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ART. V.—*Observations on the Artificial Dilatation of the Mouth of the Womb during Labour, and upon Instrumental Delivery, &c. &c.* By ROBERT COLLINS, M.D., late Master of the Dublin Lying-in Hospital.

THE above subjects occupy a very considerable portion of a work just published by Professor Hamilton of Edinburgh, and as the practice inculcated is calculated to urge junior practitioners to a hasty, in my mind unnecessary, and consequently injurious interference, I feel myself called upon to advise them against a line of practice, which, after the most anxious consideration with an ample field for observation, I am satisfied is fraught with much hazard to the patient. The treatment adopted by Dr. Hamilton is so completely opposed to that recommended by the most eminent physicians in London, Paris, and Dublin, that had it been advanced by a less distinguished member of the profession, it would have attracted little attention. Dr. Hamilton declares, that the first stage of labour, viz. the full dilatation of the os uteri, should be completed within twelve or fourteen hours from the actual commencement of labour, as the natural efforts can no longer be trusted to; that sundry measures are to be resorted to by the medical attendant for this purpose; and that the patient should almost never be allowed to continue longer than twenty-four hours without being delivered. The following are his own words; "When the pains take place, if the dilatation prove tedious, that is, if the continuance of strong pains for *six* or *eight* hours do not advance the dilatation to such a degree as to give reason to expect its completion within a few pains, *it becomes necessary to interfere*, lest the patient's health should suffer."* "Since the year 1800 the author has advised his pupils to secure the termination of the first stage of labour within *twelve* or *fourteen* hours

* See Hamilton's Observations on Midwifery, p. 225, Part I.

from its actual commencement."* Again, when treating of laborious labours, " the author feels it incumbent upon him to declare, that when the uterine contractions proceed regularly without decided interruption, or when the infant, after the rupture of the membranes remains in close contact with the passages, the sufferings of the woman should almost never be allowed to continue longer than *twenty-four* hours, reckoning from the beginning of true labour throes."†

Such are Dr. Hamilton's directions, to the support of which he has devoted a large share of two volumes, in language the most decided, and sometimes even a little dogmatical. I have, however, studied every page with the closest attention, nor can I find fact or argument to induce me to alter my decided conviction, that such measures, thus warmly urged, are not only uncalled for, as far as regards the safety of the patient, but if *generally* acted upon, likely to be followed by serious results, both to mother and child. What must be the consequences of instructing the junior practitioner to effect the delivery of his patient within twenty-four hours ? It appears to me to cruelly encourage the destruction of the child, where, in the great majority of cases, not even a shadow of necessity could exist for such a proceeding. We may be told that such is not the case, as delivery can be effected in safety with the forceps ; this, however, where disproportion exists, as in really *laborious labours*, is mere delusion, and where there is no considerable disproportion the *necessity* for speedy delivery of the patient we have elsewhere shewn does not often occur, where the labour is not complicated.‡ Surely no experienced practitioner would be guided as to the safety or otherwise of his patient when in labour, by the number of hours, but by the present symptoms and previous history. Have we not the symptoms, *indicating* the approach of *danger*, as clearly and accurately marked as

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* See Hamilton's Observations on Midwifery, p. 195, Part I.

† See p. 42, Part II. ‡ See Practical Treatise on Midwifery, p. 10.

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under any circumstances whatever: and is there any physician, with moderate observation, who has not seen some females exhibiting symptoms more aggravated, and sufferings more acute, at the expiration of twenty hours' labour, than others after sixty? What would be thought of the surgeon who directed all operations to be performed at stated periods, without regard to *symptoms* or *necessity?* To me the symptoms and necessity are as imperative and apparent in the one instance as the other, and there can be little doubt, the consequences equally serious.

Dr. Hamilton states, "when labour (with the head of the infant advancing) is protracted beyond *twenty-four hours*, the sufferings of the woman are always more or less distressing. Increased action of the heart and arteries, with febrile heat and thirst, headach, restlessness, and despondency, first take place. By and by the *strength fails*, the *belly* is first *pained* on pressure, and then *swelled;* the *passages become tender* to the touch; *the features shrink;* the *breathing* is *affected; vomiting* is apt to occur, *followed* by *delirium*, or *convulsions*, or *death.*"*

"That this is a real representation of the consequences of protracted labour, must be acknowledged by every practitioner who has devoted himself to the department of midwifery; and is most strikingly illustrated by Dr. Collins's valuable record of the cases which had occurred in the Dublin Lying-in Hospital during his mastership."

As to the symptoms above detailed, representing the real state of the patient in an ordinary tedious labour; or the cases recorded by me in any way shewing such a result, I cannot but dissent. It is, indeed, somewhat like the condition of a patient in *truly laborious and difficult* labours, where such disproportion exists between the child's head and the mother's pelvis, as in most instances to render the reduction of the former necessary; would any practical physician draw a comparison between

* Hamilton's Observations on Midwifery, vol. ii. p. 44.

the state of the patient here and in an ordinary tedious labour? Even in these trying cases, the mortality from the effects of laborious and difficult labour is, comparatively with other causes, *very inconsiderable,* when the patient is properly treated during its progress. This is a fact amply demonstrated by the results given of our Hospital practice ;* and, in my opinion, the source of observation here was as extensive and unobjectionable as could be desired. In proof of this assertion, I have little doubt the following statements will appear satisfactory.

Of 16,414 women delivered in the Hospital during my residence, 164 died, or in the proportion of one in 100. If from this number we deduct the deaths from puerperal fever, which may be considered *accidental,* the proportion becomes greatly diminished, viz. to one in 156 deliveries: and again, if we subtract those deaths from causes *not the results* of childbirth, (which are marked thus * in the following table,) the mortality from effects arising in consequence of *parturition* is vastly reduced, viz. to one in 244.

TABLE SHEWING THE CAUSE OF ALL DEATHS IN THE HOSPITAL.

* Diarrhœa	1	Sloughing of Vagina	6
* Typhus Fever	5	* Hydrothorax	2
Rupture of Uterus or Vagina	32	* Pericarditis	1
Uterine Hæmorrhage	11	Peritoneal Inflammation, (Placenta retained)	4
* Puerperal Fever	59	* Abscess in Spinal Canal	1
* Inflammation of Brain	3	* Lumbar Abscess	1
* Ulceration of Intestines	3	* Phthisis	2
Hectic Fever	1	* Diffuse Cellular Inflammation	1
* Grief, apparently	2	* Abscess in Abdomen	2
* Stricture of Intestine	1	* Acute Bronchitis	1
Effects of tedious and difficult Labour	11	* Anomalous Disease	12
Convulsions	2		

* See Tedious and Difficult Labours, Practical Treatise, p. 7.

