of an hour, but
 “ their labour was more frequently of the
 “ duration of two hours; in tedious and dif-
 “ ficult cases, which in London, where the
 “ animals are overfed, and made too fat, oc-
 “ cur as often as once in six or eight labours;
 “ it is protracted from eight or ten hours
 “ to two days or more. That these difficult
 “ cases happened, not only when the calf
 “ came in a wrong position, but even when
 “ the presentation was natural. That
 “ the difficulty was sometimes so great as
 “ to require considerable dexterity, and the
 “ strength of six or eight men to surmount
 “ it. Some persons,” our informant ac-
 “ quainted us, “ fix a rope to the presenting
 “ part of the calf, and make use of a horse
 “ to draw it away; but as horses do not
 “ draw steadily, but by jerks, the cow
 “ was liable to be injured. He therefore
 “ disapproved of this practice. Cows
 “ sometimes lose a prodigious quantity of
 “ blood on parting with the calf; and al-
 “ though he never knew an instance of any
 “ one

“ one flooding to death, yet their health
 “ and strength were sometimes so reduced
 “ from this cause, and from the difficulty
 “ of the birth, that their recovery was very
 “ tedious, and sometimes they were never
 “ perfectly restored to health. They some-
 “ times experience convulsions during par-
 “ turition, but more frequently immedi-
 “ ately after, which carries them off sud-
 “ denly. In some cases the perinæum is
 “ lacerated so completely as to lay the va-
 “ gina * and rectum into one passage; and
 “ this happens in natural births, when the

* This accident the author imagined never hap-
pened to animals.

“ This difference in the structure of the soft parts
 “ in man and in animals,” he says, “ likewise sa-
 “ tisfactorily explains, why the laceration of the
 “ perinæum, which, from inattention or ignorance
 “ of the person attending, is no uncommon accident
 “ in human parturition, should never happen to
 “ quadrupeds; a circumstance which has been con-
 “ sidered by some as a strong proof of the supe-
 “ riority of the powers of unassisted nature, over
 “ all the care and exertions of art.” *Essays,*
 page 16.

calf

“ calf proves too large for the passage.
 “ In straining to force away the bag, (the
 “ membranes) a prolapsus, or descent of
 “ the womb, sometimes takes place, which
 “ is then found hanging out of the body
 “ of the cow, of the size of a gallon pot :
 “ in this case they put the uterus back, and
 “ retain it in its situation by making two
 “ or three strong stitches at the entrance of
 “ the vagina. When the placenta is re-
 “ tained more than twenty-four hours after
 “ the birth of the calf, it never comes
 “ away,” he said, “ entire, but putri-
 “ fies, and gradually dissolves. In these
 “ cases it is seldom entirely discharged in
 “ less than a month : the animal during
 “ this time has bad health, and is generally
 “ reduced almost to a skeleton. Cows are
 “ peevish and fretful as the period for calv-
 “ ing approaches, refusing to be milked*,
 “ or even not suffering any one to come

* Although this is acknowledged to be a bad
 practice, yet they sometimes continue to milk their
 cows nearly to the moment of their calving.

“ near them. That they frequently suffer
 “ very severely during labour is evident,”
 he said, “ from their countenance, which
 “ is sometimes suffused with tears, and
 “ from their groans, which may be heard
 “ at a great distance. In general, cows
 “ that are fat have more difficult labours,
 “ and are more liable to disease after par-
 “ turation than those that are lean. If
 “ there is a great disproportion between the
 “ cow and the bull, the latter being much
 “ the largest, the labour may be expected
 “ to be difficult.”

Although, from this account it appears,
 that parturition, among the larger quadru-
 peds in particular, is not unattended with
 difficulty and danger, yet I shall readily
 admit that those accidents are more fre-
 quently the lot of women*. But this is
 not

* Ratio est, quia bruta sunt maxime animalia la-
 boriosa; mulier ut plurimum sellularia est, et ociosa,
 dedita deliciis; qua ratione fit, ut magis laboret in
 partu, quam bruta; quod inde apparet, quia inter
 mulieres,

not the necessary consequence of the structure of the pelvis, or the erect position of their bodies *, but of errors in their mode of living, and particularly in their method of conducting themselves during the period of uterine gestation: and in some instances the foundation is laid earlier, and is to be sought for in errors committed in the management and education of children.

The delicacy with which the children of Europeans are treated,—the confining them too much to the house, and sending them too early to school; (and thence de-

mulieres, illæ quæ magis laborant facilius pariunt. Altera ratio est, quia mulier est timida, irata, mœsta.

Hier. Mercur. de Morbis Mulieb. lib. 2. cap. 3.

* *Feminas vero delicatioris sortis difficilior quandoque parere, naturalis partus facilitatem non infringit, sed sensibiliiori corpori et vitæ regimini debetur. Opusc. Med. G. Roedereri, p. 492.*

Quod si itaque nostro sub cœlo quæ vitam degunt, inanem timorem propellerent, vitam sedentariam vitarent, et a depravatis quibusdam consuetudinibus abstinere; minor procul dubio difficilium partuum esset numerus. Ibid. p. 493.

priving

priving them of the daily use of exercise in the open air, so necessary to the health, strength, and complete developement of the parts of the body); but, above all, the accustoming them too early to sitting, and obliging them to continue in that posture too great a portion of the day, must have considerable influence in injuring the constitution. These causes have particularly very much contributed to, if they are not the sole cause of, introducing the rickets which is endemial in, and seems solely confined to, those countries where the customs I have mentioned prevail. This, I believe, will, be readily allowed by all who consider how necessary air, and the most liberal or unconfin'd motion or exercise are, to the firmness, integrity, and growth of an animal body.

Thus, therefore, from an error in the management of infants, a foundation is laid for the greatest difficulty that occurs in labour: for the bones of the pelvis, in common with every other bone in the body, becoming soft, spongy, and parts of them
enlarged

enlarged in their bulk, are easily bent and distorted, so as to contract the cavity of the pelvis, whence the passage of the foetus is not only retarded, but rendered extremely difficult, and sometimes impossible to be effected. Fortunately for mankind, this deformed state of the pelvis is very far from being a common or frequent disease. * “ Smellie supposes, that in six labours out of a thousand it may be necessary, on account of the pelvis being too narrow or distorted, to make use of the fillet, forceps, or crotchet :” and by a calculation I made some years ago †, I found four women only out of nineteen hundred were from this cause incapable of bearing full-sized children without mutilating them.

But although the causes I have mentioned are not often sufficiently powerful to affect the bones, and to distort or contract the

* Treatise of Midwifery, p. 195.

† Published in Vol. LXXVII. of the Philosophical Transactions.

pelvis, they operate in preventing the constitution from acquiring its proper firmness and vigour, and by introducing a weak, feeble, and irritable state of the body. This is too frequently kept up and increased by improper habits and modes of living in the adult state*; by too sedentary a life; too rich

* Vita enim otiosa est potissima causa omnium malorum quæ patiuntur pregnantēs, tum etiam difficilis partus. Quod esse verum experimentum probat. Nam non solum brutorum animalium feminæ bene se habent dum sunt gravidæ, et facilius pariunt, quam mulieres, propter majus exercitium; sed etiam inter ipsas mulieres, eas melius se habere dum gravidæ sunt, faciliusque parere observamus, quæ proprio labore victum quærunt, ac ruraliter vivunt, quam eas quæ inter delicias perpetuo degunt. Est etenim fere in omni mundi provincia genus quoddam perpetuo errantium mulierum, quod quidem ab Ægypto ortum habuisse ferunt. Hoc igitur mulierum genus eadem securitate ac facilitate in sylvis parit, qua capræ parere solent. Nam illico ac puerum ediderunt, lavant frigida aqua, ipsumque pannis involvunt, ad consueta munia redeunt, nullumque patiuntur damnum. Ioannis Gallego Oper. Phys. Med. p. 219.

Et si quod est, quod possit mulieri efficere partum
diffi-

rich and delicate a diet; frequenting assemblies and crowded rooms; late hours; lying too long in bed; taking too little exercise in the open air; sitting many hours in a coach. By these and other enfeebling practices, the constitution is often rendered too weak to retain the foetus to its full term. To this we may attribute the prevalence of abortion. Or, if women thus educated carry their burthen nearly to the expiration of the term, in this weak and irritable state, they are liable, from the slightest accident, to be thrown prematurely into labour, the most frequent cause of tedious and difficult parturition. How this may happen is not difficult to explain.

When nearly the whole of the cervix uteri is developed, which happens some days before the completion of the term of gestation, it may readily be conceived how

difficilem, procul dubio est nimium ocium, et nimius torpor. Hier. Mercurialis de Morbis Mulieb. lib. 2.

any sudden motion or perturbation of the spirits may occasion a separation of the lips of the uterus. Hence uterine tenesmi and pains resembling labour: and as the exact term for carrying her burthen is seldom known to the woman, these are frequently mistaken for labour. And although from the prudent manner in which labour is now conducted, these spurious pains may not be increased, at least among the better sort of people, by hot rooms, warm spicy drinks, and improper handling and stretching the vagina, &c.: yet there is little chance of proper and effectual methods being taken to appease and check them. But as nature, punctual to her duty, is not accelerated, but perhaps retarded, in her operation by this bustle and disturbance, the maturation of the fruit, and its disposition to separate from the uterus, and the consequent relaxation of that organ, and of the parts through which the foetus is to pass, will not take place until the completion of the natural term of gestation.

Thus

Thus will a labour be protracted for the space of three, four, or more days, which, if it had not been excited too early, would probably have been terminated in a few hours.

Among the poor the same effects may be produced, and abortion or premature labour occasioned by paucity of food, violent exercise, or hard labour, lifting heavy loads, &c., particularly near the period of parturition.

From these accidents and irregularities brutes are nearly, if not altogether, exempt. No wonder, therefore, that tedious, difficult, and dangerous births are more frequent among women than among them. But that labour is not unattended with pain and difficulty even to them, may be collected from their appearance, which is always sad and pensive as the time approaches, affecting solitude, and so far from attempting to sport and run about in their usual way, that they scarce rise to take their food.

Thus have I endeavoured, by giving an estimate of the proportion of tedious and difficult labours to those that are easy and expeditious, to shew, that human parturition is not rendered necessarily and inevitably difficult, by the structure of the pelvis ; and by pointing out the most usual causes of difficulty and danger in human parturition when they do occur, to vindicate nature from the charge of imbecility or unkindness in the construction she has adopted of the parts appropriated to that office. This I have farther illustrated, by taking a view of animal, or comparative parturition ; which is found to be frequently difficult and dangerous, although, it is allowed, no material obstacle is offered to the birth, by the structure and form of the pelvis in the brute creation.

If the arguments I have adduced be admitted, it will follow, that human parturition may be made less difficult, tedious, and dangerous. That in order to obtain these advantages, care must be taken to lay the

the

the foundation of a firm, hardy, and vigorous constitution in infancy. This is to be principally effected by allowing children a greater portion of exercise in the open air, the want of which cannot be compensated by any art whatsoever. They should, in fact, excepting during the hours of rest, be more without, than within doors. This would enable them to take a fuller and more succulent diet, without danger of crudities, obstructions, eruptions, &c. Where diet is measured to children with too sparing a hand, it is in vain to expect a strong and hardy constitution. Women should exert themselves to correct improper and mischievous habits, and should be careful to live more agreeably to the institutes of nature. They should avoid every thing that may enervate and injure their constitutions, as late hours, assemblies or crowded rooms, lying too long in bed, too delicate and voluptuous a diet, inordinate passions of the mind. They should habituate themselves to walking, or occasionally riding in the open air, and exchange their too sedentary way

way of living, (the great error of the middling as well as the upper ranks in this country) for exercise,—and forsake cards for more useful and salutary amusements. In fine, as every thing that debilitates, or tends to increase the irritability of the constitution, is found to increase, every thing that strengthens and destroys unnatural susceptibility, must necessarily diminish the difficulty and danger of parturition.

Dr.

Dr. OSBORNE'S Second Essay is on Natural Labour.

IN this essay the author gives a description of the process of a natural labour, and explains at length, and with considerable minuteness, the use of the several eminences and depressions he had remarked in the pelvis; which serve, he thinks, to conduct the head of the child through that passage, and particularly to turn the forehead into the hollow of the sacrum, as soon as the ears have passed the upper aperture or brim. But as the same structure, as I have observed before, obtains in the pelvis of the male, where there is no such duty to be performed, it is evident, that these parts were formed for very different purposes, although they may incidentally afford some assistance in this business likewise. Leaving, however, the discussion of this point, which is of no importance in practice, I shall proceed

ceed to consider the more material parts of this essay, the directions for defending the perinæum, and for providing for the separation and delivery of the placenta. On these subjects the author's opinion is so novel, and the office delegated to the midwife is so delicate and difficult, that it seems material to inquire whether the operation he recommends be necessary, as it is to be feared that few of the persons usually employed in midwifery, will be found to be possessed of sufficient sagacity, temper, or discretion, to be entrusted with the performance of it.

* “ The bulk of the head of the child,”
 he says, “ being engaged in the cavity of
 “ the pelvis, and the necessary term completed, the head for some time rests upon
 “ the arch of the pubis, as a fulcrum, or
 “ fixed point, and firm support; while the
 “ vertex and forehead, by repeated pressure
 “ against the perinæum, first relax, and

* Essays, p. 35.

“ then

“ then by renewed efforts, stretch and
 “ lengthen that part which was both thick
 “ and rigid before. The occiput at length
 “ begins to insinuate itself into the os ex-
 “ ternum, thus relaxed and prepared to re-
 “ ceive it; *and now, for the first moment,*
 “ *we are called upon for our assistance to co-*
 “ *operate with nature, in the completion of*
 “ *her kind and wise intentions, of making*
 “ *this, the last stage of her process, as slow*
 “ *and deliberate as possible, or as the former*
 “ *part had been; and by that means to pre-*
 “ *vent, in any degree, the laceration of the*
 “ *perinæum.*”

All the obstacles to the birth of the child
 appear from this description to be overcome.
 The os uteri is completely dilated; the head
 of the child has descended into, and fills
 the vagina; the perinæum, at first firm,
 thick, and rigid, is become soft, thin, and
 extended; the os externum is relaxed and
 prepared, the author says, to receive the
 occiput of the child, which begins to in-
 sinuate itself into it, and to pass into the
 world.

world. In this state what remains to be done, or what hinders that nature, who had been allowed to conduct the labour so far, should not be entrusted with the completion of it? But nature, kind, wise, and beneficent, as she is described to be, is not equal, it seems, to this task. It is the Physician, (for I cannot suppose the author means this business to be performed by more vulgar hands), that must give the necessary polish and finish to the business. The office he is to perform is described in the following terms: * “ The palm of the left
 “ hand is to be applied to the perinæum,
 “ particularly to the extremity of the os
 “ externum, or the frænum labiorum, which
 “ is the part where the greatest pressure is
 “ made, and being the thinnest, is the least
 “ capable of bearing it, and is therefore
 “ the part that is most liable to be torn.
 “ At the same time that the perinæum is
 “ strengthened by the application of the
 “ left hand, the right should be constantly

Essays, p. 36.

“ ap-

“ applied to the vertex of the child’s head,
 “ from the instant it has emerged from
 “ under the arch of the pubis, and begun
 “ to enter the os externum, by this means
 “ *strenuously (in every pain) resisting its*
 “ *progress*, and obliging the distension of
 “ the soft parts to be as gradual, and the
 “ passage of the child’s head through them,
 “ as deliberate as possible.”

Whether women, delivered by themselves,
 would more frequently suffer laceration of
 the perinæum in natural and ordinary la-
 bours than when assisted by the most ex-
 perience midwife, is a problem that, per-
 haps, will never be completely solved ; as
 the idea of the necessity of supporting that
 part, in order to prevent its rupturing, is
 so generally inculcated, that the operation
 is not likely to be frequently suspended,
 even for the purpose of making the ex-
 periment. But the number of women who
 are daily delivered with the most perfect
 safety without assistance, joined to such ob-
 servations as I have been enabled to make
 in

in the course of my practice, induce me to believe they would not; provided there were no improper interference in the early part of the labour. Indeed, it seems difficult to assign a reason why the frænum labiorum and perinœum should more frequently give way or burst, than the os internum, which, in the commencement of labour, is equally firm and rigid as those parts. But this is rarely found to be injured, except when rudely handled, by injudicious attempts to dilate it, in order to hasten the birth.

But admitting it may be necessary to guard the perinœum by pressing the hand gently against that part, while the head of the child is passing into the world, this can never warrant the forcibly* repelling the child, and

* When the parts are violently stretched, the perinœum may be gently supported during pain, and a counter pressure is generally recommended when the labour is rapid; but it should be remembered, that this support is only useful as it retards labour,

and counteracting the pains, as is here directed; which is not only a delicate, but may, I should suspect, if not skilfully and cautiously performed, prove a dangerous operation. But even when, by this hazardous and superfluous manœuvre, the head of the child is, at length, suffered to emerge and pass into the world, the business is not done. The assistant must go on, the author says, resisting the pains, lest the placenta should be retained and shut up by the irregular contractions of the uterus. * “ This “ will be prevented,” he adds, “ by only “ retarding or impeding the rapid expulsion “ of the body of the child, after the birth “ of the head, *by keeping the shoulders in*

labour, which is often inconvenient, and sometimes dangerous. A laceration of the perinæum is a very rare occurrence, and generally the consequence of previous disease. It is, therefore, doubtful how far a hazardous expedient is to be recommended to obviate an uncertain accident.—*Outlines of the Theory and Practice of Midwifery*, by A. Hamilton, p. 210.

* *Essays*, p. 45.

