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DR. RADFORD

ON THE VALUE OF

EMBRYONIC AND FŒTAL LIFE,

LEGALLY, MORALLY, AND SOCIALLY CONSIDERED.

THE VALUE OF EMBRYONIC AND FŒTAL LIFE, LEGALLY,
SOCIALLY, AND OBSTETRICALLY CONSIDERED. BY THOMAS
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CHESTER AND SALFORD LYING-IN HOSPITAL.

Moses tells us that man was commanded by his Almighty Creator to "Be fruitful, and multiply, and replenish the earth." We learn also from the same inspired writer, that God "Created man in his own image;" at first, then, man was made perfect, for it could not be otherwise if made after the similitude of God. And we cannot therefore help entertaining the most exalted sentiments of the high prerogatives of our first nature. Although we have a right to conclude that man was originally endowed with the highest moral, intellectual, and physical qualities; we know that he does not at once arrive at this perfectability, but passes through a series of phases, both moral and physical; at present, however, my intention is to advert, in a general way only, to the latter. After conception, the primeval state of this great model of creative power is in the form of a germ, or mere speck; he shortly assumes the form called embryo; organic developement progressively advancing, the name of fœtus is applied and retained so long as he sojourns in the uterus, and becomes fit to bear a new mode of existence. After birth the periods of childhood and youth gradually and progressively move on, until he arrives at manhood, the highest point in the scale of vitality, which is enjoyed for a series of years. Afterwards a gradual change takes place, old age succeeds, his vital powers sink,—he dies. Through the whole period of this changing and successive life is to be observed, the great care bestowed by the author of our nature on the human race, and in none of these do we see his wisdom more displayed, or his goodness more exercised in affording protection and provision, than during the period of intra uterine existence.

The adaptation of means to ends is no where more exemplified in man than that which relates to the *fœtus in utero*. The contemplation of these wonderful means provided by the Almighty Architect of the universe, for the safety and progressive developement of the fœtus, ought to inspire with admiration and thankfulness, and teach obedience to his will.

Do these bountiful and merciful designs lead us to estimate aright the great value of the product of human conception? In the following remarks I shall endeavour to ascertain first, whether, the life of the embryo and fœtus is rightly considered by our legislative code? secondly, whether rightly considered in society? and, lastly, if the obstetric principles of our profession are framed to afford the best possible mode of preserving it.

1st.—Does the embryo or fœtus in utero, receive full justice when the legislature is called upon for its protection.

The constitution and laws of England are the glory and boast of the nation ; but although comparatively viewed, the English laws stand unrivalled ; and are considered as perfect, and contributing to the advantages and security of society ; yet each annual revolution does, or ought, to convince us of the fallacy of our preconceived opinions. The relative changes in society require an alteration in some of our laws. The legislative enactments of our forefathers are not so unerringly framed as to be able to stand unaltered. There are some points in our legal code which must be changed ; there are stains on the statute book which must be washed out, as repugnant to reason, to common sense, and at variance with the truths of physiology.

Have we not lately witnessed an example which proves the truth of the foregoing remarks. In the middle of the nineteenth century, a case exists, (hereafter specially mentioned) in which judgement is bound down by the shackles of gross ignorance, and the misguidance of superstition. Such legislation might have been tolerated during the dark ages, when the sunbeams of revelation had not as yet dawned ; and ignorance of the great truths of physiology prevailed. But now there is no excuse for the legislation to maintain such a law, which fetters the judgment of the administrator of it, and tends to injure the feelings of society.

Every portion of our penal code, but more so that which involves a consideration of the sacrifice of life, especially in cases in which two lives are concerned, one of which is innocent, should stand pure, impartial, and based on the great fundamental principles of justice. When a woman is capitally convicted of a crime, the penalty of which, is "*blood for blood,*" she is allowed to put in her plea of pregnancy, as a bar to execution. The spirit of the law which gives her the privilege of procrastinating her execution, when she asserts pregnancy, is full of humanity ; but, unfortunately, the mode of proving the truth of her plea, is neither rational or just.—*Vide Blackstone.*

The recent trial of Mary Ann Hunt, for murder, at the central criminal court, before Mr. Baron Platt, points out the ignorance and injustice on this vital question, which now exists on the statute book. The wretched woman, epileptic, and almost in a fainting state, was placed at the bar to receive sentence. In reply to the judge, she said, "I believe I am in a family way." The judge then remarked, "*Let a jury of matrons be empannelled, to try whether the prisoner be quick with child or not.*"

To play this farce, twelve matrons were selected, and introduced to the learned judge, and in order to give the affair seemingly a more tragical character, they were solemnly told that their duty was "*to ascertain whether the prisoner standing at the bar, was big with a quick child or not.*"

To give this matron conclave more importance, they were duly sworn, the privilege was also given to them, by the learned judge, of having the assistance of a surgeon, if they thought such aid necessary ; they did not, however, *avail themselves of it* ; having, no doubt, the fullest confidence in their own minds that *such a step was quite useless*, and that they were adequate to solve the question. Their verdict was, that *she was not*. In order that no mistake might occur, the following remark was made by the judge, "*You say that she is not quick with child—that she has not a living*

child within her? Their answer was that, "we are all of that opinion. The judge then says, "Let the prisoner be removed—the law must take its course." THE LAW MUST TAKE ITS COURSE! AWFUL DECISION! to hazard the life of an innocent, helpless human being, on the testimony of twelve ignorant women! To ascertain the existence of pregnancy, the greatest address and practical skill is required. Every well informed obstetrician knows the great difficulty experienced in these enquiries. Errors in diagnosis are frequently made by men of experience. During my practice I have known the gravid uterus frequently mistaken for an enlarged ovary, and *vice versa*. I had lately an opportunity of ascertaining a far advanced pregnancy, which had been considered malignant uterine disease. I have also often met with cases of pregnancy which had been considered as otherwise, and other cases treated as such which were not so. In many instances I have found women "quick with child," who had been previously considered as not pregnant. Then let me seriously inquire, whether, a question so obscure, so hazardous, so difficult, yet so important to decide aright, should be settled by a jury of matrons; and whether the law should remain unchanged, and fraught with so much danger to the innocent unoffending being incarcerated by the law of nature in its guilty mother's womb.

The decision of such a question as the existence or non-existence of pregnancy, or if pregnant whether quick with child, by a jury of matrons, is too absurd to require any serious argument. The law of the land is at variance with what we conceive to be the law of nature, and with itself; for it is a strange anomaly, that by the law of real property, an infant, *en ventre sa mere*, may take an estate from the moment of its conception, and yet be hanged four months afterwards for the crime of its mother." *Fonblanque, vol. 3, p. 141*. Our legislators ought not only to expunge from the statute book that portion of the law which directs a jury of matrons to be empannelled, but also that which recognizes a distinction between a woman being pregnant but "not quick with child;" thereby not considering the fœtus as a vital human being before quickening has taken place; or in other words, that this event is the first evidence of life.

This opinion is ignorantly entertained by gravid women themselves; and is also too popular, and leads to moral evils which are to be afterwards mentioned.

Hippocrates considered that the fœtus was inanimate for some time after conception; but that this period was shorter when the product was male. Galen imagined that fœtal organization happened on the fortieth day, and that it then became endowed with life. We are informed that the stoics concluded that the fœtus was non-vital during the entire period of gravidity, believing that the union of body and soul did not exist until after the child had breathed. A number of other strange notions have been held by different writers.

