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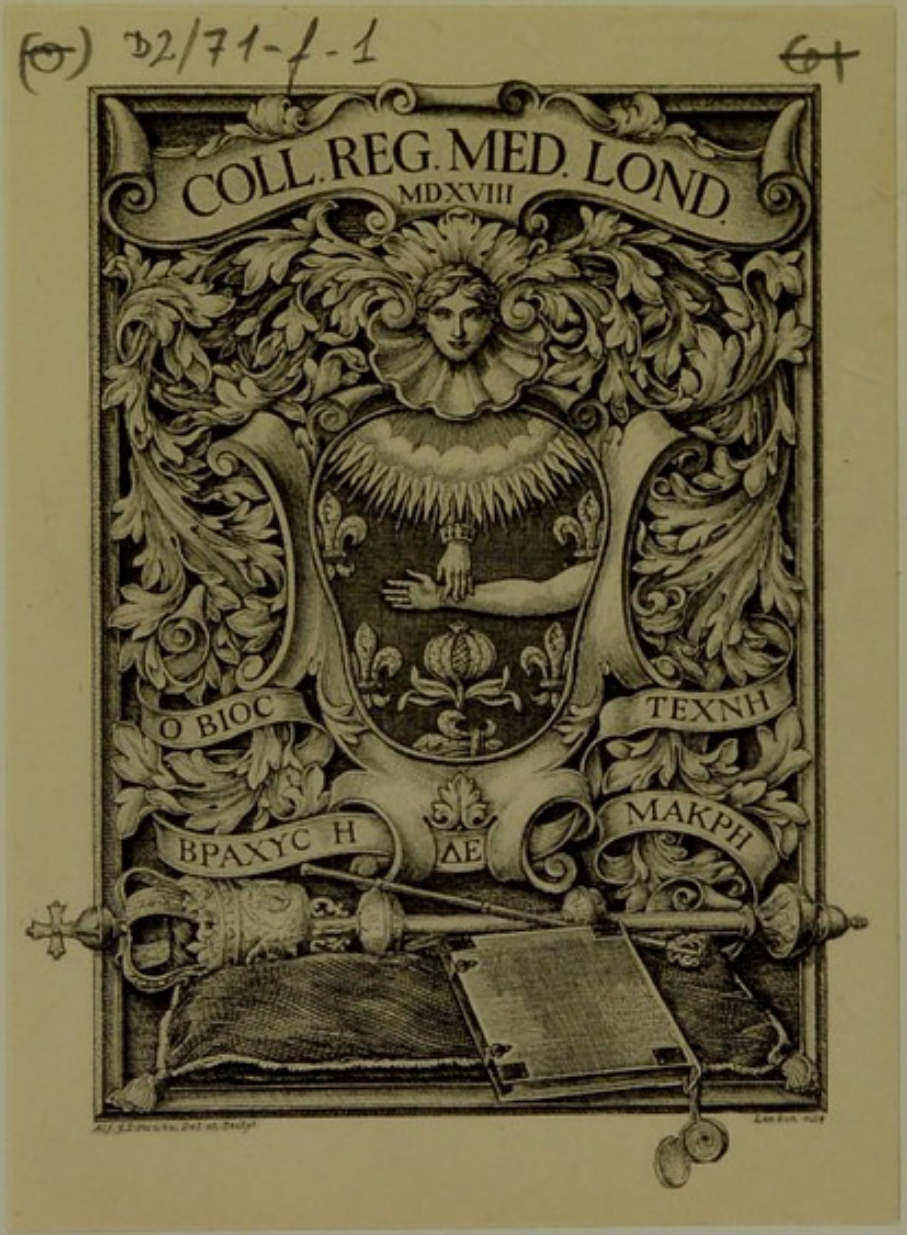

PREPARING FOR PUBLICATION,

(BY THE SAME AUTHOR,)

A SECOND EDITION, REVISED AND GREATLY ENLARGED,

OF

A PRACTICAL TREATISE

ON

UTERINE HÆMORRHAGE.

TESTIMONIALS

IN FAVOR OF THE FIRST EDITION OF THIS WORK.

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FACTS AND CASES

IN

OBSTETRIC MEDICINE.

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WITH

OBSERVATIONS ON SOME OF THE MOST IMPORTANT DISEASES

INCIDENTAL TO

FEMALES.

BY J. T. INGLEBY,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, LONDON; SENIOR SURGEON TO THE GENERAL DISPENSARY; SURGEON TO THE MAGDALEN ASYLUM;
AND
LECTURER ON MIDWIFERY AT THE ROYAL SCHOOL OF MEDICINE, BIRMINGHAM.

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TO THOSE GENTLEMEN

WHO

DURING THE LAST NINE YEARS

HAVE ATTENDED THE OBSTETRIC LECTURES

AT THE

BIRMINGHAM ROYAL SCHOOL OF MEDICINE,

THIS WORK IS RESPECTFULLY INSCRIBED

BY THEIR FAITHFUL FRIEND,

THE AUTHOR.

CONTENTS.

PREFACE.

A FAITHFUL record and an extensive collection of well authenticated cases, afford the only means of advancing the progress of our knowledge in medicine—by arranging, classifying, and comparing the facts observed, we are enabled to deduce general facts or general principles. This method has, in numberless instances, proved of great utility, and still yields to us the only expectation of elucidating those points of practice which are at present involved in obscurity. In the department of midwifery we meet with frequent illustrations of the advantage of the above method in the valuable works published by Giffard, Perfect, Hamilton, Merriman, Ramsbotham, and Collins; yet, notwithstanding the ability with which the more important subjects have been considered in our systems of midwifery, there remain many points in which the practice is undetermined, and will still continue to be so, until we acquire new facts in order to elucidate them.

Unable to plead the superior advantages which must ever be connected with the practice of a lying-in hospital, I may be permitted to remark that the cases which accompany the work have been recorded with the strictest regard both to fidelity and accuracy. A great majority of cases of midwifery are happily unattended by danger—and in consequence of the infrequent occurrence of the more important cases, the duties of the accoucheur have been too often disparaged. But the practitioner who is imperfectly acquainted with the details of the art can seldom be prepared to encounter those difficulties which the emergencies of the case may require of him.

The work is comprised in seven sections. The first three sections, a portion of the sixth and the seventh are already in print, but now appear in a revised and greatly enlarged form, the last especially, which, in its original state, received a highly flattering notice, both in our own and the French literature of the day.

ON

PUERPERAL CONVULSIONS.

Convulsions and uterine hæmorrhage are justly considered far more dangerous in their consequences than any other affections which depend upon pregnancy or parturition, and, as respects the practitioner, are inseparable from the heaviest responsibility. There is, however, a very striking difference between hæmorrhage and convulsions, alluded to by Dr. Joseph Clarke, in his admirable observations on the subject, viz. the rare occurrence of hæmorrhage in a case of first labour, whilst convulsions, though occurring under all circumstances of pregnancy, arise far more frequently in a first than in any subsequent gestation.* For the best account extant, of convulsions, we are indebted to Dr. Denman; and the unsettled state of practice which he there complains of, remains very much the same at

* In Clarke's 19 cases, 15 occurred in the first pregnancy. In 48 cases recorded by Dr. Merriman, 36 were first cases. Of 30 recorded by Dr. Collins, 29 were first children, and 20 of these were males: 15 of the 30 patients were delivered by the natural efforts, and all recovered—5 cases terminated fatally. A large proportion of the cases contained in the present essay, arose in the first gestation.

the present day. He observes, that "the rules given by different writers for the management of labours attended with convulsions, seem to have been founded on less certain principles, and to have been less confirmed by experience, than those which have been given for almost any other cases that can occur;" and again, "there is yet room for improvement in our knowledge of the causes, effects, and treatment of convulsions, depending on pregnancy and parturition." Dr. Dewees describes three forms of convulsion, viz. the hysterical, the epileptic, and the apoplectic. Velpeau describes a fourth, or the tetanic. Baudelocque describes the cataleptic also; and to these another might be added, and termed the anæmic, embracing that distinct class of convulsions which depend upon large effusions of blood. It is more common, however, to consider the disease as arising from irritability on the one hand, and plethora on the other; and, provided we acquire accurate ideas of the state of the brain, we shall not be misled by names.

Puerperal convulsions, properly so called, differ most essentially from convulsions which occur from hysteria, and will be found sufficiently distinct from this affection, for all purposes of practice. Hysterical spasms, or partial convulsions, to which nervous and highly excitable women are very liable, (usually during the term of pregnancy, but rarely during labour,)* are accompanied with a spasmodic state of the trunk and extremities, globus, palpitation, distension of stomach and flatulent eructations, and other symptoms of hysteria; but neither with stertor or coma,

* Hamilton says, that regular hysterics seldom happen during a late period of pregnancy, and never during labour; a statement to which an exception may be made.—See Practical Remarks on Convulsions, in the 5th volume of the Annals of Medicine, p. 313.

and rarely, if ever, by convulsion of the muscles of the face. The pulse, though small and frequent during the paroxysm, regains its natural state on the fit disappearing. The hysterical species, in its mode of attack, duration, degree, violence, and the perfect recovery of the patient on the subsidence of the fit, is so very different from eclampsia, that a man must want common sagacity to confound the one with the other. As for the apoplectic species, without sanguineous effusion, it is really a distinction without a material difference; it differs only in degree, and usually appears during labour. Indeed it may be doubted whether there are any decidedly pathognomic symptoms by which this form of apoplexy can with certainty be distinguished from the strictly epileptic seizure. Not only may simple apoplexy arise from mere fulness of the blood-vessels, but many of the symptoms which characterise epilepsy, including the wounding of the tongue, may be produced by an effusion of blood. I have, moreover, recorded a fatal case of convulsions, attended with sanguineous effusion, and yet the symptoms were less formidable than in a similar case accompanied merely by a very slight effusion of serum. The term "puerperal convulsions" should be confined to cases occurring in paroxysms affecting the contractile tissues generally, and, in many respects, resembling epilepsy, although the attack cannot be regarded either as apoplectic, epileptic, or tetanic, but partaking more or less of the characters of each of these diseases. The circumstance of blood-letting proving so efficacious in puerperal convulsions, militates strongly against its genuine epileptic character, for bleeding in common epilepsy is usually injurious; neither is the subject of puerperal convulsions left exposed to attacks of chronic epilepsy. Dr. Hamilton prefers retaining the old term eclampsia, the word still used

by the French, as expressive of this affection, rather than substituting the term epilepsia, for the following reasons :—

First.—The premonitory symptoms (during pregnancy) being well marked.

Second.—The first invasion of convulsion being soon followed (in many instances at least) by other paroxysms.

Third.—The immediate return of sensibility (in some cases) on the paroxysm ceasing.—(This remark must apply to the circumstances of the first or second fit. A repetition of genuine puerperal convulsions will not fail to produce the same tardiness in recovery, as is noticed in epilepsy.)

Fourth.—In a few instances, by the increased sensibility of the external senses.

Fifth.—The absence of the aura epileptica.

Sixth.—The pulse being more or less affected during the remission of the fits.—(A very severe case occurred to my observation, in which the pulse was not perceptibly affected.)

By Sauvages, puerperal convulsions are included under the genus eclampsia; but there is one symptom which does not belong to eclampsia, viz. the foaming at the mouth. Common epilepsy, in its nature, is purely chronic. Puerperal convulsions, or acute epilepsy, according to Vogel, is a clonic disease, far more violent and dangerous than common epilepsy, and the only form of convulsions *peculiar* to the puerperal state. But, independently of other objections, the term epilepsy, by conveying an idea unfavourable to depletion, is inappropriate. Convulsions cannot be regarded as an idiopathic disease, but as an effect of some lesion, either of function or structure, capable of exciting the strongest involuntary movements in the contractile tissues generally.

Respecting the comparative frequency of puerperal convulsions, as well as its comparative fatality, authors are vague and contradictory; but, according to Collins, 1 in 547. The disease occurs with sufficient frequency to claim our closest attention; and its great fatality has been very generally admitted.

Causes.—The remote causes of puerperal convulsions are essentially connected with the uterus, and a morbid susceptibility of the nervous system. That pregnancy and parturition are the predisposing causes, may be fairly assumed, since genuine eclampsia arises in those states of the system only. Dr. Bland held a contrary opinion; yet some women are so prone to convulsions, as to experience the attack in every successive labour: very slight pains throwing the whole muscular system into contraction. The actual paroxysm is usually preceded by sanguineous congestion; the increased supply of blood required by pregnancy being carried beyond the demands of the uterine system is determined to another organ, usually the brain. The attack may possibly arise independently of any previous fault in the circulation, especially in persons of hereditary predisposition, spare habit, irritable temperament, high mental refinement, and in whom the excitability of the nervous, and, subsequently the sanguiferous system, is called forth by causes apparently trivial. The position assumed by Hunter, Denman, and others, that convulsions frequently arise in weak and irritable subjects, accords with experience, since persons of spare habit are prone to excitement. In such constitutions, the strong susceptibility of the nervous system, when not congenital* or manifested during den-

* Greatly as the subject of the utero-placental circulation may admit of controversy, it cannot be doubted that whatever acts injuriously on

tition, is subsequently acquired by the force of education, or irregular habits; and displayed, both morally and physically, from an early age to the middle period of life. During a first pregnancy these tendencies are increased tenfold: the brain, in particular, from participating very actively in the uterine excitement, is unequal to the supply of unimpaired nervous energy. If we advert, for a moment, to the changes which result on the descent of the ovum in utero, the number, progressive size, and activity of the uterine vessels, and the excited state of the lining membrane in the secretion of lymph, we cannot feel surprised that sympathies naturally so powerful should, in the early weeks of pregnancy, quicken the circulation in the brain, and otherwise strongly influence its functions. Even at the menstrual period, especially in dysmenorrhœa, the excitement in very irritable females amounts to absolute convulsion. It follows, then, that in similar constitutions, especially when moral impressions are superadded, the brain and nerves will be exceedingly susceptible during the whole period of gestation, as well as in the puerperal state. Thus a young woman, who had been recently delivered, on receiving the intelligence of the death of a friend under afflictive circumstances, became convulsed, delirious, and died with marks of serous effusion. It may be asked what is the exciting cause—or how does pregnancy act in the production of the fit? The precise

the mother's system—for instance, anger or other mental emotions—may exert an influence over the nervous system of the fœtus. The convulsions of early infancy cannot altogether be disconnected from these causes. In a case of convulsions, related by Spence, which proved fatal, there was not any dilatation of the os uteri; the Cæsarian section was immediately resorted to, and a living infant extracted, but convulsions terminated its existence within an hour.

manner in which the nervous influence becomes sufficiently disturbed to produce convulsions, does not always admit of demonstration; and no single cause can be assigned as applicable to all cases. It is equally difficult to explain the production of tetanus from a wound; convulsions from dentition or worms in the intestines; paralysis of the optic and auditory nerves, whilst the vessels of the brain appear perfectly natural. The immediate cause appears to be an irritable condition of the uterus, sympathetically reacting upon the muscular system through the nerves of organic life.

The voluntary muscles derive their nerves mainly from the spinal marrow; still, from the close sympathy subsisting between the uterus and the cerebro-spinal system, through the medium of the nervous ganglia of the great sympathetic, irritation may be directly excited adequate to produce the most alarming forms of convulsion.* Possibly the researches of Bellingeri, Bell, and others, may ultimately lead to explanations relative to deranged nervous actions, which are at present involved in mystery. My own observation, that the seizure occurs in robust and plethoric habits, is confirmed by Dewees, Ramsbotham, Collins, and Velpeau: by the latter it is stated, also, that convulsions attack women who menstruate frequently and freely, and nervous women—"*maux de nerfs.*" It has been affirmed that the fits arise most frequently during the night; a circumstance favouring the opinion of its being a disease connected with congestion of the brain and spinal marrow. Dr. Blundell

* I presume that Hunter refers to this state of the system, when he speaks of the attack "killing like an electric shock."—MS. Lectures. —In the convulsions of infants when teething, life is destroyed in the same manner.

attributes the convulsions, in most cases, to increased action of the cerebral vessels; an opinion borne out by Merriman, who found the blood not only inflamed, but cupped also—a circumstance, I believe, not unusual at the close of pregnancy. In addition to these coincident circumstances, the bulk of the uterus, in advanced gestation, is calculated to promote engorgement of the cerebral veins, impeding the return of blood to the heart; whilst, under an increased power of the heart and arteries, serous effusion will be directly promoted. Hence the advantage of taking blood from the jugular vein, in preference to the temporal artery, and *vice versa*, according to the state of the circulation. It has been said that the pressure of the gravid uterus is uniform: a statement far from correct. In some pregnancies the uterus distends much more at its posterior and lateral parts, than it does at its anterior; so that a woman shall appear much smaller in one gestation than in another, although the volume of the uterus, and its contents, may be equally great. The pressure, when exerted over the intestinal canal, by oppressing the circulation, tends most materially to produce eclampsia. In several instances, I am certain that scybala were retained in the bowels for many weeks before delivery, notwithstanding a daily evacuation. Thus hæmorrhoids, tumefaction of the labia, œdema of the lower extremities, and a varicose state of their veins, prevail, according to the seat and degree of pressure: œdema of the hands and face, and epistaxis, arise most probably from increased circulation. To this view of the subject (which in practice has been acted upon to an injudicious extent) may be traced the opinion, that delivery is indispensable to the patient's safety; but whatever may be the predominant feature of the paroxysm, immediate attention should be directed to the state of the circulation. Whatever suddenly affects the momentum or velocity of

the blood, either by diminishing or increasing the frequency or force of its circulation, cannot fail to influence, very materially, the functions of the brain, and when the balance of the circulation is lost and the supply of nervous power both to the voluntary and involuntary muscles is interrupted, the train of symptoms which characterises a fit of convulsion then ensues. It is now well understood, that the brain cannot long be deprived of the natural impulse in its arteries with impunity. Andral, in particular, has shown that states of anæmia, as well as of hyperæmia, are equally productive of convulsions; and although it is maintained by some, that the amount of fluids within the cranium can undergo but little change, the position of Andral is confirmed by daily experience. Allowing, therefore, for complications and variations of constitutions, the more important convulsions of the puerperal state may be referred to two principal and opposite conditions of the system; either an excited or turgid state of the vessels of the brain (often promoted by improper diet, and a neglected state of the bowels during gestation); or by loss of blood, as after a dangerous hæmorrhage. There is also a third state, subordinate to those just mentioned, and which seems more immediately dependant upon excessive sensibility of the uterine fibres, since it generally happens under an irregular and highly painful action of the uterus during its dilatation. Not only does the attack usually occur in first pregnancies, but, what is remarkable, with very few exceptions, almost always when the presentation is natural. "Where the presentation is præternatural, there is little cause (says Collins) to dread the attack."* Denman makes a similar observation. But admitting the seizure to depend chiefly upon mere morbid

* Pract. Treatise, p. 200.

sensibility, the circulation will generally be found more or less faulty, as the straining made in an advanced state of labour will occasion an increased force and velocity of the circulation, and bleeding may be a most judicious precautionary measure. Besides these causes, convulsions which arise after the os uteri has acquired a moderate degree of dilatation, may sometimes be traced to malformation either of the pelvis or head of the infant.

According to Denman, abdominal inflammation is a common sequence of convulsions after delivery. Gooch and Collins, also, speak of peritonitis following convulsions; and in an instance of convulsions occurring before delivery, and detailed in another part of this work, extreme tenderness of the abdomen was a very prominent symptom, and continued until the patient had been bled a number of times. M. Duges observes, that serous plethora, or the anasarca which often accompanies a first pregnancy, especially if the œdema extends to the face and upper extremities, predisposes to eclampsia: and Velpeau is of the same opinion. I. F. Osiander also considers a tumid condition of the hands and face as premonitory of the attack; but Miguel questions this doctrine. That convulsions have frequently occurred in connexion with œdematous states of the system, accords with experience. But is it not more agreeable to the principles of medical science to consider both complaints as the effect of a common cause, viz. an embarrassed circulation, rather than to regard the one as the consequence of the other? It has been affirmed that this disease reigns epidemically, connected, probably, (as Andral observes) with electrical states of the atmosphere, acting primarily on the nervous system and producing cerebral excitement. The particular influence of the air is alluded to by those accurate writers, Drs. Smellie and Denman. Madam Lachapelle remarks,

"when one of our women is taken with convulsions, we rarely fail to have, soon afterwards, others in the same state;" a fact also stated by Ramsbotham, who says, "I have repeatedly remarked, among the numerous patients of the Royal Maternity Charity, as well as among others to which I have been accidentally called, that several cases have occurred soon after each other." This condition of the atmosphere has been referred to by other eminent writers. A variety of other causes, of a subordinate kind, are mentioned by authors.

Periods of occurrence.—Puerperal convulsions are noticed at four particular periods: 1st, during pregnancy, and prior to the accession of labour; 2nd, during labour; 3rd, after the birth of the child, before the detachment of the placenta; and also from portions of placenta remaining in utero after disruption; 4th, after the complete expulsion of the placenta. It has been said that convulsions, which take place antecedent to labour, cannot strictly be denominated puerperal. Convulsions, it must be observed, rarely occur before the completion of the seventh month of pregnancy; but should they arise in the early months, they may, unquestionably, depend upon the state of the uterus. Convulsions have occurred in the second month; and in two cases related by Perfect, the attack preceded quickening: but, at these early periods, they are rarely attended with danger. With respect to their occurrence in the last month of gestation, although the paroxysm mostly appears during the actual dilatation of the os uteri, or on the first approach of labour, still, when we recollect that in the last week or two of pregnancy the neck of the uterus is fully developed, the subsequent changes being confined to the os internum (the most sensitive part of the organ) it cannot be surprising that, in very irritable persons, a serious impression should be made upon the

brain at those periods. When arising prior to the accession of labour, the attack is almost invariably preceded by derangement of the sensorial functions denoted by some of the following symptoms: drowsiness; a sense of weight in the head, especially in stooping; beating and pain in the head; redness of the conjunctivæ; numbness of the hands, flushing of the face, and twitching of its muscles; irregular and slow pulse; ringing in the ears; heat in the scalp; transient but frequent attacks of vertigo, with muscæ volitantes, or temporary blindness; derangements of the auditory nerve; embarrassment of mind and speech; an unsteady gait, constipation, and œdematous swellings. There is sometimes pain in the epigastrium—a very characteristic symptom, vomiting, and other marks of gastric disorder. It is also said that a sense of weight and pain has been experienced in the hypogastric region. Restless nights, when associated with thirst, feverishness, and deranged circulation, have not unfrequently proved the precursors either of apoplexy, convulsions, or hæmorrhage at the close of pregnancy, or a morbidly increased action of the cerebral vessels in the puerperal state. A very healthy looking young woman (in whose several pregnancies, three in number, these precursory symptoms were strongly marked) fell a sacrifice to cerebral inflammation, so late as the third week after delivery. Possibly the previous attacks had induced some slight change of structure in the arterial system of the brain.