“ *the vagina for some minutes, or during the*
 “ *operation of some pains. In the same*
 “ *manner we ought to resist the farther pro-*
 “ *gress of the body, when the shoulders are*
 “ *expelled.*”

That the manœuvre here recommended is not necessary in ordinary cases, for the purpose of preserving the perinæum, I have explained above. That it is equally unnecessary for preventing the irregular contraction of the uterus, and detention of the placenta, will be apparent from the following considerations: When the head of the child has descended into, and fills, the little pelvis, and the occiput is beginning to emerge through the os externum, which is the period the author has fixed on for commencing this operation, a portion of the fundus uteri will be emptied, equal to the space that had been occupied by the head of the child and the liquor amnii:—that is, to about one third part of its cavity. And as the descent of the head is almost always gradual, and it usually rests in that situation
 some

some minutes, the fundus uteri will have had abundant time to contract and come in contact with the body of the child, and consequently of loosening and detaching the placenta. And when the head of the child has totally emerged, or, in the language of midwifery, is born, the uterus will have had opportunity of contracting and reducing its cavity to less than half the size it was at the commencement of labour, and thus completely providing against the detention of the placenta; an accident which rarely, if it ever, happens, unless when it is diseased, or labour has been hastened or has commenced prematurely*.

It is generally admitted that nature has placed those things, that are necessary to the existence and support of mankind, in so clear and conspicuous a point of view, that they cannot easily be overlooked or

* From what I have been able to observe, or learn from inquiry, this case of retained placenta does not occur so often as once in two hundred labours.

mistaken. * “ Nec de malignitate naturæ,
 “ queri possumus, quia nullius rei difficilis
 “ inventio est, nisi cujus hic unus inventæ
 “ fructus est, invenisse. Quicquid nos
 “ meliores beatosque facturum est, aut in-
 “ aperto aut in próximo posuit.” But the
 practical rule here laid down and recom-
 mended, to check and restrain the progress
 of the child, is so far from being obvious,
 that it has not even been suspected to be
 necessary until this moment; and instead of
 facilitating parturition, it adds to the diffi-
 culties attending that operation, which the
 author had described as already too numer-
 ous. It allows no labour to be natural, and
 overturns all the rules and cautions against
 unnecessary interference, which the most
 experienced practitioners have laboured to
 establish: for, however physicians may
 have differed in their mode of assisting in
 laborious and preternatural births, all seemed
 to agree in leaving easy and common labours
 to the guidance of nature. Or, if they did

* Seneca, lib. 7. cap. 1. de Beneficiis.

interfere, it was in giving some gentle, but, perhaps, useless, assistance at the conclusion of the labour, when nature might be conceived to be wearied and exhausted: and even this was gradually wearing away.

Mr. White, of Manchester, first observed, that, after the birth of the head of the child, the force of the immediately succeeding pains were usually expended in giving the body of the child a diagonal turn, by which means the shoulders, now occupying the largest diameter of the pelvis, were more safely and easily expelled. He, therefore, recommended to leave the expulsion of the shoulders and body of the child to nature, instead of assisting in extracting them, as had been recommended by former writers, and was, I believe, generally practised:---thus restoring to nature the rights that had been usurped from her, and banishing the last remains of barbarism from the practice of midwifery. This judicious maxim, which does so much honour to the sagacity of Mr. White, is

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totally

totally mistaken, or perverted, by our author. Not content with checking and restraining the officiousness of the midwives, and preventing them from extracting the child before it is properly disposed for its exit, he very imprudently resists the efforts of nature, and forcibly retains the child in the passage, in order to obtain some imaginary advantages, which he thinks nature incapable of procuring*.

If this manœuvre for retarding and resisting the birth of the child was merely to be considered as an unnecessary and superfluous operation, it would, even on that account, deserve reprehension, as it tends to make the practice of midwifery difficult and mysterious; and, in some degree, carries it back to the state of barbarism, from

* Every other animal brings forth its young without any assistance; but we judge nature insufficient for that work, and think a midwife understands it better, &c. Comparative View of the State and Faculties of Man, by J. Gregory, M. D. p. 29.

which

which it has so lately, and with so much difficulty, emerged. But those who consider with what force the foetus is sometimes expelled, of which the story related by Harvey * is a memorable example, will be apt to suspect that it is not only superfluous, but may be dangerous. For the uterus, irritated by resistance to more frequent and

* *Serenissima Angliæ Regina equam candidissimam formæque eximiæ dono acceperat: ejusque genitalia ne ab equis admiffariis inita, corporis gratiam atque equitandi usum amitteret, equifones, ut fieri solet, annuis ferreis infibulaverant. Eadem tamen, nescio quo pacto, nec custodes mihi modum indicare poterant, facta est grvida; tandemque, cum nihil tale suspicarentur, noctu peperit, pullusque vivens mane ad matris latera conspicitur. Id cum mihi nunciaretur, adii illico locum, vidique ambo vulvæ labia annulis confuta, totumque pudendum versus sinistrum latus detrusum, abruptum, et a dextra coxendice laceratum adeo, ut, soluta per incredibilem foetus vim partis robustissimæ unitate, facile ei per ingentem illum hiatus exitus patefceret. Tantus scilicet est maturi vegetique foetus vigor et efficacia.* Harvey Op. om. p. 557.—Harvey attributes to the efforts of the foetus, what we now know to be effected by the contractions of the uterus.

violent contractions, may be so bruised and injured as to give rise to dangerous fever and inflammation; or may even burst, and thus put a speedy termination to the life of the woman.

Accidents of this kind, I am ready to acknowledge, could not possibly happen in cases under the direction of the essay writer, or of any temperate and judicious practitioner. But, as we cannot expect that all the persons engaged in midwifery are endowed with an equal degree of discretion and judgement, it seems highly improper to recommend to general use any regulation or maxim, which either misunderstood, or improperly enforced, may be productive of mischief.

This solicitude, on the part of our author, to make human parturition, even in its most simple state, appear to be an intricate and difficult process, and consequently to require the assistance of skilful and ingenious persons to conduct it, seems to have
been

been excited by the attempts of some late writers* to degrade the dignity of the profession of midwifery, by charging it with insignificancy and inutility. To the prevalence of this opinion, it is probable a late regulation of the College of Physicians may have contributed. For although it is known, that the members of the college are precluded, by their statutes and byelaws, from practising midwifery, yet they have instituted a board †, for the purpose of examining

* “ To point out the fallacy of these opinions,
 “ and to obviate their influence, by demonstrating
 “ the cause of the inevitable, but superior, difficulty
 “ and danger of human parturition, and thus
 “ to rescue the art of midwifery from the charge
 “ of inutility, and to restore it to the importance
 “ which it merits, as a branch of the general practice
 “ of physic, are the particular objects of this
 “ essay.” *Essays*, p. 3.

† What the intention of the College was in forming this Board, it is not easy to guess. It may, however, be rendered a very beneficial institution. But this can only be effected, by admitting a competent number of practitioners in midwifery as members
 of

amining and admitting into the rank of licentiates in that art, such persons as they, who are totally unacquainted with the practice, think qualified. Whence it would seem, *quod dii tamen probibeant*, that that

of the College, and associating them with the present censors or examiners; and obliging all persons to pass an examination, and to be licensed by them, previous to their being permitted to practise midwifery within the district that is under the direction of the College.

Such an institution is more wanted than, perhaps, the College have the least idea; as at present every person, without restriction, may practise midwifery; and it is to be feared, that some, at least, do engage in that business, with a very slender portion of knowledge. It is thought a fair ground for recommendation, at present, if a young man has attended two or three courses of lectures, although he has scarce had an opportunity of entering a lying-in room.

To correct this abuse, and oblige candidates for midwifery, not only to shew that they are masters of the theory, but that they have actually been present and assisted at a certain number of labours, would reflect the highest honour upon the College, and would be of essential service to the community.
learned

learned body is infected with the heresy I have mentioned, and that they imagine, that no particular course of study or mode of education is necessary to qualify any one to undertake the practice of midwifery. But this is certainly not the truth. For although it should be allowed, and I think I have satisfactorily proved, that nature, in all ordinary cases, is competent to complete her business without the smallest assistance or interference, yet, as it is equally well known that cases do occur in the practice of midwifery sufficiently perplexing and difficult to require the utmost skill and address in the management of them, it necessarily follows, that persons must be educated with a particular view to the science. And although such difficult cases do not occur oftener, perhaps, than once in three or four-score labours, yet, as there are no signs antecedent to labour, generally speaking, by which they may be predicted, it seems prudent to employ, in the first instance, persons so educated, who being on the spot

spot in time, may rectify what is amiss, and frequently avert a considerable share of the danger. Besides, midwifery being an operative art, whose basis is experience, it is necessary that those who are to assist in difficult cases should be employed in general practice; as it is only by being familiar with natural labour, by being constantly in the habit of delivering women, that they can be enabled to give assistance in difficult cases, when they do occur, with that facility and readiness that are necessary to insure success.

That this is the fact will be farther apparent by observing, that although some of the greatest geniuses of antiquity endeavoured to improve the practice of midwifery, and have left monuments of their labours in this way behind them, yet, not having the advantage of an extensive experience, their ideas were vague and confused, and the art continued to be disgraced and perplexed by the most absurd and ridiculous

culous precepts*, until the middle of the sixteenth century, at which period Ambrose Paré, and soon after, his pupil Guilmeau, began to acquire reputation in the

* When the child presented itself wrong, the Ancients had recourse to various methods to reduce it to a natural situation, the only way in which they thought it could come with safety. Hippocrates advises, that the breech and lower parts of the woman should be raised, that the child might fall back into the fundus uteri, where, he supposed, it would have room to turn itself. *De Morbis Mul. lib. 1.* Sometimes the women were taken out of bed by two or more strong persons, and shook in various directions. Or the presenting part of the child being pushed back, the operator endeavoured to bring the head to the orifice. These methods not succeeding, and the child being now supposed to be dead, they opened its head, or in any other way diminished its bulk, and then extracted it with hooks.

Moschion has left a whimsical account of the vulgar practice in his time. “*Alii,*” he says, “*ad scalas ligabant, et sic pendere jubebant; alii*” “*infinitum deambulare et salire cogebant, alii sc-*” “*las ascendere; alii autem, manibus sub axillis*” “*missis, a terra sublevabant, et diutius exagitabant.*”

Harm. Gynæc. p. 11.

Court

Court of France, as practitioners in midwifery.

Until this time women were solely employed in the general practice. Physicians or surgeons were only applied to, when some operation, such as performing the Cæfarian section, opening and enlarging the natural passage, or mutilating or dividing the foetus, were thought to be necessary. And there can be no doubt but that the midwives, who obtained great influence over the women they assisted, endeavoured, with the utmost art, to keep the physicians in ignorance of every circumstance they were able to conceal. To this cause we must attribute the opinion, held by Hippocrates, of the almost necessary fatality of all cases, in which any other part than the head of the child presented.

It is very evident, for instance, that the midwives, even from the earliest period of time, must have known, that children presenting the breech or feet, were frequently
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excluded by the labour pains alone, without even the slightest assistance from art. But, as Hippocrates was never consulted in such presentations, except when from the straightness of the pelvis, so much strength and exertion was necessary in extracting the foetus, that the body of the child frequently separated, and left the head behind; he was naturally led to consider such situations as extremely dangerous. If he had known with what facility children were frequently born, in such cases, and that the accidents he had been witness to were very rare, and only happened when the pelvis of the woman was too narrow or distorted, he would certainly have entertained a very different opinion upon the subject.

It is well known, he says*, that if an olive enters the neck of a bottle transversely, it cannot be extracted in that position without crushing the olive, or breaking the bottle; but if it enters by one of its ends,

* De Morb. Mul. lib. 1. p. 602.

it passes without difficulty. Thence he infers the necessity of the child's presenting by its head. But as he knew it was immaterial which end of the olive came first, he would have found it was nearly equally indifferent which end of the child presented, if he had had the advantage of experience, or if the midwives had been candid and communicative. That he was not apprised of this circumstance is evident, as he immediately adds, *there is great danger when the child presents by its feet; in this case the mother or the foetus, or both perish.

But the improvement of midwifery had other obstacles besides the intrigues and ignorance of the midwives: and these continued long after the latter had lost their influence, and in some countries continue still to fetter the practitioners; I mean the interference of the priests †, who, fearful
left

* De Morb. Mul.

† Mauriceau says, Mais le plus grand mal procedoit principalement du delai de l'operation, qui fut

left children should lose the advantage of baptism, frequently prohibit the extracting them with instruments, in the vain hope of their being born alive, even in cases

fut causé par le curé du lieu, qui soutenoit positivement qu'on ne pouvoit pas baptiser un enfant dans le ventre de sa mere, et que dans le soupçon qu'on avoit qu'il pouvoit etre encore vivant, on ne devoit pas hasarder sa vie pour sauver celle de la mere.—Tom. II. p. 72.

The curate in this case acted conformably to the practice of the church at that time, as will be seen by the following extract from Peu's "Pratique des Accouchemens," p. 364.

The surgeons of Paris, having demanded whether, in cases of great emergency, where the life of the mother could by no other means be preserved, they might open the head of the child, received the following answer :

Nous sous signez, Docteurs en Theologie de la facultié de Paris, sommes d'avis, que si l'on ne peut tirer l'enfant sans le tuer, l'on ne peut sans péché mortel le tirer ; et qu'en ce cas las, il se faut tenir a la maxime de St. Ambroise : Si alteri subveniri non potest, nisi alter ledatur, commodius est neutrum juvare. Deliberé a Paris, le 24 April, 1648.

As this opinion is wearing away, I thought it might not be improper to insert this *morceau*.

where

where the projection of the sacrum renders that impossible. From this cause delivery is frequently delayed, until, exhausted with travail, the woman and child both fall a sacrifice together. To this prejudice we must attribute the zeal with which so many writers on the continent have recommended the Cæsarean section, and their endeavours to conceal the fatality of that operation. This is found to be somewhat abated, since it has been determined that children may be baptised in utero by means of a syringe, which happy expedient, after a long consultation of the Doctors of the Sorbonne*,
was

* The question whether children might be baptised in utero was found to be very difficult in solution. For it had been observed by St. Thomas Aquinas, that such children, not being born, could not be objects of this sacrament; which is esteemed a second birth. But this opinion at length not satisfying, the question was solemnly argued by twelve doctors of the Sorbonne, who decided, that children might be baptised in utero, provided the holy water could be made to touch any part of their bodies.
“ Dummodo infans sit vivus, et arte seu industria
“ medi-

was adopted, and continues to be practised at this time *, whenever they are under the necessity of making use of the perforator

“ medicorum, possit aqua ad ejus corpus immediate
 “ pervenire.” Délibéré en Sorbonne le 10 Avril
 1733. This being finished, another question, apparently of greater difficulty, arose: Whether this office might be performed whilst the children continued to be enveloped in their membranes. The church had decided, that if a child was sewed up in a leather pouch, or if the holy water was only sprinkled on its clothes, such baptism would not be efficacious.” “ Neque puer sacco coriaceo inclusus,
 “ neque homo vestibus indutus, rite baptisatus dici
 “ potest, si aqua soli corio, vel indumentis fuerit
 “ affusa: secundinæ vero nonnisi coriaccæ aut membranosa
 “ vestes infantis sunt, quasi ex madido
 “ pergamine confectæ quibus includitur et vestitur.”
 But it having been since determined, that the membranes are living parts of the fœtus, it seems to be agreed that baptism may be equally efficaciously administered, although they should not be broken. The materials for this note are taken from *Histoire de deux oper. cesariennes*, par M. Guenin, 1750.

* See *Traité sur divers Accouchmens*, par M. Herbiniaux.

and

and crotchet ; or indeed whenever they suspect the child cannot be born alive.

But notwithstanding the impediments I have recited, the improvements in midwifery, since the practice has devolved upon physicians, have kept pace with, or perhaps exceeded, those of any other art or science in the same period. Amongst the advantages the community has gained by this change, one, and not the least, has been, divesting the minds of women from innumerable fears and prejudices, equally destructive to their health, and to the peace and comfort of their minds. The idle apprehension of marking their children, which haunted their imaginations, and which in the memory of many persons was so inveterate that it seemed impossible to be eradicated, led their parents and friends to indulge them in excesses, often of a dangerous kind, and to gratify every whim at the expence of their future peace and comfort. This foolish prejudice is now effectually wearing away. The custom of con-

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fining women after delivery to close and hot rooms, of obliging them to continue in their beds for the first nine days at the least, and of administering hot stimulating drinks and cordials, which proved so injurious to their health, and frequently reduced them to a state of imbecility from which they with difficulty recovered, is now entirely abolished: instead of those enervating practices, the women are allowed, as soon as they are recovered from the fatigue of their labour, to move themselves, and to quit their beds for a small time every day; and they are refreshed, and their strength recruited by simple, plain, and cooling meats and drinks; so that it is rare to hear them complain of even any remaining weakness after nine or ten days. The farrago also of slops and medicines formerly used is almost entirely banished.

In the operative part the advantages are not less considerable.

From an accurate acquaintance with the

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state

state of the cervix uteri in the different months of utero gestation, the experienced practitioner now knows certainly, when called to a woman feeling the pains of labour, whether she has completed her term, and consequently whether the uterine contractions should be encouraged or repressed. If the labour is premature, by enjoining the most perfect rest, by bleeding when necessary, clysters and opiates, he endeavours to appease the disturbance, which has been occasioned perhaps by some accidental circumstance; and by every possible expedient tries to prevent the progress of the labour, until the expiration of the term. Puzos by his writings contributed very much to the perfection of this art. This led to another circumstance not less important; an early knowledge of the position of the fœtus in utero, long before the bursting of the membranes, or that the os uteri was so far dilated as to suffer any part of the child to descend into the vagina: so that the accoucheur, foreseeing the necessity, is prepared in preternatural births to turn the child

child and bring it by the feet, before the entire exhaustion of the waters, and the consequent contraction of the uterus. How much this contributes to the facility of turning when that is necessary, and to the safety of both the woman and child, every practitioner knows.