I shall next give a short statement of the *cause* of death in *all cases** where the patient was more than TWENTY HOURS in labour. These were forty-two in number, or in the proportion of *one* in nearly 391 : of the forty-two, *three* died of typhus fever ; *nine* of puerperal fever ; *one* of stricture of the intestine, with effusion into the thorax ; *three* where the placenta was retained ; *two* of convulsions ; *one* of abdominal inflammation previous to labour ; *nine* of rupture of the uterus ; *one* of inflammation of the intestines, with pus in the uterine sinuses ; *three* of anomalous disease ; *one* of diffuse cellular inflammation ; *six* of inflammation, &c., subsequent to difficult labour ; *one* of ulceration and sloughing of the vagina ; *one* of disease of the lungs and hæmorrhage ; and *one* of abdominal abscess. In addition to the forty-two deaths here noticed, *six* women died, who had been reported *several days* in labour previous to admission ; of course the duration of their labour could not be stated.†

When we reflect, in connexion with this simple statement of *facts*, that only *forty-two* women died who were above *twenty hours* in labour, out of the vast number of 16,414 ; and at the same time look to the *cause* of the fatal result, the truth of my assertion is, I think, clearly made out.

Again, let us examine the results in another point of view : thus, of 15,850 cases, where the *length of labour* was accurately noted in the hospital, 15084 were delivered within *twelve hours* from the commencement of labour ; 15,586 within *twenty-four ;* 15,671 within *thirty ;* and 15,720 within *thirty-six* hours ; leaving *only* 130 above that period. In no single instance in all these cases, were any means whatever used to effect the dilatation of the mouth of the womb within any *given period ;* nor was artificial assistance ever attempted until the *safety* of the patient absolutely required it. Of 16,654 births in the hospi-

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* Practical Treatise, p. 365.

† All cases are minutely recorded in Treatise as above.

tal, which was the total number during the period of my medical charge, delivery was effected in seventy-nine by lessening the head on account of extreme difficulty in the labour; or where the child was dead and interference desirable, owing to the state of the mother. In *six* of the seventy-nine, delivery with the forceps was attempted; but no force, consistent with safety, could in this way accomplish it. *Fifteen* only of the seventy-nine women delivered by the crotchet, in difficult labour, died. *Fourteen* of the fifteen women were delivered of *first* children, all *males;* the other was a fourth child, and a female: this was one of the two hæmorrhage cases. *Seven* of the fifteen children were born *putrid; three* of the seven were the children of the women who had been a length of time in labour before admission. In *none* of the fifteen was death caused by any injury sustained in the actual delivery.

In this report of delivery by the crotchet, it is necessary to bear in mind that the *proportion* of such deliveries is greatly increased in consequence of the *same patient* returning to hospital *two, three,* or even *more* times; in whom, from deformity or other circumstances, such mode of delivery is rendered *unavoidable.* It is a remarkable fact, that of the examples given by me (page 487) of repeated delivery by the crotchet, but *one* of the women died; thus satisfactorily proving, that where *death* succeeds this operation, the fatal result is *not* dependent on the mode of delivery, but upon the circumstances demanding such interference. Another cause which greatly *increases* the *proportion* of deliveries with the *crotchet,* is the fact of so many patients being admitted after having been *one, two, three,* or more days in labour. Of the 106 cases, where the children were *still born,* and the *labour severe,* nearly *one-half* were of this description; and most of them grossly mismanaged before admission. Of the fifteen above mentioned, one died from stricture of the intestine, with effusion into the thorax; *one* from the effects of abdominal inflammation, *previous* to labour; *five* from the effects of labour, *previous* to admission; *one* from

puerperal fever, which at the time was prevalent in the hospital; *one* from typhus fever; and *one*, a poor, starved, idiotic woman, died from *gangrene* of the vagina and bladder. The *five* remaining cases died from the effects of inflammation and hæmorrhage, or injury produced by pressure. *Two* of the five suffered from hæmorrhage; one previous to the delivery of the placenta; and the other subsequent to its expulsion. In *both* it was necessary to pass the hand into the uterus. One of the two had been force-delivered with a former child, and *all* her children were still born.

Do not these calculations establish to actual demonstration, that the *chief* mortality (97 out of 164), subsequent to delivery, arises from causes *not* the results of *childbirth;* and that the deaths in consequence of the labour being protracted or laborious, are *trifling* indeed. In support of this position, it is only required to examine the mortality in the hospital for the four last years of my residence after puerperal fever disappeared.* In this period, the very great number *ten thousaud, seven hundred* and *eighty five* deliveries occurred; out of which *fifty-eight* died, which is nearly in the proportion of *one* in every *one hundred* and *eighty-six:* the lowest mortality perhaps on record in an *equal number* of a *similar class* of *females*.

With such facts as I have here stated, and taken from so extended a series of observations, I feel not only justified in dissenting from the hasty measures recommended by Professor Hamilton to effect delivery, but at the same time called upon to state my opinion publicly, as well as the foundation upon which it is based, on so important a point of practice. This, my numerous pupils have justly a right to expect from me, having so long had the medical charge of our magnificent Lying-in Hospital, where the instructions I inculcated were so much at variance with the views of Dr. Hamilton.

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* See p. 387, &c. of Practical Treatise.

In the second part of Professor Hamilton's work, page 99, he, after describing two cases of delivery with the forceps, " expresses his surprise at the delay recorded in many of the cases which occurred in the Dublin Lying-in Hospital, under the very able superintendence of Dr. Collins." " It appears that, from twelve to twenty-four hours were not unfrequently allowed to elapse in cases where (there being no disproportion) the labour throes ceased to advance the infant, before recourse was had to instrumental delivery." " He can scarcely permit himself to believe that the patients, instead of having been watched unremittingly from the moment that the infant's head had passed through the os uteri, had only been visited from time to time, according to the practice adopted above half a century ago."

In support of this rather uncourteous allusion to my practice, twenty-three cases are referred to by number, without any statement whatever; *twenty-two* of which are selected from those recorded by me as the *worst laborious labours* in my accounting for the children being still-born, and the remaining one is from the cases of rupture of the uterus.

It is strange, indeed, that these observations could have been made by one so very competent to form a correct opinion; and, above all, that such a remark as (" THERE BEING NO DISPROPORTION") should be found, when, in *all* the cases but *two*, the child's head had *unavoidably* to be lessened, and even after this was effected, in several of the cases there was great difficulty. Three of the patients had been *twice* force-delivered; one, *four* times, and another *more* frequently; in *three* others, the pelvis was *very defective;* in *three*, the children were *unusually large;* in *four*, the forceps was applied, in *two* of which no force consistent with safety could effect delivery, and the head was then lessened; and in the other two forceps cases, the children were got away with much exertion; almost *all* the labours, where the patients had not been *previously* delivered

with instruments were *first* children. A *very brief* outline of the cases from my work is given below;* and when we recollect, that these cases are taken from a record of 16,654 births,

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* The following cases were recorded by me to shew the cause of the children being still-born.

Page 462, No. 49. Considerable difficulty was experienced in getting the head through the pelvis after it was lessened, in consequence of the hand having descended with it. First child.

P. 464, No. 150. In this case, the forceps was applied, but no force consistent with safety was found sufficient to effect the delivery; the pelvis evidently defective.

No. 173. The pelvis was considerably diminished in size, in consequence of a projection of the last lumbar vertebra. First child.