The premonitions already described, though in some instances scarcely cognizable, are in others very clearly marked; and justify the injunction of prudent moral and physical restrictions. Even under a strong predisposition to convulsions, the attack may generally be prevented by bleeding, daily laxatives, a simple diet, and mental quietude. Whenever a woman has been the subject of

puerperal convulsions, the necessity for adopting these precautions in a subsequent pregnancy, especially towards its termination, and for maintaining tranquillity of the circulation, must be obvious. When the lower extremities become materially œdematous in the latter months of pregnancy, in women of unimpaired constitution, Dr. Hamilton confidently declares that "copious bleeding alone prevents the occurrence of convulsions, either before or during labour." Denman, again, speaks in commendation of bleeding, in the following terms: "Bleeding is known to lessen, in a very material manner, all the complaints in pregnancy which arise from uterine irritation. It is, therefore, I may say, universally recommended in all cases where these convulsions exist, or are to be apprehended." Generally, however, as depletion is now practised, its efficacy in removing the paroxysm, and permitting gestation to proceed, is either not acknowledged, or not yet estimated according to its high and practical importance.

Premonitory symptoms are rarely observed in the convulsions of labour. Excessive restlessness, however, may be considered as the harbinger of an approaching fit. It is said that rigors and delirium have also been noticed. I am not here alluding to a mere incoherence which occasionally appears during the dilatation of the uterine orifice; a fact familiar to most observing practitioners, and formally noticed by a very eminent writer, Dr. Montgomery;* an attack so transient in duration, and unimportant in character, can scarcely be confounded with more serious conditions of the brain. The indications of attack after delivery are still less apparent, and perhaps

* See Dublin Journal of Medical and Chemical Science, No. XIII. Vol. V. page 52.

no cause can be assigned in addition to an overloaded state of the bowels, except turgidity of the blood-vessels.

Convulsions under such circumstances, are considered, by Dr. Ramsbotham, as peculiarly fatal in their consequences: a conclusion at variance with my own more limited experience, and also with the observations both of Velpeau and Collins.

As regards the anæmic form of eclampsia, I may briefly observe, that convulsions which result from hæmorrhage, and succeed syncope, are not only more dangerous than the other forms, but often far more violent than we might, *a priori*, suppose. The symptoms which characterise this class of convulsions, are—contortion of the muscles of the face, whilst those of the extremities are but little affected; attacks of syncope; a small and frequent, but sometimes slow pulse; collapse of the features; coldness of the extremities, and an exsanguine countenance. A similar seizure, though milder in kind, now and then occurs at the close of a very tedious labour, and is merely an evidence of exhaustion. These diagnostic marks are the reverse of those which characterise convulsions in contrary states of the system. In cases of exhaustion, the ergot of rye, henbane, camphor, and musk, together with ammonia, aromatic confection, and other stimulants and cordials, are suitable remedies; but opium is the grand restorative: its agency in sustaining and equalizing the circulation, and subduing spasm, places it almost beyond value. In the interval between the paroxysms, it may possibly be necessary to perform transfusion. The head should be maintained in a low position; sinapisms applied to the feet; and stimulating liniments rubbed in the course of the gastric and cardiac regions. Nourishing broths, taken by the mouth, and injected into the bowels, will be highly proper; and should the œso-

phagus be paralyzed on the convulsions subsiding, the elastic tube must be had recourse to. In the event of the question of delivery arising, the directions laid down elsewhere will be strictly applicable.* The paroxysm of genuine eclampsia cannot be attended with any deception, on account of its great peculiarity. The attack occurs suddenly, and, from its terrific character, occasions the greatest alarm and confusion. The patient, if in the erect position, suddenly falls to the ground; sometimes with a shriek, and perhaps an immediate discharge of liq. amnii. During the continuance of the fit, the determination of blood to the head is very manifest, by the throbbing of the carotid arteries ; the distension of the superficial veins of the head and neck ; the injected state of the conjunctivæ; and the swoln and almost purple state of the upper part of the body. The patient is insensible to external impressions; the limbs are very rigid, alternately flexed and extended, occasionally agitated by spasmodic twitchings, the trunk is thrown backwards, and the abdominal viscera most violently compressed; the face is distorted; the mouth drawn aside, and in constant motion; the teeth are forcibly set together, emitting the hissing noise spoken of by Dr. Denman. In rare cases, the mouth has been observed to remain open. From the spasmodic contractions of the jaw (which has even been luxated by their violence) the tongue is generally wounded, and saliva, tinged with blood, issues from the angles of the mouth. The respiration is hurried and irregular, having occasionally long suspensions; there is a rattling noise in the throat; the eyes are wild, fixed, and open, leaving the white part only in view—sometimes they open and close, and turn round, with great rapidity—the pupils are dilated, and, when the fit conti-

* See the author's Treatise on Uterine Hæmorrhage, pages 152-5.

nues long, insensible to light; the breathing is stertorous; the sleep profound; the pulse labouring, slow, hard, and full, with intermissions, but usually it soon attains a great degree of frequency and quickness; and the sphincter of the bladder, and sometimes that of the rectum also, lose their power. The duration of the actual fit is commonly about a minute, or even less; it varies, however, from one to five minutes, or longer; recovery from the fit is sometimes momentary, and sighing usually announces the return of natural respiration; but too frequently one fit is followed by another, indicated by a diminished frequency of the pulse. When the paroxysm frequently occurs, the deprivation of sense is, for the most part, permanent. The number of fits is almost indefinite. When the fit arises during actual labour, the convulsion may regularly recur with the return of pain; and, on the fit subsiding, the patient stares in a wild and vacant manner, and, though unconscious of what has happened, is either perfectly calm and rational, (a most favourable feature,) complaining of pain in the head, and perhaps in the epigastrium, or otherwise falls into a comatose state. The return of sensibility may be instantaneous, although it is for the most part gradual, corresponding, in this respect, with the subsidence of the fit. There is, in this case, a confusion of the senses; the articulation is at first defective, and vision imperfect; indeed, both the optic and auditory nerves have been known to undergo a temporary paralysis. The expression of countenance, also, remains very heavy, and the face continues swoln. When the result is not fatal, the intellect remains unimpaired in the great majority of cases. It appears singular, on reflection, that the functions of the brain shall present such contrarieties of character within the very shortest period:* at one

* See Dr. Parry's remarks on the effects of impetus of blood to the brain, in the first volume of his posthumous works.

time the patient is agitated by a convulsion inconceivably frightful, and speedily recovers; at another, she lies motionless and senseless, having the apoplectic stertor, or possibly breathing with tranquillity; and, on recovering speech and motion, the mental disturbance varies in degree from the slightest incoherence, or loss of memory, to the greatest rhapsody. At this juncture, the connexion between this state and puerperal mania is so striking, that the most sagacious practitioner, if ignorant of the previous symptoms, would probably be deceived. I am acquainted with several cases of puerperal convulsions, which were succeeded by puerperal mania: the transition might, probably, be the result of the large bleedings which were necessary to subdue the primary disease. The patient may die in the first fit, or after the occurrence of a great number of fits. Death rarely occurs just at the close of the paroxysm, but in the coma which succeeds it, or rather from asphyxia consequent upon the deteriorated state of the pulmonary function, of which the purple state of the skin is so characteristic.

Pathology.—It has been shown by pathological research, that increased vascularity and turgescence of the meninges, veins, and sinuses of the brain, prevail in the great majority of these cases. Connected with extreme fullness in the cerebral vessels, Denman found that the heart was unusually flaccid. An effusion of serum between the arachnoid membrane and pia mater, and also in the ventricles, (according to my own observation,) is the morbid appearance most frequently met with. It has been remarked that this appearance is not peculiar to disease; and that, in animals who are bled to death, an effusion of limpid serum is not only an ordinary result of the depletion, but that its amount will be in exact ratio to the escape of the blood, and the period occupied in dying,

whether the mortal agony be momentary or protracted: in the latter case, the amount of the effusion being greatest. Dr. Seeds, whose experiments seem peculiarly applicable to this subject, remarks, "If an excessive quantity of blood be lost, either from an artery or vein, water is effused within the brain." Although as these experiments seem to prove, congestion and effusion may be *produced* by venæsectio ad mortem, yet, as the reviewer observes, "a state the very reverse is produced by moderate venæsection,"* properly timed. The intention of bleeding in convulsions is to lower action, not to exhaust the body.

Blood has also been found extravasated both within the cranium and the theca vertebralis. In many instances the morbid changes have been disproportionate to the violence of the attack, whilst in others no unusual appearances, either in the spine or any other part of the body have been detected. Bloody points have sometimes been discovered on making a section of the brain. "In some cases," observes Ramsbotham, "the blood-vessels of the pia mater have been found visibly surcharged, whilst those supplying the medullary and cortical part of the brain have appeared almost bloodless."† It has been remarked, that many of the appearances of vascular turgescence which have been observed in the brain and spinal chord, are the mere accidental effects of the violent struggles of the patient in her last moments; the same as appear in all cases of violent death. In this view of the case, the injected state of the cerebral vessels may be compared with the blood-shot eye, and the œdema of the eye-lid, occasioned by the struggling in a severe fit of chronic epilepsy; still, the turgidity may

* See Medico Chir. Jour. and Review, for January to June, 1836.

† 473 Cyclop. of Practical Med. p. 249.

be explained by other causes. Ramollissement of the brain is said to be an occasional result of the convulsive paroxysm. The uterus has generally, I believe, been found in a natural state; portions of decomposed placenta and marks of abdominal inflammation have occasionally been detected. The spine has been found congested, and occupied by effused blood and serum.

Prognosis.—To give an unqualified opinion in favor of recovery, even in the mildest cases of genuine puerperal convulsions, would be most imprudent, considering the liability of the paroxysm to recur. It has been already observed, that the attack which appears during the progress of labour is attended with comparatively little danger; whilst the paroxysm which arises either antecedent to labour, or subsequent to delivery, and is marked by frequent returns, and an intervening coma, is inseparable from danger, and that, proportionate to the suddenness, frequency, and violence of the attacks, and the profundity of the coma. The danger to be apprehended from convulsions which follow large effusions of blood, will be in exact ratio to the enfeebled state of the sensorium. In all cases, therefore, our prognosis must be regulated by the particular circumstances under which the convulsions may arise.

Treatment.—In the treatment of sthenic convulsions, having cut short the paroxysm, our grand object should be to remove the coma, and guard against the paroxysm recurring. There are two leading indications of treatment: first, allaying vascular excitement and relieving turgidity of the blood-vessels of the brain; and secondly, in the failure of general treatment, lessening the volume of the uterus, either by the discharge of the liquor amnii, where the case occurs antecedent to the sixth or seventh month of pregnancy, or by the entire evacuation of its contents, when

subsequent to those periods. As respects general treatment, *active* and *early* depletion is indispensable. Bleeding, which is borne exceedingly well, must be enforced before effusion has taken place, or a permanent impression has been made upon the brain. This is a point of the greatest moment. The tremendous impetus with which the blood is sent to the brain, must necessarily inject the minute vessels, and under the frequent recurrence of the fit, effusion takes place within a very short space of time: a circumstance explanatory of the ill success which sometimes attends artificial delivery, even in cases the best adapted for it. The fact of the coma ceasing, and sensibility being restored, is no argument against the existence of the effusion. In apoplexy, with extravasation of blood, a copious bleeding will sometimes be followed by temporary recovery; yet the coma shall return without the apoplectic symptoms, and the patient sink in a few hours. Mr Churchill, who has reported six cases of puerperal convulsions,* considers bleeding of very doubtful value except in the apoplectic form of the attack: a conclusion which is greatly at variance with general observation. Certainly to neglect liberal bleeding in convulsions, attended with determination to the head, would be incurring the risk of an apoplectic effusion, and hemiplegia or other forms of paralysis. Velpeau observes, that bleeding is almost the only remedy on which all are agreed; but few practitioners will, I apprehend, coincide with this author and Cruveilheir, in advocating small bleedings, instead of depleting rather freely. In justification of small bleedings, Velpeau urged that Mauriceau and Madame Lachapelle bled largely and lost their patients, whilst Merriman, who bled less freely, saved two-thirds. To justify this in-

* London Med. Gazette for Oct. 25, 1834, p. 107.

ference, the cases should have resembled each other in all particulars; but of this we have no proof, and, consequently, the deduction is founded on narrow and unsound principles. If bleeding is performed with a view of allaying inordinate vascular action, and diminishing the resistance of the cervix or os uteri, the amount of blood abstracted must be sufficient to answer the intended effect; and small bleedings will neither relax the uterus nor prevent effusion. Velpeau admits most fully, when contrasting the success of the English and French practice, that of 22 cases treated antiphlogistically by Merriman, 6 only died, whilst at *La Maternité* almost as many deaths occur as recoveries. The question is not whether the patient has lost blood, but whether the bleeding was resorted to immediately, and to an amount commensurate with the urgency of the case, for upon these circumstances the success of the measure will entirely depend. Unless speedily cut short, the paroxysms recur in rapid succession, probably with intervening coma; and yet on the cessation both of the convulsions and the coma the patient is not unfrequently affected with violent vascular excitement, and a repetition of venesection, arteriotomy, and cupping becomes needful before the activity of the disease is overcome. The temporal artery may be opened during a fit, for if it were possible *then* to open a vein in the arm, the spasmodic state of its muscles would prevent the blood from flowing: or on the fit subsiding, from ten to thirty ounces may be taken freely from the arm; (forty have been taken away;) and unless decided relief be soon obtained, it may be necessary to repeat the operation, whether delivery be effected or not. We cannot, however, define the amount of blood which it may be needful to abstract, since this must correspond with the urgency of the case, and the effects

produced. Gooch used to observe, that he had never seen a single patient die from convulsions, unless the lancet had been unemployed or employed inefficiently. By general bleeding we not only relieve the circulation, but, by subduing tension, relaxing the whole muscular system, and the uterine fibres in particular, the delivery, will be rendered comparatively safe and easy. By opening the temporal artery, or by cupping, or placing a number of leeches upon the temples and behind the ears, the brain is especially relieved. It may be prudent to bleed, although the os uteri is dilated or dilatable when the convulsion arises, and the propriety of speedy delivery too obvious to admit of doubt. The French authors coincide in opinion with our own, in referring one form of convulsions to sympathetic irritation, and advising sedatives. Assuming the line of demarcation between the different forms of the disease to be well marked, still, when the force and frequency with which the blood is transmitted to the brain, during the paroxysm, are considered, the propriety of treating the case by fœtids, sedatives, and turpentine, to the exclusion of bleeding, may legitimately admit of question; whilst, in advanced pregnancy, the fullness of the vessels, which then so commonly prevails, at least aggravates, if it does not directly excite, deranged nervous action. This state then is far more successfully treated antiphlogistically, than by antispasmodics: indeed, nervous medicines, commonly so called, are decidedly improper either under an oppressed or excited state of the brain.

Whether general bleeding be admissible when the fits have ceased, and the comatose state has ensued, is a nice but important point to determine. Should it be undertaken, the greatest precaution must be exercised, and its effects on the circulation narrowly observed whilst the

blood is flowing; it is greatly, however, to be feared, that false pathological views, respecting serous plethora, have much restricted the depleting system. If doubt exist, it is better to practise a moderate bleeding than to neglect it; but in *protracted* states of coma, and in convulsions which arise after delivery, cupping is not only the safest, but usually the most effectual method of abstracting blood.

From the difficulty of conveying medicines into the stomach, and the determination of purpose necessary to effect it, the office must be performed by the practitioner; if consigned to other hands, it is more than probable that half the medicine will never reach the stomach.

The treatment which stands next in importance to bleeding, is that of active purging. Bleeding, though the most important remedy during the paroxysm, subsequently becomes subordinate to purging; the first affords temporary, the second permanent relief, and we cannot speak too highly in its praise. Indeed, in convulsions which arise *after* delivery, it is our chief dependance. When deglutition is impeded, calomel and croton oil are almost the only purgatives that can be given by the mouth; suitable doses may be placed on the tongue, and two or three drops of croton oil rubbed over the abdomen. Injections of turpentine, colocynth, or senna, should also be employed.

In convulsions which occur prior to the dilatation of the uterus, or with a tendency to abdominal inflammation, the tartar emetic, in $\frac{1}{4}$ or $\frac{1}{2}$ grain doses, to produce nausea, highly extolled by Collins, appears to be a most beneficial agent.

Medicines which stimulate the uterus (perhaps already too tense) are, for the most part, inadmissible. The ergot of rye has been much eulogised in the treatment of convulsions, both by American and English practitioners, espe-

cially by the former. The accounts on record, of the diseased rye in bread having absolutely produced convulsions, must not be overlooked; and similar effects are said to have followed the use of camphor, when exhibited in large doses. I am not aware of any valid objection which can be urged against the administration of ergot, provided the uterus and external parts have undergone their requisite degree of relaxation. Under contrary circumstances, no practice short of the passage of the hand could be more hurtful. Assuming that no objection of this kind exists, that the convulsions do not threaten immediate danger, and that it is expedient to promote delivery, a trial of ergot, with a view of obtaining its full effects, will be quite allowable. But supposing delay to be inadmissible, to trust to an uncertain measure, when the forceps can be applied, would be most injudicious, in which opinion Velpeau most fully concurs. Of the action of opium, in these states, I have had no experience; and the testimonies of authors, respecting it, is most conflicting. Velpeau observes, that it neither merits all the good, nor all the ill, which has been said of it. Collins declares it to be "not only harmless, but highly beneficial in those cases where the fits continue *after* delivery;" and peculiarly so when combined with ant. tart. and calomel. In proportion as the circulation is either oppressed or excited, it will almost certainly prove injurious. If the determination to the head is not of an active character, or, in the words of Velpeau, unattended by stupor or stertor, and venesection has been premised, opium may possibly be beneficial; indeed, a surgeon, in extensive country practice, assures me that, in an instance of convulsions which continued after delivery, he gave opium, with the best effects. After the violence of the disease is subdued, the countenance being pale, and the heat of surface defective, opium, or

rather a preparation of morphia, would seem a desirable medicine. Dr. Hamilton, who denounces opium, strongly advocates the employment of camphor in doses of ten grains: a remedy to which Burns and Chaussier are opposed. The first effect of a large dose of camphor, according to Dr. T. Thomson, is derived from its action as a local stimulant; its second general effect is manifested by its excitement of the circulation. The tepid hip bath has been advised by Capuron and others, after general bleeding, in rigid states of the uterus; and if cold was at the same time applied to the head, the practice might be useful. Mustard sinapisms to the legs, and fomentations to the abdomen, have also been much commended. The head must be kept in an elevated position, the hair cut close, and the scalp refrigerated. For this purpose, ice (when it can be obtained) in solution, or pounded and enclosed in a large bladder partially collapsed, seems highly appropriate. I have witnessed the most frightful convulsions in infants immediately arrested by this means, as well as by gradually pouring cold water from a short distance, and in a moderate stream, over the head and face. In puerperal convulsions, attended with much arterial excitement, the same kind of affusion might be most beneficially employed; the head and shoulders being placed conveniently over the edge of the bed, whilst the water is poured as directed. Great nicety is requisite in the use of a high degree of cold, which must not be resorted to indiscriminately, but proportioned to the urgency of the symptoms, the different states of the brain, and the effects produced. Dr. Graves, in his observations on convulsive diseases,* advises "that the stream of water should be small, not poured from a

* See Dublin Journal of Med. and Chem. Science, No. II.

great height, and be discontinued the moment the fit ceases; to be again renewed on the appearance of another paroxysm." Between the paroxysms a spirituous evaporating lotion may be laid over the scalp. The application of cold to the abdomen has been suggested, but on no sufficient authority. Leeching the epigastrium, as strongly advised by Chaussier, appears far more rational; and the liberal application of leeches over the abdomen must not be neglected, in case its circulation evidences congestion, or where there is an inflammatory tendency. Counter-irritation seems well adapted to the more obstinate paroxysms, or to protracted states of coma, but great care should be exercised in the application of blisters, which I have seen productive of much mischief. Redness of the conjunctivæ may be occasioned by the violence of the convulsive paroxysms; but if, in addition to this, the scalp be heated, or there be febrile re-action, blistering must be decidedly improper. When used, the blisters should be confined to the nape of the neck, and the course of the spine. Emetics have been strongly recommended, but I have had no experience of their efficacy. Miguel observes, that in exciting partial convulsions by emetics, we do not necessarily relieve the general convulsions, and they would appear to be altogether inadmissible, unless the stomach is suspected to contain indigestible food. Michell is an advocate for musk, and Dr. Copland speaks highly of glysters composed of camphor and valerian; but of the value of these remedies I am unable to offer an opinion. Several circumstances of minor import will claim our attention. A guard or plug of cork, if needful, should be placed between the molar teeth (to prevent the tongue from being wounded), the blood and mucus removed from the mouth, and the patient prevented from self-injury by the imposition of a very mild restraint.