The practice of turning the children and bringing them by the feet, whenever an arm, shoulder, back, &c. presents, was first introduced by Paré: before his time the most preposterous methods were tried to bring the head of the child to the orifice, the only safe presentation as it was then thought. The women, rolled in a sheet, were strongly shook by two or more assistants, or set on their heads, that the children, by their gravity, might fall into the fundus uteri, where it was supposed they would have more room to turn themselves, and other fatiguing and mischievous manœuvres were had recourse to, which generally terminated in the death of both mother and child. The practice of turning in

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cases

cases of uterine hæmorrhage was also first taught by Paré, as Guilleméau* acknowledges; who relates several instances of his success in cases that must generally before have proved fatal. Puzos contributed greatly to the improvement of this art, by shewing in what cases we must necessarily have recourse to it, and when after opening the membrane we might safely leave the business to nature. But I shall have occasion to speak of this again when I come to examine our author's method of treating convulsions and floodings.

The preposterous custom of swathing

* Guilleméau being sent for to Mad. Simon, daughter to his late master, Paré, finding her almost without pulse, having her voice weak and her lips pale, from loss of blood, says, "I told her mother and her husband that there was but one way to save her, which was to deliver her speedily; the which I had seen practised by the late M. Pareus, her father," &c. Translation of Guilleméau's *Treatise de la Grossesse et Accouch. des Femmes*, 4to. 1712, p. 128. I have not seen the original.

and

and confining the bodies and limbs of the children, which was done in so artificial a manner that none but midwives were allowed, or indeed were able to dress them during the first month, and which was invented by them to keep up their influence in the families they attended, is now entirely left off, and a cool, light, and easy dress substituted in its place.

But I have said enough to shew the improvements midwifery has received since physicians were introduced into the general practice; and which, but for the experience they thence obtained, they would not have been in a condition to have made. But although the art has attained under their auspices a considerable degree of perfection, yet we have no reason to believe it is incapable of farther improvement; we should therefore go on diligently investigating the causes of the difficulties that still occur, and endeavour to find out appropriate remedies. But in doing this we must take care not to suffer ourselves to be influenced
by

by any hypothesiſ, however ingenious, or to admit any innovations that are not founded on the ſolid baſis of reiterated experience. Above all, we ſhould avoid all unneceſſary interference, neither interrupting and retarding, nor accelerating labour; but leaving every thing in all ordinary caſes entirely to the guidance of nature.

Nec deus interſit niſi nodus vindice dignus,
Occurrit. —————

Dr.

*Dr. OSBORN'S Third and Fourth Essays
are on laborious or difficult Labours.*

IN these, the only original parts of the volume, the author gives a disquisition on the nature and use of the forceps and lever, and a comparative view of their excellencies and defects. He divides laborious parturition into three classes.

* “ The first class comprehends all cases
“ where, though the labour be very slow,
“ tedious, and difficult, yet it shall be ultimately and safely accomplished by the
“ powers of nature without any assistance
“ from art, or without the slightest interference of the practitioner, except the
“ attention so strongly recommended in

* Essays, p. 50, &c

“ the

“ the preceding essay, to preserve the pe-
 “ rineum from laceration, and prevent the
 “ retention of the placenta.

“ Secondly. The next class compre-
 “ hends all cases where the powers of na-
 “ ture, however long exerted, are demon-
 “ strably unequal to the accomplishing of
 “ the delivery, and where we are compelled
 “ by the last necessity, or utter inability of
 “ nature, to have recourse to art for the
 “ actual preservation of the mother's life;
 “ but upon the presumption that the child
 “ is at this time living, the means of art
 “ to be employed are to be compatible
 “ with the child's safety, or such as shall
 “ certainly neither injure nor destroy it.

“ The third class, or the last degree of
 “ difficulty, is where, from the extreme
 “ deformity of the pelvis, or disproportion
 “ of its cavity to the volume of the child's
 “ head, the child cannot be extracted alive,
 “ but where, deplorable as this condition
 “ is, its head must be opened, the contents
 “ dif-

“ discharged, and, of course, its life sa-
 “ crificed for the preservation of the mo-
 “ ther, or the mother’s life must be sacri-
 “ ficed for the preservation of the child,
 “ by submitting to the cæsarean operation;
 “ or they must both together be involved
 “ in the extremest danger, by the division
 “ of the symphysis pubis.”

This useless subdivision of laborious par-
 turation into classes renders the author’s de-
 finitions obscure, the different species run-
 ning into each other, so that it is impossi-
 ble to mark their several boundaries.

The first class, according to this distri-
 bution, contains all those labours which,
 although tedious, are ultimately and safely
 terminated by the pains, without the smallest
 interference of the practitioner. In what
 then does this differ from a natural labour,
 which the author repeatedly tells us, “ even
 “ under the most favourable circumstances
 “ must necessarily be a slow, deliberate,
 “ and painful process?” The definition
 of

of the second class is still more defective. Under this are arranged all those labours, where the powers of nature, however long exerted, are demonstrably unequal to the accomplishing the delivery. In these cases the author recommends the forceps. But so far is it from being true, that the powers of nature are incompetent to expel the child, in those cases that are deemed, even by the most cautious practitioners, proper for the forceps, or other instruments by which delivery is intended to be effected, without any injury being done to the mother or child, that even in those more deplorable cases, or, in the third class, where, on account of the projection of the sacrum, it is impossible to deliver with the forceps or lever; and our only hope of being able to save the life of the mother, is placed in opening and lessening the head of the child, previous to its passing through the pelvis: yet even in these cases, when the necessary assistance has been cruelly or ignorantly withheld for the space of three or four days, the pains will frequently go on vigorously
pro-

propelling, and at length force the child into the world. The woman, sunk and exhausted by the violence and continuance of the pains, dies usually soon after the exclusion of the child ; or, if she survives, is so bruised, mangled, and torn by the violence of the birth, that the remainder of her life is one continued scene of misery and sorrow.

Smellie, whose cool, temperate, and philosophical disposition qualified him, in a peculiar manner, for a teacher, and who having no paradoxes to maintain, made every subject, he treated of, clear and intelligible, treats this business in a much more simple manner ; he “ * calls that a “ natural labour, in which the head pre- “ sents, and the woman is delivered by “ her pains, and the assistance commonly “ given, that is, by taking care to preserve “ the perinæum from laceration ; and that

* Treatise on Midwifery, p. 193.

“ laborious *, in which, on account of
 “ its tediousness or difficulty, we are
 “ obliged to have recourse to art to dilate
 “ the parts, or to extract the child with the

* For the purpose of instructing pupils, laborious parturition may not, perhaps, unaptly be divided into three classes, to be deduced from the circumstances that occasion the delay or difficulty. The first class to consist of those cases in which the pelvis is of its natural shape, but the ring or brim is too small to admit the head of a full-sized fœtus to pass, until the bones that compose the skull are brought nearer, or made to ride over each other. The second of these, where the bones that form the pelvis are of their natural shapes, and the capacity of the brim or ring is of a due and proper size, but the head of the child entering the ring in a perverse and unnatural position, as with the face or an ear, &c., presenting, it cannot be excluded but with great pain and difficulty. It will be easy to discern that, if this class be blended with the former, the difficulty must be increased. The third class to consist of those cases, in which the bones which form the pelvis being distorted, and the brim or ring being thence made too small, and of an unnatural or improper shape, the head of the child cannot possibly pass through, until it is opened and considerably reduced in its size.

“ for-

“forceps or crotchet.” This forms a natural and intelligible distinction; and the choice of the means, by which any difficulty or obstacle is to be removed, is left to the discretion of the practitioner, who will employ such as are best adapted to the circumstances of the case. Where labour is retarded solely by the imbecility of the woman, he will, by proper management, by procuring rest, and a temporary cessation of the pains, or by the stimulus of cordials, or of gentle cathartics, or clysters where necessary, or by gradually dilating the os uteri, or rupturing the membranes, rouse the powers of nature to enable her to expel the child. Or, these mild and lenient methods failing, the delay being occasioned by the disproportioned bulk or wrong presentation of the head of the child, he will,

“* without waiting until the mind being
 “as much depressed as the body, the wo-
 “man and child are in danger of sinking
 “together under the influence of unavailing

* Essays, p. 60.

“strug-

“ struggles,” as this author recommends,
 “ without waiting until the arrival of that
 “ period of time,” when death staring us in
 the face, “ * we are reduced by that last ne-
 “ cessity which supersedes all human confi-
 “ derations,” have recourse to the mild,
 safe, and salutary assistance of the forceps or
 lever; and in extreme cases, when the pel-
 vis is so distorted as to render the birth of
 the child absolutely impossible in its com-
 plete and perfect state, he will preserve the
 life and safety of the mother, by a prudent
 and judicious use of the perforator and
 crotchet.

But these shades, if I may so call them,
 in the portion of difficulty occurring, with
 the means or remedies adapted to each, pass
 unnoticed by this author, who allows no
 interference whatever of the practitioner,
 until the unfortunate and neglected woman
 is in the most imminent danger of falling a
 sacrifice to the cruelty and severity of her

* Essays, p. 53.

pains,

pains, and then offers the frequently, I am afraid, unavailing assistance of the forceps. Unavailing I call it, because, by the time the period arrives in which the author admits the use of the forceps, for the lever does not enter his vocabulary, so much damage will be done to the vagina and neighbouring parts in the woman, as will make life itself little worth preserving.

Indeed the doctor seems aware that he has carried this doctrine of procrastination or delay too far; but having demonstrated, as he imagined, “the necessity of a natural labour being a slow, deliberate, and painful operation,” and having said, “that the future health of the woman depended upon its being a long, tedious, and difficult process,” he could do no less than enjoin this extreme patience and delay in laborious parturition. * “The propriety of leaving the woman,” he says, “to such a tedious, and, as the event proves, unnecessary state of suffering

* Essays, p. 61, 36.

“ from the unavailing powers of nature,
 “ rests on the impossibility of determining
 “ a priori that those powers cannot suc-
 “ ceed; and a thorough conviction that
 “ no danger whatever can happen from
 “ this patient expectation, unless fever,
 “ hæmorrhage, or convulsion should inter-
 “ vene.”

How far the author is correct in saying
 that no danger whatever can happen to the
 woman from this patient expectation or
 waiting, will be best learned from placing
 before the reader the state of the labour,
 and the situation he requires the woman to
 be in, before he allows any assistance what-
 soever to be given; for he has not even ta-
 ken the precaution to recommend those
 mild and gentle aids I have just proposed,
 with a view to mitigate the severity of the
 pains, and to obtain a more speedy termi-
 nation to the labour, although all of them,
 in their turn, are found to be so salutary
 and advantageous. The symptoms by
 which we may know, he says, that the
 powers

powers of nature are absolutely incompetent to the task of expelling the child, and the presence of which can alone authorise us to give the minutest assistance, are —

“ * The continued cessation of labour pains
 “ for several hours, occurring at the end
 “ of the third or fourth day from the
 “ commencement of labour, accompanied
 “ with other signs of general debility,
 “ evident from an alteration of countenance and a weak and quick pulse.” —

“ Here †,” continues the author, “ all the
 “ powers of life are exhausted, all capacity
 “ for farther exertion is at an end; and the
 “ mind as much depressed as the body,
 “ they would at length both sink together
 “ under the influence of such continued,
 “ but unavailing struggles, unless rescued
 “ from it by the means of art.”

These restrictions to the use of the forceps appear to be founded on the following suppositions: that there are no symptoms

* *Essays*, p. 59.

† *Ibid.* p. 60.

or circumstances attendant on laborious parturition, sufficiently clear and intelligible to warrant the having recourse to them, until the woman is reduced to the last extremity. This again involves an idea, that delivery with the forceps or lever is an operation so painful, difficult, or dangerous, that nothing but the last necessity can justify our using them. It also supposes, that when this last necessity arrives, or, in other words, when we have withheld our assistance until the powers of nature are totally and irrecoverably exhausted, we have it still in our power, not only to preserve life, (which is in itself an absurdity, for how restore what is irrecoverably lost?) but even to guard against and avert those terrible accidents which we know to be consequent upon the head of the child being suffered to remain too long impacted in the pelvis; and which the symptoms the doctor requires to be present, before we administer the smallest assistance, indicate to be absolutely at hand.

I will

I will consider each of these suppositions.

Although no period or length of time during which the head of the child may with safety be allowed to remain fixed in the pelvis without attempting to remove it, can be named, that would be equally proper for all women, or even for the same woman in different pregnancies; as some women are more susceptible of fever and inflammation than others; and women in general are more susceptible of injury in their first than in subsequent labours; yet there are symptoms and circumstances sufficiently clear to direct us in this difficult point. These I will endeavour to explain.

If the child is prevented from descending solely by languor and imbecility in the woman, and, on examining, the head is found to lye so loosely in the vagina that a finger or two may be passed around it, no injury can happen from suffering it to continue in that state, until by rest, cordials,

and nourishment, stronger pains are excited; but if by these means the constitution cannot be roused to more powerful exertions, the os uteri being soft and sufficiently dilated, we may with perfect safety proceed to deliver with the lever or forceps. On the other hand, if the delay is occasioned by the disproportioned bulk or wrong presentation of the head of the child, the pains having been for many hours strong and impelling, and the head of the child having descended half way through the brim of the pelvis, where it at length remains immoveable for six or eight hours, denying egress to the urine, the os uteri being found at the same time to be soft, yielding, and sufficiently dilated, we have now waited as long as we prudently or safely may, and no mischief whatever can occur by slowly and cautiously extracting the child with the lever or forceps.

If we now delay, not only the vagina may suffer irreparable injury, but the bladder furcharged, particularly towards its neck,
the

the part pressed upon by the head of the child, with urine, may be bruised and inflamed, and at length suppurating, may leave a chasm through which the urine will continue to drain, in an uninterrupted stream, night and day to the end of life: perhaps a similar bruise of the back of the vagina and rectum, terminating in like manner in suppuration, may leave a passage for the alvine fæces through the same channel. Of these accidents, which every practitioner who is accustomed to be consulted in difficult cases must have seen instances, when the parties have delayed too long to call for assistance, the author takes no notice. In these cases, which do not, I confess, frequently occur, I have no doubt that the instrument has been sometimes accused of doing that mischief, which if timely used, it would inevitably have prevented. There is reason to believe that our author has fallen into this error; for although he repeatedly assures his reader that he never in his life knew any injury happen to a woman by suffering the labour to be protracted

protracted for three or four days, or until the powers of nature were completely exhausted, yet he complains of great and irretrievable mischief having been occasioned by the use of the lever, even in the hands of experienced practitioners, who were in the habit of using that instrument*.

In respect to the second supposition, that delivery with the forceps or lever may be so painful, difficult, or dangerous, that nothing but the last necessity can justify our using them. This, although a natural deduction from the author's arguments, can hardly, particularly so far as the lever is concerned, be conceived to be his meaning; as one of his charges against that instrument is, "the facility and secrecy with which it may be used." But if the instrument occasioned considerable pain, or its introduction was accompanied with remarkable diffi-

* Preface to Essays, p. 6. In these cases I have no doubt that the injury was done by the long-continued pressure of the head of the child prior to using the instrument.

culty or trouble, it would be impossible to use it without the knowledge of the woman and her attendants. And this might be urged as an argument against the danger also of using the lever; as no danger can very well be incurred, where there has not been such a degree of force applied, as to occasion pain. The same plea cannot be set up, at the least, the author has not set it up, for the forceps, which being more complex in their form, and more difficult in their application, may not only occasion more pain but danger also than the lever; as we have not an equal power of moderating their action.

But it may be said that this repugnance to the use of instruments does not so much arise from an opinion of the pain, difficulty, or danger attending the application of them, but from a notion that labour being a natural process, ought not to be interrupted but on the most urgent necessity. This opinion, which is not intended to be controverted by any thing here said, as
 lever

lever cases will not occur, within the limitations I have given, oftener than once in three or four hundred labours, can with very little propriety be urged by this author; who, in the most simple cases and in the most healthy subjects, “ strenuously resists
 “ the birth of the child, in order to prevent the bursting of the perinæum, or
 “ the undue retention of the placenta;” as if nature had not made sufficient provision against both these accidents; or as if she were not as much violated by restraining as by precipitating her in the performance of a natural function.

I shall not, however, rest my opinion of the safety with which we may use the lever or forceps, upon these arguments; but having before pointed out the situation of the woman and child that demand their application, I shall now shew under what circumstances they may possibly be mischievous. These, so far from being difficult or impossible to be ascertained, as this author seems to think, will be found to be
 so

so obvious, that none but the most uninformed can mistake them.

Before, however, I describe these circumstances, it may be proper to consider more particularly what is meant by laborious parturition, as it is for that class of labours that instruments are peculiarly proposed. This seems necessary, as I cannot help thinking, if the author had kept this circumstance always in his mind, we should not have differed so much in opinion upon the treatment of them, as we appear to do. But he seems every where to have confounded lingering or tedious, with difficult or laborious, parturition, although they are diametrically opposite to each other, both in their causes and consequences, and require distinct and different modes of treatment. The one occasioned by general debility in the woman, or particular indisposition or inertness of the uterus, scarce ever requiring any other aid than rest, nourishment, or those mild stimulants I have before recited, even although it should remain *in statu* for
many

many days. The other, occasioned by the disproportioned size or wrong position of the head of the foetus, is attended generally throughout with the greatest constitutional exertions on the part of the woman, and cannot be suffered to continue beyond a certain and moderate term, without hazarding the most dreadful consequences.

What then are the symptoms or circumstances which make the use of instruments in midwifery safe and adviseable? What those which render them dangerous, and to be absolutely prohibited? These are to be sought for solely in the state of the os uteri. While that continues firm, rigid, and unyielding, we cannot, without hazard of doing the greatest mischief, attempt to use them, even although the labour should endure four, five, or a greater number of days. When that is soft, yielding, and dilatable, we may then safely have recourse to them, whenever we apprehend the vagina and neighbouring parts of the woman are so pressed by the head of the child, as to be in danger of inflammation.