P. 465, No. 209. This woman had been *four* days in labour before admission, and many of the bones of the head were removed before the delivery could be completed; the child was large and putrid. First child.

P. 469, No. 425. In this case, the forceps was applied, but no force consistent with safety was of the *least service*. First child.

P. 470, No. 509. In this case, the bladder was forced down before the head; the child, her third, was *very large*, and *all* her children were still-born.

No. 526. It was this patient's second child; she had been delivered in the Hospital thirteen months previously, with the *crotchet*, after a labour of *three* days.

P. 471, No. 555. The *pelvis* was *defective*. First child.

P. 472, No. 626. The head was *firmly fixed* in the pelvis. First child.

No. 639. The ear could with difficulty be reached by the finger; the forceps was cautiously applied, and *considerable exertion* was required to effect the delivery, the child being *unusually large*.

P. 473, No. 665. Was thirty-five hours in labour of her first child.

P. 474, No. 667. *Great exertion* was necessary to effect delivery after the head was lessened, in consequence of its being *much ossified*.

P. 475, No. 674. Was thirty-six hours in labour with her first child; delivered with the forceps.

P. 476, No. 740. Was thirty hours in labour in the Hospital, and the child's heart having ceased to act, the head was lessened. First child.

P. 477, No. 808. The child's head was scarcely even within *reach* of the finger; she was *two* days in labour before admission, and *twice* force-delivered in the Hospital previously.

No. 817. The soft parts in this case continued in such a state as to prohibit he use of the forceps, and the pains were very ineffectual. First child.

and given there in the very words originally entered at the time of the patient's illness, when often so much had to be attended to, I should hope they will appear tolerably satisfactory ; most of them were considerably curtailed, in order to state the particulars in as condensed a form as practicable.

As to the weakness of Dr. Hamilton's belief, expressed above, after reading my statements on the subject accompanied by the truly minute reports given, it appears more like the thought of one who had lived *a century* than only "half a century ago."

That Professor Hamilton's "positive decision," respecting the cases here noticed, originated in his own imagination, and not from the facts detailed, is accurately demonstrated by himself ; as in his *third order* of laborious labours, which he describes as comprehending "all *those distressing cases where there is a disproportion between the infant and the apertures through which it must pass ;*" *most* of these IDENTICAL cases are *again* selected as examples ; followed by " whenever the necessity for interference in those deplorable cases has been ascertained, the author has recommended and practised immediate delivery." p. 162.

As to the case of rupture of the uterus selected out of thirty-

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P. 478, No. 820. Was forty-eight hours in labour, first child; and the child being dead for some hours, the head was lessened.

P. 480, No. 976. Was a similar case. First child.

No. 1005. Was only nine hours in Hospital ; had been seven times artificially delivered.

No. 1032. Was four times artificially delivered ; fifteen months previously with the crotchet, in the Hospital.

P. 482, No. 1041. It required *two hours* diligent exertion to effect delivery, even after the head was lessened as much as possible, owing to the defective size of the *pelvis*. First child.

No. 1053. Had been artificially delivered before ; head lessened when child's heart ceased to act.

Such is a short outline of the cases commented upon by Dr. Hamilton. *See particulars* in Practical Treatise, p. 462, &c.

four, I cannot, as it is given, account for the delivery being delayed from her admission in the evening when the symptoms were so urgent, till nine o'clock next morning. There must have been some omission in recording the case. That rupture of the uterus is not caused by *protracted labour,* in the great majority of instances, the cases given *clearly* prove. Of the thirty-four, in *eight* only did the labour exceed *twenty-four* hours; and *even* in *these* eight, a perusal will satisfy the most sceptical, that the labour was almost *invariably moderate.** In *one-half* of the *total* number of cases the rupture occurred within *twelve hours* from the commencement of labour. This is a *striking fact,* markedly shewn by the tables which accompany the cases in my work, yet apparently overlooked by several readers. Thus it is obvious, that this deplorable accident is not often the result of *severe* and *greatly lengthened labour;* and therefore, not to be prevented by artificially effecting the full dilatation of the mouth of the womb within twelve hours, and still less, the delivery within twenty-four.

Another misfortune, scarcely less fatal to the patient's welfare than the above, viz., sloughing of the urethra, or of the recto-vaginal septum is adduced by Dr. Hamilton as demanding interference in laborious labours. After enumerating several of the symptoms indicative of danger, he adds: "delay, under such circumstances, according to Dr. Collins's own shewing, would be productive of sloughing of the contents of the pelvis, with all its fatal consequences, as he has so well described, p. 18."

This quotation is certainly given with some ingenuity to support Professor Hamilton's own views, which I do feel in *several* instances he has apparently done—in opposition to my sentiments, my meaning, perhaps, being obscure. The passage referred to is taken from my urgent recommendation of the vital utility of the stethoscope, in enabling us to ascertain the

* See Practical Treatise, page 307.

life or death of the child in laborious labours; which is in my opinion, one of the greatest improvements that has been made in the practice of midwifery. Heretofore, we were in a great measure, ignorant of the time at which death took place; and the practitioner, *imagining the child alive*, from want of satisfactory evidence of its death, delayed interfering, until his patient was in the *greatest possible danger;* whereas, had he been assured the child was *dead*, he would have delivered her before life became *actually hazarded*, and thus prevented her not only enduring for hours, but even days in some instances, the most torturing pain, the result of which continued suffering was not unfrequently death; or, what was perhaps worse than death, extensive sloughing of the urethra, or of the recto-vaginal septum, establishing a communication between these two cavities, reducing the unfortunate sufferer to a state of extreme misery. Such is the passage to which reference is made; but surely, my anxiety to have the delivery effected shortly after the *death* of the child, without waiting till it be expelled in a *putrid** state, during which time the patient must suffer the most urgent distress, followed often by the worst results, *does not shew* me to dread these fatal consequences where the patient is under the charge of an intelligent physician.

On the contrary, at page 16, the following strong expressions are used by me; I have no difficulty in stating, and that after the most anxious and minute attention to this point, that where the patient has been properly treated from the commencement of her labour; where strict attention has been paid to keep her cool; her mind easy; where stimulants of all kinds have been prohibited, and the necessary attention paid to the state of her bowels and bladder; that under such management, the *death* of the child takes place in laborious and difficult labour, before the symptoms become so alarming, as to cause any experienced physician to lessen the head. This is a fact which I have ascer-

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* See page 19, Practical Treatise.

tained beyond all doubt, by the stethoscope; the use of which has exhibited to me the great errors I committed before I was acquainted with its application to midwifery, viz.: in delaying delivery, often, I have no doubt, so as to render the result precarious in the *extreme*, and in some cases even *fatal*.