In a case, terminating fatally, to which I was called, the sufferer was so shockingly disfigured, as scarcely to be recognised. When convulsions do not speedily subside, and the patient remains unconscious, it has been deemed important to place the system under the influence of mercury. Insensible as she may be to external objects, calomel suspended in a little thick gruel will usually be swallowed; but should this be impracticable, mercury introduced by inunction or by application to a blistered surface is always available. I have heard of several cases of puerperal convulsions terminating successfully under a mercurial treatment; and the beneficial influence of mercury, in several acute affections of the brain, is well known. In one of the cases salivation was produced, and delivery did not occur until some weeks afterwards.

These, then, are the measures which appear best calculated to subdue the disease; and whether the convulsions arise before delivery, or appear subsequently, the *general* principles of treatment are the same.

A most important part of the subject remains to be considered. We will suppose that general treatment has failed in subduing the violence of the paroxysm, or preventing its recurrence, the question of delivery will then naturally arise; and first, I shall record the views of our most esteemed authors on this subject, and then briefly advert to my own. Without doubt, artificial delivery has generally proved unsuccessful; a result mainly attributable to erroneous opinions respecting the immediate cause of the disease. By Mauriceau this practice was advocated, under the idea that the convulsions were occasioned by distension of the uterus, a most incorrect conclusion, the uterus not being distended at any time prior to the supervention of labour. Dr. Hunter, who appears to have considered all treatment as equally

unsuccessful, observes, that half his patients died whether they were delivered or not.* "That convulsions (observes Dr. Osborne) in general are dependent upon the state of the uterus which can be removed only by delivery, I am persuaded by repeated experience; and that no remedy can be used with any reasonable expectation of benefit, till delivery is completed; and therefore, it is our indispensable duty to effect it in the quickest possible manner."† This unqualified practice is no less objectionable than the contrary extreme, advocated by Dr. Bland, who discountenanced all interference of this kind. Hamilton is opposed to delivery, unless the forceps admit of easy application; and Leake (who speaks ambiguously respecting the seat of the disease, referring it either to the brain, stomach, or uterus) is very judicious in his directions. He advises delivery only when the os uteri is lax, and other means have failed, observing "it will admit of many exceptions, and ought to be regarded with caution."‡ According to Dr. Denman, it appears that a greater proportion of deaths have succeeded artificial delivery, than when the cases were committed to nature; and Dewees very truly affirms, that the importance of delivery has been greatly over-rated. Michell, a strong advocate for delivery, seems to found his opinion on the alleged fact, that convulsions cease during natural uterine action; a fact admitted by Levret, Lauverjat, and Velpeau, and confirmed by my own experience. But this alone will not justify the practice; for, in some instances, the convulsion either produces an active state of uterine contraction, or returns simultaneously with each pain; and similar effects are induced by any attempt to pass the hand. That convulsions may arise in opposite states of the uterus, *i. e.*

* MS. Lectures. † Essays, 62. ‡ Pract. Obs. p. 333.

either during strong labour pain, or in the intervals, can scarcely be questioned. Under no other supposition, can we reconcile the following contradictory statements of Dr. Denman: "The intervals between the convulsions evidently depend upon the action of the uterus, as will be proved merely by the application of the hand to the abdomen." And again: "The danger of cases attended with convulsions is not increased by their frequent returns, as these depend upon the frequency of the action of the uterus."* I perfectly accord in opinion with Dr. F. H. Ramsbotham, that "convulsions neither suspend, nor interfere, with efficient uterine action," notwithstanding that the action of the uterus may arrest the convulsive paroxysm. During the insensibility which attends eclampsia, as well as apoplectic and paralytic seizures, although the sufferings of parturition are scarcely expressed by external signs, the process not unfrequently proceeds with vigour until the uterus has expelled its contents, and acquired its natural degree of contraction. Indeed, the fact advanced by Baudelocque and others, that, during the paroxysm, the uterus has actually expelled its contents, although no action had previously existed, is a presumption in favor of artificial delivery.† Under strong and frequently renewed paroxysms, an impression will almost certainly be made upon the os internum; a circumstance which evinces the necessity of an early examination, although there should be no

* Essays on the Puerperal Fever and Puerperal Convulsions, p. 68.

† The paroxysms, although differing from the natural parturient action, can only be regarded as modified labour; and, notwithstanding the insensibility of the patient, the uterine action will be obvious to the experienced practitioner.—It has been asserted that the contractions of the uterus are not attended with pain—an assertion at variance with daily observation.

indication of labour except the convulsion; for not only, as already mentioned, do the general convulsions act as labour pains, but cases are recorded of the uterus retaining the child by the violence of the convulsions even to laceration; at other times forcing the organ through the pelvis, and also, in some instances, continuing its contractions, and expelling the child after the death of the mother.*

Although the convulsive attack may arise at any period, from the first reception of the ovum into the uterus, to its expulsion at the ninth month, it is rarely noticed prior to the seventh month of pregnancy; antecedent to which our practice is limited to general treatment, excepting, perhaps, the evacuation of the liquor amnii. In conformity to Capuron's suggestion, (previously mentioned by Denman and Lauverjat) if ordinary treatment has failed, and the os uteri be sufficiently relaxed, the membranes may be ruptured, under the impression that, by reducing the volume of the uterus, and permitting the blood to circulate more freely in the abdomen, the derivation will relieve the brain. Although the success of this measure will depend both upon the period of pregnancy, and the amount of liquor amnii, the prospect of turning being rendered more difficult, should it be found necessary, must be fully considered; but the greatest objection consists in the uncertainty when labour will ensue. An in-

* Does this statement derive any countenance from the fact of the limbs of cholera patients having been observed to move after dissolution?* I have related a case (No. I.) in which the child's head was expelled through the external parts some days after the death of the patient; but the circumstance was clearly owing to the pressure of air generated by putrefaction.

* See Mr. Rumsey's paper on the subject, in the London Medical Gazette, Vol. XII. p. 836.

stance of "eclampsia puerperarum" is published in the Annal. Univer.* in which the membranes were ruptured by means of a trocar, but labour did not take place for twenty-nine hours. The patient recovered. Dr. Maunsell "lately ruptured the membranes in a case of convulsions at the sixth month of pregnancy, after all other means had failed. Labour was completed in four hours after, but the woman did not recover."† From the seventh to the ninth month, delivery, when it is expedient, may certainly be accomplished, but every objection which attaches to artificial delivery at the full term of utero-gestation, applies with peculiar force, to the performance of it, if undertaken before the term is completed, since the cervix uteri will not have undergone its full development. In numerous instances death has speedily followed artificial delivery; in others, the event has not been so immediately fatal. In an instance of very recent occurrence, the comatose state in which the patient died, did not take place for many hours after her delivery; she was in the eighth month of pregnancy, and labour succeeded the artificial evacuation of the liquor amnii. Even admitting that the convulsions which arise previous to labour depend *primarily* upon the condition of the uterus, it is important to recollect that labour is not always necessary for their removal, and that whether delivery be effected artificially, or by the violence of the paroxysms, the convulsions may continue in full force, notwithstanding the evacuation of the uterus; possibly, indeed, the impression previously made upon the brain may be increased by the efforts which attend delivery. Convulsions, therefore, which precede labour, are to be regarded as im-

* See Med. Chir. Review, July, 1833.

† Dubl. Pract. of Midwifery, p. 184.

minently dangerous: thus Dr. Hull observed to Professor Burns, that in every case which terminated unfavourably, there was no dilatation of the os uteri, and, consequently, no labour. The most manageable form of attack is that which arises during the dilatation of the uterine orifice; indeed the irritability of the nervous system, to which this seizure may usually be ascribed, is unattended with that marked derangement of the circulation which characterises convulsions preceding labour. The removal of convulsions arising after labour has commenced, will, in most cases, depend upon the evacuation of the uterus. Desjardins, acting on this principle, did not lose one patient out of seven; Champion saved seven out of ten; and Velpeau concludes that all failures depend upon the brain having undergone a previous important alteration, the result of delay. Not that artificial delivery is even here always a necessary proceeding; for when the pains are regular, the convulsions of the hysterical kind, and the patient sensible between each paroxysm, the case may be left to nature; if otherwise, we must interfere with promptitude. On the principle of the labour pains arresting the paroxysm, Lauverjat observes, "if convulsions persist, and there is only little or no dilatation, I insinuate the fingers between the womb and its membranes, to separate them as much as possible; we cause, in this manner, cessation of the convulsions, by the relaxation of the fibres of the *(neck of the)* womb." This is a very admirable mode of inducing premature labour, but in many cases of eclampsia its expediency may be doubted. It has already been stated that convulsions sometimes cease under *natural* and *spontaneous* labour pains; nevertheless, it is equally true that manual interference is, at the moment, calculated both to renew the paroxysm and render it more violent; thus Denman found the mechanical dilatation of the

os uteri productive of these effects, and the best informed writers, including Chaussier, fully confirm his statement. The principle of forwarding the dilatation of the os internum by means of the fingers, can only be commended when the orifice is in a soft and yielding condition; under contrary circumstances, the practice cannot fail to be injurious.

Assuming that the neck of the womb is hard and undeveloped, that the symptoms are urgent, and that ordinary treatment has failed—what can be done? Velpeau provides for such a case: following the suggestion of A. Paré, Van Swieten, Lauverjat, Dubois, Coutouly, Boden, and others, he recommends that one or more incisions should be made through the vaginal portion of the cervix uteri *(debridement)*; an operation said to be neither painful nor very formidable. But surely M. Velpeau is not in earnest, when he asserts that there are few first labours in which some equivalent lacerations are not produced. It has been termed, by Simpson and Lauverjat, the vaginal cæsarean section,* and appears to have been performed several times with success. English practitioners will question the prudence of this measure; indeed, it is proscribed both by Mme. Lachapelle and M. Bouteilloux, on account of the extension which the wound is likely to undergo in the delivery; and Baudelocque says, it can only be the fruit of a moment of delirium. I am far from believing that nothing can justify its adoption, since it may be called for in schirrhous states of the womb; and it is only within the last few days that I was consulted on a case of this description, which almost seemed to require it. But

* This operation has also been performed on account of an obliteration of the inferior part of the womb.—See Lancet for 24th May, 1834.

mere constriction of the cervix uteri may surely be overcome by ordinary measures. According to M. Dubois, the operation is simplicity itself:—"Even laceration of this part," said M. Dubois, "is not of itself dangerous, and only becomes so when complicated with, or preceded by, severe accident. The artificial division of the neck of the uterus is still less to be feared. A few months back, a woman, pregnant of twins, entered the *Maternité;* the labour had continued for many hours, and the head, which had descended into the cavity of the pelvis, was closely embraced by the neck, which was rigid, and showed no tendency to dilate. In this case I divided the neck of the uterus. The operation, which was extremely simple and easy, gave rise to uterine contraction, and the woman was delivered, without accident, in five minutes after. A similar case presented itself at the same establishment a few days ago. M. Dubois found it necessary to divide the neck, upon which the labour proceeded in the most favourable manner. A great number of analogous cases are to be found in works upon midwifery; and, upon the whole, M. Dubois concluded, that division of the neck of the uterus is an operation in itself not dangerous, giving rise neither to hæmorrhage nor inflammation; but, at the same time, one to which the practitioner should never have recourse, without a perfect conviction of its necessity."*

Can the line of duty then be clearly marked out? Supposing a formidable paroxysm to arise between the sixth or seventh and the ninth month, or at the full term, frequently recurring, followed by coma, and resisting the most prompt and energetic medical treatment—are we to deliver, or not?

* Lancet for 10th May, 1834, p. 247.

Mr. Symonds, in a communication, on the subject of convulsions, to a weekly periodical,* after detailing the particulars of four cases successfully treated—first, by depletion, cold to the head, blistering, the warm bath, and camphor and opium—concludes in the following words: "Instructed by my own experience, and fortified by the authority of such writers as Denman, Blundell, and Gooch, I should say with the latter, take care of the convulsions, and let the uterus take care of itself." In this, as a general principle, I quite concur; but exceptions to it may arise. When the attack appears during actual labour, our line of practice is clearly defined; we must moderate excessive action, and deliver on the first favorable moment. But should the convulsions *precede* labour, the practice pursued by Dr. Joseph Clarke (very similar to that recommended by La Motte) is the most rational that can be followed, viz. to trust to nature's efforts, aided by medical treatment, until the patient's life appears to be *immediately* endangered by the continuance of the disease, and then to interfere in the speediest and safest manner to promote delivery. The circumstances which justify interference demand an impartial and dispassionate consideration, and should embrace the state of the uterus, the presentation of the fœtus, the period of gestation, and the violence of the symptoms. An apprehension lest the patient may die undelivered, has often proved an incentive for undertaking delivery at any risk, and, doubtless, the interests of the mother alone ought to decide so momentous a question; indeed, under severe and frequent paroxysms, especially of the tetanic kind, the child is frequently still-born.† In

* Lancet for 8th February, 1834.

† The cæsarean operation, *post mortem*, might be performed with *faint* hopes of success. To determine, instantly, upon the operation, (for delay is inadmissible,) presupposes a promptitude and composure

Collins's cases, 14 of 32 children, including two twin births, were born alive. Of 43 cases, including a twin birth, which occurred under Dr. F. H. Ramsbotham's observation, 21 of the infants survived. The death of the child is considered, by this gentleman, to depend rather upon a defective utero-placental circulation,* than upon direct pressure; but the result may be occasioned by either cause.

The want of success in delivering generally arises from one of two causes; the first—delivering too early, before the uterine orifice has undergone sufficient relaxation; the second—postponing the delivery until effusion has taken place, or a fatal impression been made upon the brain. Previous to delivery being attempted, sufficient relaxation of the uterus must therefore be obtained by bleeding or emetic medicines in nauseating doses, purgative enemata, and perhaps the application of belladonna to its orifice, otherwise we incur the risk either of an apoplectic seizure,

of mind to which few can lay claim; and since the preservation of the child, theologically considered, (involving the baptismal question,) is viewed with opposite feelings by Protestants and Catholics, the consent of the nearest relative, or friend, is essential before it should be undertaken. A late practitioner of this town resorted to the operation, about twenty minutes after the mother's decease, against the inclination of the friends (Protestants); and although the operation failed, I heard the principle of it condemned. On the other hand, a friend of mine, on a recent occasion, was blamed by the husband of an Irish woman (a Catholic), who expired very suddenly, near the end of pregnancy, for not resorting to it at the end of half an hour. It is clearly the practitioner's duty to suggest the measure. A living child was extracted by the cæsarean operation, after the death of the mother by apoplexy, and reported in the Lancet for 24th January, 1835, page 626.

* The fœtal circulation sustains a similar and equally fatal interruption, by the increasing contraction which follows the full effect of the ergot.

or a laceration of the uterus or vagina.* This precaution has less regard to the degree of dilatation of the os uteri, (for the orifice is not unfrequently more or less open for many days before labour,) than to its state of softness; and if a decided impression be made upon it during the paroxysm, the sooner delivery is accomplished the better. Although the uterine orifice often becomes relaxed earlier than we might *a priori* infer, a moderate degree of resistance is, in every delivery, both to be expected and desired: but a forcible entry into the uterus must be discountenanced by every rational practitioner. Ashwell considers that we may always dilate the uterus with the fingers: a statement which I cannot assent to, and it is with marked propriety that Collins strongly cautions the practitioner to "avoid hasty measures for the delivery of the child."

Delivery having been determined upon, the mode of accomplishing it, a point of vital importance, must next be considered. The success of this operation, like that of all others, will depend, in a great measure, upon the skill displayed in its performance. The objection to turning, abstractedly considered, applies very forcibly to almost all cases of puerperal convulsions. Hamilton's opinion has already been mentioned. "In every instance," (he remarks,) "it ought to be a rule to wait until the head of the child is sufficiently protruded, that the access may be easy to apply the forceps." Provided, however, the membranes are entire, the os uteri very dilatable, the vagina relaxed, and the head quite above the brim, turning might be performed with comparative ease and exemption from danger; but in such a state of relaxa-

* Of 5 fatal cases recorded by Collins, 3 were complicated with laceration of the vagina.

tion, a moderate uterine contraction, whether natural or convulsive, will most likely of itself occasion the descent of the fœtus.

The forceps are, in a great measure, limited in their application to cases in which the os uteri is opened and relaxed, and the head is low in the pelvis; for, as M. Velpeau remarks, the application of the forceps at the brim of the pelvis is more embarrassing, and requires more time, than the operation of turning; and the objections against turning, when the eclampsia arises from a spasmodic or diseased contraction of the cervix, apply equally to the use of the forceps under similar states of the organ. But, provided all other things are favorable, the circumstance of the uterine orifice being only partially open and the occiput at the brim of the pelvis, is not absolutely conclusive against the application of the forceps. In determining upon the smallest degree of dilatation of the orifice which will permit a narrow-bladed pair of forceps being placed within the uterus, and over the face and occiput of the child, I think, if the orifice is soft, actually dilated three inches in diameter, disposed to yield further, and the patient offers no violent resistance, the forceps might be both safely and effectively applied. When once secured, the further dilatation of the orifice would be promoted by the very efforts of the uterus consequent upon their action; and should there be a deficiency of power in the uterus to aid the action of the forceps, still there is in all cases, both of spontaneous and artificial delivery, a certain degree of contraction of the fundus which is accompanied by more or less dilatation of the orifice. In a case of very strong convulsions, which arose under the circumstances just mentioned, the practitioner gently forwarded the dilatation by means of his fingers, and having applied the

long forceps, (Levret's is the best,) accomplished delivery with little difficulty, and with a successful result. The advantage of the forceps over turning, when the head is engaged within the brim, is too obvious to need comment; indeed, the restlessness and strugglings of the patient will oppose a powerful resistance to the introduction of the hand. If the fœtal head is so situated that the forceps or lever cannot be safely or effectively employed, Dr. Joseph Clarke recommends delivery by means of the perforator or crotchet, in preference to turning. Craniotomy was practised in six instances, and these cases did well. For this preference the following justification is assigned: "By looking into the cases of this disease on record, I observed that, where the operation of turning the child was employed to expedite delivery, the event in general has been less successful; probably owing to the great irritation excited by it." This rule appears to me rather too indiscriminate and unguarded; for, in effecting delivery either by turning, or the long French forceps, we do not necessarily incur so increased a risk over cephalotomy, as will justify the destruction of the child. In careless and unskilful hands turning must, indeed, be highly dangerous, and the long forceps, a most destructive instrument; but our rules of practice should be regulated by principle, and not by their liability to abuse. When the head is entirely above the brim, perforation is our only resource; and, unless the child be dead, a most dreadful resource it is. Every means, therefore, which auscultation and the hand afford, should be employed, with a view of ascertaining whether the fœtus is still living; and the cases adduced by Collins "point out, in a most striking manner, the immense value of the stethescope in ascertaining the life or death of the child." If we can obtain no certain evidence on this point, we must be governed partly by the

length of time the convulsions have continued, partly by their degree of severity, but chiefly by the urgency of the symptoms in general; for, as Velpeau has well observed, "in convulsions our chief aim is to serve the mother, the fœtus demands so much less care, since it often dies before we decide how to act;" though he candidly tells us, that in France it is not rare to see the mother sacrificed to the desire of saving the child. Collins also declares, that the evidences, however satisfactory, of the child's death, "will not warrant the practitioner hurrying the delivery," to the injury of the soft parts, and the after consequences likely to ensue. I need scarcely observe, that when the convulsions depend upon the highest degree of pelvic distortion, the question of the cæsarean operation will necessarily arise; but the chances of preserving the child's life will be very feeble, under the most favorable circumstances.

Again, the attack may immediately succeed the birth of the child, previous to the removal of the placenta, and in this case the placenta will most probably be soon expelled. The introduction of the hand should, if possible, be avoided, on account of the straining which it would occasion. It may, perhaps, excite surprise that the fit should occur directly after delivery. Possibly it may arise from the great alteration in the circulating system produced by the sudden removal of pressure, or an immediate and violent impression on the nervous system, as it has been known to be momentarily fatal. The paroxysm which succeeds delivery or within two or three hours (when not connected with hæmorrhage) is sometimes evidently referrible to congestion in the brain, but more frequently to neglected states of the bowels during the last weeks of gestation. The first changes after delivery, however natural, appear instrumental in the production

of the fit. Distention of the bladder, according to La Motte and others, may occasion an attack; therefore the introduction of the catheter must be enforced in cases of this nature. It may be supposed that owing to the violent contraction of the abdominal muscles, the bladder will be emptied, but the extent of this may be very partial; for in a case of this kind occurring after delivery, although the urine was largely discharged during the fits, there was still a material accumulation in the bladder. The lochiæ, when defective, and connected with tenderness over the hypogastrium, must be promoted by fomentations—perhaps leeching the vulva and other approved means.

Convulsions arising about the second day after delivery, are usually connected with the secretion of milk, and demand active depletion; but subsequently to this period the attack will probably be connected with irritative fever, the result of decomposed portions of disrupted placenta, of which I have seen several instances.* In this case the treatment will consist in the removal of the cause, allaying the febrile excitement, and supporting the strength. Phlegmasia dolens is a frequent sequel of this species of convulsions. Whenever the fit may appear, and however well the patient may seem to be on it ceasing, a very vigilant watch should be imposed upon her for many days, and all means enforced to ensure tranquillity of the system, since there can be no exemption from another attack until the changes in the uterine system are nearly accomplished. A woman, attended by a respectable surgeon of this place, who had merely indications of a fit during the labour, was suddenly seized with a paroxysm on the fourth night after delivery, and expired

* See "Treatise on Uterine Hæmorrhage," pp. 217-219.

almost immediately. Another person was seized on the seventh day, but the symptoms yielded to leeching and an opiate; indeed, in proportion to the lateness of its invasion, the attack will probably assume a mild character, approaching a chronic form of epilepsy. These general rules must be applied to the exigencies of each individual case.