How

How long we may wait before such danger is to be apprehended, will vary according to the constitution of the patient; but may, by a person versed in practice, be pretty accurately known. In general, as I have hinted before, mischief may be expected to happen sooner in the first than in subsequent labours. Whenever the head of the child is so low, and the pressure so great as to deny egress to the urine, we may be assured that danger is at hand. On the other hand, I can boldly affirm, from long experience and practice, that no danger whatever can happen from the use of the lever and forceps when the os uteri is fully dilated. We find the principal caution, insisted upon by teachers of this science, is to avoid enclosing the os uteri in the grasp of the forceps: and the principal and most dangerous accident I ever heard of, was the thrusting a blade of the forceps through the cervix uteri. But this, if it ever did happen, must have occurred in consequence of introducing the instrument before the os uteri was completely dilated: when that

part is entirely distended, the vagina and uterus form one continued canal, with scarce a ruga, or the lightest eminence, to distinguish where it was placed; consequently is in no danger of being injured, except by pressure. In this case, therefore, I once more repeat, we are not to wait “until the powers of nature are irrecoverably exhausted,” until so much injury is already done, that it is beyond the power of art to remedy it; but by a prudent and cautious use of the lever or forceps, slowly and gradually to extract the child; remembering always that as it is perfectly safe, so it is most prudent rather to begin this necessary and salutary operation a few hours sooner, than one minute later than the period when danger commences. This precept cannot be too often nor too seriously inculcated. To assist at this period, is seconding the views and intentions of nature, who has now made all the dispositions in her power to disembarrafs herself of her load, and is only prevented by accidental circumstances, which it is the duty of the Accoucheur to remedy.

remedy. Not to give assistance in this case is pusillanimity ; to say we are not to do it, is to encourage sloth and ignorance. It is telling us to cry out, God help us, when we ought to put our shoulders to the wheel.

If the contrary doctrine to this be admitted, and instruments of this kind are only to be used in the extreme cases this author proposes, they can be of very little service in practice, as opportunities of introducing them, under those restrictions, would not occur oftener than once in eight hundred or a thousand labours, and when used they would be productive of very little advantage to the patient, who would have previously suffered more injury than it would be in the power of art to remedy.

On this supposition all the labour and ingenuity that have been bestowed in inventing and improving the forceps, have been wasted ; neither do I see how the author can justify himself, in bestowing so much
trouble

trouble and expence in attempting to improve an instrument, that is so useless, insignificant, or mischievous. But I trust this is not the state of the case, as the slightest view of the instrument must convince the most prejudiced, that no mischief can ensue from it, but in the hands of the most rude and uninformed pretender. And the rule I have laid down, deduced from the state of the os uteri, directing when we may with absolute safety, if the necessity of the case should require it, have recourse to them, is so clear, as to preclude all possibility of mistake.

Forceps have been called with great propriety artificial hands, and certainly never did so much injury, even under imprudent and ignorant management, as those men have done, who, affecting to decry all instruments, rudely attempted to dilate and enlarge the capacity of the pelvis with their hands. I allude to the clumsy manœuvre of Daventer, and his imitator, Sir Richard Manningham. For my own part, I have
rarely

rarely seen, and not often heard of mischief having been done by the forceps or lever. When injury has been done by either of these instruments, I believe it has not extended farther than the outer rim or os externum ; and although rents there, are sufficiently troublesome, yet we know they are never dangerous : and the inconvenience they occasion in persons who are capable of indulging in rest, is generally, in a small space of time, if not completely overcome, in a great measure repaired. But even these accidents are much more frequently found to happen, where no instrument has been used. They are also more commonly met with in tedious and difficult, than in quick and easy, labours. The reason seems to be, that by too frequently handling the parts *
with

* Loin de faciliter la sortie de l'enfant par des attouchemens continuel, l'on cause a ces parties membraneuse, qui sont d'un sentiment très delicat, une inflammation, d'ont s'ensuit un gonflement qui rend leur dilatation très difficile, et qui cause par une suite neccessaire un dechirement, lorsque l'enfant
poussè

with a view to dilate them, in order to facilitate the birth, they are made tender and irritable; a greater flux of blood is solicited to them; hence the vessels are overfilled, and instead of becoming soft, pliant, and distensible, the opposite state of firmness and rigidity is induced. But quick and easy labours are more incident to persons of a soft and loose texture of fibres; in these subjects the os uteri, vagina, &c., give way to the slightest impulse, and consequently are in little danger of being torn. Thus it is observed, that women of leucophlegmatic habits, or who part with their children in the course of the small pox, or any dangerous fever, or in articulo mortis, where there is no impediment from mal-conformation, have astonishingly quick labours; the child frequently seeming to drop away, almost without effort. This shews that the celerity or tediousness of labour depends more upon the state of the os uteri

pouffé par les extremes douleurs vient a forcer le passage. De la Motte, Traite des Accouch. p. 155.

and

and vagina, than upon the peculiar form of the human pelvis, unless when that cavity is distorted, or too small in its general dimensions to allow an easy passage to the head of the child.

I shall now consider the cases in which the author admits a deviation from his general rule; and we shall here find him offending as much by an inconsiderate precipitancy, as before by a want of firmness and precision.

“ * That rule of practice,” he says, viz. not to interfere in laborious parturition until the powers of nature are totally and irrevocably exhausted, “ was, however, by “ no means intended to preclude us from “ having immediate recourse to art at any “ period of the labour, even during the “ most vigorous exertions of nature, if “ the patient was attacked with any disease which might endanger her life if

* Essays, p. 62.

I

“ delivery

“ delivery was protracted. The lesser dan-
 “ ger must yield to the greater in all cases ;
 “ and here, instantaneous delivery affords
 “ the only probable chance of safety to
 “ the patient ; and even if not performed
 “ in the most skilful manner, is infinitely
 “ less dangerous in its future consequences,
 “ than leaving the patient for any length
 “ of time undelivered.

“ The cases of danger alluded to are,

“ First, Fever ;

“ Secondly, Hemorrhage ;

“ Thirdly, Convulsions.

“ With respect to fever, it is well known
 “ to every practitioner in midwifery, that
 “ fever in the puerperal state, is always
 “ dangerous to a great degree, and very
 “ often fatal. If, therefore, the patient
 “ falls into labour under the influence of
 “ fever ; or if, in the progress of the la-
 “ bour, fever should be excited to any
 “ considerable degree, as the danger from
 “ fever

“ fever greatly increases by continuance,
 “ and it must continue so long as the wo-
 “ man remains undelivered; in such a case,
 “ early recourse should be had to art: the
 “ woman ought undoubtedly to be relieved
 “ from such impending danger, for it is
 “ greater than what may arise from any
 “ accidental injury in artificial delivery.

“ In all cases of hemorrhages and con-
 “ vulsions, happening, *durante partu*, the
 “ propriety or necessity of immediate de-
 “ livery, whether instrumental or manual,
 “ is now so universally acknowledged to
 “ be founded on the firmest principles of
 “ science, as to be admitted an invariable
 “ rule in practice, because affording the
 “ only probable chance in such cases of
 “ preserving the patient's life; it therefore
 “ becomes unnecessary to enforce the doc-
 “ trine by any argument, or confirm it by
 “ any facts.

“ I cannot however avoid, upon this
 “ subject, urging, with an earnestness and

“ confidence founded on, and confirmed
 “ by, the experience of more than thirty
 “ years, in a great variety of instances,
 “ both of hemorrhages and convulsions,
 “ that recourse be had to artificial delivery
 “ immediately upon the first attack, and
 “ long before danger is apparently incur-
 “ red; for if we wait till symptoms of
 “ danger arrive, the event will prove that,
 “ in general, we shall have already waited
 “ too long.

“ We cannot in such cases be too quick
 “ in the determination of the measures to
 “ be pursued, nor too prompt in the exe-
 “ cution of them; however caution and de-
 “ liberation might have been the right line
 “ of conduct in the preceding state of the
 “ labour, or while it was unattended with
 “ any circumstances of danger, here too
 “ much celerity cannot be exerted; the
 “ preservation of the patient's life actually
 “ depends on our expediting the delivery
 “ with the utmost dispatch. For if the
 “ danger arises from hemorrhage, it is de-
 “ monstrable

“ monſtrable that the uterus cannot con-
 “ tract, the veſſels cannot by any poſſible
 “ means be conſtringed, till it is com-
 “ pletely emptied of its contents by the
 “ delivery both of child and placenta.

“ What may be the primordial cauſe of
 “ parturient convulſions is extremely diffi-
 “ cult to determine, and is not our buſineſs
 “ here to inquire; but that they originate
 “ from, and in general are dependant
 “ upon, that ſtate of the uterus which can
 “ be removed only by delivery, I am per-
 “ ſuaded, from repeated experience; and
 “ that no remedy can be uſed, with any
 “ reaſonable expectation of benefit, till
 “ delivery is completed; and that therefore
 “ it is our indiſpenſable duty to effect it
 “ in the quickeſt poſſible manner.”

I have quoted this whole paſſage that
 the reader might have before him all that
 the author has ſaid on theſe momentous
 ſubjects.

As

As the treatment of fever, floodings, and convulsions did not form a part in the author's design in these essays, we did not expect a complete and perfect account of them; but as they fell in his way as accidental symptoms now and then occurring in laborious, as well as in natural labour, there was reason to hope that the rules he might lay down for the management of them, however short, would have been proper, or at least, not such as might mislead; and yet I am afraid what the author has advanced is of the latter kind, and that they will be found, in many points, contrary to what is recommended by the most accredited authors, and to general and approved practice.

The affections here mentioned are so different in their nature and causes, and are often combined with such a variety of circumstances, as to make it impossible to lay down any general rule of practice that will be always proper or admissible, even to any one of the classes, still less that will
 suit

suit the whole: this is particularly the case in convulsions and hæmorrhage. I cannot help therefore expressing my surprise at this author's attempting to prescribe a method of treating diseases so various and complex in so concise and summary a manner.

I have before observed, that women falling into labour while afflicted with the small pox or any malignant or dangerous fever, the labour, in such cases, was usually uncommonly expeditious, and that it added to the fatality of the disease. This latter circumstance was observed by Mauriceau, who, when the physicians * flattered themselves that the discharges consequent on parturition would diminish the fever, constantly assured them that the contrary would happen, and that the danger would be considerably increased, “ † Car “ il faut remarquer,” he says, “ que l’ac-

* Obs. sur la Grossesse, &c. Tom. II., p. 61. Obs. 72.

† Ibid. p. 69. Obs. 82.

“ couchment,

“ couchment peut bien apporter du sou-
 “ lagement, et guerir les indispositions qui
 “ ne sont causées que par la grosseffe; mais
 “ que les maladies qui n’en dependent
 “ point, et qui de soi, sont dangereuses,
 “ ne manquent pas pour l’ordinaire de
 “ devenir mortelles après l’accouchment.”

But as women in fever will be equally lia-
 ble to preternatural or laborious parturition as
 in the absence of fever, there can be no
 doubt of the propriety of delivering them
 as soon as the os uteri, vagina, &c. shall
 be so far dilated, or in so soft and relaxed
 a state, as to admit an easy passage to the
 hand to turn the child, where that shall be
 found to be expedient, or the head of the
 child shall have descended so low into the
 pelvis as to be within the reach of the lever
 or forceps. Any attempt to deliver before
 this period will, by the violence necessarily
 used, increase the irritation and fever, and
 consequently the danger. Besides, there is
 reason to believe that if we deliver before
 the os uteri spontaneously yields, we shall
 find the placenta strongly adhering to the
 uterus,

uterus, any efforts to separate which, in the situation we have supposed, will almost inevitably be fatal. The author's direction therefore, "to have immediate recourse to art at any period of the labour, even during the most vigorous exertions of nature," is certainly, as far as it applies to women afflicted with fever, erroneous and dangerous. But what he farther adds, "that delivery, even if not performed in the most skilful manner, is infinitely less dangerous in its future consequences, than leaving the patient for any length of time undelivered," is an encouragement to rash and ignorant men to interfere in cases the most momentous, difficult, and important that occur in practice. For if there is any situation that requires peculiar skill and address in the operator in order to secure success, it is this particular one, where he takes the whole business of dilating the passage and delivering the woman into his hands; instead of waiting until, by the spontaneous dilatation of the parts, he has indubitable proofs that the period
for

for the birth of the child, and separation of the placenta is arrived.

The necessity for this practice sometimes occurs in cases of hæmorrhages, rarely in convulsions, but certainly never can be induced by fever: for it is by no means true that women falling into labour during the continuance of fever die solely in consequence of their exertions to expel the child, as parturition in that state is observed to be equally fatal when easy and expeditious as when tedious and difficult. In respect to the hot skin and quick pulse which in all cases of difficulty come on a few hours after the commencement of labour, and which continue, even in the most simple cases, some hours after its conclusion, and which are occasioned by the violence of the uterine exertions, they have always, when excessive, operated with me as an inducement to endeavour to shorten the duration of the labour, as soon as from the relaxed state of the parts I was satisfied it might be done with safety; lest such a degree of
heat

heat and so rapid a circulation should, by long continuance, degenerate into a dangerous fever, or a foundation should be laid for some local inflammation, not afterwards to be removed.

But I have said enough, more perhaps than was necessary, upon this subject, as cases of fever, except of the chronic or hectic kind, are by no means of frequent occurrence in any period of the pregnant state, particularly near its conclusion. The constitution, employed in the great business of administering to the increase and perfection of the foetus, and in guarding against the numerous inconveniences necessarily attendant upon that process, seems little susceptible of any foreign stimulus.

The paucity of cases of this kind, with the facility and expedition with which they usually are terminated when they do occur, accounts for the little notice taken of them by writers on the subject of midwifery :
no

no author that I recollect having left any peculiar directions concerning them.

The same necessity for instantaneous delivery, at any period of the labour, even during the most vigorous exertions of nature, exists, the author says, in all cases of convulsions or flooding. “ This,” he adds, “ is now so universally acknowledged to “ be founded upon the firmest principles “ of science, as to be admitted an invari- “ able rule in practice.”

How the author came to couple together two diseases or accidents so directly opposite to each other in their natures and causes, and requiring, notwithstanding what is here said of the universal consent of practitioners, or even the author’s thirty years extensive experience, methods of treatment as different as any two diseases in the whole catalogue of human calamity, is beyond my ability to comprehend. I know no point in which they agree, except in the event; both of them prove, if neglected or impro-

improperly treated, equally fatal, and demand a large share of experience and sagacity to decide upon the proper steps to be taken; every individual case requiring a distinct method of treatment, according to the cause from which they spring. But that I may not fall into an error similar to that I am censuring, I shall consider them separately, commencing with an inquiry into the opinions and practice of the most celebrated authors on convulsions.

Mauriceau seems, in some respects, to countenance the practice here recommended. Imagining that the distension of the uterus was the principal cause of puerperal convulsions, he concluded they could only be appeased by delivery. But, notwithstanding this opinion, we find him constantly recommending bleeding, clysters, and antispasmodics, prior to his making any attempt to deliver, and by that means giving time for the dilatation of the os uteri, and the descent of the child, which he afterwards turned or extracted with the crotchet,

crotchet, according as it was situated, or where the labour was not too tedious, trusted the expulsion of the child to the pains. He relates more than twenty cases*, among which, instances of these several methods will be found. Let the following serve as a specimen of his practice:

“ † He was called to a woman,” he says,
 “ who had been two days in labour, when
 “ she

* These may be readily found by turning to the index to the second volume of his *Observ. sur les Malad. des Femmes grosses*, under the article *convulsions*.

† Le 15 Novembre 1682, un de mes confreres me requit de voir une femme, qui etant depuis deux jours en travail de son premier enfant, avoit eu deux acces de convulsion: et comme pour lors les eaux de l'enfant qui se presentoit naturellement, n'etoient pas encore ecoulées, et que l'orifice interne de la matrice n'etoit dilaté que de la largeur de deux doigts, etant néanmoins d'une substance assez mince et molle, ce qui donnoit lieu d'esperer, que la nature etant un peu aidée, pourroit achever son operation, je conseillai de faire prendre a cette femme, apres l'avoir fait saigner, une infusion de deux drachmes de

“ she was suddenly seized with convulsions.
 “ As the membranes were not broken, and
 “ the os uteri, which was soft and thin,
 “ was only dilated to the breadth of two
 “ fingers, he directed a dose of infusion
 “ of fena, sharpened with orange juice,
 “ to strengthen the pains; this being re-
 “ jected by vomiting, a second dose was
 “ given, which answered so well, that in

de fene, y meslant le jus d'une orange aigre, afin
 de reveiller un peu les douleurs de l'accouchement,
 qui estoient presque entirement cessées, ce qui ayant
 ete fait, et la malade ayant vomi ce remede peu de
 temps apres, je conseillai de lui en redonner un
 autre semblable, qui produisant le bon effet que j'en
 avois esperé, contribua beaucoup a faire accoucher
 heureusement cette femme cinque ou six heurs ensuite.
 L'on doit aussi en pareille occasion rompre les mem-
 branes des eaux de l'enfant, aussitost qu'elles sont
 assez preparées pour le pouvoir faire, comme je le
 recommendai a la sage femme qui assistoit cette
 femme; afin que par l'ecoulement de ces eaux la
 grande distension douloureuse de la matrice venant
 a se relacher, cela puisse contribuer a faire cesser la
 convulsion qui'en pouvoit estre causée. Ibid. page
 268, Obs. 323.

“ five

“ five or six hours the woman was happily
“ delivered.”

La Motte, who rivalled Mauriceau in reputation and experience, thought that convulsions might be excited by different causes. He relates two cases * in which they appeared to have been occasioned by the inordinate distension of the bladder, as they were immediately relieved by drawing off a large quantity of urine. “ † We must

* *Traité des Accouch.* p. 313. *Obf.* 220. and 221.

† Il ne faut pas faire une regle generale d'accoucher toutes les femmes qui sont attaquées de convulsions, tant pendant leur grossesses, que dans le tems de leur accouchement ; l'on ne doit meme se servir de cet extreme remede, que lors qu'il n'y a plus rien a esperer du côté de la nature, et que la mort de la mere et de l'enfant sont également a craindre : mais au contraire il faut aider la femme grosse, autant qu'il est possible, par plusieurs remedes qui peuvent diminuer la cause des convulsions, et rendre leur effets sans danger, comme je l'ai pratiqué dans les occasions dont je vais parler. *Ibid.* p. 310.