Such must ever have continued, to the incalculable injury of the patient, and disgrace of the medical attendant exhibiting his imperfect knowledge, had not the means of detecting the death of the fœtus with accuracy been found out. I cannot, therefore, too strongly impress on the mind of the junior practitioner, the absolute necessity of making himself acquainted with the use of the stethoscope; considering it as I do, of the utmost importance in these cases. I am fully satisfied, that sloughing of the urethra, or neck of the bladder, the result of *pressure* from the *natural efforts*, where due attention is paid to the patient, is *very rarely* to be met with, *provided* delivery be effected (*where the pressure is severe*) by lessening the head in a short time *subsequent* to the death of the child; indeed our hospital practice *proves this beyond a doubt*.* Is it not culpable, therefore, to defer delivery when we are perfectly convinced of the child's state, and our patient threatened with an injury so deplorable? These observations, it is to be recollected, are *solely* applicable to laborious and difficult labours; where the delivery can be effected in safety by no other means than lessening the head.

Doctor Hamilton, in noticing such cases, where the symptoms are urgent, states "he should consider it his duty instantly to relieve the poor woman, without paying the *least regard* to the *condition* of the infant." Again, "he cannot imagine a case of laborious labour, which had been much protracted, where the knowledge of the *state* of the *infant* can be necessary to regulate the practice."† These are *startling* observations to guide the junior practitioner; and, to me, apparently made without

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* See page 359 Practical Treatise. † See part II. pages 104 and 107.

sufficient caution or cool reflection. Surely no individual, however experienced, would venture to open the head of a *living child,* so long as even the most *remote shadow,* even of hope *existed,* of any favourable change taking place, or the life of the mother being preserved. The imperative duty of *saving* her *life,* when placed in the most *imminent* danger, should *alone* tempt us. On the contrary, when the *child* is *dead,* is it possible any practitioner could be found so little competent to the discharge of his duty, as in *any degree* to hazard the life of his patient; when, by lessening the head, all danger is removed? I could not picture to myself a greater act of cruelty, nor a more glaring error in practice, than permitting a female to suffer the torture of a laborious labour, hour after hour, where the child is *dead,* and the *symptoms urgent,* until it be at length expelled in a *putrid* state, with the probability of entailing upon her for life the miseries before noticed. It is here the real value of the stethoscope can in my opinion be fully appreciated; there is no mode of diagnosis more truly useful, and I feel convinced, all who accustom themselves to its application will eventually agree with me in this opinion.* I cannot avoid expressing my dissatisfaction with the following extract, given by Dr. Hamilton, on an important practical point, connected with the treatment recommended by me in these trying cases of difficult labour. He states, page 103, in alluding to the Princess Charlotte's death: "that melancholy case strongly shews the fallacy of a rule which appears extremely plausible, and which has been scrupulously adopted in the Dublin Lying-in Hospital." The rule to which he alludes is delaying interference "*as long as the head of the*

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* We fear Professor Hamilton does not yet fully estimate the value of this instrument, otherwise the following observation never could have been made by him: "Would the reviewer propose to apply the stethoscope to the *naked belly of the woman?*"! I will use his own reply nearly: "he may be assured that, in this part of the world at least, such a proposal would be indignantly rejected by every young or old practitioner of reputed respectability."

infant advances ever so slowly."—(Doctor Collins, p. 17.) It is only necessary to refer to the page noticed, to at once see the freedom used in suppressing the latter truly important part of the sentence. After enumerating the symptoms indicating the use of the *perforator*, and that these, being *urgent* or *otherwise*, should make us deliver sooner or later, it is added, the difficulty in such cases is caused by a disproportion between the child's head and the pelvis; and except where this is very great, no individual can foretel whether the uterine action be sufficient or not to expel the child; therefore the most certain proof we can have of such disproportion existing, is, the head remaining stationary for a number of hours after the dilatation of the mouth of the womb; uterine action during this time continuing strong. This is a more certain proof than any derived from the most accurate examination; for, though in this way we may be able to inform ourselves with tolerable correctness, as to the size of the pelvis, yet the size of the child's head, its degree of ossification, or the amount of compression it may undergo from uterine action, never can be correctly ascertained. *Let it be carefully recollected, at the same time, that so long as the head advances ever so slowly,* the patient's pulse continues good, the abdomen free from pain on pressure, and no obstruction to the removal of the urine;* interference should not be attempted unless the *child be dead.*

Is it possible a more distorted view of our practice could be given than the *quotation* represents? Or is it conceivable

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* What are Doctor Hamilton's own directions, p. 48, Part II: "The apparent effects of the labour throes require very particular attention; so long as they are perceived to act decidedly in pushing forward the presenting part, *however slowly*, the natural powers may be trusted, if other *circumstances* are *favourable.*" Again, p. 51, "On the whole it may be concluded, that so long as there are no untoward symptoms in respect to the general health; so long as the pains continue to advance the infant; and so long as the passages remain in their healthy natural state, the contractions of the uterus may be expected to complete the delivery.

any individual could be found to recommend the destruction of a child under such circumstances, as all other means of relieving the mother are out of the question? I sincerely hope and believe the search would be vain; even the thought creates a shudder.

I feel satisfied also, that the very favourable results shewn of the practice in our hospital, fully justify me in recommending to my junior brethren what I found so truly successful.

I have now to request attention to another point of vast practical utility, which is delivery by the forceps in laborious labours. Here again, I am almost ashamed to say, my directions are as different from the construction adduced as words can convey.

In expressing my opinion as to delivery with the forceps, I have made the following *general* statement. The delivery of a female with the forceps, when the os uteri is fully dilated, the soft parts relaxed, the head resting on the perineum, or nearly so, and the pelvis of sufficient size to permit the attendant to reach the ear with the finger, is so simple that any individual with moderate experience may readily effect it. I have no hesitation in asserting, that to use it under other circumstances, is not only an abuse of the instrument, but most hazardous to the patient. It is from being thoroughly convinced of these facts by long and extensive observation, that I consider the forceps quite inapplicable when the head becomes *fixed in the pelvis*, and that the *ear cannot be reached by the finger except by* VIOLENCE, in *consequence of disproportion existing between the head and the pelvis, either owing to the former being unusually large, or the latter under size; in most instances measuring little more than three inches from pubes to sacrum, and in others less than this.* Compare the meaning herein conveyed with Dr. Hamilton's inference: "these observations warrant the inference, that Dr. Collins is not fully aware of the power of the forceps: for, in the *first* place, when, from the protraction of the labour, the necessity for interference occurs,

although the ear of the infant be within reach of the finger, that is, so near the external orifice that an ordinary sized finger could touch it, *it very seldom happens that this can be accomplished* WITHOUT GIVING PAIN. If Dr. Collins's rule, therefore, were adopted, the forceps could not be employed once in *twenty* cases, when the author, from experience, knows it is both safe and useful."*

What greater perversion of meaning could be conceived than is here stated, "without giving pain"! It was truly disagreeable to me to notice this in any way; and having made the facts known, I shall do no more.

It is not my intention to enter into any detail as to the application of the forceps in laborious labours; this I have done at length in my Practical Treatise.

I consider the forceps when used with prudence, a most valuable instrument; but its utility is greatly lessened by the injury so frequently inflicted on the patient, by having recourse to it where *no* instrument is *necessary;* but *much more so* by using it where in my mind it is not only inapplicable but highly dangerous to the patient's safety. A prudent use of instruments in the practice of midwifery is of great importance; but the necessity alone of freeing the sufferer from impending or present danger should induce us to resort to them.