As respects the treatment after delivery, it may be observed, that on the subsidence of a long protracted coma, sensibility can scarcely be restored suddenly. We have now to contend with the delirium of mania rather than of fever, and a train of morbid actions as the result of the previous cerebral disturbance. The experience both of Gooch and Esquirol furnish ample proof that in this form of disease the depleting system is rarely admissible, and essential as bleeding may have been to preserve life, it cannot be doubted that the worst forms of delirium are the consequence of copious depletion. The grand object in the treatment is now to allay nervous irritation, and to restore the natural secretions by the mildest means. Though the presence of the child may perhaps be regarded with indifference, yet, as it may increase the excitement, the breasts had better be drawn by a properly qualified person. Purging must be avoided, and magnesia, or the mildest enemata, (broth for instance,) used for keeping the bowels open. Effervescing draughts with soda in excess, and camphor and hyoscyamus in pills, are also useful. The apartment should be sprinkled with the chlorides, and well ventilated, and the offensive discharges promptly removed: the linen on the person and bed must be changed frequently; the face and head sponged; the horizontal position strictly maintained, and as the urine and fæces are often passed involuntarily, the bed should

be additionally guarded by skins of leather. The diet should consist of milk and water, cold chicken broth, soda water, grapes, oranges, &c. Puerperal mania almost invariably gives way to soothing means and moral management; and Esquirol ascribes the recoveries to nature rather than art. The termination of eclampsia in permanent mania may be regarded as peculiar to persons in whom a maniacal predisposition, or an excitement almost amounting to it, had previously existed; and, with a single exception, every case with which I am acquainted, was followed sooner or later by perfect restoration of the mental powers. In the instance excepted, delusions were established common to the ordinary forms of mania.

I shall conclude these observations by a reference to some of the cases upon which my opinion has been formed. Many of these occurred in the practice of my friends; and, for the particulars of six of them, I am greatly indebted to my esteemed friend Mr. J. M. Coley, of Bridgnorth. Before detailing the cases, I may observe, that several instances might have been added of peculiar affections of the brain and nervous system, which appeared to have been co-existent with, and produced by, some corresponding morbid condition developed during the process of utero-gestation. The immediate cause of such phenomena was probably local or partial congestion in the brain, as its functions became perfectly restored after the uterus had expelled its contents. I subjoin only two such instances: the first is worthy of notice in consequence of the same condition of the system having produced convulsions in one labour, and amaurosis in another; and the second as tracing hemiplegia, both in its production and cure, to the state of the uterus.

CONVULSIONS ARISING DURING PREGNANCY, AND PREVIOUS TO LABOUR.

Case I.—Mrs. ——, who has borne several children, and for some years been the subject of severe epilepsy, was seized on the 23rd of May, being in her ninth month of pregnancy, with a paroxysm of convulsion, attended with total insensibility; a very feeble, almost imperceptible pulse; coldness of the surface of the body in general; a pallid countenance; rather stertorous respiration; and constant vomiting of dark secretion like coffee grounds apparently mixed with blood. Mr. Elkington attended her almost immediately, and finding the uterine orifice very lax, and the head presenting, promptly ruptured the membranes. I saw the patient half an hour after the seizure, and as an apparently expulsive effort every now and then took place, I recommended the dilatation of the uterine orifice (evidently progressing with each expulsive effort) to be forwarded very gently by the finger, hoping that the head would descend sufficiently low to allow the forceps to be easily applied. Mr. Elkington informs me that the head rapidly descended, but, notwithstanding this, the patient continued sinking, and died, undelivered, within half an hour after I quitted the house. It is material to recollect that at this time the head was about equi-distant between the brim and the outlet; and as the point was ascertained by Mr. Elkington after life had ceased, (with a view of instant delivery if the friends would have consented) no doubt can possibly be raised respecting it. Some hours after death the body was exposed and washed, at which time no unusual appearance presented itself; but, on again exposing the body for instituting the post-mortem examination, it was discovered that the head of the infant had quite

passed the os externum, presenting naturally. The abdomen was enormously distended with gas, and to the uniform pressure of the gas upon the uterus (the internal parts being quite relaxed) the expulsion of the child's head may be attributable. The uterus, with the placenta in connexion, was perfectly healthy, as well as the viscera in general.

Post-mortem appearances.—The substance of the brain was very soft (probably the result of putrefaction) and its vessels materially congested. The pons varolii was very large, being much broader and flatter than natural, and a dark spot like extravasated blood was apparent in front of the pons, and between the crura cerebri. The canal leading from the third to the fourth ventricle was unusually capacious, and, when laid open, presented a very singular appearance, not unlike a mucous surface, the urethra for instance, its colour being pink, and its structure resembling fleshy fibres. This state seemed owing to a thickening and increased vascularity of the serous membrane. The fourth ventricle was greatly enlarged, and its floor, which was almost the size of a moderate lateral ventricle, contained at least half an ounce of coagulated blood. This effusion seemed owing to a laceration of the pons and left crus of the cerebellum, and a considerable mass of coagulum extended beneath the corpora quadragemini into the substance of the pons and between the crura cerebri.

An inveterate form of epilepsy here terminates in apoplexy. The case strongly supports the doctrine laid down by Abercrombie relative to apoplexy from rupture of small vessels, being attended with a feeble pulse and pallid countenance.

Case II.—The convulsions, which appeared in the eighth month of a first pregnancy, were so violent that I was induced (injudiciously) to attempt delivery, but the at-

tempt failed on account of the rigidity of the os uteri. The patient, a very stout and plethoric young woman, was now largely bled: the convulsions immediately ceased. I then directed calomel and jalap, and an aperient mixture. Recovery was perfect, and labour did not come on until the expiration of a month; and the convulsions did not then recur. The patient was seen by Mr. Blount and Mr. Ryland.

Case III.—In this case, in which the convulsions occurred at the seventh month, and continued, more or less, for several days, general and local bleeding were frequently practised, both on account of the convulsions and the tenderness of the abdomen. The convulsions ultimately ceased, and the patient was delivered some weeks afterwards, by her surgeon, Mr. Wright, of a living child. Notwithstanding the abdominal tenderness, stupor continued, more or less, during the whole period of the illness.

Case IV.—The attack happened at the seventh month, and under bleedings and other measures so far subsided, that labour pains came on naturally, in the course of a few days, without any recurrence of convulsion.

Case V.—In this case, which occurred about the sixth month of a first pregnancy, the convulsions were associated with hemiplegia. The muscles of the right side of the face were at times convulsed; the right angle of the mouth fell; and the pupil of the right eye was dilated. The patient had difficulty in uttering certain words; the countenance was dull; the mind melancholy, and materially enfeebled. Labour ensued at the ninth month; on the termination of which the disease began gradually to subside, and in three weeks entirely left her. She perfectly recovered, and afterwards had a large family of children, without a recurrence of the disease.

Case VI.—A poor woman, subject to convulsive fits, and the mother of several children, applied to me in the seventh month of her pregnancy, with an enlargement of one of the finger joints. She expressed a wish to be bled, on account of a violent pain in the stomach of several days continuance: but before my pupil could see her, she was seized with convulsions, and had been bled largely by a neighbouring surgeon. Some hours after this she was bled again, to nearly ℥xl. and other curative means were used; nevertheless, the fits frequently recurring, ended in stupor. The os uteri was closed. She died in a fit, undelivered, about thirty-six hours after the seizure.

Sectio cadaveris.—Abdomen—the uterus and its contents in a natural state. *Thorax*—slight enlargement of the bicuspid valves of the heart. *Head*—considerable effusion of limpid serum between the pia mater and arachnoid membrane, and an effusion of bloody serum in the ventricles, with adhesion of the membranes to the upper part of the spinal canal. I had not an opportunity of seeing this patient after the attack of convulsions.

Case VII.—Mrs. ——, naturally of a spare habit, had become rather plethoric during her third pregnancy. She complained, on Monday morning, the 15th of July, (being within six weeks of the full term of gestation) of sick head-ache, and went up stairs to lie on the bed. Soon afterwards the servants heard a heavy fall, and, on entering the room, found her on the floor, struggling violently, quite insensible, and surrounded by blood, which proceeded from injuries received in falling and struggling; this was at ten o'clock a. m. I did not see her until two p. m.; she had then had three fits, and had vomited three times; was partially conscious, but quite unable to speak: the pulse was rapid and very full: the countenance was flushed, and the os uteri sufficiently open to admit a finger. After taking away

about ℥ xvi. of blood, a frightful convulsion ensued, which entirely deprived her of consciousness. I allowed the vein to bleed to about ℥ xxx., applied cold to the head, and endeavoured, but in vain, to make her swallow some castor oil (the only medicine at hand.) She was exceedingly restless, and lay moaning, partly crying, and frequently put her hand to her head. At four o'clock (the earliest moment the medicine could be obtained) I succeeded in giving her 8 grains of calomel and a drop of croton oil, administered a colocynth injection, and had twenty-four leeches applied to the temples. The convulsions followed each other in rapid succession; the breathing after each paroxysm became more stertorous, and the coma more profound. At five o'clock the vagina was greatly relaxed, and the os uteri easily admitted two fingers. As the case was assuming progressively a more alarming aspect, I requested a consultation. Mr. J. S. Blount arrived at eight o'clock, and acquiesced in the propriety of delivery: at this time three fingers could have passed the os uteri. Rather more than usual difficulty attended the passage of the hand into the uterus, otherwise delivery could not have been more easily or speedily accomplished. No fit came on during the delivery, but another most violent paroxysm ensued immediately afterwards, succeeded shortly by death. The infant survived.

Autopsy.—The body was examined twenty-four hours after death. Serum had collected between the arachnoid and pia mater, and also from ℥ ij. to ℥ iij. in the ventricles. The brain was very firm and healthy.*

* The point at issue between Abercrombie and Andral might be raised on cases VI. and VII. Abercrombie argues that the serum effused in apoplexy is always preceded by a previous state of congestion; whilst Andral regards the serous effusion, not only as the primary effect, but as the sole cause, of the coma.

Case VIII.—Mrs. ——, a healthy young woman of florid complexion, was attacked in the thirty-seventh or thirty-eighth week of her second pregnancy, with spasmodic pain in the stomach and œdema of the face, which continued a fortnight, at which period a fit of convulsion ensued, followed by several other fits in rapid succession. The first fit took place at three o'clock a. m. of December 13, 1834, and her surgeon saw her at nine. She was in a state of profound coma; the countenance purple; the pulse slow and feeble; and the tongue protruded, and badly wounded. She was bled to ℥ xvi. with immediate relief to the coma; but a high degree of excitement ensued, marked by delirium, violent gestures, and indecorous expressions. I visited her at eleven o'clock. In consequence of the convulsions recurring during my visit, venesection was repeated to ℥ xxiv.; leeches were applied in considerable number to the temples and behind the ears; the hair was cut off, and the scalp refrigerated by suitable lotions. She was made to swallow 10 grains of calomel mixed in a teaspoonful of gruel; and an injection was administered, composed of croton oil and extract of colocynth in gruel. The stage of coma again ensued, but terminated within half an hour. About eight or nine o'clock in the evening labour occurred, and she was shortly delivered of a living child. Recovery was gradual, but quite perfect.

CONVULSIONS ARISING PREVIOUS TO LABOUR, AND TERMINATING IN DELIVERY.

Case IX.—This case, which was preceded by violent pains in the head, occurred at the seventh month; the countenance was almost purple, and the legs and thighs

were greatly œdematous. Mr. Hudson bled from the arm, and applied leeches to the temples. The os uteri relaxing, the membranes were ruptured, and the patient was soon delivered in a state of complete insensibility. The antiphlogistic plan was continued, and she perfectly recovered.

Case X.—I am allowed to refer to this case by the eminent practitioner to whom its management was committed. During the attack, which came on instantaneously, and whilst the patient was walking, the membranes suddenly gave way; she was bled, and the convulsions ceased; but as the coma became progressively more profound, turning was decided upon, and accomplished. The patient survived only an hour. A *post-mortem* examination was not permitted.

Case XI.—In this instance (a twin case) the patient, a very corpulent and unwieldy person, was seized five days before delivery, with a fit of convulsion, followed by acute pain in the head. The pulse was full and slow; and bleeding and purging produced great relief. The day before delivery the pain in the head returned, and again yielded to active purging. Half an hour after the birth of the first child she experienced another fit of convulsion, which continued a quarter of an hour, and was followed by two or three others, terminating in stupor and difficult respiration. Her surgeon again bled her to ℥xviij. and I saw her immediately afterwards. A second child was soon expelled by the natural efforts; but death took place a few minutes after the removal of the placentæ. My earnest entreaties to be allowed to inspect the body were resisted.

Case XII.—A poor woman was seized, in the sixth month of pregnancy, with a fit of convulsion. The paroxysms recurred frequently during two days; at the close

of the second day, labour pains occurred, and she was delivered of twins. A great hæmorrhage, which attended the separation of the placenta, seemed materially to relieve the brain.

Case XIII.—Mrs. ——, the mother of a family, a corpulent and unwieldy person, nearly at the full period of gestation, had been afflicted with pain either in the head, abdomen, or limbs, during the last few weeks; but she refused to be bled. Sunday, 29th of April, Mr. Elkington was called to her at five a. m., a fit of convulsion having just occurred. Having become sensible ere he arrived, he entreated her to be bled, but without effect. During his visit a second fit arose, and he then bled her to ℥xxxv. At nine p. m. several fits having recurred, ℥xxx. of blood were abstracted, and leeches applied. From this time until the same hour the next morning (Monday) she was perfectly insensible, having experienced a great number of fits, and not speaking during the whole period. From nine to three on Tuesday she was in a comatose or apoplectic state, with stertorous breathing, but could be roused with some difficulty, and then complained of great weight and oppression of the head. V. S. was repeated to ℥xii. which afforded marked relief. Calomel and jalap were prescribed, and also the cold affusion. Glysters were also administered. At five she was quite sensible.

Wednesday.—Labour pains commenced this day, and terminated in the delivery of a dead child. No hæmorrhage followed, although it had been always most alarming in previous labours. She recovered after a severe attack of phlegmasia dolens.

I was called to this woman in her succeeding pregnancy. Three or four days before delivery the symptoms premonitory of convulsions were treated by leeching, and the la-

bour went on most favourably. Five or six weeks afterwards, some embarrassment in respiration took place; from which she appeared to have nearly recovered, when a fit of convulsion suddenly came on, and terminated her existence.

CONVULSIONS OCCURRING DURING THE DILATATION OF THE OS UTERI.

Case XIV.—In this instance, which occurred in the practice of Mr. Starkey, of West Bromwich, and to whom I am much indebted for the particulars, the convulsive paroxysm came on whilst the os uteri was undergoing dilatation. In consequence of the fits increasing in severity, delivery was effected by the perforator and crotchet, but the convulsions continued unabated. Within twelve hours she was bled largely three times; cold was applied to the head, leeches to the temples, and a blister to the nape of the neck. Immediately after the last bleeding, a dose of croton oil was placed upon the tongue. It operated very speedily, and produced the greatest relief. The bowels were loaded with scybala and disordered secretions. The case appeared to be so very hopeless that twice the patient was supposed to be dying. Recovery was perfect.

Case XV.—The attack occurred during labour. The patient was bled; the convulsions ceased, and she was very speedily and safely delivered by the natural pains.

Case XVI.—In all respects much the same as the last case. Result the same.

Case XVII.—A case attended under similar circumstances, occurring in a lady of spare habit and active circulation. A large bleeding weakened, but did not

altogether remove the convulsions. Delivery was then accomplished by means of the forceps, and the patient did well.

Case XVIII.—In this case the convulsions continued after artificial delivery, but ceased under depletory measures.

Case XIX.—Terminated in paralysis.

Case XX.—The convulsions arose in a woman of spare habit, and nervous temperament. It was a first labour, and proved very lingering. The paroxysms, followed by stupor, continued about twenty-four hours: bleeding failed to give relief. Delivery was accomplished as soon as the os uteri admitted of the application of the forceps, and the convulsions ceased shortly afterwards. This patient, in a subsequent accouchement, was attacked with complete amaurosis, which continued during the whole period of her labour. She was bled, while in labour, without any apparent benefit. Vision was gradually restored.

CONVULSIONS ARISING AFTER THE FULL DILATATION OF THE OS UTERI.

Case XXI.—After a general bleeding, the head being within reach of the forceps, delivery was immediately accomplished. Recovery was perfect.

Case XXII.—A convulsive paroxysm, which succeeded a violent hæmorrhage, yielded to a dose of opium. The patient was then safely delivered, without any return of the paroxysm.

Case XXIII.—The lady who forms the subject of this case, and who became plethoric during her pregnancy, was seized with convulsions near the close of her labour;

the head of the child pressing upon the perineum. After a copious bleeding, delivery was accomplished by the forceps; but, so far from the symptoms being removed, the patient remained insensible at least twenty-four hours; but fully recovered under the antiphlogistic treatment. Shortly before the completion of the ninth month of her succeeding pregnancy, she experienced decided premonitions of convulsion, especially muscæ volitantes and pain in the head. Those symptoms disappeared after bleeding, and labour ensued without any return of convulsions.

Case XXIV.—Violent convulsions occurred after many hours of suffering, just as the uterine orifice had undergone its full dilatation. The patient was delivered by the forceps, and the convulsions immediately ceased. It was a first labour, and the face presented to the pubes. The child's head was large and firmly ossified.

Case XXV.—A lady had been ill with irregular pains forty-eight hours, after which time they became suddenly very strong and violent, and in one hour the os uteri was fully developed. A considerable hæmorrhage and strong convulsions, alternating with coma, now took place. The forceps were applied as soon as possible, and a living female child extracted, the patient being quite unconscious the whole time. The convulsions and stupor continuing for twelve hours, she took 2 grains of opium, soon after which they ceased, and at the end of two days she recovered her faculties, but had no recollection of her delivery, or of any event from the commencement of the convulsions.

CONVULSIONS ARISING AFTER THE BIRTH OF THE CHILD, AND BEFORE THE EXPULSION OF THE PLACENTA.

CASE XXVI.—The subject of this case died in a convulsion, which came on whilst her accoucheur was passing his hand into the uterus to remove the placenta. I was engaged in making counter pressure externally. The convulsion was very violent, and life was extinct in about a minute. A *post-mortem* examination was refused.

CASE XXVII.—A violent hæmorrhage followed a disruption of the placenta, arising from the unskilfulness of a midwife. Offensive discharges and violent uterine pain, attended with vomiting and a puffy state of the abdomen, terminated in occasional strong fits of convulsions and stupor. Death took place on the eleventh day. On a *post-mortem* examination, a layer of placenta was found adhering tenaciously to the fundus uteri. The viscera were nearly ex-sanguineous.

CASE XXVIII.—After the birth of the child at the sixth month, the placenta was left in utero, in consequence of the funis giving way. The practitioner made several unsuccessful attempts to pass his hand into the uterus. On the seventh day after delivery convulsions arose, which soon terminated in death. I did not see the patient during life. On examination *post-mortem*, the intestines appeared partially and slightly agglutinated by lymph; the uterus was in a healthy state, containing the entire placenta somewhat decomposed, but wholly though slightly adherent to it. The brain was quite healthy.

The two cases last detailed, of cerebral irritation, the consequence of placental decomposition, are fully reported in pages 119 and 219 of my treatise on uterine hæmorrhage.

Case XXIX.—In this patient the convulsions appeared within forty-eight hours after delivery, and terminated in death. My friend Mr. Knowles, who opened the body, informs me that no morbid appearances were discovered, either in the head or abdomen, to account for the fatal event.

Case XXX.—This patient, in her sixth labour, had been previously ill for fourteen days with uterine pain, attended with partial discharges of liquor amnii. She was in a state of extreme emaciation. Two hours after delivery, upon rising up in bed, she was attacked with convulsions, which in a short time terminated in death. The child, a female, was still-born; and the head was so much distended by hydrocephalus internus, that it appeared nearly as large as that of a person ten years old.

Case XXXI.—A lady of very sanguine temperament, whose diet (with a view of obtaining a large secretion of milk) had been too stimulating, was seized after delivery, with very violent convulsions. Her state was altogether one of very imminent danger; but under a copious abstraction of blood from the temporal artery, active purgatives, and a strict antiphlogistic treatment, she fully recovered.

Case XXXII.—For the annexed case I am indebted to my late colleague, Mr. F. Ryland, who attended the patient in my absence.

Jan. 4.—Sarah Cotton was delivered by a midwife about noon, after a natural labour, and continued in an apparently favorable state till three, when she was seized with extreme pain in the head and a fit of convulsion, quickly suc-

ceeded by two more; and at five, when Mr. Ryland was called to her, she had experienced a fourth. She was insensible; the face was flushed; the head very hot; the pulse strong and about 100; and saliva tinged with blood, issued from her mouth. A vein was opened, but not more than 5 or 6 ounces of blood could be obtained. This, however, afforded great relief. Before seven she had experienced two more fits, both quite as severe as the others. Twenty ounces of blood were taken from the arm, the head shaved, a blister applied to the neck, and a purgative mixture administered. After the bleeding the face had become paler, and at times she was partially conscious; yet she lay, for the most part, perfectly still, the eyes being wide open, and the breathing stertorous. Eight p. m.—She has had several fits since morning, and most of them violent. In the intervals she lay in a comatose state, with stertorous breathing; but occasionally seemed conscious of what was passing around: the pulse still continued very strong. Twenty-four leeches were applied to the temples, and a stimulating clyster injected.

5th, nine a.m.—One fit only recurred during the night; the patient continued in a state of stupor, with occasional signs of sensibility, and expressions indicative of great pain in the head: the pulse was softer, and the face less flushed. Eight p.m.—She has had one fit during the day; bowels constipated. One drop of croton oil to be taken every hour until evacuations were procured.

6th.—The patient was materially better this morning, two doses of croton oil having produced three copious evacuations. She was perfectly sensible, and free both from stupor and head-ache; thirst considerable; the lochial and lacteal secretions very trifling in quantity.

7th.—Better in every respect. No recurrence of fits.

11th.—The patient suffered from head-ache and sleep-

lessness during the night of the 9th, owing to the torpid action of the bowels. A brisk purgative quite removed the symptoms, and from this time she gradually regained her health.