“ not,”

“ not,” he says, “ in all cases of puer-
 “ peral convulsions immediately attempt
 “ to deliver the woman, but must endea-
 “ vour by proper medicines to break the
 “ violence and diminish the danger of
 “ them, which he had often effected.
 “ Our efforts to this purpose not proving
 “ successful, and the life of the woman
 “ and child appearing to be in danger, we
 “ are then to have recourse to delivery as a
 “ last remedy.”

The observations of these two writers,
 so contrary to the doctrine maintained by
 our author, destroys at once that universality
 of consent upon which he founds his sys-
 tem; and we shall find the rules laid down
 by them, followed by the most distinguish-
 ed practitioners to the present time.

Smellie first tried, by bleeding*, blis-
 ters, &c., to appease the convulsions, and

* Coll. of Cases, Vol. II. p. 321, &c. Vol. III.
 p. 182, &c.

obtain a relaxation of the os uteri and the descent of the child, before he offered to turn or to extract it with the forceps or crotchet. Mr. Mudge * was called to a woman seized with convulsions at the commencement of her labour; he found the os uteri firm, rigid, and scarce admitting the end of his finger. Not being able to dilate it, he had recourse to bleeding, blisters, &c.: nevertheless the convulsions continued without intermission the whole of the next day. In the evening he was sent for suddenly, and arrived just in time to receive the child: the woman recovered.

In most of the cases I have referred to, the convulsions came on when the labour was considerably advanced, and acting as pains, the head of the child was usually in a few hours either brought within reach of the forceps, or in cross presentations, the os uteri was sufficiently dilated to admit the hand of the assistant to pass to turn and

* Coll. of Cases, Vol. II. p. 323

deliver by the feet. This disposition was forwarded by bleeding, clysters, and other evacuants. In Mudge's case, when the convulsions first attacked, the os uteri was too close to admit the end of a finger, yet in less than thirty hours the child was successfully expelled by the convulsions or pains*.

Dr. Leake † says, "the cause of con-

* Mr. Mudge's attempting to dilate the os uteri, when he first saw his patient, implies, I confess, that he had imbibed the notion that instantaneous delivery was necessary. And as he had been a pupil of Smellie's, it seems probable that he had been taught that practice by him. In one case also we find Smellie remarking that the woman might have been saved, if she had been delivered earlier. But whatever his theory might be, he has left no account of any case, where he attempted to deliver, until the os uteri was so far dilated that the operation was performed with facility. And the failure of Mr. Mudge's endeavours shews that immediate delivery is sometimes impracticable, and therefore cannot be directed as a general rule.

† Practical Observat. on the Child-bed Fever, &c., p. 319.

“ convulsions is either seated in the brain, the
 “ stomach, or the uterus, with which the
 “ first becomes sympathetically affected by
 “ means of the nerves.” He assigns also
 various other causes, and adapts his remedies to what he conceives to be the seat of the disease; but in no case attempts to deliver until the os uteri is so much dilated, or the child is so far advanced, as to admit of being turned or extracted with instruments, without offering any considerable violence to the uterus.

“ * In strong convulsions during pregnancy,” he says, “ a speedy delivery
 “ has been proposed, and resorted to as a
 “ principal remedy; but observation and
 “ experience shew that this rule will admit
 “ of many exceptions, and ought to be
 “ regarded with great caution.”

Dr. Denman † found, whenever he attempted

* Pract. Obs. on the Child-bed Fever, &c., p. 333.

† When the os externum began to dilate, I gently assisted

tempted to dilate the os uteri, the convulsions were increased, or new fits excited.

Dr. Hamilton gives the following directions in puerperal convulsions: “ Epileptic fits, when so violent or frequently repeated as to leave the patient in a state of stupor and insensibility, retard labour and endanger the lives of both parent and child. If the fœtus should not be expelled by a few paroxysms, if symptoms are threatening, and the child is within reach of the forceps, delivery should be effected as soon as possible. But any violent exertions to procure delivery, by forcibly stretching the parts and counteracting nature, with a view to turn the child, as many advise, is impracticable with any probability of success. In every instance it ought to

assisted during every fit; but being convinced, that this endeavour brought on, continued, or increased the convulsions, I desisted and left the work to nature. *Essays on the Puerperal Fever and Puerperal Convulsions*, by T. Denman, M. D. 1768, p. 68.

be

“ be a rule to wait until the head of the
 “ child is sufficiently protruded, that the
 “ access may be easy to apply the for-
 “ ceps.”

Dr. Denman, in the essay I have before
 quoted, says, “ * The most eminent men
 “ of the present time have been induced
 “ to prefer waiting the event of the natural
 “ pains, or even of the convulsions them-
 “ selves, which generally act as pains.
 “ They have observed that the violent me-
 “ thod proposed very often failed of suc-
 “ cess, and that women labouring under
 “ this dreadful complaint, were not only
 “ delivered without extraordinary assis-
 “ tance, but were more likely to recover
 “ afterwards, when the birth was left to
 “ nature. Besides it was not overlooked,
 “ that convulsions often came on when
 “ things were so circumstanced, that it
 “ was impossible to pursue the measures

* Essays on Puerperal Fever and Convulsions,
 p. 56.

“ laid down, without bringing on, cer-
 “ tainly, as great mischief as we endea-
 “ voured to avoid. This disease, though
 “ not frequent, occurs too often not to
 “ make the establishment of this improve-
 “ ment desirable.”

As this essay was written at a time when Dr. Denman and our author were joint lecturers on midwifery, when, to use an expression of the latter, on another occasion,
 “ * Although they were not pledged to
 “ support the same opinion on any subject,
 “ yet it would have been preposterous to
 “ read lectures together in the same school,
 “ if they had not agreed in the great and
 “ fundamental principles of practice.”—
 How comes it to pass, the reader may ask, that these two gentlemen maintain opinions so directly opposite to each other, upon a subject of so much importance as the treatment of puerperal convulsions? Or rather it may be inquired, when, or upon what

* Essays, preface, p. 6.

grounds did Dr. Osborn alter his opinion? for it is natural, upon his own suggestion, to suppose he, at one time, held the same doctrine as his coadjutor. Leaving the author to answer these questions, and to reconcile, if he is able, that general testimony which he claims in favour of his opinion, with the declaration of his Colleague, supported as it is by the numerous authorities I have adduced, I shall now add such farther observations as have occurred to me on the subject.

Convulsions which happen during parturition have been thought to differ essentially from the same disease, occurring at any other period. This notion I have always considered as erroneous. If any of the circumstances, usually attendant on parturition, could occasion convulsions in constitutions not previously disposed to them, they must necessarily be of frequent occurrence. But this is so far from being the case, that from every observation I have been enabled to make, they do not happen oftener than once in a thousand or more labours.

labours. Would women then, who are attacked with convulsions during labour, have suffered that affection, if they had not been pregnant? I conceive they would upon the application of any exciting cause; such as great fatigue and exhaustion of their strength, or great terror and anxiety of mind. But these two circumstances are present, in some degree, in every labour. Where the party therefore is predisposed to hysterics or convulsions, the attack will be very likely to be made during parturition.

This simple mode of considering them, leads to the only rational, and from experience I am enabled to say, the only successful method of treating them; where success can by any means be expected. If the convulsions, or spasms, are merely hysterical, they are not attended with danger, and may, generally speaking, be easily appeased: or if they recur from time to time, until the termination of the labour, they then cease, and leave no hurtful impression upon the constitution. But when a woman during
labour

labour is seized with convulsions, attended with stertor, frothing at the mouth, lethargy, or total insensibility, she may then be considered as suffering an apoplectic paroxysm; the danger of which will certainly not be diminished, but will rather be increased, by the heat and pain, which are the constant concomitants of that state.

In the former case, or in hysteria, the convulsions will be mitigated by bleeding, by clysters, when the state of the bowels requires evacuation that way, and by opiates. I have procured an immediate suspension of this species of convulsions, happening in delicate constitutions, by giving a clyster consisting of a few ounces of warm water with about forty drops of the tincture of opium, without premising bleeding or purging.

In these cases, at the least, I presume, the author will allow it would be highly improper to irritate the constitution by any attempt to dilate the os uteri, with a view to procure an early delivery.

It

It seems more proper to leave the whole of the business of expelling the foetus to nature, unless there is such delay as shews that the labour is impeded by some obstacle that it is the duty of the assistant to remove: such as those arising from the diminished capacity, or unnatural shape of the pelvis, or the perverse position and presentation of the child. In these cases we should act in the same manner as when there are no convulsions.

In apoplexy the patient should be bled largely, unless in very delicate and impoverished habits, when that evacuation should be omitted; but invariably, when it can be effected, a sharp stimulating clyster should be injected, to empty the bowels, and we should then have immediate recourse to opium. Of this a grain, or twenty drops of the tincture, should be given every hour or two for three or four times; by this means the os uteri will generally be found to be relaxed, and if the pelvis is of proper dimensions, the child will

will be expelled ; the convulsions acting as pains ; or at the least the child will be thrust down low enough to be taken hold of with the forceps or lever.

In preternatural presentations, or when the pelvis is distorted, or too small, the same methods must be pursued to effect the delivery, as when convulsions are not present. To attempt artificial delivery in any early stage of the labour, under these circumstances, and before the os uteri is completely dilated, would be not only superfluous, but mischievous : besides there is little probability that we should be able to succeed in effecting our purpose ; as the strong and sudden motion of the body of the woman during the fits, which would be excited and increased by handling the os uteri, would be sufficient to baffle all our exertions.

On the treatment of uterine hæmorrhage, *instante partu*, practitioners are more divided. I shall give my opinion, supported
by

by such reasons as I am able, premising what has been left by the most accredited writers on the subject.

Ambrose Paré first taught the practice of turning, in this accident. There are no traces indeed of this doctrine to be found in his works, but his pupil, Guillimeau*, acknowledges that he learned the art of turning, in cases of flooding, from his master, Paré, by which he had preserved many lives, that must otherwise have been lost; and this was adopted and continued to be the general practice for many years: still subject to the discretion of the operator, who delayed the delivery, or even left it entirely to nature, where that was thought most prudent.

Mauriceau† details near an hundred cases of this kind. When the os uteri was very

* See the translation of Guillimeau's *Treatise de la Grossesse et Accouchmens des Femmes*, p. 128.

† See the index to his second volume, under the article *Perte de la Sang de Femme Grosse*.

little dilated on his first seeing the woman, if she was not so much exhausted as to give reason to fear almost immediate death, he ordered a clyster to be injected and enjoined the most perfect rest and quiet, to give time for the parts to become more pliant and supple, before he attempted to deliver; or where there appeared a disposition to labour, he opened the membranes and assisted in dilating the os uteri, by which means uterine contractions were excited and encouraged, and the child was allowed to come in its natural posture.—

“ * He was called to a woman,” he says,
 “ who had been flooding twenty-four
 “ hours, and was now so reduced that her
 “ life appeared in danger, but as she had
 “ some slight pains, he directed the mid-
 “ wife to open the membranes, in order
 “ that the child might not in descending
 “ drag down with it, and farther separate
 “ the placenta, which being done, the la-
 “ bour went on successfully, and the wo-

* Vol. II. Case No. 457.

“ man

“ man was delivered in about two hours.”
 How much more prudent, and how different this conduct, from the positive direction of our author, “ to have recourse to artificial delivery immediately upon the first attack, and long before danger is incurred:” which, Mauriceau observes*, in some cases cannot be done without risking the most imminent danger.

I shall not trouble the reader with farther quotations or references from the earlier authors upon this subject, as this may be considered as a specimen of their practice until the time of Puzos. That enlightened and judicious practitioner, finding that many women labouring under this accident, whom he had assisted in the most cautious and prudent manner, died soon after the operation of turning and delivering the child; and observing that in all cases when labour pains came on the flooding was diminished, and that this diminution went

* Ibid. Case, No. 457.

on as the strength of the pains increased, he determined to try a middle method, and by piercing the membranes and evacuating the waters, to give the uterus an opportunity to contract and approach nearer to the body of the child; by this means the orifices through which the blood continued to be poured out were diminished, and in a great measure closed, and the flooding abated or stopped. Pains were likewise by this means excited and strengthened, and the labour accelerated. The obtaining these good effects was farther assisted by dilating the os internum from time to time with his fingers.

These manœuvres the author practised with the most happy success in all cases, except where the placenta was attached over the os uteri, in which cases delivery is perhaps the only means of preserving the life of the woman and child that can be depended upon; and this should be performed as soon as the os uteri is sufficiently soft and pliable to admit the hand to be
intro-

introduced into the uterus to turn the child without great violence. I cannot help recommending to our author to read the *Memoir sur les Pertes de Sang**, from which I have extracted the epitome I have here given, and Mr. Rigby's *Treatise on Uterine Hemorrhages*, in which every thing necessary to be known upon the subject is delivered with the greatest clearness and precision. It seems hardly necessary to add, that in all preternatural presentations the child must be turned in the same manner as when no flooding is present, except that the operation should be performed more slowly and deliberately, and that when the feet are brought into the vagina, it may be sometimes proper that the child should be left in that situation for half an hour, or the labour left entirely to nature, in order to give the uterus time to contract gradually and close the bleeding orifices, and thence diminish the hemorrhage. Where delivery

* Published at the end of *Puzos Pratique des Accouchmens.*

has been performed with too much haste, there is reason to fear that the uterus, relaxed and weakened by the preceding discharge, has been incapable of contracting, and thence continuing to pour out blood in a profuse stream, lives have been lost which might with proper caution have been preserved.

Smellie, whose career of life was nearly finished when this memoir of M. Puzos was first published, had adopted a method very similar to it. He * relates six cases that fell under his own direction; in all of which he contented himself with breaking the membranes, and assisting in dilating the os uteri with his fingers. The women were all safely delivered with this assistance only, and recovered. It is worth remarking that in three of these cases, the placenta came down before the head of the child, and that in all of them, as the waters were

* Vide Collection of Cases and Observations in Midwifery, Vol. I. p. 302.

discharged, the flooding abated, and, as the head of the child advanced, stopped. As the first of these cases happened in the year 1735, the last in the year 1750, we must consider this practice as the result of Smellie's sagacity and genius; and although he had not examined so far into the principles as to draw any general rules or precepts from them, yet it must be confessed he had made an advance towards a discovery of them. This does not detract from the merit of Puzos, who not only explains the principles upon which his doctrine was founded, but erected upon them a system of practice, which scarce admits of improvement.

After this ample detail, little remains for me to add upon the subject, but that it is apparent that the same circumstance which I have mentioned as affording the only certain rule, directing us when to assist, or when to refrain in laborious parturition, is likewise to be our principal guide in these distressing situations. And that as long as

the os uteri continues hard, rigid, and unyielding, we must labour by every possible means, by administering clysters, cooling purges, mineral acids, and other styptics and opiates, assisted by the most perfect rest and proper nourishment, to appease the hurry of the circulation and check the discharge, until a different state of the os internum is induced, and uterine contractions or pains are at length excited. These never fail to come on, in a longer or shorter space of time, dependent I believe principally upon the greatness of the discharge, or upon the larger or smaller portion of the placenta that happens to be separated.

When things are arrived at this state, it must be left to the discretion of the practitioner, whether to turn the child and deliver the woman immediately, in the slow and cautious manner I have before recommended, or simply to break the membranes, and assist in dilating the os uteri, in order to expedite the birth in the natural posture. The latter, as it will generally be found to be

be sufficient, so it will nearly always prove the safest and the easiest method. But when the placenta is attached over the os uteri, notwithstanding the fortunate termination of three of the cases mentioned by Smellie, and some similar cases that I, and, I suppose, almost every practitioner must have been witness to, I should think it my duty to have recourse to artificial delivery, as soon as the parts were prepared for that operation.

From this view of the practice in uterine hemorrhage, recommended by authors of the first rank in the profession of midwifery, and from such observations as I have occasionally interspersed, the reader will see how little reason the essay writer had to affirm, that “in all cases of hemorrhages happening, *durante partu*, the necessity of immediate delivery is universally acknowledged and admitted as an invariable rule of practice,” as, on the contrary, it is found to be in some cases absolutely impracticable, and in almost all others improper

proper, or even dangerous. I shall here conclude my remarks on this subject, and proceed to examine the author's discourse on the comparative value of the forceps and lever.

In

In Dr. OSBORN'S Fourth Essay the Subject of laborious and difficult Parturition is continued, and a comparative View is given of the Utility and Value of the Forceps and Lever.

IN entering on this subject, it seems proper to lay before the reader some passages from the preface to the essays, in which the author assigns his reason for making an estimate of the utility and value of the instruments in question.

“ Before I proceed farther,” he says,
“ it may not be either improper or im-
“ pertinent to point out the reasons why I
“ consider myself personally called upon,
“ at this time, to make this comparative
“ inquiry, and how, and why, I feel my-
“ self particularly interested in the discus-
“ sion,

“ sion, and bound to give an explicit and
 “ decided opinion on the subject.