The Romish church considers that the fœtus is not animate before a certain period. Although she denounces criminal abortion induced, yet she makes a distinction in the heinousness of the crime, as its embryo or fœtus is animate or inanimate.—*Vide Embryologia Sacra, &c. T. E. Cangel-mila, p. 4-5, No. 6.*

The extravagantly unfounded opinions of the ancients do not exceed in folly those which are entertained, or at least acted on, by our legislators; although much more pardonable, as they had not the same physiological discoveries to guide them. There is no absurdity in their writings which exceeds that which is written upon this vital question in our code of laws.

The legal distinction made between a woman, pregnant, or pregnant with a quick child, has arisen from fancy usurping the place of reason, and idle speculation superseding the necessity of calm and rational investigation.

Every obstetrician knows, *whether the legal advisers of the crown do or not*, that the ovum is immediately after its formation endowed with the vital principle, which in fact is the same in essence as that which exists at a later period of development.

The vital powers at every stage of increase are proportionate to the necessity of the embryo's then state of existence; and although not so actively observed by us during the earlier, as during the latter months of pregnancy, yet they are equally stamped with the divine impress of the Almighty Creator's hand, and designed by Him to be complete and adequate to all required ends. Religion, morality, and science, call loudly upon the legislature, to afford protection and safety to the embryo, however short its existence, and not suffer it to fall into the grasp of the hangman; and to extend its mercy and listen to the plea of the convicted woman, although her statement may be fairly presumed to be false, until time shall have lapsed to bring conviction to the mind, that no grounds for such plea do really exist. The suggestion of an extension of accepting the plea of pregnancy under such circumstances, is obstetrically borne out, by the well known difficulty to truly ascertain whether a woman be pregnant or not during the first two or three months. Whilst justice loses nothing but time in protracting the expiation for crime, by thus allowing a few weeks of miserable existence to the wretched woman, the objects of humanity are served, and the law stands unimpeachable.

The attempt to procure criminal abortion is now considered and punished as felony. It is however only within a very short time, indeed, during the reign of her present majesty, that attempts to procure criminal abortion, the woman not being or not proved *quick with child* at the time, were considered felony, and liable to transportation for fourteen years; but means resorted to with same intent, *after quickening*, "shall be punishable with death."

But it is now punished as a felony, according to a late statute, passed during the reign of her present majesty; and is liable to the punishment of transportation for life, or fifteen years, or imprisonment not exceeding three years.

By this act the absurd distinction, made in the former statute, between a woman being *quick* and *not quick* with child is abolished, and the subject made less abstruse, and more just.

What strange anomalies are found on the statute book. Before this enactment, our code of laws contained two statutes, in which the distinction was made between a pregnant woman being *quick* or *not quick* with child. One, which has been particularly mentioned before, when a woman capitally convicted is allowed to put her plea of pregnancy to bar execution; the other,

when criminal attempts are made to induce miscarriage. Under both these circumstances the embryo, and foetus in utero, are physiologically considered as placed in the same relative position, and ought to be socially and legally so; and they both demand from legislation an equal right of protection. But it is not so. The latter statute, which contains this rule, has been wisely repealed; and the guilt of the party is considered as great, whether the criminal attempt be made before or after quickening. This law does not only punish the party who criminally destroys the embryo or foetus, by inducing miscarriage; but also he who attempts to do so. Here then it is just, and steps in to prevent the destruction of the offspring which in most of such cases, has been brought into existence by the moral guilt of those who now, either directly or indirectly, adopt means to destroy it. But under the other statute the legislature suffers, nay, even commits, to the hangman a being having the same endowments, and possessed of the same civil rights. Although the law allows a child, *en ventre sa mere*, from the earliest period, certain civil rights, yet its claims to maternal protection, and preservation, are not sufficiently considered. What moral depravity equals that of a mother destroying or attempting to destroy her own offspring;—the lowest animal in the brute creation entertains better feelings; and yet the legislature has provided no statute, which is directly applicable to such a case. It is quite possible (I am struck with horror to say so) for a woman to attempt, or to commit, criminal abortion on herself; and all doubt as to the powers of the present statute, which punishes the abettors of the crime, should be entirely removed, by making such additions as will make it also penal to the woman herself.

In some cases the birth of a living child enables its father to hold property after the death of his wife, intestate; which had been possessed by her, or specially settled on her, "as tenant by courtesy:" but in others he is deprived of this privilege by a legal quibble, although the child is living when brought into the world. The child must be *born* during the *life* of its mother, and if *not born*, but *extracted alive* by the caesarian section during *her life*, or by this operation, or other means after *her death*, the husband loses his right, and the property is taken by the heir at law.

The caesarian section is recognized by the legislature as a most justifiable operation, to be performed under certain circumstances during the woman's life, for the purpose of saving both lives; and after the death of the woman to save the child. Turning and extracting it by the feet, or drawing it forth by the forceps are also approved as means to achieve the same humane end. There is not a judge on the bench, or any body of jurymen, before whom a medical man might appear, in consequence of some accidental contingent circumstances, who would not strongly censure him if he had not had recourse to one or other of these means.

Then why should the mode by which the child enters the world make a difference in the disposition of the property? Reason, common sense, and justice know none; and the sooner this anomaly is abolished the better. The antiquity of the statute ought not to invest it with the right of perpetuity. It is absurd to say that a child is *not born* when brought into the world by the means above mentioned, and, thereby, ought to lose its hereditary rights, and

also deprive its father of his privilege "as tenant by courtesy." The immortal Shakespeare took advantage of this quibble:—

"APP. Macbeth! Macbeth! Macbeth!

* * * * *

Be bloody, bold, and resolute. Laugh to scorn
The power of man, for *none of woman born*
Shall harm Macbeth."

Act 4, Sc. 1.

"MACD. * * * * * Despair thy charm;

And let the angel whom thou still has serv'd,
Tell thee, *Macduff was from his mother's womb*
Untimely ripp'd."

Act 5, Sc. 8.

P.S.—The powerful efforts first made by the medical press, *Lancet*, and *London Medical Gazette*, especially the former, afterwards followed and supported by an influential leading article in the *Times* paper, has had the effect of drawing the attention of the home secretary to the case of Mary Ann Hunt. He humanely exercised his executive power, and directed her case to be examined by three medical men, who pronounced her to be *pregnant*. The execution is therefore staid; a letter was despatched to that effect to the court of aldermen, by Sir G. Grey, dated Whitehall, Nov. 6, 1847.

It is to be sincerely hoped that this case may be the last in which a jury of matrons will be empannelled, and that Sir G. Grey, the home secretary, will make this question worthy the consideration of the legislature.

I shall now proceed to the consideration, whether the life of the embryo or fœtus is rightly considered by society.

[To be continued.]