Case XXXIII.—Elizabeth Roden, æt. 23, had become very plethoric during the latter months of pregnancy; but, with the exception of drowsiness, had not experienced any of the premonitory symptoms of convulsion. She was delivered at six p.m. June the 25th, of her first child, after a very natural and easy labour, and at nine was seized with a violent convulsion which lasted ten minutes. Mr. Bindley saw her at half-past eleven; the fits had recurred several times. She was now partially sensible, but the stupor was considerable; presently the paroxysm returned; she rolled her head about, struggled, saliva issued from the mouth, the pulse was full but not frequent, the head hot, and the face flushed; the lochiæ sparing, and the bowels constipated. Mr. B. ordered leeches, cold to the head, and camphor and opium.

26th, eight a. m.—The fits have frequently recurred during the night. In the intervals between the attacks she lies in a state of coma, and has stertorous respiration. V. S. ad ℥xxv.; head to be shaved, and cold cloths applied. Calomel, pulv. jalapæ, and the purging mixture, were ordered. Two p. m.—The convulsions continue; the teeth had become so firmly fixed, that it was found impracticable to give her the medicine; pulse 100. The blood does not present an inflammatory crust. Cold to be continued. Seven p.m.—The convulsions have recurred. ℞. Olei crotonis gutt. viij.; spt. vini, ʒij.; aquæ cinnam. ℥ij. M. sumat ʒi. 3 tiis horis donec alvus respt. Sinapisms to the feet.

29th, eight a. m.—A surprising quantity of dark green and very offensive fæculent matter has been discharged,

including a multitude of ascarides. She now became sensible, but was unconscious of her illness; and did not remember having been delivered. From this time, with very slight deviations, she gradually and completely recovered.

I have the minutes of a third case, which so intimately resembles the two foregoing, as to render a minute detail quite unnecessary. I will only remark, that the patient was seized, a few hours after delivery, with formidable convulsions. Bleeding mitigated the symptoms; but the most marked relief attended the action of a purgative. The quantity of fæculent matter discharged was almost incredible.

Case XXXIV.—Mrs. ——, æt. 44, was delivered of her fourth child, at three p. m. on Wednesday, the 16th of January, 1834. Her habit is full, and she suffered from constipation, vomiting, and sick head-ache, during each pregnancy, but more especially during the last. She did not pass even a single day, and scarcely a single night, up to the hour of gestation, without vomiting several times; and head-ache also occurred very frequently during the whole period. About the fourth month she was attacked with simple fever, and was bled; after which she suffered still more from pain in the head, spasmodic respiration, and constipation. She entertained a strong prepossession that she should die from the labour, which was, however, safe and of short duration. In five or ten minutes after the expulsion of the placenta, she was seized with a violent fit of convulsion, which continued about two or three minutes, and was attended with purple complexion, and the strongest marks of congestion. A second fit occurred within the hour. On the subsidence of both these fits she recovered her senses, but soon afterwards became perfectly unconscious; the fits recurring about every half hour, until five next morning; from which

time, until nine, she had only two. Twelve leeches had been applied to the temples, and also blisters. The attempt to give medicine had failed.

I arrived at half-past ten on Thursday. Symptoms:—Insensibility; perfect coma; face of a crimson hue, and loaded with perspiration; pupils permanently contracted; conjunctivæ thickened and injected as in ophthalmia; the breathing, which had been stertorous, was now tolerably tranquil; the pulse from 150 to 160 and very small; the breasts flaccid; the uterus large; the lochiæ tolerably copious; and the urine passed involuntarily. Forty leeches were now applied to the temples; ℈ss. of calomel, with i. gtt. of ol. croton was given in gruel, and a colocynth enema administered occasionally. I directed the hair to be cut off, and the application of the freezing mixture: ice was not to be obtained. Calomel in four grain doses was also prescribed every second hour; and the blisters were dressed with ung. hydrargyri. ℥x. or ℥xii. of high-colored urine were drawn off by the catheter. In the course of the evening the bowels were freely acted upon; the motions were dark and fœtid.

Friday.—Although occasionally confused, the senses were, in a great measure, restored, and she conversed with tranquillity. Pulse 120. Mist. sennæ comp. was ordered.

Saturday.—An unfavorable change had occurred. There was constant delirium, with a perpetual exclamation—"the world is to be destroyed." The pulse was feeble and 140; the pupils were much less contracted than on Thursday; the tongue was moist, and very sloughy where it had been bitten. A blister had been applied to the head before my arrival; but it was soon taken off. Sponging the head and face, together with the mist. efferves. and ext. hyoscyami gr. iv. and calomel gr. ij. h. s. constituted

the treatment. After several days, in which little variation was observed, the case terminated fatally. A *post-mortem* examination was refused.

Case XXXV.—A woman, aged 35, and cook in a respectable family, complained on the Sunday evening of violent pain in the stomach, for which she took some brandy, and retired to her bed-chamber. At nine o'clock the following morning, she was found on the floor, dressed, (not having been in bed,) insensible and convulsed. A full-grown dead child, covered by a cloth, lay under the bed, and the placenta and a quantity of blood was concealed in a bucket of water. The funis was lacerated near the child's body. A neighbouring surgeon had bled the patient to the amount of ℥iv. without relief. I saw her immediately afterwards: she was quite insensible; violently and frequently convulsed, with intervening coma; the pupils were dilated, the pulse was feeble, the skin pale, and the tongue much wounded. A dose of calomel and croton oil was swallowed, though with difficulty, and a colocynth enema administered, the operation of which speedily occasioned a partial recovery of the senses. This was followed by a single application of leeches to the temples, the spirit lotion, and saline purgatives with tartar emetic. In a few days she had perfectly recovered.

Since the foregoing pages were written, I have had an additional proof of the efficacy of the tartarized antimony in the sthenic form of eclampsia, the attack taking place within a very short period after delivery. The agency of this medicine is of singular value; for, whilst it lowers inordinate action, it does not produce those

distressing secondary effects which follow large bleedings. Although the emetic tartar cannot be regarded altogether as a substitute for bleeding, the repeated employment of the lancet becomes in a great measure unnecessary, provided, indeed, the influence of the medicine is maintained over the system until the activity of the disease is overcome. In the words of an esteemed author, to whose stethoscopic researches in obstetric medicine we are so much indebted, "the return of the fits will by this means, in the great majority of cases, be prevented; and even in the most obstinate cases they will be lessened in their severity and frequency. This medicine is eminently useful in all cases of puerperal convulsions, in which depletion proves serviceable."*

* Dr. E. Kennedy's observations on the use of Tartar Emetic in Obstetric Practice.—American Journal of Medical Science.

SECTION II.

ON MALPOSITION OF THE UTERUS, OVARIA, BLADDER, AND URETHRA, BOTH IN THE IMPREGNATED AND UNIMPREGNATED STATE, IN CONNEXION WITH RETENTION OF URINE.

If the diseases peculiar to females are not essentially more dangerous than diseases affecting the male sex, they require more patient investigation, and in this country are comparatively ill understood. The acknowledged acquirements of the French in the obstetrical department of medicine, seem referrible to their superior opportunities in the investigation of disease, their unwearied perseverance in scientific research, and in employing the various means of diagnosis.

Malpositions of the *uterus* and bladder constitute some of the most distressing affections to which females are exposed. Descent of the *uterus*, in connection with pregnancy and parturition, is common both to the early and late weeks of gestation, and the first few weeks after delivery; and a material descent rarely occurs under other circumstances, unless occasioned by a polypus or other morbid growth. It is remarked by Mr. Roberton, that "the great distension which the *vagina* endures in giving passage to the head of the fœtus for the first time is productive of more temporary injury to that canal, and the neighbouring textures, than happens in a subsequent delivery; and hence ensues a condition of parts favoring the descent of the uterus and bladder."* From this and

* Edin. Med. and Surg. Journal for April, 1834, p. 395.

an accompanying table of cases, this respectable author concludes, that in a great majority of cases uterine descent may be traced to a first labour. Mr. Roberton's opinions, being the result of much personal experience, are entitled to great consideration; but whether this particular deduction is founded on a sufficient body of evidence may perhaps admit of doubt. So long as the puerperal *uterus* is in a state of enlargement, and the *vagina* is unduly relaxed, a certain degree of *prolapsus* will most assuredly ensue, whether in connection with a first or a subsequent delivery. When, however, it is considered that both the *vagina* and *uterus* acquire higher degrees of relaxation in subsequent labours than is common to first labours, and also that the *rugæ* of the *vagina* are less distinguishable after each successive delivery at term, the evidence in subversion of the received opinion must be most conclusive. It was represented to me by an eminent lecturer on midwifery, that the *uterus* of a woman recently delivered of a first child contracts more perfectly, and is consequently lighter than under corresponding circumstances in a subsequent delivery. This statement, if correct, seems quite incompatible with Mr. Roberton's conclusions.

As respects the catheter, it scarcely need be remarked, that its employment is sometimes superseded in partial descent of the *uterus* by simply raising the organ with one or two fingers, and, provided a moderate elevation of the pelvis be preserved, the obstruction may not recur. When the introduction of the catheter becomes necessary in cases of complete *procidentia uteri*, its direction should be downward and backward, on account of the peculiar situation of the bladder.

Difficult parturition is sometimes followed by inflammatory action, by which the partially prolapsed *uterus* becomes consolidated to the pelvis, and it is obvious that the functions of the bladder may be materially de-

ranged. Retention of urine, consequent upon the descent of the impregnated *uterus*, rarely occurs antecedent to the third month; but when the impregnated *uterus* previously contains within its proper tissues a moderately sized fibrous tumour, the bladder may sustain inconvenience very early after conception.

The most important malposition to which the womb is exposed consists in its retroversion; a displacement said to be favored by a narrow brim, in conjunction with an unusual capacity of the cavity of the pelvis. But it is not my intention to enter into causes; for whether the retroversion is *primarily* owing to the distended bladder, or a loaded state of the bowels, the principles of treatment are nearly the same. The symptoms denoting obstruction in the functions of these organs, obviously point to a mechanical cause, and are faithfully detailed in systematic works on midwifery. Authors have advanced very discordant opinions respecting the danger which this displacement is calculated to produce. The first few cases which occurred to my notice were simple in their character, and yielded to the regular employment of the catheter. In a still more simple case, but attended with severe pain, to which I was called five or six hours after the malposition (occasioned suddenly by the restraint of company) had taken place, although the pressure upon the *urethra* embarrassed me in the introduction of the catheter, the womb rectified its position almost instantly after the bladder was emptied. But my next cases, so far from being very manageable, proved exceedingly perplexing, both on account of the development of the *uterus* and the severity of the symptoms. The catheter was a palliative merely; yet these cases ultimately did well. A case of retroversion, which terminated in death,

was reported to me by a surgeon of the highest respectability; but the event was entirely owing to the patient obstinately resisting the introduction of the catheter.

After the very satisfactory evidence adduced by Dr. Merriman of the *uterus* continuing in a state of retroversion during the whole course of pregnancy, I need only refer to his dissertation* on the subject, and the statements it contains have in no respect been affected by the severe criticism of Dr. Dewees. It has been denied, on very recent authority,† that a real retroversion can take place *after* the fourth month of gestation; and an opinion is there advanced, that the instances reported by Merriman were either examples of extra-uterine gestation or posterior obliquity of the womb. But the case which forms a prominent part of the present essay seems to refute this opinion, and to confirm the facts advanced by Merriman. It is true that in the latter months of gestation a complete retroversion cannot, under any circumstances, take place; but partial displacements have even then occurred, and been attended with the most important results, of which I have adduced a striking example.

In the treatment of *retroversio uteri*, the bladder having been relieved, attention should be immediately directed to the state of the *rectum;* the degree of pressure made upon it has been known in some cases to resist the passage even of an injection. Obstructions so very formidable, it is true, rarely arise. A most important, though neglected, part of the treatment, consists in the *frequent* employment of the catheter; for when the retroversion is complete, and the patient has nearly reached the fourth month, the mere evacuation of the bladder at distant intervals may fail to answer

* A Dissertation on Retroversion of the Womb.

† Traité Pratique, par M. Boivin, et par A. Duges, p. 73.

our expectations. The introduction of the catheter every fourth hour is preferable to the plan of retaining the instrument within the bladder; we guard against an accumulation of urine, and thus secure the great object in view. *

The amount of urine which will collect in the bladder within this period will be insufficient to maintain the *cervix uteri* in its unnatural situation. Should it be found impracticable to give personal attendance so frequently as the case demands, the introduction of a long elastic gum catheter may perhaps be safely intrusted to a properly qualified nurse. Very marked instances of the advantage of frequently emptying the bladder in cases of retroversion might here be adduced; one shall suffice. A few weeks ago I was desired by a brother practitioner to visit a woman in consequence of the *uterus* remaining retroverted at the fourth month of pregnancy, notwithstanding the daily introduction of the catheter for many days. The *fundus* had descended almost to the *anus*, and the *os uteri* was just above the brim. At my recommendation the urine was now drawn off four times daily, instead of once; and on the third day the organ was restored to the natural position.

It cannot be doubted that, in a very large proportion of these cases, the frequent use of the flat silver catheter will be found an all-sufficient remedy. It affords instant relief; and, although the *uterus* may possibly regain its natural position immediately after the bladder is emptied, some days will probably elapse before the restoration is complete. Cases, however, which will not yield to the catheter, though few in number, do really occur, and demand the rectification of the uterus by the hand or fingers; a mode of treatment very commonly resorted to in Hunter's

* See Dissertation on Retroversion of the Womb, 1810.

time, but scarcely ever in the present day. In determining to rectify this malposition, we must be influenced not only by the duration and severity of the symptoms, the period of gestation, and the supposed dimensions of the pelvis, but also by the actual size of the *uterus*, whether enlarged by pregnancy, or disease, or both combined. The mere circumstance of the retroversion continuing until the fourth month, although in itself a strong ground for manual interference, constitutes no absolute necessity for this treatment. The mode in which the *uterus* is lodged in the pelvis must also be taken into account. It may be tightly confined, literally impacted, or it may lie comparatively unrestrained. The *os uteri* may be entirely above the brim, resting upon the *symphysis*, or pressing upon the neck of the bladder; or below the brim compressing the *urethra;* and in women who have had children, perhaps partly above and partly below the brim, pressing both upon the *urethra*, and the cervical part of the bladder. But in the latter case, on account of the increasing weight and progressive descent of the *fundus*, the orifice, notwithstanding its width, will soon emerge quite above the brim, the womb acquiring a more oblique inclination.

Without advocating the expediency of this practice as a general rule, I am satisfied that the position of the retroverted *uterus* may be rectified with less difficulty than is usually supposed. An eminent practitioner assured me that he experienced very little difficulty in effecting the change, although his patient had reached the fifth month of her gestation. The risks of this proceeding have been greatly magnified. The chief evil to be apprehended from it appears to be the premature expulsion of the *ovum*. Peritonitis can scarcely be induced, unless the patient's sufferings have been protracted, or violence has been resorted

to. Provided the necessary manœuvres are made with caution, such results must be very improbable. From a rude attempt very much may be feared; and when gentleness and skill have failed, violence will seldom succeed. A little perseverance, however, may be necessary. Having ascertained the nature of the case, and determined upon the propriety of restoring the *uterus*, the bladder being emptied, an attempt to raise the *fundus* above the brim* should be made with great care, and in the proper axis, the patient resting on her hands and knees. Bleeding and the hot bath may be premised if the resistance is considerable. By placing two fingers of the left hand in the *rectum* against the *fundus*, and two fingers of the right hand behind the *symphysis pubis* upon the *cervix*, the compound action thus obtained will usually prove successful. The proposal to raise the *fundus*, and, at the same time, to depress the *os uteri*, by means of an instrument passed into the bladder, and used as a lever,† will never be contemplated in this country as safe or prudent. In a very difficult case of this kind, occurring in the fourth month of pregnancy, (the *os uteri* being high up over the *symphysis pubis*,) Mr. Cunningham introduced the fingers of his right hand, and pressed them against the body of the *uterus* gently, but steadily, till it began to yield. He then placed the fore-finger of the same hand upon the *os uteri*, and by making traction with it, and at the same time pressing the thumb against the body of the tumour, the *uterus* was brought into its original position. Labour took place on the fifth day, but the patient died two days

* See cases of retroversio-uteri, in the Lond. Med. Gazette, Vol. XIII. page 671, and 754, showing the immediate advantage of raising the *fundus uteri*, and superseding the long process of catheterism.

† Traité Pratique, par Mad. V. Boivin, et par A. Duges, p. 151-2.

afterwards from peritonitis.* If the attempt to rectify the uterus should fail, and no dangerous symptoms appear, the case must be deferred to nature, providing always for the evacuation of the bladder and rectum. Purgatives which occasion straining should be avoided; but since the return of the *fundus uteri* may be rendered difficult by a collection of fæculent matter, the regular use of glysters will be highly expedient.

An important question here arises, viz. can the obstacles to the introduction of the catheter, under every variety of retroversion, be always overcome, and will any circumstance, justify an operation having for its immediate object the partial evacuation of the *uterus?* It is said by the late Dr. John Clarke, that, "either with a small or flexible catheter, the urine may be drawn off in all cases by a person accustomed to the use of the instrument, and who is acquainted with the nature of the case."† Professor Burns observes, "I cannot conceive any case where a gum elastic catheter could not be introduced." It is very certain, however, that persons of undoubted skill have sometimes failed in their attempts to reach the bladder. We have already described the different malpositions of the uterine orifice. Two of these may be attended with some embarrassment; the first, when the *os uteri* is below the brim, and pressing heavily on the *urethra;* the second, when it is above the brim, and making great pressure on the inferior part of the bladder. In either case the course of the *urethra* may be more or less distorted. The *uterus,* under its complete retroversion, may be absolutely impacted within the *pelvis* and immoveable, the orifice being firmly wedged against the upper part of the *urethra,* and resisting the passage of

* Glasgow Medical Journal, for October, 1833.

† Practical Essays, p. 7.

any instrument beyond it. Several fatal instances are on record, in which, owing to this cause, it was found impracticable to enter the bladder. Thus in Mr. Walls' case, which terminated in death, the position of the *uterus* could not be changed until the *symphysis pubis* was divided;* the same circumstance happened in another instance.†

When the retroversion is rendered incomplete, and the *os uteri* rests above the *symphysis pubis*, the pressure will be exerted upon the lower part of the bladder. To this peculiarity in the situation of the uterine orifice, and the trifling amount of urine which has been obtained on passing the catheter, may be ascribed the opinion, that the bladder has been divided into two cavities like the hour-glass; a circumstance which Dr. John Clarke has shown to be almost impossible. The deception seems owing to the catheter not having been conveyed beyond that part of the bladder pressed upon by the *os uteri*. The space which intervenes between this portion of the neck of the bladder, and its termination in the *urethra*, must be inconsiderable, and yet, when the bladder is greatly distended, (and it has been proved to contain two gallons,) a sufficient quantity of urine may be contained in it to occasion the deception. This appears to have been the state of the bladder in Dr. Cheston's celebrated case, in which the catheter was regularly employed for many days. "I could not, (he remarks,) draw off such a quantity of urine as sensibly to diminish the tumour of the abdomen." He therefore tapped the bladder above the *pubis*, and drew off five pints of urine.‡ In Mr. Lynn's case, although the pressure made by the *os uteri* on the neck of the bladder allowed a small quantity

* Med. Obs. and Inquiries, Vol. I. p. 400.

† Perfect's Cases, Vol. I. p. 349.

‡ Med. Communications, Vol. II. p. 9.

of urine to insinuate itself into the catheter from above, it would by no means admit that instrument to pass it from below. The bladder burst from gangrene, and nine or ten pints of urine escaped in the belly.* We are indebted to Dr. Weir, of Glasgow, for one of the most important cases of this nature hitherto recorded.† This patient had taken strong purgatives with the view of procuring abortion. For some days prior to Dr. Weir's attendance the urine had dropped away involuntarily, and now the abdomen was swollen by a firm tumour, painful on pressure, and occupying the sub-pubic region. The vagina was filled by a tumour regarded as the *uterus* in a state of retroversion, although the uterine orifice could not be reached. This tumour not only pressed upon the bladder and prevented the free discharge of urine, but nearly obliterated the *rectum* also, yet the bowels responded to the action of medicine. Urine was drawn off repeatedly by the catheter, varying in amount from two to four pounds in the twenty-four hours, and yet the sub-pubic tumour was only partially lessened The lower extremities as well as the abdomen became œdematous ; the tumour in the vagina approached nearer and nearer its orifice ; every distressing symptom was increased, and it was now impracticable to pass any description of catheter the requisite distance into the bladder. A smaller quantity of urine was each time drawn away, and the bladder reached considerably above the *umbilicus*, whilst the *fundus uteri* was progressively descending, the *uterus* being ultimately turned almost upside down. About the tenth day from the commencement of the severe symptoms, pains ensued resembling the pains of labour, and owing to the strong action of

* Med. Obs. and Inquiries, Vol. IV. p. 398.

† See Glasgow Med. Journal, Vol. I. No. 3, p. 262.

the abdominal muscles forcing the *uterus* still lower, the introduction of the fingers into the vagina proved exceedingly difficult. The condition of the patient had now become desperate, and it was essential to attempt her relief almost at any risk. The puncture of the bladder, (previously contemplated,) was abandoned under a well-founded conviction that such a measure would have little or no effect in bringing down the uterine orifice. The puncture of the *fundus uteri* was also suggested, but prior to its adoption it was determined to make a last effort to reach the orifice. "After much difficulty, and a great degree of force, and in opposition to the strong and powerful exertions of the patient, I succeeded in getting my hand into the *vagina*, forced up my finger above the pubes, and reached the mouth of the womb. An assistant at the same time got his hand into the *rectum*, and we had thus the perfect command of the patient. By steadily pushing upwards the *fundus*, and cautiously pulling the neck and mouth of the womb downwards, the tumour was gradually raised above the promontory of the *sacrum*, and the *uterus* reduced to its proper position." A considerable quantity of urine was discharged during this proceeding; the pubic tumour disappeared; labour progressed, and a four months fœtus, putrid, was extracted about twenty-four hours after the *uterus* had been replaced. Severe abdominal inflammation ensued, which demanded vigorous depletion ere the patient was safe. She perfectly recovered.