“ It is very well known, that Dr. Den-
 “ man and myself publicly taught mid-
 “ wifery together, in this city, for many
 “ years ; and although we were not pledg-
 “ ed to support the same opinion on any
 “ subject, yet it would have been prepos-
 “ terous to read lectures together in the
 “ same school, if we had not agreed in
 “ the great and fundamental principles of
 “ practice ; and in no one principle, (I
 “ always thought) did our opinions more
 “ exactly correspond, than in preferring
 “ the forceps to the vectis, in every case
 “ of difficulty which might actually re-
 “ quire either the one or the other of those
 “ instruments. Our opinion was founded
 “ partly on theory, but confirmed by several
 “ instances of extreme injury done by the
 “ vectis, in the hands of able and expe-
 “ rienced men, who were likewise much
 “ in the habit of using that instrument.
 “ I was therefore both astonished and mor-
 “ tified

“ tified at reading my old friend and col-
 “ league’s account of the vectis, particu-
 “ larly where he expresses his decided opi-
 “ nion in the following unequivocal man-
 “ ner: *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.* I was astonished, be-
 “ cause this declaration was a direct dere-
 “ liction of the opinions which he for-
 “ merly held of the doctrine which he
 “ always taught, and the practice which
 “ he had followed for many years. I was
 “ mortified, because, unless I disavowed
 “ them, I knew I should be implicated in
 “ the opinions by all those practitioners
 “ who had formerly been instructed by us
 “ together, or who knew of our connec-
 “ tion in lectures. But I was the more
 “ particularly mortified, because, as far as
 “ Dr. Denman’s authority extended, and
 “ the reputation which he has deservedly
 “ acquired as a practitioner, an author,
 “ and a teacher, would render that in-
 fluence

“fluence both considerable and extensive;
 “it would tend to establish the preference
 “of the vectis, and promote the general
 “and (I think) mischievous use of that
 “instrument, especially among women in
 “the more humble situations, or even in
 “the middle ranks of life. The vectis is
 “an instrument which may be so easily
 “and so secretly applied, the temptation
 “to its unnecessary use among patients of
 “the above description so great and so
 “frequent, by shortening the duration of
 “the labour to the patient, and of the at-
 “tendance to the practitioner, and its ap-
 “plication may be so injurious, and is
 “often so dangerous, that I feel myself
 “especially called upon to oppose its in-
 “troduction into general use, to point out
 “its inconveniences, and to guard against
 “its dangers; and in cases therefore of
 “such difficulty as indispensably to re-
 “quire the use of instruments, to demon-
 “strate, upon principle, the decided pre-
 “ference of the forceps in efficacy and
 “safety both to mother and child.”

From

From this declaration, the reader, unacquainted with the London practice, may be inclined to imagine that Doctor Denman stands almost single in his present opinion of the lever, or that its use is confined to a very few persons ; but this is far from being the case. The first lever I remember to have seen, was one used by Dr. Ford, about twenty years ago, and I then learned that there were many other practitioners in town who constantly substituted it for the forceps. I had soon an opportunity of trying it, and found it so easy in its application, and so certain in its effect, that I scarce ever after made use of any thing else. And on conversing since, at various times, with my brethren in the profession, I found almost all of them entertaining the same opinion concerning it ; and unanimous in declaring their ignorance of what those deplorable accidents were, “ occasioned by
 “ the use of the lever, even in the hands
 “ of able and experienced men,” which the Doctor so pathetically laments ; they never having met with any accident of material
 conse-

consequence that could fairly be attributed to that instrument. After saying this, the reader will learn with surprise, that the essay writer is actually acquainted with most of the gentlemen I allude to, knows their general preference of the lever, and that some of them, after having been instructed in the management of the forceps, and having used them exclusively for many years, have relinquished them, and adopted the lever.

Of what importance can it be to surgeons, what the name of the instrument is with which they are to perform an operation? they will naturally incline to that which can be handled with the greatest ease, and which seems best adapted to their purpose. They are bound by every tie of honour, humanity, and interest, to perform their business in the easiest, safest, and most advantageous way that is possible for their patients. Is it credible, therefore, that a majority of the practitioners in London, and

and many of them in the most respectable line of business, should have wantonly sacrificed all these great and powerful motives, or that they should have abandoned the forceps and adopted the lever from any other motive than a conviction of its superior utility? Is it not more probable, that the author of these essays, having bestowed a great deal of time and pains in giving the forceps the highest degree of perfection they are capable of, as he imagined, should feel himself concerned at finding that another instrument had usurped its place; and that his improved forceps, the labour of years, were in danger of being confined almost within the limits of his own school? This, without doubt, was sufficiently mortifying, and might be allowed to rouse the spleen of a philosopher. But it seems hardly consistent with sound morality to proscribe an instrument which, upon the best authority, upon the united testimony of many men of judgement and experience, is declared to be a safe and powerful auxiliary in one of the most grievous calamities that
can

can afflict human life. Quitting, however, these general reflections, I shall proceed to consider the arguments adduced to prove the superiority of the forceps, and think I shall be able, from the author's account of the qualities requisite to the perfection of that instrument, to prove the very reverse to what he imagines he has demonstrated, viz. that the forceps are necessarily defective, and of very limited powers; or, in other words, and which will convey my meaning more justly, that the shape or form of the human pelvis is such, and the variety both in the size and form of pelvises and foetal skulls is so considerable, as to render it extremely difficult, if not impossible, that any one pair of forceps, however artificially or exquisitely contrived, can be competent to deliver in all cases, or upon all subjects. In this opinion the reader will find I am warranted by the representation the author has given of the qualities requisite to the perfection of that instrument. And hence we shall arrive at the cause, why the forceps have undergone so many alterations,

tions, as we know they have experienced, since they were first invented *.

The author begins the second section of this essay with giving a short account of the different species of vectes, or levers, with their properties: but as he neither seems to have been influenced himself, in preferring the forceps, by any of the arguments here mentioned, and it would besides require a long process, and the solution of many problems, before we should be able to demonstrate the superiority of one instrument over the other, if it could be done at all, (which I suspect it could not be, as the only result would be the quantity of power each species of lever possessed, and not the safety with which such power could be applied,) I shall wave

* Since the publication of the essays we are here examining, Mr. Rawlinson, an ingenious surgeon of Oxford, has invented a pair of forceps, which he thinks far superior to Dr. Osborn's, in which latter instrument he has pointed out many very material defects.

that

that part of his argument, and proceed to consider his account of the forceps, with the method of applying them, and the cases in which they may be used efficaciously, and shall then examine his account of the lever, and his objections to that instrument.

In going over this part of his work, I cannot help once more noticing the strong expressions he makes use of to shew the perfect state of debility to which he expects the woman should be reduced before he begins his operation. After stating that the causes of the detention of the head is its disproportioned bulk, or wrong position in the pelvis, “and that there is an entire
“cessation of the pains by which it might
“have been farther diminished, and at
“length expelled,” he goes on to say, that the first office of the forceps is to lessen the volume of the head with safety to the child; the second to extract the child, when the head is thus lessened, without injury

injury to the mother. “ * For it must be
 “ obvious,” he adds, “ that however less-
 “ ened the head may be by compression,
 “ *if the expulsive powers are extinguished,*
 “ an extracting force must be substituted
 “ instead of them, or the woman would
 “ remain undelivered, even though the
 “ child were ever so much lessened in its
 “ volume; hence the use of that particular
 “ structure of the instrument by which
 “ the extracting purchase is given.”

From this argument it is evident that the woman is supposed to be reduced to the lowest state of inertion or debility; since in cases where the perforator and crotchet are used, although the force of the pains may have been considerably diminished, or even entirely ceased, before we begin our operation, yet, after opening and lessening the head of the child, and thence diminishing the pressure upon the parts, the pains will generally revive, and assist

* *Essays*, p. 87.

very materially in its expulsion. The same thing happens when using the forceps or lever, if assistance has not been delayed too long. On moving the head of the child from the position in which it had remained many hours, fresh pains are usually excited, which contribute very much to facilitate the operation: the reason is, that by taking off pressure, the cause of the torpid and paralytic state of the woman, the spring or elasticity of the fibres will be restored, and they will act again with fresh vigour. I have known cases where, after a woman has continued in a state of languor and debility, and been incapable of the smallest exertion for several hours, on moving the head of the child with the lever, the space of a quarter of an inch, the pains have in a little time revived, and sometimes been even powerful enough, without farther aid, to expel the child, yet without that assistance, I have had no doubt that in a few hours more she would have sunk beyond the possibility of recovery.

I know

I know no circumstance of more dangerous prognostic, or that gives me more serious alarm for the safety of the woman, than to find her incapable of exertion after the head of the child has been removed from the situation in which it had remained fixed for many hours; and yet such must constantly be the case if we follow the directions given by this author. But this complete inertion, this absolute state of debility, was necessary, that the forceps might not be defrauded of their due honour.

“ * To effect these two great essential
 “ purposes, of lessening the volume of the
 “ head and then extracting it,” the author
 says, “ perhaps there never was an instru-
 “ ment invented more ingenious than the
 “ forceps in the original contrivance, more
 “ simple in the structure, better adapted,
 “ or more capable to overcome every pos-
 “ sible resistance, to answer every benefi-
 “ cial intention, and to guard against every

* Essays, p. 88.

“ possible injury, either to mother or
 “ child: I am not afraid of asserting, that,
 “ if applied with ordinary skill and atten-
 “ tion, it is infallible in its effect, in every
 “ possible degree of difficulty, from the
 “ slightest to the greatest, if the child’s
 “ head is only in such a position as to be
 “ within reach of the instrument.”

As this is mere assertion, without the
 shadow of an argument to support it, I
 will endeavour, by bringing it to the test
 of reason and experiment, to find on what
 basis it is erected.

If the female pelvis was a straight canal
 or cylinder, the mouth or entrance into it
 being formed of a soft yielding substance,
 capable of considerable distention, there
 would be no doubt of the absolute power
 of the forceps in extracting any substance
 confined or sticking in any part of it that
 lay within its reach; but the pelvis being
 of an irregular figure, a considerable angle
 being formed about its center or middle,
 which

which divides it into two chambers or cavities, it must be evidently impossible, or at the least extremely difficult, to pass a pair of forceps beyond the first chamber, or the part where it begins to be reflected. Here, therefore, is a boundary set by nature to the power of the forceps; to overcome this, and to qualify them to pass this strait, and to act in the upper cavity also, has excited the labour of many of the most ingenious practitioners in midwifery, from the first invention of the forceps to this time: for they saw that this inability in the forceps to take hold of the head of the child while the largest part of it was detained above the brim of the pelvis, was a great defect in the instrument, rendering it in a great measure useless; as after the head has passed the brim, and descended into the little pelvis or lower cavity, the danger and difficulty are nearly over. But their endeavours have not been crowned with success; and the reader, acquainted with the anatomy of the parts, will readily agree that it is impossible they should succeed
with

with an instrument of this kind: as besides the angle I have mentioned, which occasions a great variation in the axis of the pelvis, there are several considerable inequalities in the surface of the little pelvis, by which the difficulty is very much increased. To this we may add the great variety both in the figure and size of the pelvis in different women, and in the shape and size of the heads of children, seeming to demand as great a variety in the form and structure of the instrument. This will account for the numerous changes the forceps have undergone since their first invention; and new attempts to improve them must for ever be making, while we continue to expect from them more than it is possible for instruments of the kind to perform. Hence also we learn the reason of the injunction given by all late writers on the subject, not to attempt to deliver with the forceps until the head has passed the brim of the pelvis; which does not arise from an opinion that it would be improper or injurious to the woman to deliver her
until

until the head had descended to that point ; they knew that in cases of distorted pelvis, where the head could not possibly be thrust down so low by the pains, women were so far from being injured, that they were much benefited by early delivery ; provided the operation was not begun until the os uteri was completely dilated. But it originated in a consciousness of the impossibility of extracting the child with the forceps before that period, without doing very great violence, perhaps irretrievable injury, to the woman. Our author, without well considering the principle upon which the injunction was founded, enforces it more rigorously than any of his predecessors, and yet, in direct violation of his own doctrine, labours, by varying the curves, and otherwise altering the figure of the forceps, to enable them to perform what he strictly enjoins us not to attempt.

That I have not overrated the defects of the forceps, and that the circumstances I have mentioned do actually operate as impediments

pediments to their action, the author acknowledges, although he seems to hope that by the alterations he has made in the instrument, they are principally, if not altogether, obviated. “ * At the same time,” he says, “ as every instrument of this kind
 “ is not equally good, it is obvious that
 “ its excellence must very much depend
 “ upon the accuracy of its form and size,
 “ in length and breadth ; so as to be best
 “ adapted to the complex shape of the
 “ mother’s pelvis, and the child’s head,
 “ that the outer or convex side may exactly
 “ correspond with the concave pelvis ;
 “ and that the inner or concave surface
 “ of the instrument may be as exactly
 “ adapted to the convexity of the
 “ child’s head ; that the compression may
 “ be so equable, as neither to leave any
 “ external mark of their application upon
 “ the integuments without, or do the
 “ smallest injury to the cerebrum within.
 “ With respect to the mother, it ought to

* Essays, p. 94.

“ be

“ be so formed, as that not only the usual
 “ convexity of the branches should be
 “ exactly suited to the concavity of the
 “ bony pelvis, but both in shape and size
 “ they should be so constructed, that, by
 “ ordinary skill and attention, they may
 “ be used with tolerable facility, and that,
 “ without the smallest possible injury to
 “ the soft parts within the vagina, either
 “ in their first introduction, or their sub-
 “ sequent application, and without the
 “ slightest laceration of the perinœum, in
 “ the final extraction of the child’s head.
 “ To perfect the instrument, that we may
 “ attend to the complexity of the shape of
 “ the pelvis and the soft parts, but with a
 “ particular reference to the different di-
 “ rection or axis of the vagina and pelvis,
 “ it becomes necessary to give a slight cur-
 “ vature or convexity to the edge of the
 “ blades, that they may be the more easily
 “ and readily introduced, and properly ap-
 “ plied, and more exactly adapted to the
 “ concave sacrum, that thereby the pur-
 “ chase or hold may be more certainly se-
 “ cured,

“ cured, so that when once fixed, they
 “ may never slip from the head, or even
 “ shift their position.

“ To save time and trouble, and to
 “ convey a perfect idea of the instrument
 “ which I would recommend in preference
 “ to all others; the annexed plate is added,
 “ which is an exact delineation of one
 “ blade; and the instrument may be had,
 “ according to my exact directions, either
 “ of Mr. Savigny, in Pall Mall, or of
 “ Mr. Carlberg, in Great Windmill
 “ Street.”

After this very exact account of the properties required in the forceps, which the reader will readily see are impossible to be attained, the author in the remaining twenty pages of this section, proceeds to lay down rules necessary to be observed in the introduction and use of them. “ * These rules, “ which,” he says, “ are few in number,

* Essays, p. 111.

“ and

“ and therefore easy to remember, simple
 “ in principle and practice, and therefore
 “ easy to understand and perform,” have
 been repeated by almost every professor in
 midwifery for these forty years past; and
 yet, by a strange fatality, seem, if we may
 believe our author, to be even at this time
 very far from being generally understood,
 even by those who have made midwifery
 their particular study.

“ * The necessity of attending to the axis
 “ of the pelvis, in the introduction of
 “ the blades of the forceps,” he observes,
 “ is so obvious, and so well understood in
 “ theory, and so demonstrable on the ma-
 “ chine, that it should seem a work of
 “ supererrogation even to mention it, much
 “ less to press it so close to the attention
 “ of the practitioner; but it is so very im-
 “ portant, *and so many instances have oc-*
 “ *curred within my own knowledge, where*
 “ *it has been either forgotten, or not under-*

* Essays, p. 105.

“ stood, or wholly neglected, that, in my
 “ opinion, it cannot be urged too strongly,
 “ or repeated too often. Besides, in many
 “ late authors, we find it a very general
 “ complaint, and a very strong objection
 “ to the use of the forceps, that they are
 “ very apt to slip, and disappoint the ex-
 “ pectation of the practitioner. I have
 “ been induced to be thus particular in my
 “ directions relating to this point, and
 “ thus earnest in my recommendation of
 “ attending to them, because I am per-
 “ suaded, that if strictly observed, the
 “ forceps never will or can slip; the ope-
 “ ration must infallibly succeed; the child
 “ must be both safely and speedily ex-
 “ tracted.”

The reader must necessarily be struck
 with the contradictions that appear in these
 two paragraphs. “ The rules for using
 “ the forceps are few, and easy to be re-
 “ membered; simple, and easy to be un-
 “ derstood and performed;” and yet many
 instances have occurred within the author’s
 know-

knowledge where these rules have been
 “ either forgotten, not understood, or wholly
 “ neglected.” Many authors also, who cer-
 tainly ought to be well informed, as they
 presume to teach others, have complained
 that the forceps are apt to slip: and this
 must always be the case, as long as they
 endeavour, with one pair of forceps, to
 deliver in all the variety of circumstances
 that occur: for it is evidently impossible
 that any one pair of forceps can be made
 “ that shall be so adapted to the complex
 “ shape of the mother’s pelvis and the
 “ child’s head,” as to suit all the varieties
 in size and shape, that occur in practice;
 and yet this our author considers as neces-
 sary to the perfection of the instrument.

If the observations I have here adduced
 are just, I shall then be allowed to have
 proved, that the true and legitimate use of
 the forceps is limited to extracting the
 child after its head has passed the brim of
 the pelvis, and is lodged in the lower
 chamber or little pelvis. And to this it
 has

has been of late confined by Smellie, Denman, and all the most intelligent writers on the subject, and finally by our author himself. But for this purpose very little apparatus is wanting, and the forceps originally invented by the Chamberlens, as described by Palfin, and delineated in the second volume of Heister's Surgery*, seems to be of the exact size and form that is required, and nearly adequate to all the purposes for which such an instrument can or ought to be employed. The shape of these has undergone some alterations, but the

* Heister says, the first idea of this instrument was communicated to him by a friend of Palfin's, that he tried to deliver with it by tying the handles together, after having introduced the two blades one on each side the head of the child, but without success; he afterwards invented a moveable hinge, or joint, but still without obtaining the proposed advantage, "*quod si enim,*" he says, "*caput blande eis comprimitur fœtus adeo inclusus non sequitur, si nimis fortiter, periculum est ne caput tenerum comminuat.*" *Instit. Chirurg. Pars II. p. 1046.* From which it is evident that Heister attempted

the principal improvement that has been made in them consists in having invented, and given to them a proper and convenient joint; for which we are indebted to Smellie. All the alterations therefore that have been since made, the different curves that have been given them, even the final improvement of our author, are nugatory.