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The unnatural crime of destroying the embryo fœtus in utero has existed for many ages. De Pauw says "the case of the Jews must therefore be so very extraordinary that it stopt for an instant the course of the law, because they were to be treated with the same severity that they themselves exercised towards the inhabitants of Canaan, where they massacred many children in the cradle, and even in the womb of their mothers." (*Philosophical Dissertations on the Egyptians and Chinese, vol. 1, p. 64.*) Strabo affirms that the Egyptians were pre-eminent in affording paternal justice to their male offspring, and Diodorus mentions that both sexes were equally regarded by them. Other writers, however, deny them this high quality; Plutarch, Diodorus Siculus, and Lucianus, are of the number. According to Dr. Brown, the Egyptian women more recently destroyed their offspring by resorting to means to induce abortion. (*Stuart, de Mensura Tome 6, p. 247.*) Infanticide was not only permitted among the Greeks, but sanctioned by the law, and defended by their ablest men. Aristotle not only commands the exposure of delicate and deformed infants, but also the induction of abortion. His words are as follow:—"Propter multitudinem liberorum autem ne plures sint, quam expediat, si gentium instituta et leges vetat procreata exponere, definitum esse oportet procreandorum liberorum numerum, quod si quibus inter se copulatis et congressis plures liberi, quam definitum sit, nascantur, priusquam sensus et vita inseratur, abortus est fœtui inferendus. Quid enim pius et religiosus sit, quid non, sensu et vita circumscriptum et definitum erit." (*Resp. Liber 8, c. 16.*) Plato, who was remarkable for his benevolence, defends the induction of abortion as a means of preventing an increase of population. (*Commin, Dictionnaire moderne, Tome 13, p. 258.*) This philosopher (*de rep. lib. 5, p. 461.*) allowed men and women, "who shall have passed the age prescribed by the laws to the engagements they ordain, to contract others; always provided that on one side no fruit of their union be suffered to appear." (*Travels of Anacharsis the younger in Greece, and the Abbe Barthelemy. Translated from the French, vol. 3, p. 342.*) Abortion was also remarkably prevalent amongst the Romans. Juvenal mentions this wicked practice in the following words:

Hæ tamen et partus subeunt discrimen et omnes
Nutrices tolerant fortuna urgente labores;
Sed jacet aurato vix ulla puerpera lecto
Tantum artes hujus, tantum medicamina possunt,
Quæ steriles facit atque homines in ventre necandos
Conducit, Gaude infelix, atque, ipse bibendum
Porrigo quicquid erit; nam si distendere vellet,
Et vexare uterum pueris salientibus, esses
Ethiopo fortasse pater: mox decolor hæres
Impleret tabulas, nunquam tibi mane videndus.—*Juven. Sat. 6, v. 592.*

Ovid speaks of this unnatural crime, too brutal to be committed even by ferocious animals, and which so often proves fatal to the mother herself.

"Vestra quid effoditis subjecta viscera telis;
Et nondum natis dira venena datis.
Dicite quis Sereus, quis vos irritet Iason
Figere sollicita corpora vestra manu?
Hoc, neque in Armeniis tigres fecere letibris:
Perdere nec fœtus ausa læna suos:

At teneræ faciunt, sed non impune, puellæ :

Sæpe suos utero quæ necat, ipsa perit.'—*Ovid Amor., lib. 2.*

The wicked attempts to induce abortion do not always succeed, and the foetus escapes injury. Ovid speaks of such an event :

“ Quas mihi non herbas, quæ non medicamine matrix

Attulit, audaci supposuitque manu ?

Ah ! nimium vivax admotis restitit infans

Artibus ; et tecto tutus ab hoste fuit.”—*Heroides, Epis. 2nd.*

Seneca speaks of the dishonor of the practice of inducing abortion as a means of preserving beauty. Cicero makes a distinction in the degree of criminality of those who procure abortion for a pecuniary gain, and those who are induced to commit it by the importunity of the father. Minutius Felix says, “ Vos video procreatos filios nunc feris et avibus exponere, nunc ad strangulatos misero mortis genere elidere. Sunt, quæ in ipsis visceribus medicaminibus epotis originem futuri hominis extinguat et parricidium faciant, antequam pariant.”—*Octav. c. 30.* The practice of procuring abortion was very prevalent amongst the Visigoths. Blaquièrè speaking of the evils of a cloistered life, says, “ many also are the infants who fall victims to the amours of the young ecclesiastics, owing to the dangers which must inevitably attend the discovery of the crime, which are only avoided by destroying the offspring of their connection.”—*Letters from the Mediterranean, vol. 1, p. 184.* He also says that “ the Bashaws' family would have been infinitely more numerous, if he had not encouraged his wives to evade their accouchements, which is not considered a criminal act amongst the Mahometans in general.”—*P. 90.* Dr. Robertson, when speaking of the distresses and hardships of savage life, says, “ afraid of undertaking a task so laborious and of such long duration, the women, in some parts of America, extinguish the first sparks of that life which they are unable to cherish, and by the use of certain herbs procure frequent abortion.”—*History of America, vol. 1, p. 297.* Ellis says, “ that it is common for the women about Hudson's Bay to procure abortion by the use of a certain herb which grows there.” A considerable number of authorities might be added to those already cited, to prove the prevalence of this crime.

Whilst we pity the moral depravity of nations degraded by idolatry and superstition, and feel horror at the enormity of some of their crimes, especially the sacrifice of human life both before and after birth, we are compelled to acknowledge that the same diabolical acts are, at the present time, perpetrated to a great extent in our own country ; and there cannot exist a doubt that the enormity of the crime is much increased by being committed amongst those who are blessed with the truths of revealed religion, and possessing all the advantages of a high state of civilization. This black offence against the laws of humanity is most commonly committed in cases of illicit pregnancy, but there is one case on record in which an attempt to procure abortion was made by the husband with the permission and assistance of his wife. The induction of abortion is not considered so highly criminal as the heinousness of the crime deserves, and this unfounded and mischievous opinion has undoubtedly arisen, partly if not entirely, from an erroneous estimate of the vital condition of the embryo. Dr. Percival, after noticing this practice amongst the Romans,

says, "For the fœtus being regarded as a portion of the womb of the mother, she was supposed to have an equal and full right over both. This false opinion may have its influence in modern, as well as in ancient times; and false it must be deemed, since no female can be privileged to injure her own bowels, much less the fœtus, which is now well known to constitute no part of them. To extinguish the first spark of life is a crime of the same nature, both against our Maker and society, as to destroy an infant, a child, or a man; these regular and successive stages of existence being the ordinances of God, subject alone to His divine will, and appointed by sovereign wisdom and goodness as the exclusive means of preserving the race and multiplying the enjoyments of mankind."—*Medical Ethics, &c.*, p. 79. Penal laws against this crime exist, but do not prevent its commission. In order to render them effectually preventive, they should be consistently framed, and based on justice.—(*Vide remarks in first part of this paper.*) The duty of the state extends beyond the mere punishment of crime when committed; its powers should be exercised to prevent the commission. This cannot be entirely accomplished by creating in the people a fear of punishment, but by adopting every plan calculated to elevate their principles to a high standard, which can only be consummated by the general formation of national schools, and the inculcation of a sound moral and religious education. It is a notorious fact that embryonic life is not properly valued by females in other classes of society. Many married women neglect to pay attention to spontaneous abortion. Some lightly and thoughtlessly treat this event, considering it a "*mishap*," although it is an unnatural and indeed an abnormal process, subject to frequent occurrence, and frequently attended with important and disastrous consequences. In the great majority of these cases, the only circumstance deemed worthy of consideration, is the extent of the injury likely to accrue to the health and constitution. If perfectly assured of a satisfactory termination, they reconcile themselves to a few days of rest, and then resume their former avocations, altogether regardless of their social, moral, and religious responsibility. They never consider that the death of the embryo, not only in one instance, but in successive pregnancies, may be caused by neglecting to adopt adequate means for its preservation; and this omission of duty is as morally criminal as an act of commission where the result is similar, particularly if the party is cognizant of it. Every married woman ought seriously to reflect, and strictly act upon the vow made at the altar, one of the great fundamental principles for which it was ordained being the "*procreation of children.*" It is, therefore, her imperative duty to protect and preserve the fruit of her womb with the same anxiety bestowed upon the infant after birth. The slight importance attached by some to abortion, I am charitably disposed to consider, mainly arises from the erroneous opinion entertained as to the precise vital condition of the embryo, and in order to produce a stricter observance of duty on this occasion, it is desirable to state the physiological fact, that from the first germ formation, a living human being, or "*potential man*," exists. The causes of spontaneous abortion are manifold, and its tendency to recurrence, or to become "*habitual*" as it is called, is great; and the subject is so complex, that no woman can properly estimate the causes of interrupted pregnancy, or what may again interrupt it and induce miscarriage. An uniform method of treatment is not applicable

to all cases ; on the contrary, it must be relative or modified according to the existing causes and circumstances ; and, therefore, the case can only be properly and safely managed by a well informed and regularly educated medical practitioner. Most of these cases of habitual abortion are remediable, if judiciously treated, as I have frequently known women, who have miscarried four, five, or six times successively (and even oftener), enabled to proceed to the full period of pregnancy, and bring forth, to their great delight, a healthy living child.