Dr. Hamilton, in his observations on the forceps page 112, notices five cases where we endeavoured, but without effect, to deliver the patient with this instrument, of which he offers a rather gratuitous and lengthened explanation.

In *three* of the five the uterus had ruptured; in one of which the head receded on attempting to introduce the instrument; in the other two, no force consistent with safety could effect the delivery; and even after the head was lessened, considerable exertion was required. The *two* remaining cases

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* Dr. Hamilton seems to forget here that he only used the forceps thirty-three times in *forty-eight years*. We used it twenty-four times in *seven years*.

were *before* alluded to, and given above, see page 47, Nos. 150, 425: in one the pelvis was defective; and in both no force, consistent with safety, was of the least use.

Dr. Hamilton, in accounting for my want of success, states, "the instrument employed had certainly not been calculated to lessen the head of the infant to the degree which it can bear with impunity, viz. to three inches between the parietal protuberances."

I have stated elsewhere,* that in most laborious labours the pelvis measures little more than three inches from pubes to sacrum; in others less than this: and when we consider that the blades of the smallest sized forceps used in Britain, even when *completely closed,* measure from $3\frac{1}{8}$ inches to $3\frac{1}{2}$, it is clear that were the bones of the pelvis denuded of their *soft parts,*†, there would not be space to admit their application. Professor Hamilton, in commenting on this measurement of the forceps, states, "when the branches of his are joined, the greatest distance *between* the *blades* is $2\frac{5}{8}$ inches." This is certainly a deviation from the ordinary mode of taking the size of the instrument, as if the *blades* consisted of air instead of steel. We must also recollect that the child's head measures $13\frac{1}{2}$, $14\frac{1}{2}$, or 15 inches in circumference; and were we even to overlook altogether the safety of the mother, if compression be made to a great extent, there can be scarcely a hope of life.

This is a very different opinion from that of Professor Hamilton, where he states, page 115, "*any unusual size* of *the infant,* independent of monstrosity or disease, can be overcome by the compression of well adapted forceps." When we reflect that the usual weight of the infant at birth is 7lbs. or $7\frac{1}{2}$lbs., we can clearly see that such a child may be delivered with the

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* See page 12, Practical Treatise.

† Dr. Hamilton states, page 49, that he has discovered *swelling* of *the parts lining the pelvis* to be one of the chief obstacles to the progress of the infant under ordinary management.

utmost facility, when one of 10lbs., 12lbs., or 14lbs. as we have frequently witnessed, could not possibly be got away by any exertion, particularly if the pelvis be in the least under size: neither is it uncommon to meet with ossification of the head to such an extent as scarcely to admit of any compression, especially in *male* children, of which the *great* proportion consists in laborious labours, owing to the increased size of the head of the male, causing disproportion between it and the mother's pelvis.

The *frequency* with which instruments are used varies much in the practice of different individuals. By continental physicians and also by some in Britain, artificial delivery is often resorted to. The *crotchet* is used by many as *frequently* as in our hospital and by others much *oftener*, notwithstanding the *forceps* being in *constant* requisition.* This is a *fact* worthy of attentive consideration, and if examined into conjointly with my statements of the results of the practice of the Dublin Lying-in Hospital both with regard to mother and child, it will I think be apparent, that it is neither *necessity* nor the *safety* of the patient which demands this interference, and consequently neither an appropriate nor useful practice. In my Treatise on Midwifery I used my utmost endeavour to state as clearly and concisely as possible, the result of every occurrence which took place in our hospital during my residence, so as to enable all practical physicians to draw conclusions far more satisfactory than any I could place before them. How to communicate the *numerous* facts so as to insure this important object, cost me much consideration; and I am more than gratified to find that the minute details given, together with the full record of cases on the various subjects, have proved in some measure as satis-

* See page 28 of Practical Treatise, as to *proportion* in which instruments are used in many of the principal institutions. In the Report of the Wellesley Dispensary, for forceps used thirty-one times, read three. This error was in the Report from which I copied.

factory as it was my wish they should to a very widely extended circle of professional brethren both in Britain and on the Continent, whose opinions I value highly. Conclusions thus arrived at by the individuals themselves, either of the utility or otherwise of the practice adopted, must prove beneficial.

I have made the latter remarks in consequence of the too narrow and contracted view Professor Hamilton has taken of a work into which so much had to be compressed. It is surely not to comment on a *few* cases from a report of *sixteen thousand, six hundred* and *fifty-four*, that such a work should be looked into; it never should have been published if the author had not widely different and more extended ideas of its utility. Is it not to the *general results* collected in this valuable field for observation our best attention should be directed? To this however, Professor Hamilton has not looked, as, if considered important by him he would have stated these results, which *in no one instance* has he done, although given by me on *all* the various subjects with strict accuracy, and sufficient brevity: this is an apparent and vital omission in his otherwise full and numerous extracts.

I have not entered into any detail of the measures recommended by Professor Hamilton to effect the dilatation of the os uteri within a limited period, as disbelieving in the utility of the measures it is unnecessary. For information on these points the work itself must be consulted.

In some instances, especially with first children, the mouth of the womb continues rigid and hot, with little tendency to yield under uterine action, accompanied not unfrequently by considerable irritation. In such, bleeding to the extent of ten or twelve ounces, and keeping the patient under the influence of slightly nauseating doses of tartar emetic, (to which a small quantity of opium should be added,) will be found to promote relaxation, and thus be productive of the best effects. In others, where a fold of the os uteri continues to be forced down before the head anteriorly between it and the pubes although else-

where obliterated, the descent of the head will be much facilitated by applying two fingers, so as to keep it stationary during the pain, and thus permitting the head to clear this obstruction; neither of these cases are often met with, nor have they any tendency to illustrate the opinions noticed. I make the observation here having had practical experience of the advantage of the treatment.*

On that part of Professor Hamilton's work, subsequent to the consideration of laborious labours, it is not my intention to make many remarks at present. To several observations however some explanation is required.

First, with respect to presentations of the feet, I have pointed out with much earnestness to the junior practitioner the importance of avoiding all interference until the hips of the child shall have been expelled, permitting thus much of the delivery to take place slowly and gradually in order to promote as full dilatation of the soft parts of the mother as practicable, so as to facilitate the delivery of the shoulders and head, which in every case is the most critical part of the labour; if this be not attended to, delay will be the result, and pressure on the funis prove destructive to the child.

Dr. Hamilton states, " it *sometimes* happens, that while the patient is out of bed, the membranes suddenly give way, the liquor amnii is discharged, and the feet of the infant are protruded. These circumstances are apt to excite such alarm, as to suspend the uterine contractions; and if the practice recommended by Dr. Collins be adopted, the infant would probably be lost. Instead of not interfering the infant's limbs (feet?) should be wrapped in a soft warm cloth, and gently drawn forward shifting hold according to their advance," and thus completing the delivery. He adds, " even in a first labour, it should not require much more than *five minutes,* for experience proves that the passages yield readily to pressure from within."