It appears, from Dr. Weir's interesting narrative, that the abdomen and inferior extremities became œdematous from the pressure either of the distended bladder, the retroverted *uterus*, or both. In this respect, a more extraordinary case recently occurred in this town, for the œdema extended to the face, especially to that side

of it on which the patient rested, and disappeared on drawing off a large quantity of urine.

The introduction of the catheter may also be rendered difficult in consequence of an unusually distorted course of the *urethra*. In a case of retroflection which terminated fatally, described in Mr. Baynham's paper, the *urethra* was lacerated in the ineffectual attempts to reach the bladder. In another case, on which I was consulted, the angle was so great that it was impracticable to pass a common catheter, male or female. Every attempt was attended by a discharge of blood; and unless we had obtained a catheter with a most extraordinary angle, the bladder must have been punctured. This case will be described presently.

Although the course of the *urethra* will vary a little in different cases of retroversion, it is usually drawn more or less upward and backward;—backward in proportion to the descent of the *fundus*. A catheter with a suitable curve is to be passed into the bladder with its concavity towards the *sacrum;* but, should the inclination of the *urethra* be less unnatural, this precaution will be needless. Assuming, therefore, that serious difficulties in the treatment of retroversion every now and then arise, it may be laid down, that, should the continued pressure occasion inflammation of the bladder, or render the introduction of a catheter impracticable; or should a formidable obstruction arise to the passage of the fæces;* the evacuation of the *liquor*

* A case is recorded, in which twelve days elapsed without any evacuation.—Med. Chir. Review, for July, 1834, page 212. In Dr. Bell's case, which proved fatal, all attempts to pass a glyster were unsuccessful. Inflammation of the intestines, and inflammation and gangrene of the bladder were discovered after death.—See Med. Facts and Obs. Vol. VIII. p. 32.

amnii through the *os uteri*, or, if this is not adviseable, the puncture of the inferior part of the body of the *uterus* through the *vagina* (not the *rectum,)* and the immediate restoration of the *uterus*, will be essential to the preservation of life. This operation has once been adopted in England, in the dispensary practice of my colleague, Mr. Baynham, and I had the gratification of being associated with him in consultation upon it. The situation of his patient, who was six months advanced in pregnancy, was in every respect desperate; and as it was impracticable to pass any instrument through the *os uteri*, as a last resource the *uterus* was punctured *per rectum*, the *liquor amnii* drawn away, and rectification then speedily effected. Recovery most fortunately took place, and a more creditable and instructive case is not on record.* Boyer cites an instance very similar, both in its nature and result.† Purcell and Gardien have spoken of symphyseotomy as applicable to these dangerous cases of retroversion; and it has even been suggested to open the abdomen, and then attempt the replacement of the *uterus*.‡ Upon the fatality of such measures it is needless to insist.

The retroversion of the womb may be occasioned by diseased structure entirely. Malpositions of this kind, in which the *body* and *fundus* are enlarged by disease, although noticed by Pearson, Merriman, and others, is but little understood even at this day. In an instance detailed by Dr. Merriman, rectification followed the regular employment of the catheter. "This alone," he observes,

* See Edinburgh Medical and Surgical Journal, for April, 1830.

† Traité des Maladies Chirurgicales, Tom. X. p. 531.

‡ Traité Pratique des Maladies de' l'Uterus, par Madame V. Boivin, et par A. Duges, Tome premier, p. 154.

"will generally perfect the cure;"* a statement unquestionably correct. Nevertheless, the practitioner must not allow the *uterus*, when greatly enlarged by disease, to remain long in a state of retroversion, confident that rectification will take place under the use of the catheter, since the organ will gradually acquire an increase in its bulk, and may ultimately resist every attempt which can be prudently made to alter its position.

All the symptoms of *retroversio uteri* may be occasioned by malposition of one or both *ovaries* enlarged and pressing upon the bladder and rectum. A case of this kind was confounded by Dr. Ramsbotham and others† with retroversion of the womb; and where the *os uteri* cannot be reached, the diagnosis must be unusually perplexing. Not only may retroversion of the *uterus* be confounded with the enlarged ovarium, but with extra-uterine pregnancy. From the latter it may not be easily distinguished, and yet the distinction is of the highest importance. To elevate a tumour from the recto-vaginal septum, consisting, for instance, of the impregnated ovarium, would be converting a comparatively simple into a very complex case. Dr. Young has published a case of extra-uterine pregnancy, in combination with *retroversio uteri*.‡ Retroversion of the enlarged but unimpregnated *uterus* must be treated by the catheter, mild aperients, and opiate injections. Unless contra-indicated by circumstances of a special kind, bleeding, the hot bath, and medicine to create nausea, may be also resorted to, and an attempt gently made to change the bearings of the diseased organ.

The retroverted *uterus* may also consist partly of the

* Dissertation, &c. p. 23.

† Practical Observations, Part II. Case CCXI. page 452.

‡ See Edin. Med. Chir. Transactions, Vol. III. page 536.

ovum and partly of diseased structure, usually of the fibrous or sub-cartilaginous kind. These growths are more frequently developed in the *fundus* and *body*, than in the *cervix uteri;* but I have recently prescribed for four females, in each of whom a tumour, varying in size from a large nut to a small hen egg, has formed within the tissues of the *cervix*.

The morbid anatomical character of these tumours vary very materially at successive periods of their growth, increasing in consistence from a steatomatous or fibrous deposition to a structure of a cartilaginous and even bony hardness. According to Madame Boivin, their early induration checks their further increase. Between these morbid growths and diseases of a malignant character there is scarcely any analogy, at least at their commencement and when free from inflammation; and their progress, whilst small, is seldom denoted by any obvious symptoms.

Although a tumour of this character frequently increases the menstrual secretion, it seldom offers resistance to conception. When the *uterus* generally is affected by it, abortion will probably take place; but a partial enlargement may occasion malposition of the pregnant womb, without interrupting the course of gestation; and many instances of difficult and even fatal parturition have been proved to depend upon this cause. If the tumour be confined to the *fundus uteri*, its presence may not be suspected, and will not impede labour. In this town a woman died apoplectic a week after her delivery; and a large fibrous tumour, the existence of which was not suspected, was found developed in the proper structures of the *fundus* and *body* of the womb. From the rapid growth which these bodies acquire during pregnancy, and their liability to inflame and implicate the general *peri-*

toneum, the attendant should observe the state of the circulation both previous to parturition, and also for several days subsequent to the delivery, so as to enable him to detect the first symptoms of mischief, and enjoin an appropriate treatment.

In some instances the proper tissues of the *uterus* have acquired an increase in bulk, but in others the walls have become so thin, as to justify an apprehension that the labour-pains might occasion a breach of surface. In all cases of tumours, the chances of inflammation supervening after delivery must be greatly increased; and I am not certain whether the frequent and violent contraction of the abdominal muscles upon the tumour in protracted parturition may not favour the attack.

I shall now detail the circumstances of a case of enlargement of the *fundus* by disease, in connection with retroversion of the *body* of the pregnant womb, which terminated in death after delivery.

Case.—A lady, who had been married about a year, directed the attention of her physician, Dr. Shirley Palmer, to a solid and apparently immoveable tumour, confined at this time to the right iliac region, and, from its pyriform shape, considered by him to be the *uterus*. Menstruation had recurred without interruption from the period of her marriage up to the last two months, about which time the tumour began to attract her notice. In consequence of a sudden inability to void urine, attended with severe pain, I visited her at Dr. Palmer's request.

On examination *per vaginam*, I discovered a large tumour in the *pelvis*, in addition to the tumour seated in the right iliac region. By means of a full-sized catheter, a quart of urine was drawn away; but, owing to the course of the *urethra* having become unusually curved, a little manœuvring was necessary to reach the bladder. The

patient having placed herself on her hands and knees, I now made an attempt to elevate the tumour in the *pelvis* above the brim by means of two fingers of the left hand passed into the *rectum*, (the thumb not being sufficiently long,) and two fingers of the right into the *vagina*, but the attempt proved unsuccessful. The bladder being relieved, the chief symptoms were thirst, sickness, frequent vomiting, difficulty in moving, and occasional attacks of pain in the hips and back, but there was neither tenesmus nor expulsive effort. There was subsequently an increased frequency in voiding urine; but this seemed to depend upon an inability to retain more than an ounce or two of urine without inconvenience. The catheter was introduced to prevent the possibility of a mistake.

Examination of the Abdomen.—A firm, immoveable, and inelastic tumour was situated in the hypogastric region, extending nearly from the right *ileum*, to within an inch and a half of the left, having a very marked elevation on the right side, and its margin at the *umbilicus* was well defined. The tumour did not impart any particular sensation on pressing it, and neither motion nor pulsation could be detected in it by the hand. The stethoscope merely evinced a whizzing sound near the right groin, differing very sensibly from the sound on the opposite side.

Examination per vaginam.—The tumour in the pelvis had the form and consistence of a fœtal cranium. It lay in the axis of the brim, and was loosely covered with a membrane, through which furrows, resembling the sutures of the fœtal cranium, could be easily distinguished. The apex of the tumour was scarcely two inches from the *os externum*. With some difficulty, the finger could be passed its whole length between the tumour and the *symphysis pubis*. About half-an-inch above the *symphysis*, and barely within reach, I detected the uterine orifice, not

quite closed, lying transversely, rather in advance of the tumour. The state of the *cervix* could not be satisfactorily determined. Between the tumour and the posterior part of the *vagina*, I was unable to pass my finger higher than two inches,—its farther passage being prevented by a *cul de sac*.

Examination per rectum.—Almost as high as the finger could reach, the tumour could be felt bulging into the rectum, but not interrupting the passage of the fæces.

Subsequent changes.—Although the introduction of the catheter was only once really required, the tumour continued progressively descending, so that, on the eighth day of my attendance, it almost touched the vaginal orifice, having passed as low as the recto-vaginal septum would permit. We now entertained doubts whether the tumour consisted of the impregnated *uterus*, an extra-uterine conception, or a morbidly enlarged ovary or womb; and the propriety of returning the part within the abdomen, admitted of serious question. With a view of satisfying myself as to its impaction in the *pelvis*, having passed two fingers within the vagina, I placed them upon the most depending part of the tumour, (the patient resting on her hands and knees,) and although I made no very considerable effort, the tumour was suddenly carried above the brim. The character of the tumour, within the *abdomen*, was immediately changed. Its situation was central; its margin was just above the *umbilicus;* the *hypogastrium* was greatly distended,—two-thirds of it being occupied by a tumour of a very dense structure, in connection with a softer structure situated above the *symphysis pubis* and resting on the brim.

The tumours were continuous with each other, and, excepting a marked difference in their form and consistence, there was no line of demarcation. The pains instantly

ceased, the *os uteri* regained its natural situation, and the patient felt light and comfortable. The tumour was peculiarly moveable in every part of the *abdomen*, and appeared to have slight irregularities on its surface. For two or three months the tumour continued progressively ascending, and it was apparent that a very marked change had taken place. The whole of the *abdomen* below the *umbilicus* had become uniformly distended by a substance having all the characters of the gravid womb. This tumefaction extended above the *epigastrium*, and occupied the whole of the right *hypochondrium*. In this tumour very active and even violent movements were not only perceptible to the fingers, and painful to the patient, but visible to the eye; and knuckle-like substances were traced passing simultaneously with the movements, from one part of the tumour to another. The movements cannot be distinguished when the body is erect, in consequence of the distended state of the abdominal integuments. They were not perceptible before the sixth month, and this will not appear surprising when it is considered that the child was confined to the *body* and *cervix uteri*, and that a part of the *cervix* was confined within the brim during the whole period of gestation. On examining *per vaginam*, the *os uteri* was felt relaxed, and sufficiently open to admit the end of the finger, the *cervix* was quite developed, and a substance like a child's head rested on the *symphysis pubis*, in which the movements just described were perceptible on examination *per vaginam*. With the advance of pregnancy the left *hypochondrium* was occupied by a very hard, oblong tumour, longer than a child's head, and a line of demarcation between this solid tumour and the more generally diffused swelling was tolerably distinct. The dense tumour could now be moved freely from one side nearly to the other, and we felt tolerably assured, that it consisted

of a greatly enlarged *uterus*, which had acquired a fibro-cartilaginous structure. The tumour continued to enlarge, and the *os internum* became very soft and expanded, in consequence of the increasing development of the *cervix uteri*. In the erect position of the body the *os internum* could barely be reached, being then forced upwards and backwards by the action of the abdominal muscles upon the anterior part of the hard tumour. There appears to have been a material connection between the peculiar displacement in the example before us, and an unusual laxity of the soft parts.

The first approach of labour, on the afternoon of Tuesday, 21st October, was denoted by slight pains, and the usual muco-sanguineous discharge; but my attendance was not required until about ten o'clock on Wednesday morning, and in two hours she was delivered of a fine living child. The labour was of short duration, and so remarkably easy as to excite the patient's surprise. On the division of the *funis*, I placed my hand upon the *abdomen*, but the relative situation of parts was now quite altered; the hard tumour had promptly descended from the left *hypochondrium* to the hypogastric region, occupying the *abdomen* from *ilium* to *ilium*, and extending from about an inch and a half above the *umbilicus* to the *ossa pubis*. The *placenta* was expelled within five minutes, and without hæmorrhage; but, subsequently, the discharge was rather copious. In the evening of this day the patient was seen by Dr. Palmer, and her situation was in all respects most satisfactory.

Thursday, half-past 2 p.m.—She remained very comfortable, but the *lochiæ*, though natural in quantity, was more than usually unpleasant in its odour. The bowels had been gently moved by castor-oil, and milk was secreted. Shortly after my visit, she was seized with consi-

derable pain in the tumour, and Dr. Palmer was, in consequence, called to her at 10 p. m. The *abdomen* was extremely tender and swollen, the degree of swelling quite concealing the tumour; she had vomited; the pulse was 130, and feeble; and the countenance most anxious. The treatment recommended comprised fomentations, the abundant application of leeches, with calomel and opium, and mercurial inunction, but she positively declined all treatment until the following day.

Friday, noon.—The leeches have been applied with great relief. Friday evening.—Much the same.

Saturday Morning.—Effusion has taken place. The exhaustion very considerable; we were obliged to resort to stimuli. Saturday evening.—The puffy state of the abdomen is much diminished, and the tumour may again be distinguished. One side of the abdomen is occupied by it, and the other side by the serous effusion, which distinctly fluctuates.

Sunday.—The exhaustion has increased.

Monday morning.—She is somewhat improved, but complains of considerable pain in the upper extremities, and the angle of the left jaw is swollen, occasioned, perhaps, by the mercury, although there is no other evidence of its action.

Tuesday morning, 3 o'clock.—She expired apparently during sleep.

Autopsy.—The body was examined thirty hours after death. The *peritoneum* lining the abdominal muscles presented a very beautifully injected and radiated appearance. The intestines were distended with air, and their exterior surface assumed a highly injected appearance. The *abdomen* and *pelvis* contained a quart of orange-coloured *serum*, with flakes of lymph, and a quantity of well-formed purulent matter.

The tumour was found to be the *fundus* of the womb. The organ consisted of two parts, a line of demarcation distinguishing the healthy from the diseased structure. The superior part comprised a morbid growth bulging very considerably both before and behind, and corresponding to the situation of the *fundus*. Its surface is irregular, and appears distended by small depositions. The *peritoneum* covering the tumour presents rather a singular appearance, a deep mottled colour pervading its surface generally with intervening patches of the colour of lymph. The inferior part of the tumour corresponds with the body and neck of the organ, and is healthy. Blood-vessels traverse its surface in a radiated form, but its colour is otherwise quite natural.

The *uterus* and appendages, when divested of all the loose cellular tissue, weighed three pounds and six ounces. The length taken by compasses is $11\frac{1}{4}$ inches; the breadth $4\frac{3}{4}$ inches; the circumference of the diseased growth is 14 inches; the distance from the centre of the *fundus* to the Fallopian tubes, is $5\frac{3}{4}$ inches, and the distance from the Fallopian tube to the *os uteri* from $5\frac{3}{4}$ to 6 inches. The depth of the cut surface is $3\frac{1}{2}$ inches.

On opening the *uterus*, and making a section of the tumour, it was found to consist of a fibrous-like structure, improperly termed the fleshy tubercle, but more appropriately designated by Hooper, the subcartilaginous tumour.* On minute examination, the tumour appears to be composed of two structures, the one rather brown and like cow's udder, the other white, and resem-

* See Hooper's Morbid Anatomy of the Human Uterus, p. 10, and Plates 4, 5, and 6, of which figure 2 in Plate 4, although not so fine a specimen, is the nearest representation of the appearances here described.

bling gristle. The brown structure greatly predominates over the white, and the gristly structure, though partially diffused through the whole tumour, is deposited chiefly on its exterior surface, and thus imparted to the fingers during life a firmness of structure which the interior of the tumour did not possess. In form, the tumour is globular, and occupies the whole region of the *fundus uteri*, where it appears to have been developed in every direction, but peculiarly so towards its summit, three-fourths of the tumour from above downwards having nothing besides *peritoneum* for its envelope; the remaining fourth is covered both by the *peritoneum*, and the proper tissue of the womb, greatly attenuated. The capsule, therefore, which contains the tumour, is chiefly formed by the *peritoneum*, but partly both by the *peritoneum*, and the attenuated uterine substance. At the posterior surface, the tumour adheres very closely to the capsule, though not by any apparent vessels; but the great mass of the tumour is perfectly loose, having no communication whatever with the parts around it.

The disease seems to have commenced about the centre of the *fundus uteri*, and within its fibrous tissue, the absorption of which must have been progressive. In the body of the *uterus*, the proper fibrous tissue remains almost natural, and a small tumour, rather larger than a full-sized horse-bean, was enclosed within it. It was quite loose, and dropped out of the cavity, which resembles a defined but well-formed cyst.

The *cervix* is scarcely if at all thinner than usual; a circumstance which appears rather singular, when it is considered that its structures were fully unfolded as early as the fifth month, and that it contained a part of the child during two-thirds of the period of pregnancy. The *placenta* was attached as high as the tumour would admit,

and the vessels corresponding with its implantation appear very large.

It is clear from the history of the case, that the retroversion preceded for several weeks the retention of urine, and was not primarily occasioned by it. The case is instructive, especially in the fact of the retroversion continuing (for there is no evidence when it took place) for so long a period. Instead of the *uterus* returning to its natural position on the bladder being emptied, it continued progressively descending, and, if rectification had been neglected, the retroversion must have remained until, by increasing its bulk, the elevation of the gravid womb would have been wholly impracticable. The retroversion of the body of *uterus*, when the far greater part of the organ was within the *abdomen*, is certainly very singular. Judging from what happened in this case, it is evident that the *fundus* may remain within the *abdomen*, and the neck rest upon the *symphysis pubis*, whilst the body of the organ is near the outlet.

Before delivery the tumour was not productive of pain or tenderness; the inconvenience was merely mechanical. She was harassed by occasional attacks of vomiting and heartburn; but these depended upon her habits of life, and not upon the state of the *uterus*. I need only observe, that her habits, which were most uncongenial either to health or happiness, were persevered in up to the hour of labour, notwithstanding the strongest remonstrance. Under such circumstances, an attack of acute *peritonitis* would almost certainly prove fatal, and, to render the chances of recovery as slight as possible, twelve hours elapsed after the treatment had been determined upon, before our unhappy patient could be prevailed upon to commence it.

The patient had suffered severely for many years from attacks of *hysteria*, bordering at times on *nymphomania;*

the *hysteria* alternated with *hæmatemesis;* and occasionally she suffered from attacks of *dysuria*. It appears highly probable that these were connected with the disease of the *uterus* in an incipient state, and that the marriage and consequent impregnation had given an impulse to a disease before dormant.

It has already been stated that a tumour, when confined to the structures of the *fundus uteri*, will not interfere with the process of labour. But when a large tumour is attached to the *cervix*, malposition of this part of the womb will almost certainly ensue, and, by obstructing labour, prove a source of great danger.

The details of a case of this nature were very obligingly furnished me by a medical friend. It appears that the patient had experienced labour-pains for five days, during which time a large tumour occupied the whole of the brim of the *pelvis*, descending also into the hollow of the *sacrum*, and the uterine orifice, being forced quite above the *symphysis pubis*, could not be distinguished. On the fifth day the tumour receded, and the *os uteri* now descended through the brim, but the labour-pains being inefficient for expulsion, and the child being dead, delivery was effected by the operation of craniotomy. I need not say that every possible assistance was afforded the patient, when it is known that she was attended by two of the most able practitioners which the profession affords. But, notwithstanding their judicious treatment during labour, and their prompt measures subsequent to labour, the patient died from inflammation on the tenth day.

On the examination of the body, a very large mass was seen at the lower part of the *abdomen*, and occupying the brim of the *pelvis*. It appeared to be divided into two parts by a deep indentation; one part, which proved to be the *uterus*, was situated above the brim, the other part,

formed by the tumour, quite occupied the brim, and presented through it. It was situated within, and apparently formed part of, the *parietes* of the posterior part of the *cervix uteri*. Its diameter measured 3½ inches; externally it felt very hard, but internally it was pulpy, and contained some liquid. Three other tumours, divided by thin membraneous septa, were also found developed in the proper tissue of the *uterus*. The intestines were in close adhesion to the liver, *uterus*, and the large tumour, and also to each other; coagulable and flocculent lymph and serum had been extensively effused.