P.S.—In the last paper, page 4, I stated that the Roman Catholic Church “considered the fœtus as not animate before a certain period,” which inference was drawn from an examination of one opinion out of a great number, quoted by Cangiamila, and therefore must not be considered as the doctrine held by this Church. *Vide Embryologia Sacra, &c., by T. E. Cangiamila, pp. 15, 16, 17, &c., &c.*

Since writing the first part of my paper in the first number of the *Record*, I perceive I have erroneously stated that the husband is deprived of “tenancy by courtesy,” when the child is extracted by the Cæsarean section during the life of the mother. In the other cases the statement is correct.

I shall proceed to consider if the obstetric principles of our profession afford the best possible mode of preserving the embryo and fœtus.

(*Extracted from the British Record, Feb., 1848.—To be continued.*)

DR. RADFORD'S PAPER ON THE VALUE OF EMBRYONIC AND FŒTAL LIFE.

SPONTANEOUS ABORTION.—Abortion is a subject of the highest importance to the medical, but more especially to the obstetric practitioner; it is not, however, my intention, in the following observations, to enter into a detailed account of the accident, but only to make a few remarks on the moral responsibility connected with this subject, and to suggest a few practical hints, which may be useful in guiding the young and inexperienced practitioner in his prognosis.

Although we are fully aware that abortion occurs much more frequently than is generally supposed, yet it is quite impossible to arrive at a statistical accuracy as to the frequency of its occurrence, as it usually takes place during the early period of pregnancy, and in private practice; this accounts for hospital reports affording no correct data. Some, however, suppose that it is during the sixth month, or even later, that abortion most frequently occurs. Pregnancy may be abnormally interrupted at all stages, and the contents of the gravid uterus expelled; these events lead to an enormous sacrifice of human life, and therefore demand the most serious attention from the obstetrician. Before we can judiciously and satisfactorily treat any case, we must previously acquaint ourselves with the causes; which will require a careful and patient investigation. The causes of this accident are numerous; in one case a single cause may exist—in others, two, or even more, may be present; each being sufficient to induce abortion. I shall now briefly proceed to enumerate them in the following manner:

1st. Some are confined to the uterine contents, and may either exist in the organic system of the embryo (or fœtus), or in its appendages. These are, sanguineous effusions of blood into the structure of the placenta; inflammation, and purulent deposits in it; hypertrophy; atrophy; morbid degenerations of its organization; hepatization; hydatids; moles; different morbid changes in the umbilical cord; and inflammation of the amnion; acute and passive dropsy of the amnion; and various diseases of the embryo, or fœtus. For a more complete description of these pathological causes, &c., the reader is referred to Cruves, Veron, Ducrest, Charcelay, Malebranche, Deneux, Drs. Granville and Simpson, and to other valuable contributors to intra-uterine pathology.

The maternal causes are as follow:—1st, injuries, directly or indirectly inflicted on the womb, either by blows on the abdomen; falls; wounds; irritating injections; tight lacing; hot baths; abuse of general or local bleeding; drastic purgatives, or other drugs, such as ergot, poisons, &c.; intoxicating liquors; lifting heavy weights; straining; surgical operations; excessive costiveness.—2nd, Malpositions of the uterus, as retro-version; retro-flexion; prolapsus; and procidentia.—3rd, Pathological states of the uterus and neighbouring parts; adhesions of the uterus to other parts; tumours in the uterine tissue and cavity; and also those in the pelvis; uterine congestion; inflammation of the os and cervix uteri; varicose state of the cervical or osal vessels; hypertrophy; and different kinds of ulcerations affecting the os

and cervix.—4th, Sedentary habits.—5th, Laborious occupations.—6th, A luxurious mode of living.—7th, General and local irritability and debility; nervous constitution; leuco-phlegmatic habit.—8th, Diseases, such as fevers, exanthemata, syphilis, &c.

A strict examination of these causes will convince the practitioner that a very large proportion are remediable. Some of them only act in one pregnancy; but others, unless removed, continue to exercise their pernicious influence in successive pregnancies, and a fixed abnormal habit is thereby acquired by the uterus, of prematurely expelling its contents. Repeated abortions, in many instances, produce serious constitutional mischief; their evil effects, also, are extended to domestic happiness, and thus, socially considered, ought, if possible, to be averted. We have already remarked, that the uterus may expel its contents at any period, before the completion of pregnancy. The terms abortion (or miscarriage) and premature labour, have been differently applied by various writers to signify the event, when it has occurred before or after a certain time. In the following observations I have confined the term *abortion* to those cases which occur, at any period, during the first five months; and that of *premature labour* to those which take place from this date, during the latter months of pregnancy, but before the full period. This arrangement differs from that usually adopted by writers on this subject, as it allows a longer period of viability to the fœtus, than has been generally admitted.

In the preceding part of this paper I have endeavoured to prove that the life of the embryo is of greater value than is usually admitted, and, therefore, that in the treatment of spontaneous abortion, it is the duty of the obstetrician to practice all measures calculated to arrest its progress, and also to remove every cause disposing to its consecutive occurrence, and thus establishing an abnormal habit in the uterine system. To ascertain the real state of facts in these cases, it is necessary to institute a most careful investigation into all the direct and contingent circumstances; but this, I fear, is not generally accomplished, a mere superficial view being taken of the case, one or two of the most prominent effects seized upon, and made the grounds of the after treatment. Their importance, as symptoms, should not divert the mind from that careful analysis, which is so essential to the welfare of both the mother and embryo, as there is too much generalization in the treatment of these cases—rest, Infus: Ros: Comp: and Laudanum, being the only means usually employed.