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* See a very useful Paper on the benefit derived from tartar emetic, in several varieties of labour, by Dr. Evory Kennedy. Philadelphia Med. Jour., Feb., 1836.

I have merely to observe upon this ingenious and truly hypothetical case, that my suggestions had reference only to ordinary occurrences; yet, even in the instance sketched, except where some unusual delay took place, I have no hesitation in stating the treatment pointed out much more likely to destroy the child, than that objected to by Dr. Hamilton.

Second, with respect to presentations of the breech, I have stated where the uterine efforts are from any cause inadequate to its expulsion, or some occurrence takes place rendering speedy delivery necessary, the attendant by passing one or two fingers into the groin and assisting during each pain, will almost invariably be able to get it down, if great deformity do not exist. We would strongly deprecate the use of the blunt hook or forceps, as advised by some authors, as such practice is very likely to be followed by fracture of the thigh-bone, or at least considerable injury of the soft parts. The force we employ even with the fingers must be exerted with caution. In cases of extreme deformity desperate measures are necessary, and instrumental delivery unavoidable; yet we never met more than *one* instance, out of between 24,000 and 25,000 deliveries, where any instrument was required under such circumstances.

The case alluded to was that of a patient who had been forty-two hours in labour before admission, the child *dead.* All efforts with the fingers in the groin were fruitless; the blunt hook was then passed over the thigh, and by great exertion the breech got down. The child was very large and putrid; the body distended with air. This was the only breech presentation we ever met with requiring the aid of instruments for its delivery. The large size of the child, but chiefly its great *distention,* sufficiently explain the difficulty. Some of the most tedious labours arise from the latter cause. The use of the stethoscope under these circumstances is invaluable.

Dr. Hamilton in reference to the observations and case given states, " in the practice of the author, for the last forty

years,* he has had no occasion to use any mechanical means in such cases." He adds, "every practitioner in extensive practice must acknowledge that cases now and then do occur where neither the fingers nor a ligature can be of any avail in advancing the infant; and even Dr. Collins, although he strongly deprecates the use of the blunt hook and forceps, records, that in *one* case he was obliged to have recourse to the blunt hook. Admitting then the necessity for applying mechanical assistance in some cases of breech presentation, the question to be decided is, whether the blunt hook or the forceps be the appropriate instrument; and the selection in the author's opinion is abundantly obvious." "Dr. Collins has, to the author's surprise, included in his anathema, an interdict of the use of the forceps as well as of the blunt hook: he says that such practice is very likely to be followed by fracture of the thigh-bone, or at least considerable injury of the soft parts. That the blunt hook may have such effects is willingly conceded, but that the application of the forceps could either fracture the thigh-bone of the infant, or injure the parts of the mother, is quite inconsistent with the experience of the author."

In reply to the lengthened observations of Dr. Hamilton, (a considerable part of which I have omitted,) I would remark, that by my statement it is obvious it is not from experience of the use of the forceps in breech presentations my opinion is founded; and it must be equally evident to all who read my comment on the blunt hook and forceps, that the danger of fracturing the thigh-bone is applied to the former, and the injury of the soft parts to the latter. I am satisfied no possible effort with the forceps could have effected the delivery in the case here detailed; and that the soft parts of the mother, if the attempt had been made, must indeed have suffered grievously, and that to deliver a *putrid* child. As this difficulty is not likely to be *often* met with, enough has been said.

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* Dr. Hamilton should have recorded the number of his *cases* in place of *years*.

Thirdly. With respect to presentations of the shoulder or arm, which is a subject of great importance to the practitioner in midwifery, my experience warrants me in recommending in *certain cases* of *much difficulty,* an opposite line of practice to Dr. Hamilton, but at the same time singularly successful, and as it is *alone* practised in cases where the child is dead, in no way hurtful.

I have stated, amongst many other suggestions on these trying occasions, that in my opinion, there are but *two* modes of delivery to be considered: the one, turning; the other, perforating the thorax and bringing down the breech with the crotchet.* The propriety of *turning* the child when it presents with the shoulder or arm, in *all cases* where it can be effected with tolerable safety to the mother, *cannot* be *questioned.* After describing as accurately as in my power, the cases where *turning* is to be resorted to, at the same time the means to be employed to enable us do so; and likewise the operation itself, I then describe a very different case, one where the greatest danger must be encountered in any attempt to turn, so much so that in my opinion no prudent practitioner would do so: yet such attempts we have witnessed, but with very fatal results.

The cases we more particularly allude to, are, where the waters have been long discharged, the uterine action powerful, and the child's body forced low, and firmly impacted in the pelvis for several hours; in such, turning would be hazardous in the extreme; besides, under these circumstances, the child's life is destroyed by pressure—a fact which we have clearly ascertained by the stethoscope, by which we are enabled to detect the death of the fœtus at a period when otherwise we might be induced to expose our patient to the utmost danger in

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* No instance of spontaneous evolution occurred in the Hospital during my assistant or mastership; nor did one take place during the residence of Doctor Clarke—*one* excepted, which the Doctor states was very doubtful, as it merely depended on the report of a midwife. In these different periods there were *thirty-four thousand five hundred and seventy-six* women delivered.

the attempt to turn, where we have a comparatively safe means of delivery.

The singularly rare occurrence of a living child being born where spontaneous evolution takes place, even in the most expeditious manner, affords additional testimony to the fatality to the child in such cases.

Doctor Clarke in his Report of the Dublin Lying-in Hospital states, "he has heard of several patients who lost their lives by practitioners of good repute insisting on turning the fœtus, although evidently putrid. Would not," he adds, "a better chance be afforded to patients so situated, by perforating the thorax or abdomen, so as to lessen their bulk and by the aid of the crotchet or blunt hook bringing down the breech?"*

This, from ample experience is the practice we should unhesitatingly recommend; and that in all cases where its death can be satisfactorily ascertained. We have performed this operation repeatedly without the slightest injury to the patient, except in *one* instance where the pelvis measured but *two* and a *half inches* from pubes to sacrum; nor do we think, where common caution is used, that there is comparatively speaking any risk to the patient. Delivery in this way is very troublesome, in most instances requiring an hour and a half or two hours for its completion. A free opening must be made with the ordinary perforator into the thorax, so as to permit us completely to empty it of its contents; we next open through the diaphragm and remove the abdominal viscera, in order as much as in our power to diminish the bulk of the body; for this purpose the crotchet and finger are to be used; we then fasten the crotchet on the pelvis of the child, and giving gentle assistance with each pain, where the woman is well formed, the breech by a little perseverance will be got down and the delivery accomplished. Where we find much resistance and there is no very urgent

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* See Transactions, Association of College of Physicians, Dublin, vol. i.

symptom, rendering speedy delivery necessary, by withholding further interference for some hours, the body becomes softened and collapsed and is then more easily removed; in some instances the child is expelled doubled by the action of the womb.