The flexions of the *uterus* are numerous, and may affect almost any part of the organ. According to Baudelocque, "in certain obliquities of the *uterus*, the *cervix* has been flexed on the same side as the *fundus*," "recurved like a horn," and Boër maintains, "that, five times out of twelve, the *cervix uteri* during pregnancy bends to the same side as the *fundus*." Madame Boivin asserts that flexion takes place, "more particularly near the place where the *cervix* is fixed upon the body of the *uterus*; and that in retroflexion the *cervix* is sometimes "forcibly directed backward," "the *fundus* being also carried a little backward." We learn from Denman, that in retroflexion the *fundus* is turned downwards and backwards in the *recto-vaginal septum*, the *os uteri* remaining in its natural position; and he further observes, that this alteration is produced by the bending of the *uterus* in the middle, and only immediately after delivery; a conclusion which subsequent observation has disproved.

"It has been asserted," observes Dr. Blundell, that, "if the *uterus* is not retroverted, the *os uteri* will always be found lying forward and upward above the brim in front; but this is a mistake. The occurrence is sufficiently frequent to render the diagnosis worth your attention. Re-

member, however, that it is far from being the sole or principal one by which you are to judge,—*first*, because, when the neck of the *uterus* is very flexible, as sometimes, you may have a retroversion of the body only, the *uterus* doubling backwards upon its own *cervix*, and the *os uteri* remaining nearly in its former situation." The direction of the *os uteri* is usually regulated by the degree in which the *fundus* is displaced, but not invariably so. Instead of being in its natural situation, the *os uteri* may be projected above the *symphysis pubis*, as in the case detailed, whilst the *fundus* is in the *abdomen*, and the body and neck of the *uterus* remain in the true *pelvis*, and constitute the retroversion. This change is more likely to happen at the time when the bulk of the *uterus* is quitting or has just quitted the true *pelvis;* for under these circumstances the *os uteri* might easily emerge, and rest above the brim.

In Mr. Baynham's communication, already referred to, a case is described of retroflection, or incomplete retroversion, of the pregnant *uterus*. It appears that a woman, not supposed to be pregnant, had suffered from retention of urine, in connection with a distended state of the abdomen, and a distinct tumour situated on the right side between the *pubis* and *umbilicus*. Death occurred on the 13th day from a laceration (by the catheter) of the *urethra*, where it formed an angle, and the continued retention of urine.

On inspection, a part of the *uterus*, embracing the head and chest, of an apparently five months child, was found tightly retained in the *pelvis*, and a considerable part of the *uterus*, containing the other parts of the child, was still above the brim.

The term *antiversion* signifies that displacement of the womb, in which its *fundus* lies forward upon the bladder, or between the *vagina* and bladder, the *os uteri* being directed to the *sacrum*. Professor Burns informs us, that

he never met with an instance of it during gestation. It seems doubtful whether antiversion in the unimpregnated *uterus* will be attended with retention of urine. According to Boivin and Duges, the pressure of the *fundus uteri* keeps the bladder empty. According to Desgranges, the *fundus uteri* sometimes descends still lower, pressing upon the neck of the bladder, and favoring retention of urine. In this case, the *os uteri* will exert more or less pressure upon the *rectum*.

A middle-aged unmarried woman, supposed to be the subject of diseased bladder, was recently sent to me from the country, in whom antiversion existed in its perfect form. The demands upon the bladder were nearly incessant. Its structures were apparently sound, and it did not contain urine. The bowels were obstinate. I could easily alter the position of the *uterus;* but on withdrawing my fingers, it immediately relapsed into its unnatural position. At present she has not obtained relief.

The common form of obliquity of the gravid *uterus* is that in which the organ inclines more or less to either side; and although sometimes occasioned by a deformity of the spine, brim of the pelvis, or a distended bladder, more frequently depends either upon an accumulation of fæces in the large intestines, or an undue relaxation of the abdominal *parietes*, possibly in connection with fæcal accumulation. The inconvenience which arises during labour is usually slight, and easily overcome. Obliquity may also be occasioned by any extraneous growth which interferes with the natural inclination of the organ. In a very interesting example of this kind, a tumour, which was very tender to the touch, and about the size of a large orange, partly occupied the brim of the pelvis, and partly the left iliac region, during the act of parturition. Gradually the uterus fell into the axis of the brim, and delivery terminated

favorably. Two years have elapsed, and although the tumour has materially increased in size, its position is still variable. Uterine obliquity is rarely observed prior to the accession of labour; but in women who have borne many children, a high degree of obliquity may occur soon after the third month, and by its obscurity constitute a source of great danger. I subjoin an example. A woman with a large *pelvis*, and a very lax state of the abdominal coverings, noticed a tumour about the size of an infant *cranium* resting almost upon the *ilium*. It proved to be a gravid *uterus*, for, after a succession of hemorrhages, expulsive pains came on, by which the *uterus* was brought into the centre of the *hypogastrium*, terminating in the delivery of a five months child and *placenta*. The patient was greatly exhausted, and died almost immediately. The last section contains a still more interesting example.

I now proceed to make a few remarks on malposition of organs with which the uterus is more or less connected, viz. the ovaries, bladder, and urethra.

1. *Malposition of one or both Ovaries.*—To enter fully into this subject would occupy a space altogether inconsistent with my present intention.* In very rare instances the (healthy) ovarium has been found within the hernial sac; but with this exception, the descent of the (diseased) ovarium within the recto-vaginal septum constitutes the only change of position to which the part is liable. I say nothing of the change in its relative situation of the greatly enlarged ovarium when confined within the abdomen, whether it is loose and floating, or generally adherent. The descent of the moderately enlarged ovarium into the recto-vaginal septum is by no means unfrequent; and

* See Midland Med. Reporter, No. VII. Vol. II. p. 50.

when material in degree, will derange the functions, and affect the situation both of the uterus and bladder. Dr. Ramsbotham's striking case has already been referred to.

Another example is here annexed. A young woman was seized two or three weeks after delivery with most severe neuralgic-like pains in the bladder and course of the urethra, accompanied with intense pain in passing urine. She was sounded for calculus; leeches were applied to the external genitals; opium, carbonate of iron, and a variety of other remedies were tried in vain. Her distress becoming intolerable, a consultation was held on her case. On examination *per vaginam*, I found a substance about the size of an hen-egg situated in the recto-vaginal septum, and excessively tender to the touch. It was agreed to attempt on the following morning the elevation of the tumour above the brim of the pelvis; but in the meantime the distress had suddenly ceased: and on renewing the examination, it was found that the tumour had disappeared; a spontaneous cure had, in fact, taken place.

Although the ovarium when greatly enlarged cannot enter the brim of the pelvis, a portion of dropsical ovarian sac, or a small sac in connection with a large tumour, may descend within the septum, and produce a most inconvenient pressure on the contents of the true pelvis. I once punctured the ovarium *per vaginam*, and drew off four gallons of gelatinous secretion. In every case of contemplated tapping *per abdomen* for the relief of *hydrops ovarii*, (as it is incorrectly termed,) the vagina should be previously examined, since it may possibly present a surface at once the most eligible and depending for the evacuation of the sac. The resistance which an enlarged ovarium within the septum may offer to the expulsion of the fœtal cranium is perfectly well known; and the principles of treating such cases are considered in another section.

2. *Malposition of the Bladder.*—Although the nature and treatment of uterine descent is allowed to be now well understood, the same cannot be said of displacements of the bladder. The only important displacements demanding the use of the catheter with which I am familiar, comprise prolapsed states of the bladder in connection with the womb, and simple descent of the bladder into the vagina, both in the unimpregnated state, and also during gestation or labour. Protrusion of the bladder during pregnancy is a somewhat rare occurrence; and having seen two cases possessing much practical interest, I shall presently adduce them in illustration.

Causes.—In connection with frequent or difficult parturition, violent straining, or long-continued discharges, the causes of vesico-vaginal protrusion may be referred either to a partial defect of muscular fibre, or an undue relaxation of that part of the vagina which is opposed to the posterior surface of the bladder. Subordinate causes may also be noticed. Thus, wherever a predisposition to this complaint exists, inattention to the calls of nature will operate most materially in its production; since, in proportion as the urine is allowed to accumulate, the bladder, instead of rising wholly out of the pelvis, and distending the subpubic region, sinks still lower; and, admitting that the *fundus* of the bladder may pass above the brim, the middle and inferior parts of the viscus bulge into the vagina, advancing at length towards, or even beyond, the *os externum*, and presenting a tumour of no ordinary dimensions. Dr. Davis thinks it probable "that these malpositions of the bladder are often the result of previous adhesions of parts of its parietes to the neighbouring surfaces, in consequence of former bad labours, or of other causes of adhesive inflammation of the surfaces in ques-

tion;"* but these causes appear to be rather incidental than general.

Character of the Tumour.—The displaced bladder may occupy either the *labium* or the *vagina*. Of the former kinds of tumour many instances are on record. Of the latter, two degrees of descent (as in descent of the *uterus*) may be conveniently described, viz. simple *prolapsus*, and actual *procidentia*.† The tumour, when small, may be confined to the front on either side of the vagina; but the anterior protrusion, for reasons very obvious, occurs the most frequently. When the bladder or a considerable portion of it bulges into the vagina, the canal will be occupied by a somewhat elastic but soft kind of swelling, varying a little with the inclination of the body, and acquiring a degree of tension during each effort to expel urine;—a feature highly characteristic of this malposition. The tumour recedes under the pressure of the fingers, and, after voiding urine becomes flaccid, although it may not entirely disappear. The size of the tumour will necessarily vary with the amount of urine it contains; and as the sac is but partially evacuated, the inconvenience becomes almost permanent. It is probable, as Sir C. M. Clarke observes, that the muscular fibres "which form the pouch have not the power of contracting so as to expel the whole of the urine."‡ A material degree of displacement affecting the uterus or bladder singly, is incompatible with their common anatomical connection; with slight degrees of displacement it is otherwise. In *procidentia uteri* the

* Obstetric Medicine, Part XLI. p. 989.

† Consult Sir C. M. Clarke's work for the best account of these displacements yet published.

‡ Diseases of Females, 2d edit. p. 133.

bladder constitutes the anterior and superior part of the swelling. In *procidentia vesicæ*, although the uterus can scarcely maintain its natural position, the change will be inconsiderable, provided the organ possesses its natural size. But should the descent of the bladder when complete, be attended with retention of urine, the fundus and body of the uterus being at the same time in the abdomen, (as in advanced pregnancy);* the uterine orifice will probably be directed backwards, although the situation of the fundus may undergo scarcely any change. Mr. Christian† says, that the tumour does not prevent the *os uteri* from being readily felt; but it was otherwise in one of the cases detailed in this section, and will altogether depend upon the size of the tumour. Dr. Hamilton‡ informs us, that, although the *os tincæ* can be felt, it will be situated very high and quite undilated,—a statement to which many exceptions may be made. In addition to an increased frequency in voiding urine, (which in some instances is exceedingly painful,) there is a sense of fulness or pressure in the vagina and a dragging sensation and uneasiness about the umbilicus—symptoms which have been referred to the connection which subsists between the umbilicus and the superior ligament of the bladder. The pain sometimes extends to the whole genital system; and some women are said to suffer more both from bearing down and frequent micturition, when the body is horizontal than when it is recumbent. Copious vaginal discharges of the mucous kind occasionally take place. In advanced gestation the symptoms are more

* In the middle months of pregnancy, prolapsus of the bladder will probably be relieved by the progressive elevation of the uterus.

† Edin. Med. and Surg. Journal, Vol. IX. p. 281.

‡ Hamilton's Cases, p. 9 to 17.

severe, the bearing down sensations being peculiarly troublesome, and the abdominal muscles painfully and spasmodically affected. In fact, the violence of the contractions has the effect of forcing the ovum against the uterine orifice, and partially dilating it. Thus labour might be supposed to have commenced; but the action is purely mechanical, and soon ceases on the evacuation of the bladder.

An impediment to the intercourse of the sexes may also be occasioned by a protrusion of the bladder into the vagina. Under an extreme degree of protrusion, the vagina will be completely occupied by the tumour, which may even appear externally; but an obstruction of so formidable a character has only once occurred within my observation. Minor degrees of protrusion arise not unfrequently. It may probably be thought that a vesico-vaginal tumour of circumscribed dimensions, cannot produce the impediment just alluded to; but I am perfectly assured that it may. Let it be recollected that the inconvenience is relative, or mainly so at least, since the tumour will vary materially in its bulk according to the amount of urine it may chance to contain at the moment. Without presupposing either an imaginary grievance or peculiar fastidiousness of mind, it has been a matter of conviction with the parties interested, that an obstruction had formed in the vagina, varying both in bulk and elevation, but not entirely disappearing at any time; and this obstruction has proved to be the bladder. An apt illustration may here be adduced. The parties, moving in the most respectable sphere of society, had been married five years, but had not had a family. During the first four years neither difficulty nor obstacle presented itself, but soon after this a positive impediment arose, and my opinion was solicited. I ascertained that the vaginal

canal was considerably obstructed by a soft but bulky tumour, consisting of the bladder partially filled with urine, which had fallen over the uterine orifice like a curtain. On the discharge of the urine the tumour sensibly diminished; but a very unnatural protrusion still remained as an object of medical treatment.

Diagnosis.—Had not several very serious errors in diagnosis been committed, it would seem incredible that a tumour continuous with the vaginal membrane and covered by it, could be confounded with structures not only dissimilar in kind, but perfectly detached from the surrounding parts. The requisite information may usually be obtained by a common examination; but when doubt exists, the catheter should be introduced, and provided the tumour consists of the bladder, the very marked collapse consequent on its evacuation will at once determine its real character. In *prolapsus uteri* the orifice of the *uterus* is commonly visible; but it is material to recollect, that "in *procidentia* of the bladder of long standing, the pressure of the posterior part of the viscus (when containing some urine) upon the cellular membrane, connecting it with the anterior part of the *cervix uteri*, elongates this cellular membrane, but as it does not yield readily, the *anterior lip* of the *os uteri* is dragged down with it, so as to be very much lengthened."* A tumour consisting of

* Clarke on Diseases of Females, pp. 136 and 137.

Does elongation of the *cervix uteri* usually depend upon the cause here assigned? An unnatural state of the bladder may certainly be *occasioned* by it. I was consulted in the early part of the year on the following case:—Mrs. C., aged 50, for the last twenty years had suffered pain and difficulty in voiding urine, and also during sexual intercourse, which, in fact, had become impracticable. On examination, the vaginal portion of the *uterus* appeared to be nearly, if not quite, four inches in

the hydrocephalic head or the membranes of the ovum, cannot resist the passage of the finger around its circumference. Although the protruded bladder may unquestionably recede before the finger, it will admit of being accurately examined, and the closeness of its connection with the pelvis will render it impracticable to insinuate the finger around its circumference. The tumour formed by the bladder may be very voluminous when complicated with labour (the first stage being on the eve of completion); and attended with the most serious deception. M. Aussendon at first mistook an elastic cystocele which had suddenly formed, for the sac containing the liquor amnii; but finding that the tumour did not change its situation, he passed a catheter and accomplished its reduction. M. Robert had noticed the same complication; but in this instance the bladder was extremely irritable, and the cystocele proceeded only from the pubic part of the vagina. In a case of recent delivery recorded by Chaussier, the cystocele was confounded with the fœtal cranium, and the expulsive pains for the pains of a second parturition. M. Chaussier arrived just in time to prevent the surgeon from opening the tumour.* Indeed, in two cases of this kind

length, the lowest point reaching the *os externum*, and on the least impulse descending about two inches beyond it. This portion intimately resembled the adult glans penis deprived of its fore skin, both in size, colour, and having a line of demarcation resembling the sulcus which divides the glans from the body of the organ. The *os uteri* would barely allow a good size probe to enter. The *uterus* being brought as low as possible by means of a strong ligature applied within the sulcus or groove alluded to, amputation of the exuberant portion was performed by Mr. Waddy, and in a fortnight the patient had completely lost all her symptoms. Her recovery is perfect in all respects. Mad. Boivin gives us little or no information on this particular disease.

* Archiv. Generales, Sep. 1834.

the tumour was actually punctured.* The first was mistaken for the hydrocephalic cranium, as related by Dr. Merriman. The second is mentioned on my own authority; the tumour was punctured during labour with a penknife, and the patient luckily recovered without any fistulous aperture.† Certainly, a breach of surface produced by a cutting instrument is far less likely to degenerate into fistula, than a wound occasioned by sloughing; but it is a most summary as well as a most fearful mode of overcoming a difficulty. In a similar protrusion, an attempt was made to rupture the sac, under an impression that it was distended with the *liquor amnii;* happily the attempt failed, the catheter was then introduced, and the evacuation of the sac soon followed by delivery. An encysted tumour, occupying the cellular tissue behind the *pubes*, might certainly be mistaken for the protruded bladder, but all doubt would be removed

* Merriman, p. 214, Appendix, case 4.

† A still more extraordinary case, related by Dr. Buck in Vol. 45. "Rust's Magazin," is just placed on record.‡ A woman having experienced a sense of prolapsus in the erect posture, became sensible of the presence of a round body within the vagina. It increased in bulk, and at length protruded through the external parts. For some years she was able to replace it; but at length, having descended lower than usual, it resisted all attempts at reposition. The tumour acquired the size of a small fœtal head, and was regarded as the completely prolapsed uterus, a fold of the vagina being confounded with the uterine orifice. Its removal was determined upon, and the operation actually commenced; but whilst proceeding, it became evident that the greater part of the tumour was the prolapsed bladder. A quantity of the vagina in a diseased state was dissected away, but the bladder was not cut into. Death occurred six weeks afterwards; and, on examination, the tumour was found to consist of that part of the bladder uncovered by *peritoneum*, having the upper wall of the vagina before it.

‡ An ample detail of the case, accompanied by an engraving, will be found in the Lancet of 19th March, 1836, page 975.

by passing the catheter. The bladder when prolapsed and materially distended may occasion an important obstruction to the descent of the fœtal cranium, and be exposed to all the evils of pressure, viz. laceration, inflammation, sloughing, or mere loss of tone. Dr. Hamilton tells us that, from ignorance of the true nature of the protrusion, several cases of incurable incontinence of urine have fallen under his observation.

Treatment.—Whenever an impediment to the free evacuation of urine is suspected to exist, our examination must not be confined to the sub-pubic region, but extend to the *vagina* also. As protrusion of the bladder may be connected with advanced pregnancy, the principles of treatment are necessarily contingent upon the existing condition of the system. Whatever this may be, the regular and complete evacuation of the bladder is a point of the first moment; for since the cervix of the bladder will constitute a part of the tumour, the urine, if suffered to lodge here, will render all other treatment nugatory. During parturition, whether there is any tumour above the *pubes* corresponding to the distended bladder or not, the importance of passing the catheter cannot be too strongly enforced, and this, not only when the head is in the *pelvis*, making heavy pressure, but whilst its greater part remains above the brim. If the greater part of the bladder has passed into the *vagina*, the course of the *urethra* will be materially changed, and some management may be required in the introduction of a suitably curved instrument.

Descent of the bladder unconnected with pregnancy demands the treatment adapted for ordinary cases of descent of the *uterus*, viz. promoting the general health, and obtaining a contracted state of the vaginal tissues. Sir C. M. Clarke, it is true, considers that the stomach is

"very rarely if ever affected by the mere displacement of the bladder;" but, notwithstanding his high authority, the health in some instances has suffered severely. Tonic medicines, the recumbent posture, salt and water applied with a large sponge over the pubes and to the external parts, the cold hip bath, astringent injections, and when necessary the medicated sponge pessary, as advised by Dr. Locock, constitute the most efficacious measures. The term pessary, as applicable to the medicated sponge, is a misnomer; the pessaries in general use, by distending the *vagina*, defeat the possibility of cure. It is the object of the medicated pessary to increase the contractility of the *vagina*, and thus to confine the neighbouring organs within their proper boundaries. Cases of incurable protrusion are certainly best treated by the globular pessary, as advised by Sir C. M. Clarke. Since it is material to preserve a passive state of the abdominal muscles, constipation and purging should be equally avoided.

Descent of the bladder within the *labium pudendi* is best treated by a suitable bandage, and the application of cold, attention being, of course, paid to the due evacuation of the urine; and the same may be said of that peculiar hernia which has been known to appear between the umbilicus, the crista ilii, and false ribs. Perineal cystocele is merely another degree of vaginal cystocele. A gum elastic bottle of a cylindrical form has been found most useful.

Case I.—Mrs. ——, advanced eight months in her twelfth pregnancy, suddenly felt unable to void urine. This was at five o'clock a. m. Repeated attempts were ineffectually made during the day to pass an instrument into the bladder, although catheters, both male and female, silver and elastic, of various curves and sizes, were resorted to. Every attempt to pass an instrument was fol-

lowed by a discharge of blood. A tumour was found filling the *vagina*, which defeated an attempt to elevate the child's head, supposing it to be then resting on the *ossa pubis*.

She was seen late in the day by Mr. Porter, surgeon, and I visited her at his instance. A dose of opium had been previously administered.

Symptoms.—Very strong bearing down efforts at regular periods, like labour-pains, ending in the expulsion of about half an ounce of urine, which was observed to issue from the *urethra*, and notwithstanding the smallness of the quantity, it produced marked relief. The abdominal muscles contracted most violently during the paroxysm, resembling the action of the *uterus* under its highest degree of tension.

Examination.—The orifice and course of the *urethra* were greatly tumefied, and yet the orifice was sufficiently open to admit the point of the finger. A large spherical elastic tumour, evidently containing fluid, and continuous with the *urethra*, protruded into the *vagina*, which was fully occupied by it. As the *os internum* could not possibly be reached by the finger, the hand was carefully passed into the *vagina*, and the uterine orifice found wholly above the brim of the *pelvis*, inclining posteriorly, and sufficiently open to receive the end of the finger. The fœtal head, which rested above the *symphysis pubis*, was felt very indistinctly, in consequence of the large tumour which filled the *vagina*. Nothing resembling the bladder could be recognised by placing the hand above the *pubis*, nor did pressure over that part occasion any sensation to void urine. The *uterus* from its thinness allowed the members of the child to be felt with unusual distinctness.