Hæmorrhage and pain occur in all cases, either together or singly, and pain may continue, alone, to harrass the patient for a considerable period. Hæmorrhage, during the early months of pregnancy, may arise from various causes and proceed from different sources; but it all issues through the vagina. It sometimes proceeds from the external surface of the cervix or os uteri, when in a congested state; when a varicose state of the veins exists; when ulceration has destroyed, to a greater or less extent, the external tissue of these portions of the organ, or when a polypus is externally attached to it; but it most usually issues from the uterine cavity, and is occasioned by a separation of the organic connection of the ovum with the uterus; it may be more or less profuse, thereby producing different relative constitutional

effects, and cannot continue for any length of time, without great risk of the destruction of the vitality of the embryo being incurred; sooner or later, other symptoms also present themselves, which add to the danger and peril of the case. Some writers assert that the hæmorrhage which occurs during the early months of pregnancy, is unattended with danger, but this opinion is much too decisive and dogmatic. It is true that all these hæmorrhages are not dangerous, as they exist in every degree, and, as we have previously stated, proceed from different sources; although it may be conceded, that little risk to the woman's life attends the generality of these accidents, yet the truth of the above dogma must be denied, as there is both immediate and remote danger in many of them. Such statements as these exercise a prejudicial influence on the mind of the young and inexperienced practitioner, and induce him to neglect the application of active preventive measures, at a time when they alone can be successful. It is by no means to be understood that the timely adoption of remedies will invariably be attended with success; on the contrary, experience proves that cases sometimes occur, in which the abortive process proceeds in spite of every effort to arrest its progress, however judiciously made; but even in these cases, the practitioner has much in his power to prevent both local and constitutional mischief, the latter of which is occasionally fatal. If, then, the symptoms are so uncontrollable as to resist all remedial means, the practitioner is satisfied, knowing that he has discharged his duty conscientiously. Sometimes these accidents have existed so long before assistance is obtained, that it is too late, consistently with safety, to adopt preventive measures, and in which it would be unjustifiable to attempt the arrest of the expulsive uterine action, as this practice tends to increase the mischief by protracting the process. Therefore, as it is a moral duty to adopt correct principles in the treatment of abortion, not only are we bound to avoid the evils of commission, but also of omission, by endeavouring to acquaint ourselves with all the contingent circumstances that may afford a knowledge of those organic conditions which are to prove our compass to guide us in our difficulties. It has been previously asserted that there are two symptoms, one or both of which invariably exist—viz., pain and hæmorrhage. Uterine pain cannot continue long without great danger to the ovum, and as pain in the abstract is an evil, we ought to endeavour to subdue it, if it is proved to be so. The amount or duration of the pain affords us no indications as to the probability of the occurrence of the abortive process; it is therefore our duty otherwise to ascertain whether we should employ measures calculated to prevent or expedite the expulsion.

When hæmorrhage occurs, it ought always, if possible, to be suppressed, because its continuance may become dangerous to the mother, and is always more or less so to the embryo. This symptom does not enable us to ascertain the extent of the separation which has taken place between the ovum and the uterus, or whether the vitality of the embryo is destroyed. The existence of vitality is a sufficient reason why every effort should be made to preserve the embryo, and prevent its expulsion; on the contrary, its death justifies the use of means necessary for its expulsion. Unfortunately, however, the signs of the life or death of the embryo, or fœtus, in the early months, are so uncertain, and indeed obscure in most cases, that rules for the regulation of practice cannot be based upon them.

As none of the foregoing symptoms, either alone or collectively, enable us to treat the case, it may be asked, what ought we to depend upon for the guidance of our proceedings? These I shall now endeavour to show.

A vaginal examination ought, in the first place, to be instituted in every case of threatened abortion, for it is impossible to treat it upon scientific principles, or even with justice to the patient, if this exploratory operation is not performed. It affords information on which to ground the diagnosis, prognosis, and treatment, more correctly than can be obtained by any other means. Although this operation is so important, yet it is generally omitted, and the cases are treated on routine and general principles, regardless of the real condition of the uterus or its contents. Great caution is necessary in this examination, so as not to irritate the cervix uteri, which, in some cases is so susceptible, as soon to be abnormally excited; meddling with the os uteri at first, must also be especially avoided, as great danger would consequently arise of further loosening the mucous plug. Examination by the speculum must be conditionally made when abortion threatens, and only after ascertaining by the finger, or the suspicion being aroused, that some abnormal organic state exists which can be better determined by visual inspection. Such conditions are, inflammation, ulceration, congestion, or hypertrophy of the os and cervix uteri. In all our methods of examination, and in the application of curative means, we should be careful not to compromise the life of the embryo, or thereby to induce uterine contraction; the reflex agency of the nervous system must never be overlooked. The development of the gravid uterus is confined to the body and fundus during the early months; but the cervix afterwards changes, and progressively contributes to the enlargement of the cavity. Some writers assert that the gradual shortening and expansion of the cervix is uniformly the same at the same time in all cases; but this statement does not agree with my experience, although the difference is so slight as not materially to interfere with the practical deductions drawn from the admeasurement of this part. The gravid uterus, in the early months, is of a globular form above, consisting of the body and fundus, and the cervix, which forms a stem-like projection below, and gradually shortens until it is completely effaced; so that at the end of gestation the entire organ is of an oviform figure, the lips of the os uteri become more tumified, and the aperture is changed in shape, and is plugged up with mucus. The changes which the cervix undergoes during the abortive process, strongly resemble those produced by its normal development; the upper part being first expanded, and the lower portion afterwards gradually and successively yields, so that its stem-like character disappears, and the entire organ becomes oviform. Most of the alterations occurring in the os at the commencement of abortion can alone be produced by sympathy, but the mucous plug is frequently and generally first loosened by the blood pressing downwards, to be discharged per vaginam. These cervical and oral organic changes are readily detected by a manual examination per vaginam; and the length of the cervix can be easily measured, and its shape clearly ascertained, by passing the finger along its surface, and computing the different degrees of the angle of reflexion of the vaginal lining membrane, and afterwards comparing its relative length with that of the normal state, as it exists at the same period of pregnancy.

The finger must never be introduced within the os uteri during the early periods of abortion; indeed the length of the cervix offers an insurmountable obstacle to its coming into contact with the ovum, and the attempt cannot be made without great hazard. The body of the uterus is also changed by the abortive process, so that its tangible characters, presented to the finger, are very different to those of the same part, when in a normal gravid state, at the same date. It is found to be enlarged, in consequence of, and in proportion to, the addition it has received from the expansion of the cervix; by this alteration it loses its abrupt angle, and assumes one which is more obtuse, which continues to increase until the organ has acquired what has before been mentioned, an oviform figure; and no line of demarcation or difference can be traced to point out the artificial division of the organ. These changes are not always produced in the same time; in some cases they are rapidly effected, but in others a considerable time elapses before they are accomplished. Several very important inferences may be drawn from the above observations, but I shall leave them to be made by the reader himself, with this single exception, that, if after a careful exploration, we ascertain that the figure, length, and thickness of the cervix uteri are normal, it is our duty to adopt every means calculated to preserve the ovum, and thus subdue the symptoms; but, on the contrary, if we discover that it is shortened, either partially or entirely distended, and that the organ has assumed, more or less, the oviform shape, we should assist, by all proper means, the expulsive action, whilst, at the same time, we pay proper attention to those contingent circumstances which are attended with danger.

OBSTETRIC ABORTION.—By the term *Obstetric Abortion*, I mean that operation to be understood, which is performed by obstetricians during the early months of pregnancy, to destroy the vitality of the ovum, and promote its expulsion from the uterus, and (as they affirm) to supersede the necessity of more serious measures, or to rescue the patient from impending danger, arising from some constitutional disease. This practice is now admitted by a considerable number of German practitioners, but there still exist some very eminent men who are opposed to its principle; in France it is only recognized by a few, and they only advocate its adoption in cases of contracted pelvis, and consider that it is an abuse of the operation, if it is performed to avert the dangers of disease. A late writer observes “On n’a pas limité la provocation de l’avortement au seul cas de rétrécissement considerable du bassin; mais on l’a encore entendu aux cas des maladies pour lesquelles on a proposé de provoquer l’accouchement prémature, ce qu’on peut considérer comme un abus; &c.” To prove to the reader that neither the morality or the legality of this procedure is recognised in France, I beg to refer him to the opinion of Alph. Devergie, in the *Dict. du Med. et de Chirurg. Pratique*. Tome 3.