Dr. Hamilton, in his observations upon this order of preternatural labours, states they are "most dangerous and embarrassing." "With respect to a practice, lately adopted in London and Dublin, in the cases under consideration, he feels it to be his imperative duty to express his disapprobation. The practice to which he alludes, is eviscerating the fœtus, that is, extracting the contents of the thorax and abdomen."

It would almost appear from this "imperative" statement of Dr. Hamilton, that evisceration of the fœtus was the treatment usually adopted by us in presentation of the shoulder or arm. Of *forty* presentations met with in the Hospital, during my mastership, *thirty-three* of the children were *turned;* of which *twenty* were *born alive.* In *six*, delivery was effected by breaking down the thorax. In *one*, the arm descended with the breech; the birth was premature, six-month, and the child putrid. We think this short record should have formed part of Dr. Hamilton's duty, when he discharged the other so fully. He states "that in the course of his practice (now extending to near half a century) he has met with no case where he could not accomplish the operation of turning." This statement we fully believe; nor is it in the least likely that any experienced practitioner could meet with a case where by great exertion he would not succeed. The result however to the mother in cases of such difficulty is not unfrequently fatal.

To save her from this, the operation described is pre-eminently entitled from the success which I have witnessed by its adoption both in and out of Hospital, to my warmest recommendation. We have the mother only to consider, as, when the child is dead the mode of operating is of little consequence.

Fourthly, with respect to the treatment of convulsions in the latter months of pregnancy, or in the progress of labour, it appears to me necessary to make some remarks.

Doctor Hamilton observes, in bleeding the patient "he never directs less than about *fifty* ounces by weight to be drawn at first, and if there be not a decided improvement within the hour, he advises the *same quantity* to be again subtracted. He is quite convinced that no other than slight degrees of the disease can be expected to yield to bleeding carried to the extent of *twenty* or *thirty* ounces, a practice which he sees recommended by some respectable practitioners of the present day." (Page 310.) Again, (page 329,) "after having subtracted a sufficient quantity of blood, delivery ought to be completed as *fast* as *possible*."

I have stated in my Practical Treatise, page 211, that where convulsions occur at an early stage of the labour, or perhaps before there is a symptom of labour, the case is rendered very embarrassing; particularly when the fits are violent and frequent and the patient remains insensible during the interval; as when the practitioner wishes to effect delivery he finds it difficult or impossible to do so with safety to his patient. In such cases I have almost invariably adopted a plan of treatment, with the most marked benefit, of which, as it is not recommended by any writer on the subject that I am aware of, nor indeed did I ever know of it being pursued by any individual in practice previous to my using it in the Hospital, I shall give a short statement. In every severe instance of convulsions, after having carried into effect the ordinary mode of treatment, as *bleeding freely, acting briskly* on the bowels with calomel and jalap, and at the same time adopting the means usually had recourse to for protecting the patient from injury during the paroxysm, I endeavoured to bring her under the influence of tartar emetic, so as to nauseate effectually without vomiting. With this view a table-spoonful of the following mixture was given every half hour.

℞ Aquæ Pulegii ℥vi ii
Tartari Emetici gr. viii.
Tincturæ Opii gutts. xxx.
Syrupi Simpl. ʒii. M.

In some cases the quantity of tartar emetic used was only four grains to an eight ounce mixture, and in others the quantity of opium was somewhat increased. Pounded ice or cold water applied to the head, I consider useful; however, when the convulsions continue violent, and the patient's strength permits, a repetition of the bleeding *must* be had recourse to.

To avoid this *injurious necessity*, which is of much importance to the patient's *recovery* and *future health*, and to produce *relaxation*, so as to facilitate the dilatation of the mouth of the womb and soft parts, and at the same time lessen the frequency and violence of the fits, I consider the tartar emetic of eminent service.

I can from experience confidently recommend its use to the profession, in *all cases* where the practitioner either finds delay necessary previous to effecting delivery, or where he is disposed to trust to the efforts of nature. In the treatment of a patient labouring under convulsions, the main object being to gain time, and meanwhile guard the female against a frequent return of the fits, or what is even of more importance their violence. I would strongly caution junior practitioners to avoid hasty measures for the delivery of the child, which perhaps alarm for the mother's safety might induce them to have recourse to. When the case is such as to admit with propriety the application of the forceps, *no delay* should be made, but in the great majority this instrument is inapplicable.* Where the forceps can be applied, there are few situations in which this instrument can be used with such decided advantage, yet the favourable result under such circumstances is by no means

* Of *one hundred and eleven* cases recorded by Drs. Joseph Clarke, Merriman, Ramsbotham, and myself, the forceps was only used in *eighteen*.

entirely owing to its use, for the labour being *so far advanced* as to admit of this mode of delivery, very greatly lessens the danger. Of *thirty* cases occurring in the Hospital during my residence, *fifteen* were delivered by the natural efforts, and all recovered; as did also *six* delivered with the forceps. Of *eight* delivered with the crotchet, five died. *Three* of the five were complicated with laceration of the vagina; *one* with twins; and *one* with peritoneal inflammation.

It requires considerable practical experience on the part of the physician, to select the proper time to interfere, where there are so many circumstances to be taken into consideration. Next to the mother's life, there is the life of the child to be attended to; and here the stethoscope is of incalculable benefit, enabling us to detect the continuance of its life, or *its death* at an early period after the latter event has taken place; yet even the most satisfactory evidence of the child's death will not warrant the practitioner's *hurrying* delivery, there being other points of paramount importance to be attended to, viz. the state of the os uteri and soft parts; as the convulsions could hardly fail in every instance to be greatly aggravated by forcing the child through these parts when undilated and unyielding. The after consequences of a delivery thus effected would prove far more dangerous to the patient than a repetition of the fits, so long as she had strength to bear them, even with tolerable safety. It is of vast importance to effect the delivery of a patient when suffering under severe convulsions as speedily as possible; but to combine safety with this truly desirable object there is need of much patience and caution.

Such is the treatment our observation warrants us in recommending, as most successful in puerperal convulsions; for although *copious* bleeding is indispensable, yet I am fully satisfied that after the *first* removal of blood the tartar emetic has the happiest effect, and will in most cases prevent the necessity of *extreme* bleeding, which is too often ruinous to the patient's constitution. We have ourselves removed forty or fifty ounces

of blood at *once;* but the removal of *one hundred* ounces from most women in the course of an *hour* is unquestionably much calculated to seriously injure the future health; and it is in order to substitute a harmless for so *severe* a *measure* I have said so much. My opinion as to the speedy delivery of the patient is expressed above, which a perusal of the cases recorded by me fully supports. I need only add, that so long as the child continues to *live*, and where the delivery can alone be effected by opening the head, nothing but *dire necessity* should make us resort to this measure; besides observation has satisfied me, that except under most urgent circumstances, the female's safety is much more endangered than secured by delivery where the mouth of the womb is not so much relaxed and dilated as to admit of its accomplishment without much exertion. Dr. Hamilton urges "the importance and utility of extracting the infant by the *speediest possible* method, for he can solemnly assert, that since the year 1791, he has witnessed only *two* fatal cases of convulsions during labour."—(Page 330.) (Since 1800, page 310, *three?*)

We report *five* occurring in 16,414 deliveries; it would have gratified us much if Dr. Hamilton had stated his in the same way.