Smellie, who certainly understood the use of this instrument as well as any man living, after trying a variety of forms, at length recommends a pair of short forceps*, of the plainest and simplest structure that could be contrived, as the most

attempted to deliver with the instrument before the basis of the skull of the child had entirely freed the brim of the pelvis. It is observable, as our author acknowledges, the same complaint continues to be made to this day. If the forceps are used before the child has descended sufficiently low into the pelvis, they will either slip, or such a degree of force, must be applied, as will too much compress and injure the head.

* Treatise of the Theory and Practice of Midwifery, p. 258.

gene-

generally useful; and these, every one must see, can only answer the purpose of extracting the head from the little pelvis, which I have fixed as the sole and ultimate use of this instrument. If these should be generally adopted, then all the difficulty of introducing and extracting with the forceps, which has been so much and so frequently complained of, which this author thinks essential to a perfect instrument, but which every other person will call a derogation from its excellence, will vanish; and we shall no more be told, that “ * as well
 “ might one expect to be able to put to-
 “ gether the movements of a watch, or
 “ arrange any other nice piece of mecha-
 “ nism, or to be able to play upon a mu-
 “ sical instrument, by written directions
 “ only, without practice, as to be able to
 “ apply the forceps safely or effectually by
 “ the most accurate verbal description.”
 On the contrary, it will be found to be a plain, simple operation, not requiring any

* Essays, p. 94.

extraordinary talents or abilities to comprehend it, but intelligible to the most moderate capacity, and not only communicable by written, but even by colloquial instruction.

The author begins the second section of this essay with observing, “ * that it seems
 “ extremely probable that the vectis, or
 “ simple lever, was employed in laborious
 “ or difficult labours before the more complicated lever, or forceps, was had recourse to in such cases ; for comparing
 “ the situation of the child’s head in the
 “ cavity of the pelvis with difficulties of
 “ a similar nature, which must have occurred to every man’s observation, such
 “ as the removing impediments of great
 “ weight by the common lever, it was
 “ hardly possible not to apply such observations to the exactly similar situation
 “ of the child in the living woman, and to

* Essays, p. 115.

“ endeavour to effect that relief by those
 “ very means which were known to be
 “ effectual on inanimate matter.” The
 meaning of which is, if I comprehend the
 author right, that men observing the facility
 with which great masses were removed or
 dug up with the simple lever, that is, with
 the pickaxe or spade, he thinks it extremely
 likely that they should endeavour to remove,
 that is, dig out, the head of a child, when
 firmly impacted in the pelvis, from the
 living woman, by a similar instrument.

Upon this very improbable supposition
 the author goes on arguing, and at length
 assuming it for a fact, draws his conclu-
 sion or demonstration, as he chuses to call
 it, of the superiority of the forceps.—
 “ * It is probable too,” he adds, “ that
 “ the simple lever was discarded, and the
 “ forceps substituted in its stead. But as
 “ it is impossible to believe that any man
 “ of common sense would discard the

* Essays, p. 116,

“ simpler,

“ simpler, the easier, and more efficacious
 “ instrument for one less simple and effi-
 “ cacious, and the simple vectis having
 “ been discarded in favour of the forceps,
 “ the fact itself is a complete confirmation
 “ of the superiority of the forceps.”

Admitting this argument in its full force, the reverse of this conclusion would be evident; for as the author's colleague*, (and I have shewn that many other gentlemen are of the same opinion) who for many years used and recommended the forceps, has now given his testimony in favour of the superior utility of the lever; “ and as
 “ it is impossible to believe that they
 “ would discard the easier and more effi-
 “ cacious instrument for one less easy and
 “ efficacious;” it necessarily follows, that the instrument now adopted by them, that is, the lever, must be the best.

But as the author thinks the invention of the lever so obvious and easy, how came

* See page 153 of this volume.

it to pass, it may be asked, that it was so late in being adopted and introduced into practice? As the very first intimation of an instrument of that kind being used, that I can find, is of no earlier date than the latter end of the last century*; whereas we know that the forceps have been used for many ages. Avicenna†, whom Freind places about

* Roonhuijsen, who was cotemporary with the Chamberlens, is the first person who is known to have used the lever, which was kept a secret in his family near fourscore years. The property in it was at length purchased by De Vischer and Vandepoll, two Dutch physicians, who published an account of it, originally in the Dutch language, in the year 1753. Their memoir was translated by M. Preville into French, and annexed to his edition of the works of Smellie, in the year 1754; and this was the first account that was given to the public of the lever.

† In the chapter de regimine ejus, cujus partus fit difficilis causa magnitudinis foetus, he says, Liget foetum cum margine panni, et trahat eum, quod si illud non confert, administrentur forcipes, et extrahatur cum eis. Si vero non confert illud, extrahatur cum incisione, secundum quod facile fit,
et

about the year nine hundred and eighty, speaks of them as of an instrument well known, and frequently used in his time. Albucasis* has left descriptions and drawings of different kinds of them, which Rueff† improved and brought to perfection.

It is true that the forceps here spoken of, at least those described by the two latter writers, had fixed joints, and were armed with teeth, and could therefore be only used in extracting children that were dead, after their heads were crushed or opened; but no one can doubt that they suggested

et regatur regimine foetus mortui. Avicennæ Canon Medicinæ, lib. 3, p. 932.

It is remarkable that Avicenna makes a distinction between the forceps and the instruments that were used to extract dead children; whence it would seem that they were in possession of an instrument something similar to the forceps we now use: at the least it was some contrivance by which the children were not liable to be materially hurt.

* *Methodus Medendi, &c.* Albucasis, lib. 2, p. 129, &c.

† *De Concept. et Gen. Hominis*, p. 31.

the

the idea of the forceps with moveable blades that are now used. And if the author had reflected, he would have found that reason and argument here coincide with historical fact; and the hand with which he held his pen would have taught him that men had always before them the model of a pair of forceps, the use of which must have been much more familiar to them than that of the simple lever. In truth, the mouth, or even the paw of almost every animal we see, the beaks of birds, the claw of the crab or lobster, all suggest the idea of grasping any substance between two pieces of wood or metal, and drawings it to us. But as an instrument of that kind was difficult to make, and could not well be fabricated until men had attained some perfection in mechanical knowledge, the hook, or a piece of bended metal, as easier in its construction, was first used. But the method of using the hook as well as of the forceps being by simple traction, required no mathematical or speculative principles to be first learned to

to make it intelligible, as the use of the simple lever seems to require. Agreeably to this idea we shall find the earliest writers, when treating on the subject of midwifery, speaking of extracting dead children with hooks. Hippocrates*, and after him Celsus†, have given particular accounts of the method of using these instruments, and of the care necessary to avoid tearing or injuring the woman with them. The forceps next succeeded, and then, as more difficult of invention, as requiring a more enlightened and cultivated understanding to

* Caput gladiolo dissectum, instrumento quod confringat (*πίστρον* dicitur) comminutio, et ossicula per ossum yolsella extrahito, aut unco attractorio ad claviculam uti firmiter adhereat immisso, non confestim, sed paulatim remittendo et rursus adurgendo, extrahito. Hip. Oper. om. Fæcio, lib. 1. de Morbis Mul. p. 618.

Here pincers or forceps are mentioned as well as the hook.

† Si caput proximum est demitti debet uncus, &c. Trahere autem dextra manus uncum; sinistra, intus posita, infantem ipsum, simulque dirigere eum debet. Celsi de Medicina, lib. 7. cap. 29.

compre-

comprehend its qualities, the lever. Our author seems to have been induced to draw a different conclusion, and to have imagined that the instrument we usually denominate the vectis or lever of Roonhuyfen was first discovered, from its being called a simple lever. This he thought must be more easy of invention "than the more complicated lever the forceps." But simplicity, he should have reflected, is the perfection of mechanics, as well as of writing, and although when acquired it appears easy, yet it is not attained without great labour and study.

But it is time I leave this argument, and bring the instrument itself before the reader; that seeing its description and qualities, he may more easily judge of its comparative merit. We have seen the author's idea of a complete pair of forceps, have observed the extreme nicety that is required to their perfection, both in size and form, and the rules that are necessary to be attended to, with a view to the successful application of

of them. From this account, as delivered by the author, it must be obvious that no one can be an adept in using them who has not frequent opportunities of applying them: but as cases proper for the use of the forceps or lever do not probably occur oftener than once in seven or eight hundred labours, gentlemen who do not attend more than one tenth part of that number of labours in the year (and, I presume, this includes more than nine tenths of all the practitioners in the kingdom, such is the laudable zeal which the teachers or professors of midwifery in this town and in a neighbouring country exert to keep up the stock *) must be very inadequate to the use of

* As the author observes that more than twelve hundred of *the present practitioners* in this kingdom have attended his lectures, (Preface to the Essays, p. 10) and as it cannot be doubted that, at the least, twice that number must have been instructed by him in the space of near thirty years since he first began lecturing, this will give some idea of the swarms of candidates for obstetrick practice that are poured out from the different schools in this

of them. And this is confirmed by observation, and accounts for the numerous complaints of their slipping, and of other inconveniences and difficulties attending the use of them, which the author has remarked*.

But if the forceps are objectionable on account of their being operose in their structure and difficult in their application, the lever must certainly deserve commendation, as possessing the opposite qualities. These the author has allowed it, and the simplicity of its form, and the faci-

this country and in Scotland; and consequently justify the estimate I have given of the quantum of labours that may probably fall to each of them.

* Besides, in many late authors, we find it a very general complaint, and a very strong objection to the use of the forceps, that they are very apt to slip, and disappoint the expectation of the practitioner. So many instances have occurred within my own knowledge of the forceps having failed, from the operators having forgotten, or neglected, or not understood, the cautions necessary in their application. *Essays*, p. 106.

lity

lity* with which it may be used, make no inconsiderable part of his reasons for rejecting it.

But the properties of the lever will be best seen by giving a cursory description of it. Unlike the forceps, it requires no great nicety in its structure. A flat piece of iron, about the breadth of two fingers, from eleven to fourteen or fifteen inches in length, obtuse, of sufficient strength, perfectly smooth, that it may not abrade and injure the vagina, and lightly curved at one of its extremities, gives the complete idea of a lever capable of doing every thing for which the forceps or lever are usually recommended. Upon the last circumstance, the lightness of the curve, its utility in a great measure depends: when the instrument is much curved, it is introduced with difficulty, and its action upon the head of the child is weak and inconsiderable. On the contrary, when the curve is light, just decli-

* Preface to the Essays, p. 9.

ning from a straight line, it is introduced with the greatest ease, and its power in forcing down the head of the child is very great, and may be used so as to surmount almost every possible difficulty.

From this description the reader will see there is no affectation of adapting the lever to the shape, form, and size of the pelvis*, or of the head of the child; no claim of superiority in favour of one particular fashion of lever over another: it is evident that pretences of that kind would be mere quackery; the difference in the power and utility

* This circumstance, which the essay writer seems to think so essential, and as constituting the principal merit of his new-invented or improved forceps, evidently limits their use to a very small number of cases, and those of the easiest kind, and not requiring any particular apparatus to relieve; for as this instrument is constructed so as to fit the sides of the pelvis, the curves being adapted to the hollow of the sacrum, it can only be employed when the head of the child has made its turn, and the forehead is distending the perinæum. In the
more

utility of different levers depending upon properties that are palpable, and such as every person must immediately comprehend. When the head of the child is considerably elongated, or a large part of it remains above the brim of the pelvis, a lever of the length of fourteen or fifteen inches will be required; in all ordinary cases, one of eleven inches will be completely competent.

The essay writer next gives a long detail of the defects of the lever, and considers them under distinct heads: but instead of appealing to facts and observations; instead of adducing the testimony of

more common and difficult cases, when the head of the child remains obstinately fixed in the pelvis, one ear being to the pubes, the other to the sacrum, or nearly in that direction, it is evident that any attempt to introduce the blades of this instrument, must be attended with difficulty, and probably be productive of considerable mischief: so little has the author studied the power of the instrument he takes upon him so strenuously to commend.

practi-

practitioners who are in the habit of using the lever, and from his situation he was abundantly able to do that, he contents himself with shewing that it may do mischief when mismanaged or improperly used, and with giving a general account of some cases that have fallen under his care, where he supposes the women had been injured by its application.

But as we know that dreadful accidents do sometimes happen to women in tedious and difficult labours, from the pressure of the head of the child, where no instrument whatever has been used, is it not probable that the mischief the author alludes to happened in consequence of the operator's not having used the instrument sufficiently early.

That the author did not think these facts of very great importance, and that he felt some difficulty in supporting his opposition to the lever, is apparent from the great stress he lays upon a solitary case in which, he says, the lever failed, and the forceps
(the

(the Doctor does not say they were his new-improved forceps) were successful. Two gentlemen, it seems, were called to attend a woman who had been so many hours in hard labour without being able to expel the child, that it was thought expedient to have recourse to the lever, which they were not much accustomed to use. After many fruitless attempts with this instrument, a third gentleman came in, and delivered the woman with the forceps. The author by mistake has said, that the gentlemen who tried the lever, finding they were not successful with that instrument, delivered her with the forceps; but on farther inquiry he will find the business terminated as I have related. Upon this single case I think the superiority of the forceps is made to rest. Although a solitary instance of this kind can hardly be supposed to make any impression on the mind of the reader, who has been previously informed that several of the practitioners in London, in high estimation, have actually, after many years using the forceps, abandoned

doned them for the lever, yet I shall beg leave to relate one case, which will, I apprehend, be more than a balance against this imperfect one of our author.

The late Dr. Bromfield, who was thought to excel in skill and address in using the forceps, a few years before his death, attended a person in a difficult labour; after waiting the event of the pains until there was reason to fear some great mischief would happen to the woman if he delayed the delivery any longer: as the head of the child was not descended low enough to take hold of it with the forceps with any prospect of success, he began to think of making use of the perforator and crotchet; but first desired the assistance of Dr. Garthshore.—Dr. G. after carefully examining the position of the head of the child, agreed that it would not be proper to apply the forceps, but ventured to assure his colleague, that he had no doubt but the woman might be delivered with the assistance of the lever; which he accordingly pro-

posed to use. To this proposition Dr. B. at first objected, as he entertained an almost invincible aversion to that instrument: but thinking it dangerous to delay the delivery longer, and seeing no possibility of bringing the child without opening its head, he consented that the lever should be introduced; and from the instructions Dr. G. then gave him, he was enabled to deliver the woman with it safely of a living child, in about the space of half an hour.

I never thought of making an invidious comparison of the instruments in question, or imagined that any point of honour was concerned in giving the preference to one over the other; but have always considered them as nearly equally safe and useful in the hands of experienced practitioners. If I have said the use of the lever might be more easily acquired than that of the forceps, I spoke from my own experience and that of some respectable gentlemen of extensive practice, with whom I have frequently conversed upon the subject. If

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other gentlemen have found they were more able to use the forceps than the lever, even after repeated trials with the latter instrument, this by no means establishes the superior utility of the forceps; to prove that, it will be incumbent on them to produce a number of gentlemen, who, having been educated in the use of the lever, have relinquished it for the forceps; as I have shewn that a considerable number of practitioners have, after many years practice with the forceps, laid them aside in favour of the lever; and to find a case parallel to that which I have been permitted by Dr. Garthshore to relate; where Dr. Bromfield, whose prejudices against the lever were as strong as even those of Dr. Osborn, was compelled, by the evidence of fact, to acknowledge he had been mistaken in his opinion.

But Dr. O. seems to have armed himself against a possibility of changing; and the reader must have seen him with the
 extremest

extremest concern, not only declaring his resolution to hold the same opinion, to teach the same doctrine, and pursue the same practice, to the end of his professional life*, but boasting of the perfect coincidence in opinion of his colleague, and probable successor, in every point of practice laid down in these essays; and giving it as his firm persuasion, that he also “† will
 “ continue to teach the same doctrine, and
 “ recommend the same practice, as long
 “ as the school remains, or he continues
 “ to read lectures in midwifery.” By that means precluding all alteration, every improvement in the whole practice of the art, which time, so fruitful in events, may produce.

But I hope and trust that the gentleman alluded to, whose time of life gives him a

* Essays, p. 185. The author indeed adds, until he is better convinced, &c. but the quotation from the last page, shews how little he is open to conviction on this subject.

† Essays, p. ult.

fair prospect of many years for practice and
 observation, will live to see, adopt, and
 recommend, maxims very different indeed,
 from those here held up for his imitation;
 remembering

Nunquam ita quisquam bene subducta ratione ad
 vitam fuit,

Quin res, ætas, usus, semper aliquid adportet novi,
 Aliquid moneat; ut illa, quæ te scire credas nescias;
 Et quæ tibi putaris prima, in experiundo ut repu-
 dies.

Terrent. *Adelph. Act. 5, Scene 2.*

Dr.

Dr. OSBORN's fifth and last Essay is on the third Class or Division of laborious and difficult Labours, or those requiring the Head of the Child to be lessened.

THE principal part of this essay, which was first published in the year 1783, is employed in exposing the insignificancy and uselessness of the operation for dividing the symphysis pubis, which had been a few years before that period introduced, with a view to facilitate the birth of the child, when the pelvis was so narrow as to make it impossible for it to pass unmutilated. In these cases, as the church of Rome did not permit that the head of the child should be opened to save the life of the mother, it had been usual in most parts on the continent, to recommend the Cæsa-rean operation; or the woman was suffered

to perish undelivered. The section of the symphysis pubis was therefore intended as a succedaneum to that operation. But in this country the constant practice in such cases has been, to open the head of the child and then extract it with the crotchet; the Cæsarean operation being never attempted here, while there remains a possibility of extracting the child through the natural passage; which, from the great attention that has been paid to this part of midwifery, is found to be practicable even when the pelvis is extremely narrow and deformed; so that cases where the pubes and sacrum approach so near each other as to render it absolutely impossible to extract the child that way, do not occur probably so often as once in an hundred thousand labours*.

Of

* Reckoning the number of births in London to be 20,000 annually, the Cæsarean operation should, on my supposition, be performed here once in five years. Although this is not the fact, some cases occurring in which the parties themselves are happily

Of the author's arguments, therefore, against the section of the symphysis pubis, I shall take no notice, that practice, for the reasons I have given above, never having gained any credit in this country; and, indeed, from the effects attending it, seeming to be almost entirely laid aside every where.