In Brussels it has lately been recommended by one or two writers. In England it was first suggested and practised, and at the present period the greater number of British practitioners recognise it as a valuable operation. Although it is thus admitted into our obstetric code, it does not appear in that of the law, as there is no distinction made in the Statute Book between it and that outrage perpetrated for criminal purposes, except what the law of

custom has obtained for it ; and it is from such usage that it is considered as "justifiable homicide." It consequently follows that any medical man who induces abortion under any circumstances, is liable to be arraigned before a legal tribunal ; and in case of such a charge, even supposing the falsehood of the accusation and his honorable acquittal by the court, there is yet great reason to fear that an undeserved stigma will remain attached to his character. The stain upon his reputation proves too deep to be removed by his innocence of the imputation, and he is not restored, uninjured, to society ; the world being too censorious to lose such an opportunity as this. We are fully assured that the relative social position of the medical practitioner is such, that his reputation would be seriously injured under these circumstances. Why the legislature sanctions this measure on such slender grounds as those of custom, and neglects its recognition in the Statute Book, it is difficult to explain ; and it is evidently unjust to the medical man, provided the operation is considered justifiable, to allow the law, on this point, to remain in its present state. In the opinion of the writer, an enactment should be passed entirely prohibiting the practice, as the door for evil purposes is already too open, and would be still more so, if it was legally decided that when performed on supposed obstetric grounds, no enquiry should be demanded.

The honor and respectability of the great majority of the members of our profession stand too high to allow the suspicion to exist, that the apparent immunity from legal responsibility which custom affords would ever induce one of them to abuse this privilege for wicked purposes ; still we are aware that perfection does not exist in all human institutions, and in our profession as well as in others, individuals are to be found who are base enough to transgress the divine law for the sake of gain, and who are undoubtedly sheltered from criminal enquiry by their position in society. Charges of this nature have been advanced, and prosecutions ensued in districts in our own vicinity ; indeed, the criminal calendars, if searched, would testify that many cases of this nefarious practice have occurred. Midwives, generally, in this country, are uneducated, and are devoid of that respectable position in society, which is requisite for their faithful discharge of the trusts they engage in ; they are not under any educational or legal engagements to justify their being allowed to practise this unwise privilege, arising from a sad defect in our law, and which reflects equal disgrace upon those who have originated it, and those who have hesitated to amend it. Malpractices, and a mal-application of this usage are frequently reported to have occurred. The Roman Catholic church humanely protests against obstetric abortion, and her canonical law on this subject does her great honor. No doubt her reasons are spiritual, she desiring that every created being should receive the benefits of baptism. This church possesses no legal power to inflict corporeal punishment even when means are criminally used to destroy the embryo, but she proceeds in both cases as far as she is able—viz., she denounces and excommunicates the party.

The destruction of the embryo is opposed to the express mandate of God, if we accept, or act upon, that portion of sacred scripture contained in the decalogue, which says "*Thou shalt do no murder,*" and which was given us by divine authority. It allows no conditions—no reservations ; the injunction ought, and is intended to extend to the innocent unoffending creature in the

womb, and, as a most trustworthy, moral, and religious member of our profession, the late Dr. Percival, said in a paragraph already quoted, "To extinguish the first spark of life, is a crime against our Maker and society." This remark, it is true, was not made against obstetric, but against criminal abortion; but, nevertheless, it may be most appropriately applied to it. Obstetric rules should not be framed upon principles opposed to the divine law, and to the natural dictates of the human heart. We have already stated that the Statute Book does not contain a law justifying the act, but in criminal cases it grants power to punish, allowing no excuse for motives—no plea that the act was done to cover shame, and to preserve character and reputation; we, however, must admit the great value of these qualities, if good, but the law does not recognize objects, when connected with crime, however important they may be to the culpable individual. So in this case, ought the legislature tacitly to sanction the practice? How far political economists sanction it, I am ignorant; and, in my opinion, its influence is prejudicial to the well-being of society.

The obstetric principles upon which this practice is based, are founded upon a calculation made as to the relative value of the two lives—viz., that of the mother, and that of the embryo, or fœtus; and it has been decided in favour of the mother. Her social relations are, no doubt, greater than those of the child; she is endeared to her husband, perhaps to her children, and perhaps to her brothers and sisters, other kindred, connections, and friends. In the abstract, these weighty considerations would bring conviction to the mind that the mother's claim to protection greatly preponderated over that of the embryo; who, it may be said, is unequal in organization—having no moral or religious responsibility; no social ties; possessing no anticipation of its future doom—but dare any one state that it has no soul! In the settlement of such a question, involving the life or death of a human being, neither abstract reasoning or feeling should be allowed to influence us; conscience, reason, and judgment ought alone to actuate, and all relative and contingent circumstances, present and future, must be considered. The destruction of one being by this operation may necessitate, *nay has compelled*, the repeated recurrence of its performance in successive pregnancies, until the instances have reached an amount varying from four to twelve. Can such a procedure, then, be justified? The obstetrician should pause, and reflect, before he performs such an operation; he ought, indeed, to shrink from perpetrating such wholesale destruction. The woman is, "ipso facto," a party to the bringing into existence the innocent being which this operation dooms to destruction—humanity, justice, and reason speak loudly here. It may be said that the wife is subject to the husband, and we will allow that she has engaged to be so by the matrimonial contract; but both likewise promise to fulfil the intention of procreation in the solemn service of matrimony, and the object of conjugal union is thus defeated by the adoption of this operation. It is, and may be truly said, that the female was ignorant of her physical organic defect, and therefore entitled to the full exercise of those means that are calculated to terminate the pregnancy, which, if allowed to proceed to the full period, would require the Cæsarian section. Under such circumstances, (which, however, could only occur in a first pregnancy,) it is reasonable, nay it is just, that she should be allowed this privilege; but this concession can rarely be required,

because if ignorant of her state when married, this "ignorance is bliss" until she arrives at her full period; this being obtained, labour commences, and, for the first time, the mal-conformation of the pelvis is ascertained, and the only available resources are craniotomy or the Cæsarian section. The question then is, after the developement of these circumstances, if she again becomes pregnant, is induction of abortion a second time justifiable? as, if now adopted, it must, most probably, be repeated over and over again, to carry out the principle; my opinion is that such a course ought not to be adopted, but that pregnancy should be allowed to proceed, without interruption, to the full period, and when labour declares itself, the infant should invariably be extracted by the Cæsarian section. *Vide successful case of Cæsarian operation, now in course of publication in the British Record.** It sometimes occurs that the presumptive evidence of distortion is so strikingly exhibited in the early months of a first pregnancy, as to induce the woman, or her friends, to apply to an obstetrician. If, upon a most careful investigation, the pelvis is ascertained to be too much contracted to allow a viable child to emerge from its cavity, in such a case the woman is entitled to the advantage of the induction of abortion; but, as was before remarked, if she becomes a second time pregnant, it is then her duty to endeavour to save the child by submitting to the Cæsarian section. Women, in whom these cases may arise, are frequently found in very different conditions; the general health of one may be good (or in other respects healthy) and may be expected to live free from pain and infirmity; that of another may be very bad, "whose life must necessarily be embittered by pains and infirmities, and who cannot survive many months, provided her delivery can be safely effected." In the former case, Dr. Hull (whose opinion is so truly valuable) has stated, that "provided her delivery can be safely accomplished to herself" it is justifiable to induce abortion, "because the life of the mother is more truly valuable to herself, her family, if not to society, than that of the child." My opinion differs with that of Dr. Hull, as in his the operation is too unconditionally recommended; and even supposing it was not, it should only be performed according to the rules before stated. Relative to this practice, when adopted in the latter case above mentioned, Dr. Hull asks "Is it justifiable to sacrifice the child by inducing abortion, with the view of prolonging her (the mother's) miserable existence?" His answer is, "I am of opinion that it is not, because the child's life is, in this case, of more value to society, to its friends, and to itself, than that of the mother." Indeed the mother's life is often a positive evil to herself, under these circumstances. There are several methods practised to procure abortion,