Doctor Hamilton, in urging the *speediest possible* method of delivery, states, "if any additional argument in favour of this doctrine were required, the author might appeal to the fact admitted or recorded by the most respectable authors, that the infant expelled *naturally*, where the mother has been convulsed, has *usually* been *still-born.*"—(Page 332.)

This is not the result of our experience. In the thirty cases of convulsions reported, *fourteen* of the thirty-two children (two of the women having had twins) were born *alive; nine* of which were expelled *naturally.* This proves the necessity of due caution, and also the great practical utility of the stethoscope.

I have now concluded the observations which the state-

ments contained in Professor Hamilton's work required on my part; and I should hope, it will appear to all those who examine the subject with attention, that my reasons for dissenting from his views are not trifling, but based on the results of experience alone. Although we differ in opinion on many points of practice, I feel we are alike at liberty to do so, and fully justified in making known what we conscientiously believe most useful; and I am equally satisfied, the object of both is the alleviation and welfare of our fellow-creatures. It is chiefly by those, who have extensive opportunities of accumulating *facts* publishing the results, that this all-important object can be promoted, or our profession benefited. To Professor Hamilton, I, as an individual, (and I have no doubt the profession at large,) feel greatly indebted for devoting so much of his valuable time in order to publish the results of his observations for so vast a series of years, acquired from an extent of practice which falls to the lot of few.

I cannot help stating the additional pleasure and real satisfaction I should have experienced, if Professor Hamilton had embodied with his highly interesting work, a brief report of the Edinburgh Lying-in Hospital, of which it is so well known he has had the medical charge for nearly half a century. This indeed would be of great value, as a report of the cases taken during the progress of the patient's illness, *marking* the *cause* of interference, in those cases where a deviation from the *ordinary* treatment was had recourse to, would be highly instructive; at the same time making us acquainted with the *result* in *all* cases to both *mother* and *child*. Without the *latter* no correct opinion can be formed of the eligibility of any line of practice recommended. I anxiously hope for this information with respect to the Edinburgh Hospital, even for half the period mentioned, so as to enable us, as stated by Dr. Hamilton, "to contrast the result of his practice with the recorded evidence of the protraction of labour in London, Paris, and Dublin." We believe as implicitly the general assertions made by Dr. Hamil-

ton as we would our own ; but knowing how *different* the adding together a registry of *facts* proves the result to be, from the *previous* impression on the mind, our faith is more than wavering, and particularly when the evidence is opposed in principle to the opinions of many physicians, based upon the most accurate records in England, France, and Ireland.

I should hope the general statement given in the present hurried communication, (with regard to the practice pursued in our Hospital during my residence in the several important occurrences wherein we differ from Professor Hamilton,) shews to actual demonstration, that so far as the *safety* of the patient is considered, *no* deviation is necessary. If we consider the class of patients admitted into the institution, where *extreme poverty* is the *only* passport demanded, and the very great number received as already noticed, after having been *one*, *two*, *three* or *more* days in labour, most of whom are grossly mismanaged ; besides, the numerous cases sent in actually almost dead, as the reported cases witness, the success of the treatment pursued will be still *more* apparent.

It is obvious the regulations stated are calculated to create a *large* increase in the mortality of our Hospital, when compared with most similar charities, where females in *extreme distress* are nearly excluded, by the admission of tradesmen's wives, and such as are married only ; besides in some, the reception of the patient *days*, or even *weeks* before delivery ; whereas with us, she is alone taken in when the hour of *trial* is at hand.

The circumstances just noticed with regard to the *mother*, must in an equal degree add to the number of *children* still-born ; yet that the *proportion* of children still-born in consequence of the labour being *protracted* or *severe* is comparatively *very small*, is proved by the *fact*, that of 1045 cases accurately noted in the Hospital, *eight hundred and forty-four* were delivered within *twelve hours*, and *nine hundred and thirty-two* within twenty-four hours. Neither is the death of the child

subsequent to birth except in *very few* instances, comparatively speaking, a consequence of injury arising from *protracted* labour, as the result of our Hospital demonstrates; thus of the *total* number dying (284) previous to the mother leaving the institution, the labour in *two hundred and forty-six* did not exceed *twelve hours.*

These *truths* are all clearly shewn in the tables published by me, and markedly exhibit the great utility of registering *simple facts,* which, if accumulated sufficiently overpower all theory or argument opposed, and can alone form the basis of sound reasoning. I trust, in medical science the period is not remote, when statements made unsupported by *proof,* will be looked upon as more calculated to mislead than direct; which, indeed, would be a glorious era in the history of medicine, as a *speculative theory* has ever been the hot-bed of uncertainty in the physician's cure.

ART. VI.—*On the organized Bodies found in the seminal Fluid of Animals, and their Analogy to the Pollen of Plants.* By G. R. TREVIRANUS.

THE following interesting paper is taken from the fifth volume of Tiedemann and Treviranus's Physiological Journal. Like every thing coming from its illustrious author, it bears abundant marks of accurate observation and deep reflection; and we have very little doubt that Treviranus will ultimately succeed in establishing the very curious and remarkable analogy which he has been the first to observe and investigate.

"Although the beings termed seminal animalcules, have been frequently made the subject of observation for the last hundred and fifty years, the question as to their peculiar nature has never yet been satisfactorily answered. Since the abandonment of the opinions of Leeuwenhoek, who maintained that they were the germs of the embryos, they have been generally looked upon

as belonging to that class of animals which are generated in all infusions of organized substances. To the latter, it is true, they bear an external resemblance. But even in the case of infusory animalcules, our knowledge of all the individuals of this denomination is not sufficiently accurate to authorize us to place the whole in one and the same class. Ehrenberg discovered in many of these animals a more complicated internal structure than had been previously assigned to them : in many, for instance, he found a real mouth and intestinal canal. But many of them appeared, even under the best magnifying glasses, not more perfect in their interior than various hydatids and other secondary products of the formative organic powers. Among the latter products, the most noted are generally observed as excrescences from solid parts, and without any manifestations of motion. This, however, is not always the case. In man and other animals, hydatids are occasionally generated, which contain only a watery fluid enclosed in a vesicular membrane, and which have no connexion either with each other, or with the walls of the cavity in which they lie. Similar formations may be also very naturally produced in fluids situated in the interior or on the surface of organized bodies, may grow by the absorption of certain constituents of these fluids, and in consequence of the attraction they have towards some, and the repulsion towards other particles of matter, may be capable of exhibiting motions. Beings of this description cannot be ranged in the same division with the true infusory animalcules. Those which are met with in animal or vegetable secretions may form important constituents of the same, and contain a substance which may have a principal share in the functions of these fluids. Among beings of this kind we may, perhaps, place the seminal animalcula.

"These inmates of the fructifying animal secretion have been, for a considerable time, the subject of my observations. I have already made known in some of my earlier publications, two of the results obtained by my investigations ; the accuracy of