In the first section of this essay the author endeavours to ascertain the smallest dimension of the pelvis, through which a child of a moderate size can possibly pass alive; this he fixes at three inches, or, as the very smallest, two inches and three quarters, in the shortest diameter, or that reaching from the pubes to the sacrum.

pily abhorrent to the operation, and others in which, on account of the ill state of the health of the patient, or from the humane disposition of the attendant, it is not proposed; yet it is probable that the number of child-bearing women who are in the predicament I have described, and who can be delivered by no method whatever but by the Cæsa-rean operation, does not fall short of what I have set down as the average.

When-

Whenever, therefore, on examination, it appears that the shortest diameter of the pelvis does not exceed two inches and three quarters, it will be necessary to open the head of the child and extract it with the crotchet.

I have no doubt but that the rule the author has here given is correct and proper, but am by no means of opinion that it is so easy as he seems to think it, or, indeed, that it is possible to ascertain the dimensions of the pelvis during the labour, with such a degree of accuracy as to be enabled to found any practical rule upon them, particularly before the head of the child is engaged in the passage.

For although the sacrum may project so much, or advance into the pelvis so far as to reach within two or three inches of the pubes, and consequently the entrance into that cavity would be only of that diameter, if the bones were directly opposite to each other; yet, the pubes being placed something

thing lower than the greatest projection of the sacrum, and opposed to a part of that bone that diverges backward, the real distance between them may be much more considerable than to the touch it may seem to be. Whence it happens, that in cases where the projection of the sacrum has occasioned exceeding great difficulty in the beginning of the labour, opposing an almost insuperable bar to the entrance of the head of the child into the pelvis, by directing it too far forward over the pubes, yet when that direction has been altered by the crotchet, or by any other means, and the head brought into the line of the center of the pelvis, the conclusion of the labour has been frequently effected with very little exertion or force.

But I see no utility in being able to ascertain the exact dimensions of the pelvis if it were possible. Whenever the deformity of the bones of the pelvis is so considerable as very materially to diminish the upper aperture, or to divide it into two portions,

portions, one on each side the projection of the spine, it will require no great degree of sagacity to prognosticate that the labour in such cases will be extremely tedious, difficult, and laborious ; and that the child will necessarily die in the passage, or that its head must be opened, and the labour finished with the crotchet. And even in cases where the distortion is not so considerable, but where the sacrum is felt to project over and block up the entrance into the pelvis, the prudent and cautious assistant will warn the family of the difficulty and danger attending such a situation, and of the little probability existing that the child can be born alive.

And this, as it is all the knowledge we are capable of acquiring, so very fortunately it is all that it is necessary for us to attain : for I by no means agree with the Doctor, that as soon as we have ascertained the dimensions of the pelvis, by measuring it with our fingers, and have satisfied ourselves of the impossibility of a child's passing

ling alive through so contracted and narrow a space, that it would be proper to proceed immediately to open the head of the child, in order that it might become putrid and be extracted with the greater facility*. So far indeed am I from thinking this practice commendable, that I think it liable to many and very material objections.

In the first place, in all ambiguous cases, when the measure of the pelvis shall seem to be nearly equal to that width which the author has fixed as the very smallest through which a child of a middling size can pass alive, it would be extremely rash to attempt to open the head, until after

* “ Upon the timely performance of the first stage of this business, viz. opening the head of the child, in a great degree depend the facility, safety, and efficacy of the subsequent delivery.” *Essays*, p. 220. “ I presume that I have now satisfactorily proved the necessity and propriety of opening the head of the child, at the beginning of the labour, whenever the capacity of the pelvis is only two inches and three quarters,” &c. *Ibid.* p. 223.

waiting

waiting twelve, eighteen, or twenty-four hours (according to the health and strength of the woman, or the state of the labour) we are convinced of the utter impossibility of the child's being forced down so low by the pains as to be taken hold of and delivered with the forceps or lever. And as no mischief can possibly happen to the woman from waiting this small space of time, I cannot see what objection this author in particular can have to the delay, who has recommended such extreme patience and endurance before he would permit the application of the forceps, and who has assured us that no mischief whatever can happen to the woman "from
 " waiting three or four days, or even until
 " the powers of nature are irrecoverably
 " exhausted;" the error of which opinion I have exposed in its place.

But there are many material practical advantages to be gained by the delay I have recommended. By patiently waiting twelve, twenty-four, or more hours, time
 will

will be given for the complete relaxation of the os uteri and neighbouring parts, for the perfect evacuation of the liquor amnii, and for the spontaneous separation of the placenta, that it may follow soon after the expulsion of the child. Unless this disposition of the soft parts to relax and give way, without offering the smallest resistance, is present, the left hand of the operator (which must be continued in the vagina, with one or two of the fingers resting on the head of the child, as directors to the perforator, and afterwards to the crotchet) would be so cramped, and rendered so uneasy, as to make it extremely difficult to perform the operation so safely and securely, and with such a certainty not to injure the woman, as it is his duty to study to effect. By this means also, the waters being completely exhausted, and the uterus in contact with the child, the pains will have forced a part of the head into the pelvis, whence the child will be kept steady, and the perforator will be used with greater ease and certainty.

This

This circumstance, of however little importance it may be to the author of the essays, who from long experience may find little difficulty in delivering, in almost any situation that can be named, cannot be equally indifferent to the majority of practitioners; many of whom may not perhaps be called upon in a case of this kind oftener than once or twice in the course of their lives. In favour of such persons, it seems necessary that every practical rule should be clear, easy, and intelligible; and that no alterations should be made in the established practice, or any new maxims be introduced or adopted, but such as are absolutely necessary, have stood the test of experience, or have the sanction of some practitioners of known abilities and judgment.

But there is yet another reason, more weighty perhaps than those I have enumerated, why this operation of cephalotomia should not be performed in any early stage of

of the labour. By acting in the prudent and cautious manner I have recommended, by giving full time to the pains to exert their force, and thence shewing how insufficient they are to the expulsion of the child, the minds of the parents and friends will be better satisfied than by any argument that can be adduced, that the life of the child has not been wantonly, precipitately, or unnecessarily sacrificed. And as every one may not be as well satisfied as the Doctor is, of the absolute insensibility of the fœtus, it may be some consolation to the relatives of the poor sufferer, to know, that the child having been now pressed upon many hours by the uterus, and its head jammed between the bones of the pelvis, it is enfeebled, rendered torpid and stupified, and probably not very sensible to the injury it receives.

This seems a much better ground for consolation on these trying occasions, than any arguments drawn from the absolute
insensi-

insensibility of the foetus *: a doctrine that is so far from being generally assented to, that I scarce know a second person who gives credit to it.

But affection and humanity here supply the place of philosophy ; and it is robbing the parent and the husband of the honour that is due to him, when we endeavour to impose upon his understanding by a sophism, and to diminish the value of the sacrifice he is making : it is treating mankind as if they were children ; and it is doing so without the plea of necessity. I have never yet been in that situation, where I was under the necessity of announcing to the husband or friends that I had now waited as long as I safely could, and that it was become absolutely necessary, for the preservation of the health, perhaps the life, of the woman, that the head of the child

* The author (as we shall see hereafter) denies to the foetus in utero that degree of sensibility which is possessed by the lowest order of reptiles, and even by some plants.

should

should be immediately opened ; but I have found, that however reluctantly they gave up the hope of having a living child, when that was put in competition with the life or health of the woman, their opinion of the superior value of the latter has manifested itself: and, “ whatever you do, for “ god’s sake take care of the safety of the “ woman,” has been the spontaneous answer of all the persons I have been concerned for. Even among the lowest ranks, and where the husbands have, while the women were in health, treated them with the greatest harshness, in this moment of peril I have constantly seen them softened, speaking of their wives with tenderness, and ready to make any sacrifice for their safety.

The pains therefore that the author of the essays has taken, to establish the absolute insensibility of the foetus in utero, have been unnecessarily bestowed. I do not believe that any one ever imagined that sensation in the foetus was equally acute as in
 p children

children after their birth: no one thinks that a fly or a worm suffers as much when wounded as an ox or an elephant; but that the fly or the fœtus are totally void of sensation, is neither just nor reasonable to affirm.

“ * Although children do often die in
 “ utero,” the author says, “ yet the mother never can discover by her feelings
 “ when death takes place; the cessation of
 “ the accustomed motion is the first, and
 “ for some time the only difference observable by the mother, between the
 “ life and death of the child in utero.”
 Even in performing the operation of cephalotomia, he adds †, he could never learn
 that

* Essays, p. 205.

† “ When we are compelled to open the child’s
 “ head, while we know it is yet living in utero,
 “ that operation requires such extreme and painful
 “ violence, *that were the child endowed with the slightest sensation* he must of necessity feel it. Upon
 “ accurate and repeated inquiry in several such
 “ cases, I could never learn that the mother was
 “ sensible

that the mother was sensible of any alteration in the motion of the child.

This is to me an entire new doctrine. Many women I have been consulted by, have assured me that the fœtus, for several days prior to its dissolution, was restless, uneasy, and uncommonly troublesome; and some of them have even pretended to date almost the moment of its death. The same fluttering motion of the fœtus is frequently observed, as I have been informed by the women, while the operation of cephalotomia was performing: and this account, which has been confirmed to me by several practitioners in midwifery, seems consonant to reason. To maintain a con-

“sensible of any alteration in the motion of the
 “child, even at the commencement of the opera-
 “tion, when the violence offered to it first takes
 “place, and must be most painful. We are there-
 “fore, I think, warranted in the conclusion, *that*
 “*no sensation whatever does exist at that time*; and that
 “no cruelty or barbarity can be said to be com-
 “mitted upon a being absolutely without feeling.”
 Essays, p. 206, 207.

trary doctrine, is to deny to the fœtus a degree of sensibility that we know every part of an animal possesses, even after it is separated from the sensorium or brain. The heart of an eel will palpitate many minutes, sometime an hour or more, after being taken out of its body; and when the motion has ceased, on the application of a fresh stimulus the palpitation will be renewed.

But I shall now quit this ungrateful subject, and proceed to state the advantages the author proposes by opening the head of the child at the very commencement of the labour. These are, “ * to induce as speedy
 “ and complete a state of putrefaction as
 “ is possible, by which means the union
 “ of the child’s bones will be loosened,
 “ and the whole body reduced to a more
 “ compressible state, affording less resistance,
 “ and requiring less violence, and
 “ of course exposing the mother to less
 “ danger of injury.”

* Essays, p. 233.

But

But although by this early operation the calque or upper part of the skull is made to collapse more completely than it otherwise would do, yet no great advantage will be obtained by this circumstance; as the principal difficulty in cases of this kind is occasioned by the passage of the basis of the skull; which being composed of very firm and solid bones, strongly compacted together, can by no means be lessened or altered in its form. This firm texture was absolutely necessary, not only to preserve the form of the head and face, which, if the basis of the skull could be compressed or lessened in the smallest degree, would be subject to a thousand changes and distortions, but to defend the substance of the brain itself, which in that case would be liable to be broken and confounded, and the life of the fœtus to be endangered, whenever there was any considerable difficulty or delay in the birth.

This the author seems to have been aware of, and therefore says, that by removing

moving the parietal bones, we shall be enabled the easier to reach the basis of the skull and turn it edgeways, and thus with greater facility to bring it through the contracted strait of the pelvis. Upon the dexterity with which he performed this manœuvre (the method of effecting which he particularly describes) the happy termination of the delivery of Elizabeth Sherwood, he thinks, materially depended*.

After carefully considering the description the author has given of that case, and still more attentively weighing the circumstances I have constantly found occurring, when extracting a child with a hook or crotchet, I cannot help attributing this turning of the basis of the skull, so useful in facilitating its passage through a very narrow pelvis, to the necessary and unavoidable consequences of extracting or bringing it away with a single instrument, placed, as it almost inevitably must be,

* Essays, p. 240, &c.

rather

rather on one side of the head, and not to any premeditated attempt to bring it in that direction. If this shall be admitted to be the fact, then it will follow, that the putrefaction of the scalp, and loosening of the parietal bones, will be so far from adding to the facility, that it will materially increase the difficulty of the operation, by depriving the instrument of a firm hold and support. By waiting until the integuments become putrid before we begin to deliver, the danger of the operation will be also considerably increased, as the instrument will be infinitely more liable to slip and injure the woman, than it will be when we proceed to extract the child immediately after opening the head; a practice I have uniformly followed, except in three cases, where I was induced to try the method recommended by this author. But from the embarrassment and inconvenience I experienced in these cases, from the loose and tender state of the scalp, &c. I shall not be easily induced to try it again, still less to recommend it to the young and inexperienced.

experienced practitioner. From the caution I have given, not to commence the operation until the head of the child is engaged in the pelvis, and in ordinary cases that is generally effected by the pains in the space of twelve or twenty-four hours*, this putrefactive process is rendered unnecessary.

The author has introduced a passage from Celsus†, containing an observation similar to that I have just made, and shewing that the difficulty and danger attending the operation of extracting dead children with hooks, were occasioned by the instruments tearing through the putrid teguments of the children and wounding the women.

* In those cases where the pelvis is so extremely narrow as to preclude all possibility of the head of the child entering its cavity, this delay will still be advantageous, as it will afford time for the evacuation of the waters, and the contraction of the uterus; by which means the head of the child will be fixed over the aperture of the pelvis, and the operation performed with greater facility.

† *Essays*, p. 237.

“ Nam

“ Nam uncus injectus putri corpusculo
 “ facile elabitur* ;” and in another place,
 “ Unci acumen in ipsum os vulvæ delabi-
 “ tur, sequiturque nervorum distensio, et
 “ ingens periculum mortis.”

One would have thought that, with this observation before him, our author would not have endeavoured to have induced this very state or putrefaction, which Celsus considered as constituting the principal difficulty in performing the operation. For admitting he had found that some advantage had been obtained by it in a particular case, where, from the extraordinary deformity and straitness of the pelvis it might be necessary, this can hardly be considered as a sufficient reason for recommending it in all cases indiscriminately.

The last circumstance I shall take notice of in the essays is, the author's directions for using the crotchet. I have generally

* Celse de Med. lib. 7, c. 29.

thought

thought it proper to leave it to the discretion of the operator to apply the hook or crotchet, within or on the outside of the skull, wherever he could get the firmest hold. But in this, it seems, I have been mistaken; and Dr. Denman has incurred the censure of our author for maintaining a similar doctrine*.

The constant application of the crotchet within the skull, the author says, is so far from being of little importance, as Dr. Denman has asserted, that he is persuaded “† it is of great moment towards
“ defending the soft parts of the woman
“ from injury in case the instrument should
“ slip its hold.” He therefore recommends, “ that it be invariably applied
“ within the head,” and says, “ that the
“ external application can never be either
“ necessary or useful, but that it must, in
“ all cases, be unquestionably more dangerous and less efficacious.” Besides, he

* Essays, p. 456.

Ibid. p. 457.

seems to think, that it is only by fixing the crotchet withinside the head, that we shall be enabled, with it, to turn the basis of the skull, and bring it down edgeways.

It is painful to dissent in so many points from the opinion of a gentleman, who writes with so much zeal, and who, evidently has no intention but to instruct: but the numerous deviations from the usual practice, here recommended, and the authoritative manner in which these deviations are enforced, and old and established rules reprobated, made it necessary. From various expressions, it seems evident that the author has formed his opinion of the superior utility of applying the crotchet withinside the cranium, from having found it succeed in the case of Elizabeth Sherwood. As her case was as difficult as any that can be well imagined to exist, it was not unnatural to conclude, that the method that had proved successful in delivering her, must be a good one; from this it was but a short transition, to determine that it was

was the best that could possibly be devised; and if it was the best, it certainly deserved to be recommended preferably to all others.

This seems at least to have been the mode in which the author has reasoned upon the subject. For without some bias or prejudice upon his mind, it is impossible to conceive that he could have laid it down as a general rule, that the application of the crotchet on the outside of the skull, is more dangerous, and less efficacious, than its internal application. For although he was successful in that way, in the case referred to, (and I make no doubt, from his perfect acquaintance with the business, he would have succeeded with any instrument, and almost by any method) it by no means follows that the mode he used was the very best, still less that it is proper to be recommended in all cases and situations. But the reader will be better enabled to judge of the force of this argument, from the following short view of the operation: when the instrument is fixed on the out-
side

side of the head, if it should slip or lose its hold, it must pass through both the sides of the cranium, before it can touch the vagina of the woman; on the other hand, when it is fixed within the cranium, as soon as the point has made its way through the integuments on one side only, it comes into immediate contact with the vagina; the greater hazard therefore attending the latter mode of application, is too obvious to require any farther argument. But as in all cases where the crotchet is used, the operator keeps one hand in the vagina, to guard and moderate its action, it is evident no mischief whatever can happen, whichever way it is applied, except from the carelessness or ignorance of the operator.

Another argument in favour of the doctrine I am endeavouring to establish, may be drawn from the history of the instrument. Until a very late period the crotchet consisted simply of a straight piece of iron with a strong and sharp hook at its extremity. M. Levret, to whom the practice of

of midwifery is indebted for many other improvements, finding cases occurring, in which the instrument might be applied with more advantage on the outside of the head, suggested the idea of a curved crotchet, which has been so much approved, that it is now constantly used. I am no advocate for the exclusive use of the curved crotchet; the straight form seeming to me better adapted for internal application. But the general prevalence of the former, shews that the external application of the instrument is thought to be at least sometimes necessary.

I shall here close my observations for the present; reserving to a future time the completion of the plan alluded to in the preface.

Although I have very attentively weighed the arguments I have used in the course of these strictures, I am far from thinking they are all of them unobjectionable. I shall therefore see with pleasure any observations

vations on them, tending to point out where they are insufficient, and by readily acknowledging any errors that may be detected, endeavour to make some atonement for the freedom of my censures.



THE END.