* In this case, along with Mr. Goodman, I was concerned, and will again be alluded to in these remarks. In the succeeding pregnancy I did not see Mrs. Sankey, and, therefore, had no voice in the case. My opinions, adverse to the induction of abortion to prevent the Cæsarian section, were known both to the husband and the medical attendant; and therefore I experience no surprise that my absence in the case was *thought desirable*, when *such an object* was contemplated. Upon what grounds, moral or social, or indeed of any description, this expedient was resorted to, I am at a loss to understand, after the woman had once undergone the Cæsarian section; from which she recovered, and by which her child was saved. I had a conversation with Mr. Goodman on this subject subsequently, when he explained to me *why* I was not consulted; this, however, I shall not at present mention, but, if necessary, shall do so at a future time.

some of which are very uncertain in their effects. The safety of this operation is not so great as is usually imagined; on the contrary, we find that great danger frequently succeeds, which in some cases is terminated by death. Great difficulty is sometimes experienced in its performance, and in some instances it cannot be effected. In distortions of the pelvis, the relative position of the viscera normally contained in its cavity, is more or less changed, according to the degree, character, and shape which the bones have assumed. There are a great variety of forms of the general contour of the bones of the pelvis, of its aperture, and of its cavity. In some cases of mal-conformation of the pelvis this operation is performed without much difficulty; as, for instance, when the superior aperture, or brim, is found to be elliptical, as in such cases the cavity and outlet remain comparatively capacious; these effects are said to be derived from ricketts. In other cases it is performed with greater or less difficulty, and sometimes it is quite impossible to accomplish it. When the mal-conformation of the pelvis is the result of "mollities ossium," both its apertures are, more or less, altered in shape and diminished in capacity; the cavity is also considerably lessened in its antero-posterior and lateral diameter, but its depth anteriorly is considerably increased. The pelvic viscera are, as before stated, changed in their relative position in proportion to the degree of distortion; but I may now remark that the uterus is more especially influenced, as it is so much elevated from its ordinary, or normal, situation, that it is placed above the brim of the pelvis, and cannot be felt. Under these circumstances it is a perfect impossibility to accomplish this operation; in fact, much risk is incurred by making the attempt to do so, as, by bungling, rude, and rash manœuvres, so much mischief may be done, that the expulsion of the ovum follows—not by any direct entrance into the os uteri, but in consequence of organic injury; the influence of which is not locally confined, but is succeeded by great constitutional irritation, fever, &c., and sometimes death ensues. In twenty* cases the results were as follow. In eighteen it was induced to prevent the use of the crotchet, in thirteen of which the cause of distortion was mollities ossium; in ten of these the operation was successful, the membranes being ruptured; in three abortion followed the attempts made in consequence of organic irritation, not of the rupture of the membranes; ten women recovered; three died; and in five, out of the eighteen women, the brim of the pelvis was elliptical in shape, in all of which the operation was successfully performed. In two, out of the twenty cases, it was induced to supersede the necessity of Cæsarian section, and in these cases the mal-conformation of the pelvis was occasioned by "mollities ossium." In one of them the os uteri could not be detected, and as it was not entered by the instrument, the membranes could not be ruptured; the abortion followed as a consequence of extreme local organic injury. Great constitutional derangement succeeded, which ended in death. In the other case abortion was also caused by mollities ossium; abortion was induced, and she died. †

* In some of these cases the operation was repeated several times.

† This is the woman in whose previous labour the Cæsarian section was successfully performed, and who afterwards recovered; her child was also saved. Mr. Goodman told me that abortion was induced in this, her succeeding pregnancy, the particulars of which will be shortly known through the pages of the *British Record*.

PREMATURE LABOUR.—Whenever the pelvis is so much distorted, or tumours of such size, connections, or consistence exist in its cavity, as to prevent the passage of a full-grown child without the aid of craniotomy, but will permit that of one premature and viable, the induction of premature labour before the expiration of pregnancy is not only justifiable on moral grounds, but is imperatively necessary, in order to save the child. The longer gestation is allowed to proceed without interruption, the greater chance is afforded of the child afterwards to live; but the period in which labour ought to be induced must depend on the degree of distortion in the pelvis, or of the relative available space within it. The great consideration here is, the possibility of the birth of a viable child. Most writers assert that it has not the power of maintaining an independent post partum existence, until it has arrived at the seventh month; I have, however, ventured to differ from this limitation, and have already stated that a shorter period of intra-uterine life, would in many, if not in all cases, enable it afterwards to exist. I have known a fœtus not larger than those at six months to live, and one which certainly was not more than six months and a half, arrived at the age of ten years. Cases of viable children born at this age are to be found recorded. But even supposing that we, in some measure, lessen the chances of after life to the child, yet it may in general be born alive, and by the exercise of great care may ultimately survive; or it may live for a short time, which to the practitioner must prove very satisfactory; and it may afford the husband, in case of the death of his wife during, or shortly after, labour, the privilege of “the tenant by the courtesy,” if she was possessed of property within the action of this English law. I have saved a great number of children by this operation—in one woman as many as seven, after the destruction of two by the use of the perforator and forceps.

THE USE OF ERGOT.—The effect of ergot is to depress the vital powers of the fœtus, which if not expelled or extracted soon after the administration of two or three doses of this drug, is destroyed. This remedy most properly applies to cases of protracted labour, when no mechanical impediments to the passage of the child through the pelvis, exist.

GALVANISM.—This agent is much more manageable than ergot, but it should never be employed for the purpose of expelling the fœtus before the os uteri is more or less dilated, and further dilatable; or if there exists any considerable obstacle to delivery, either arising from distortion of the pelvis, or from tumours lying in its cavity.

FORCEPS AND VECTIS.—Whenever either the long or short forceps, or the vectis, are intended to be used, their application ought not to be too long deferred, as the effects of protracted labour are experienced in a ratio proportioned to the time it has continued. The mother suffers both constitutionally and locally if delivery is not effected in due time; the child being also frequently lost by adopting the principles of the advocates of patience, delay beyond a certain point being highly dangerous. The preservation of the child is an important object, and should never be overlooked when any of these instruments are to be used. A timely application of the forceps will obviate many of those serious mischiefs which depend upon long continued pressure caused by the head of the child upon the soft parts of the mother,

and which are too frequently attributed to the effects of the instrument. (*Vide my Essay on the use of the long forceps.*)

TURNING.—Turning is an operation applicable to many different cases, in most of which the life of the infant is deserving of the greatest attention. The most frequent cause of the infant's death is the too hurried extraction, after the version has been accomplished; or the parts seized, being too rapidly brought down. The erroneous doctrine which directs this quick and fatal extraction of the infant's body, regardless of all contingent circumstances, ought to be entirely expunged. The death of the infant is also indirectly produced, by untimely commencement of the operation, and before the maternal structures are in a fit condition safely to allow the passage of the hand of the operator. (*Vide my Essay on Turning.*)

PERFORATOR AND CROTCHET.—These murderous instruments ought only to be conditionally employed, when some accident occurs threatening the life of the mother; or when some temporary cause exists in the state of the genital organs or the pelvis, which, in the present instance, obstructs the passage of the child, but will not thus operate in succeeding labours. When the cause of this difficulty is permanent, and prevents the passage of the head of the child, unless a greater or less reduction is effected in proportion to the existing pelvic space, it is morally justifiable, for once, to have recourse to craniotomy, provided the woman, ignorant of her real organic or pelvic defect, had arrived at the full period of pregnancy, and that the obstetrician was also unacquainted with the exact relative measurements of the pelvis. According to the present obstetric principles, or the rules which guide the management of these cases, in order to carry them fully out, it would be necessary to destroy children in successive pregnancies, whatever number should be begot; and we know from experience, that the aptitude to conceive in women thus deformed is great; and no sooner has the practitioner, by the use of this murderous instrument, released her from one, than unrestrained by either moral, social, or religious principles, and not even affected by maternal regret for that child already destroyed, or influenced by the fear of one about to be so, her resolutions fail, and another opportunity is afforded to the obstetrician of again performing her the same service. We ought invariably to consider this operation as one of necessity, and not one of election; Divine law not permitting us to sacrifice foetal life, and Human law not sanctioning the act.

THE CÆSARIAN SECTION.—The tables of all the cases of Cæsarian operations performed in Great Britain and Ireland, which I introduced to the notice of the profession in 1843, with the addition of those cases which have since occurred, furnish important data on several practical points, but are on too large a scale for introduction here. One inference to be drawn from the aggregate, I will, however, just mention. It is the *blackness* of the account, or the great maternal mortality consequent upon the operation; for out of forty-nine women who have been delivered by the Cæsarian section, four only were saved. At the present time I shall not enquire into the validity of any of these four cases. The statistics of the result of this operation are thus very unfavourable, and are certainly, in the abstract, so very discouraging as nearly to deter us from its performance. But previous to the entertainment of an opinion adverse to this procedure, we ought strictly and circumstantially

to analyze each case, to ascertain what proportion of the fatal issue is really attributable to the operation; what part of it is assignable to the constitutional or local state of the patient, which existed previous to the operation; what is due to the length or the influence of the labour itself, or its management; and at what period, and how it was performed. All these subjects have received my serious attention, and, as far as possible, each individual point has been faithfully recorded by me, and the deduction truthfully stated to the profession. Notwithstanding the unfavourable results of the Cæsarian section in these countries, I am a warm, and I hope a sincere, advocate for its adoption, and calculate upon greater success if performed early; if the previous part of the labour has been properly managed; if the operation is properly performed; and if the after treatment is judiciously followed out; under these circumstances I consider it an important step to obtain a happy result. The maternal mortality will thus be considerably reduced, and will bear a comparison with that of other capital operations, provided a just calculation be made of all contingent and relative circumstances existing in every case. The mortality will then fall considerably under that consequent upon the use of the perforator and crotchet, although it is now stated to be the reverse; the truth of which I greatly doubt. The results to the mother in all cases of the Cæsarean section are known, but those of the other are buried in oblivion; the grave telling no tales. The child's rights are preserved by the former, as, if living, it may be extracted alive; but by the other it is necessarily destroyed. The successful termination of the case, in which I was employed with Mr. Goodman, I attribute to the attention which was paid to the above mentioned points.

All the particulars of Mrs. Sankey's case, which Mr. Goodman considered it right to note, up to Dec. 12th, 1845, have already been published in the *London Medical Gazette*, vol. 56, p. 1507. I was the consultant in the operation, which was performed throughout subject to my directions and suggestions. There is no necessity for me here to particularize, as I have not the least desire to detract from the merit of Mr. Goodman, but in consequence of a letter sent to the *Medical Times* by his present (not then) partner, I consider it my right to assert my claim to a share of the credit, if any, resulting from the successful termination of the case. Mr. Goodman shall speak for himself. He says, "due preparations being made (in which I have to thank Dr. Radford for his kind suggestions and hints, derived from his long experience in midwifery details), I proceeded to make the necessary incisions."—*London Med. Gaz.* I took great interest in this case, and kept a very circumstantial account of every day's occurrence and consultation, with the intention (having previously obtained Mr. Goodman's full and kind permission) of laying it, together with another unpublished case of this description, before the profession, accompanied with practical remarks. Mr. Goodman says, "considering the case to be one of deep interest to the profession, I have forwarded it to you in its present stage; but when the patient is completely recovered, which there is every reason to expect, Dr. Radford, who has been for many years specially devoted to this branch of the profession, will on some future occasion furnish the profession with the more minute details, and, at the same time, give his own views upon the subject."—*London Med. Gazette.*

I shall now quote a part of the letter, before mentioned, written by Mr. Close—"Reading, a short time ago, the remarks made by Dr. Adam Clarke, a celebrated biblical commentator, upon the introduction of evil into the world, I observed with interest, as a notion quite new to myself, that he has it that the word translated "serpent" in the history of the transaction in the garden, might be more properly rendered "ourang outang." Moreover, he hypothesizes, that the woman had intercourse with the animal "de functio (*functione*) maritii." Be that as it may, we are sure the philoprogenitive propensity reigns powerful in erring humanity; under its influence Mr. Goodman's patient again became pregnant." (Abortion was induced, as stated to me by Mr. Goodman; she died afterwards, and her body was inspected.) Mr. Close then says, "the particulars shall be given to you shortly, as an appendix to the former record of the case; meanwhile I am anxious to see the report of the Provincial Medical Association, at which, I am given to understand, a learned obstetric physician, of some polemic notoriety, made some observations, which, if made, amount to an arrogant assumption to himself of that which, in every sense, belongs to another."—*Medical Times*, No. 429, p. 183.

P.S.—The opinions expressed in this, the last part of my considerations on the value of embryonic and foetal life, are very contrary to those held by the majority, if not the whole, of the profession in Great Britain and Ireland; but as they are the result of long and matured thought on the subject, I shall not feel bound to notice every remark that may be made upon them.

The first part of the book is devoted to a general history of the United States from its discovery by Columbus in 1492 to the present time. It covers the early years of settlement, the struggle for independence, the formation of the Constitution, and the growth of the nation to its present position. The second part of the book is devoted to a detailed history of the United States from 1789 to the present time. It covers the early years of the Republic, the struggle for the abolition of slavery, the Civil War, and the Reconstruction period. The third part of the book is devoted to a detailed history of the United States from 1865 to the present time. It covers the Reconstruction period, the Gilded Age, the Progressive Era, and the modern history of the United States.

The book is written in a clear and concise style, and is suitable for use in schools and colleges. It is a valuable work for anyone who is interested in the history of the United States. The book is divided into three parts, each of which covers a different period of American history. The first part covers the early years of settlement and the struggle for independence. The second part covers the early years of the Republic and the struggle for the abolition of slavery. The third part covers the Reconstruction period and the modern history of the United States. The book is written in a clear and concise style, and is suitable for use in schools and colleges. It is a valuable work for anyone who is interested in the history of the United States.