Treatment.—The renewed attempts to pass a catheter beyond the distance of an inch failing, a second dose of

opium was given, and we left the patient at eleven p.m. In half an hour from this time she succeeded, under very violent contraction of the abdominal muscles, in passing three or four ounces of urine, and, after seven or eight similar efforts, about two quarts were voided in the space of a few hours. In the early part of the morning another quart was passed at different times, attended with proportionate relief. We repeated our visit at noon. The pain had now ceased. The tumour, though much diminished in size, evidently contained fluid, but the attempt to pass the catheter again failed. Having ascertained the course of the *urethra* to be upwards and downwards, and quite angular, and being now able to feel distinctly the child's head resting on the *ossa pubis*, I succeeded in raising it, whilst Mr. Porter passed into the *urethra*, and finally into the bladder, a very large elastic catheter curved to an angle like a pot hook, (a firm stilette being retained within it,) its concavity being towards the *sacrum*. About twelve ounces of urine were drawn away, the sac became collapsed, the *vagina* was no longer occupied, the child's head was felt as in ordinary cases, the orifice of the *uterus* barely within reach of the finger, and now sufficiently open to receive the ends of three or four fingers.

Reflections.—The descent of the bladder in the *vagina* containing so large a quantity of urine is somewhat unusual. An inconsiderable part of the bladder certainly must have been above the brim, (though I could not ascertain this,) and been influenced by the action of the abdominal muscles. The concealment of the *os uteri* by the tumour, and the tortuosity of the *urethra* were striking features in the case, and until the intervening fluid had been in a great measure discharged, an effectual barrier was opposed to the elevation of the fœtal head. The position of the uterine orifice was a little singular. The

same condition of the bladder above the brim would have produced *retroversio uteri.* But almost the reverse of this was the case here, the distended bladder forcing the *os uteri* above the brim and backwards.

It was curious also to observe the influence of the spasmodic contraction upon the uterine orifice, which became considerably dilated. But the action was purely mechanical, and ceased the moment the bladder was relieved. I never before witnessed so close an analogy between spurious and genuine labour-pains; indeed the preparatory changes must speedily have ended in expulsion, as in certain cases of convulsions, had not relief been obtained. Delivery took place a month afterwards, without a return of the obstruction.

Case II.—A woman, who had borne several children, was seized, when near the eighth month of gestation, with violent pains, most intimately resembling the pains of labour, which she had experienced four days, when I was requested to meet her surgeon in consultation. The pains came on at frequent and regular intervals, apparently as expulsive as they usually are when the child is pressing on the *perineum* and ending in the discharge of a quantity of urine. Owing to the tension of the abdominal muscles, it was impracticable during the pains to examine the exterior of the *uterus;* but the uterine tumour was perfectly flaccid the instant each pain subsided. The *orificium uteri* was closed, but the *vagina* was in a great measure occupied by the bladder, which bulged materially through its anterior wall. Opiates having been largely administered, and the bowels evacuated without relief, the catheter was passed, and some ounces of urine drawn away. The spasmodic contractions did not immediately cease, but the pains gradually declined, and in a few hours had entirely disappeared. The patient was delivered at

term. The marked bulging of the bladder through the *vagina*, the discharge of urine with each pain, and the relief which the catheter afforded after four days of almost unremitting suffering, prove the symptoms to have depended on the state of the bladder.

3. *Malposition of the Urethra.*—All material changes in the situation of the bladder will necessarily involve more or less the course of the *urethra*. The channel either becomes very angular in its course, or unnaturally elongated. The inclination of the distended bladder over the *ossa pubis*, though primarily dependent upon laxity of the abdominal coverings, is materially increased in advanced pregnancy by the position of the fœtal head, the *urethra* being drawn upwards and forwards. The mode of passing the catheter is too plain to need comment. In inversion of the *uterus*, the situation of the neck of the bladder will correspond not only with the degree of inversion and its duration, but with the varying position of the inverted organ, the course of the *urethra* becoming somewhat changed. In a case of complete inversion at present under my care, the functions of the bladder are unimpaired; but the free discharge of urine is very likely to be obstructed by the *uterus* in its recently inverted state. In an instance of complete inversion, the result of an unskilful attempt to separate the *placenta*, pieces of which were left adherent, a valued friend, who was subsequently called in, passed the catheter and drew away five pints of urine. To a person not familiar with the difficult and less ordinary duties of midwifery, the elongation which the *urethra* undergoes may appear very surprising. The length of the female *urethra* is very various, but averages, according to M. Larcher,* from twelve to fifteen lines. In one instance he ascer-

* See Gazette Médicale, No. 50.

tained its length to be fully twenty-two lines; but his remarks evidently apply to its natural state, and not to its capacity for elongation. On several occasions I have been unable to reach the distended bladder by a catheter of the usual length, viz. four or even five inches. It has indeed been denied that the *urethra* can undergo a material elongation, but surely the same textures which permit the canal to dilate will offer no resistance to its elongation, provided the head of the child is not pressing heavily upon that portion of it which enters the bladder. In two cases of instrumental delivery, in which an unusually long female catheter was employed, and supposed on each occasion to have reached an empty bladder, I had to congratulate myself on subsequently passing (under a feeling of dissatisfaction) an elastic male catheter, and by relieving the bladder of a large quantity of water, averting, most probably, inflammation, if not sloughing. In these cases we merely want an instrument which shall correspond with the altered course of the *urethra*. The elongation of the canal may depend upon causes which have no relation to midwifery. For instance, a polypus is ejected from the *uterus* into the *vagina*, where its presence impedes the functions of the bladder, but produces little or no expulsive effort. Provided the vaginal orifice is small and resisting, the polypus meeting less resistance in another direction, gradually forces the *uterus* quite out of the true *pelvis*, and affects indirectly the course of the *urethra*. Such a case really took place—the ligature producing inflammation both of the venous and arterial system of the pelvis. The patient died whilst the ligature still remained upon the pedicle; and, on examination, the *uterus* was found underneath the umbilicus, where it was felt very distinctly prior to the ligature being applied.

APPENDIX.

On the subject of *retroversio uteri*, I find I have omitted to notice Dr. Robertson's "cases and observations on simple chronic inflammation" of the organ in connection with retroversion. The author directs attention to the morbidly enlarged state of the *uterus* as the cause of the retroversion, and judiciously discommends any attempt to reduce the malposition by manual means whilst the organ is inflamed. Under much sensibility of the *uterus*, doubtless the attempt would prove injurious. "In Sir A. Cooper's Treatise on Hernia, notice is taken of a fatal case which occurred to Dr. Marcet, where for six weeks vomiting and constipation were the prominent symptoms, and, on inspection, the *uterus* was retroverted without pregnancy."*

* See Edin. Med. and Surg. Journal, Vol. XVIII. p. 520.

SECTION III.

ON OBSTRUCTIONS IN THE SOFT PARTS TO THE PROGRESS OF LABOUR.

An obstruction of this nature to the passage of the child through the *pelvis*, may prove almost as formidable as an obstruction which arises from deformity of the bones. Labour, attended with mechanical obstruction of the soft parts comprises :—

I. The presence of the hymen.

II. Tumours of the *labia pudendi*.

III. Protrusion of the bladder and *rectum*, and *calculi* in the bladder and *urethra*.

IV. Firm contractions of the vaginal orifice and canal.

V. Tumours abridging the capacity of the *vagina*.

VI. Tumours attached to the *uterus*.

1. *The presence of the Hymen.*—An impediment to delivery has not unfrequently arisen from the hymen being very rigid and nearly imperforate, and the only question which can be raised relative to an incision, is too simple to need comment. I have seen instances of the almost imperforate hymen combined with early pregnancy ; but, with a single exception, the obstruction gave way, under the daily employment of the bougie, prior to the accession of labour. Sexual intercourse must have been very imperfect.

2. *Tumours of the Labia Pudendi.*—An encysted tumour, however large, of the *labium pudendi*, can scarcely impede parturition ; but an extravasation of blood within

the labial tissues, extending perhaps to the vaginal entrance, and presenting a surface of extraordinary dimensions, might create a little delay. In an instance of this kind to which I was called in consultation, the amount of *coagula* which Mr. Elkington extracted by a pair of dressing forceps, through a laceration at the edge of the *vagina*, nearly filled a pint basin, and a considerable quantity remained and occasioned sloughing. The extravasation usually happens during the pain which expels the child, as in the instance already described; but sometimes at an early period of labour as in the example of severe varicose hæmorrhage here annexed. I had just left a patient to whom I had been called in consequence of the difficult transmission of the child's head through a distorted pelvis, in connexion with an inordinate varicose enlargement of the *labia pudendi*, (especially the left,) when a messenger overtook me urging my immediate return. It appeared that, during the violence of the straining, the tumour on the left side had suddenly burst at the edge of the vagina, posteriorly. The patient lay in a little lake of blood; and as the bleeding recurred in gushes with the return of every pain, it became essential to complete delivery, and a child weighing fifteen pounds was extracted with the forceps. A large slough separated the end of the third week.

It has been suggested, on very high authority, that the swelling should be punctured, provided there has been no delay, and the puncture is made whilst the blood is still liquid. On one occasion I promptly carried this suggestion into effect, but without success; and, considering the structure of the *labium*, it is probable that the greater part of the blood will coagulate almost as rapidly as it is effused. It is important to examine most accurately the *inner* surface of the *labium*, on account of its peculiar

liability to lacerate when distended with effused blood. Highly œdematous states of the external parts from serous infiltration, can only retard delivery for a very short time. The *labia*, from their bulk, may, indeed, compel the patient to rest on her back, maintaining a pillow between the thighs to keep the swellings asunder; but if the swollen parts are punctured, (and a particularly fine curved needle answers best,) a load of serum is drained off, and relief is rapidly obtained. I have not observed any of the reported bad effects, sloughing and gangrene, for instance, succeed this little operation; nor are they likely to occur in an unimpaired constitution. Neither can mere varicose tumours of the external genitals, formidable as they appear, produce a real obstruction to the passage of the child. Two years ago, I was hastily summoned into the country to see a parturient woman, in whom the *labia, mons veneris*, and *orificium vaginæ*, were so mis-shapen and swollen by varicose veins, as led to an apprehension that delivery would be impracticable; but no unusual difficulty took place.

3. *Protrusion of the Bladder and Rectum*; *Calculi in the Bladder and Urethra.*—The *vagina* may be fully occupied either by the distended bladder, or the *rectum*. Obstacles to delivery, occasioned by malposition or inordinate distension of the bladder, have already been considered.* Obstacles, which consist of the *rectum* distended with *scybala*, and protruding into the *vagina*, occur very rarely. I have seen but one striking specimen of recto-vaginal tumour protruding through the external parts; but the *pelvis* was unusually large, and had delivery been near at hand, the space would have been sufficiently ample.

* See Edin. Med. and Surg. Journal, for 1st October, 1835, page 331-2.

Instances are also recorded of labour being obstructed by urinary *calculi*. Some years ago I attempted the removal of a large *calculus*, which, after delivery, had ulcerated the superior part of the *urethra*, and projected considerably across the *vagina;* but the turbulence of the patient overcame the moderate restraint which was imposed upon her, and all intreaties to induce submission proved unavailing. In a case somewhat analogous to this, I assisted my friend Mr. Wickenden in an attempt to extract a *calculus* through a fistulous opening in the bladder (the result of difficult parturition many years previous); but the mass was held too firmly by the fungoid-looking and everted edges of the *fistula*, to admit of its removal. A year afterwards the attempt was renewed, and Mr. Wickenden succeeded in extracting the *calculus*, which was in size equivalent to a pullet's egg.

4. *Firm contraction of the Vaginal Orifice and Canal.*—Contracted states of the vaginal orifice are sometimes congenital, and frequently the result of inflammation in early life. In a case of difficult labour which occurred in the practice of my friend, Mr. Bury of Coventry, the *os externum* was very greatly contracted by a *cicatrix*, the result of an abscess in childhood; the division of the part was immediately followed by delivery, though strong pains were previously exerted in vain. It would be superfluous to describe the many impediments which are found at the vaginal orifice to the delivery of the child; for whether the aperture is very small, nearly imperforate in the ordinary acceptation of the term; or closed by thick fleshy growths, membranous bands, or cohesion of surface, the treatment is both obvious and simple. I shall therefore confine my remarks to deviations of the more important kind.

Labour may be obstructed by a præternaturally long and

unyielding state of the *fourchette*, united to an adjacent portion of the vaginal membrane. Thus, the entrance is narrow; the space between the *fourchette* and the true *perineum* very long; and the vertex, instead of inclining gradually towards the pubic arch, threatens to emerge through the centre of the *perineum*, leaving the edge entire. An instance of this accident, which I know to have happened, was very nearly occurring in my own practice. In this case the head was distending the posterior part of the *perineum* to a degree which threatened laceration. I waited in the vain expectation that it would advance towards the *pubes*, and tear the *fourchette* and portion of vaginal membrane, now greatly extended. Nothing short of an unremitting and uniform support saved the *perineum*, but presently a mass of blood was extravasated within its cellular tissue. The *fourchette* being divided with a bistoury, the head advanced towards the *pubes*, and the labour soon terminated; but the *perineum*, though entire on its external surface, presented the feel and appearance of a very large soft bag, the contents of which, consisting of fœtid black blood, continued to escape for nearly a month, producing fever, and a train of symptoms peculiar to the absorption of morbid discharges. Recovery was ultimately perfect.

The ordinary form of stricture of the vagina is referrible to injuries received in parturition, either from a protracted labour, or the unskilful or delayed use of instruments, and subsequent inattention to the state of the canal. In place of the natural textures, we find a cicatrix or callosity calculated to produce a serious impediment to delivery.

When the vagina is contracted by thick and unyielding fibrous bands, uneasy sensations arise in the urinary organs, especially in the middle months of gestation, the vagina having then acquired its utmost amount of

elongation. I have known the distress continue to the completion of the term, and only cease on the division of the stricture during labour. Contractions and partial obliterations of the vagina, which result from local injury, are in most instances removed by the timely use of bougies, sponge tents, or other suitable dilators. It is requisite, however, to mention, that the practice of dilating very firm strictures is not quite free from risk; for in irritable habits there is some danger lest inflammation should arise and extend to the peritoneal tissue. But it is more than probable that the existence of the stricture will not be ascertained until the accession of labour. The practitioner must then wait a reasonable time for the desired relaxation of the diseased parts in common with the mucous surface in general, promoting it, if needful, by the hip-bath, fomentations, general blood-letting, and medicine to create nausea. The effect of a full blood-letting has frequently proved most signally beneficial; and unless contra-indicated by constitutional peculiarities, or complexities of the labour, should always be enforced, and, if needful, repeated. The cicatrix may prove to be very thin, and give way to the first impulse of the head.* Two cases of stricture are related by Smellie, and one by Merriman.† In all these the obstruction yielded to the natural powers; but Dr. Merriman's patient died after sudden faintness on the second day after delivery. It is merely stated, that "a very small aperture through the vagina was discovered close to the contracted part."‡ In some instances the

* Smellie's Cases, Vol. II. Coll. xxi. No. 2, Case 4, p. 373.

† Synopsis, p. 59, 4th edition.

‡ See Ryan's Journal for 30th May, 1835, No. 174, for a case of occlusion of the *vagina* obstructing delivery.

For a variety of other references, see Davis's Principles and Practice of Obstetric Medicine, Part 41, pp. 972, 977.

stricture is dense, but yields after many hours of protracted suffering. Very firm cicatrices, again, yield only to incision.* The vessels at the sides of the vagina may be unavoidably wounded in very complicated contractions, but there can be no risk of injuring the urethra, bladder, or rectum.

Assuming the liberation of the stricture by incision to be indispensably necessary, it is important to determine at what period this can be done with the greatest advantage, whether during gestation, or during labour. If the amount of contraction is such as to threaten very serious difficulties, the earlier period is preferable on several accounts, but chiefly lest the child should present transversely, as in a case I have described, and the introduction of the hand *in utero* be found impracticable. The incision must not be delayed too long, but a sufficient time allowed for restoring the canal prior to the completion of the full term. If the stricture is not obviously calculated to obstruct delivery, and that most seriously, I would rather wait, and employ the bougie in the interim; since, antecedent to the relaxing influences of labour, it is not possible to predict the necessary extent of incision, nor indeed whether any will be required.

Neither would it be prudent to resort to an incision during the precursory stage of labour, lest it should prove very tedious, and allow the incised parts to inflame; but wait for tolerably strong pains in order that the necessary extent of incision may be defined with accuracy. The importance of making the incision during a pain,—a time when the patient is scarcely conscious of it,—has been forcibly represented by my friend Dr. Rigby. I proceed to detail two

* See Mr. Norman's interesting case, Vol. XIII. Med. Chir. Trans. p. 351.

cases of formidable obstruction to which I was called in consultation.

Case I.—This was a second pregnancy. The patient's former labour proved very protracted, and was terminated by means of the forceps. The catheter was employed for some days afterwards, but the bladder subsequently lost its power, and the urine was discharged involuntarily for six months. I have no doubt of sloughing having happened. At length the bladder recovered its power, pregnancy again took place, and labour occurred at the full term. On examination, a strong *cicatrix* of a circular form was discovered at the upper part of the *vagina* resisting the descent of the head. Under very powerful pains the stricture at length yielded a little, and permitted an inconsiderable portion of the head to enter it. A second cicatrix, broad and rather oblique in its direction, and producing distressing tenesmus, passed from the posterior edge of the circular stricture already described to another of a very gristly nature, which surrounded the *os externum*, and barely permitted a finger to enter. The pains, powerful as they were, at length proving fruitless, Mr. Blount divided rather extensively the circular strictures, applied the long forceps, and most judiciously and safely delivered his patient of a living child. Recovery was rapid and perfect.

Case II.—Mrs. ——, in her first labour, was delivered by the forceps of a dead child, and the catheter employed for ten succeeding days, when she was supposed to have recovered. Pregnancy recurred in about four or five months, and after experiencing many painful sensations, especially in voiding urine, the *vagina* was examined, and found to be nearly closed. At the completion of the full term, the membranes gave way without pain during the night of Thursday, the *liquor amnii* oozing away almost im-

perceptibly. I met her surgeon in consultation some hours afterwards, and made an accurate examination. The *os externum* was of a perfectly circular form, and admitted only the fore-finger, which it very tightly embraced. The perineum was long, and of a very thick and gristly texture. About an inch and a half above the external orifice, the finger encountered an apparently blind sac, or membrane not unlike the imperforate hymen; but after much searching, a *foramen* which allowed a probe to pass, and through which the waters were escaping, was discovered at its junction with the posterior surface of the *vagina*. We determined upon waiting for the active contractions, which ensued on Saturday morning, and having divided the false membrane during a pain, and carried the fore-finger beyond it, the arm of the child was found to have passed the *os uteri*. The *os externum* was freely incised wherever the stricture and resistance seemed greatest; first one portion, and then another, being selected for division as circumstances demanded, during the long period which was occupied in passing the orifice. A good deal of blood was necessarily lost. At length I succeeded in carrying my hand into the *vagina*, reached the foot, and delivered the patient of a living child. Fortunately a little *liquor amnii* still remained *in utero*.

For about a fortnight after delivery the treatment was limited to syringing the *vagina* with tepid water, oiling the injured parts, and applying large poultices. Her judicious surgeon then substituted the bougie and sponge-tent, and under his unremitting attention, the canal was perfectly restored. The patient did not experience a single bad symptom.

Like strictures in general, there is a great tendency in the diseased parts to form fresh contractions, as in the annexed example.

Case III.—A woman had a difficult labour, and was delivered by the forceps. A stricture formed rather nearer the *os internum* than the vaginal orifice, which, however, did not prevent pregnancy from recurring. Under strong labour-pains and the pressure of the head, the stricture gave way, and delivery was effected by the natural powers. Some time after this she complained that sexual intercourse was productive of great pain not only to herself but to her husband also. The stricture had in fact returned, and was only removed by a long-continued process of dilatation.

Whenever, therefore, a labour has been attended with real difficulty, particularly if instruments have been employed, the *vagina* should be examined at the end of the month, with the view of determining its condition, and preventing those firm contractions in the canal consequent upon inflammation and sloughing.

Tumours may proceed from any part of the pelvis. The largest which I have yet seen occurred in a young woman, twenty-three years of age. The first symptoms, regarded as *sciatica*, were lameness and pain in the hip. At length a tumour appeared above the pubis, rather inclining to one side, globular in shape, and of stony hardness. It acquired an immense size, and after severe suffering, the patient died excessively emaciated.

On examination, the diseased mass was found firmly attached to every part of the ligamentous structure of the pelvis. On making a section of the disease, the cut, or rather the sawn surface, presented an appearance like the undressed muscle of the cod fish, and was composed partly of bone, but chiefly of a dense homogeneous substance, the centre of which was hollow, and contained a quantity of gelatinous secretion. About a third of the mass was removed by the saw and the knife, and could not weigh less

than eight pounds. Delivery *per vias naturales* would have been impracticable.

The principal Tumours which occupy the Vagina.—An impediment to delivery arises not unfrequently from tumours connected with the vagina. Some of these are within, and others exterior to, the vaginal tissues, yet producing similar effects. Let us briefly consider them in reference to their relative situation and kind, their effects, size, texture, treatment, and final result.

5. *Vaginal* tumours which obstruct parturition, for the most part occupy three principal situations, viz.

a. Tumours within the *recto-vaginal septum*, comprising adipose growths, &c. and tumours covered by *peritoneum*, as the ovary.

b. Tumours in connection with the proper tissues of the *vagina*, or fibrous and follicular developments.

c. Tumours situate behind the *rectum*, comprising clusters of diseased glands, adipose and encysted tumours.

Fibrous and adipose tumours have been known to produce the most serious impediments to the course of labour. Scirrhous glands seldom acquire a very large size; they are usually several in number, irregular in shape, adherent, and without fluctuation. But the class of tumours which most frequently obstruct labour, comprise follicular enlargements and the prolapsed ovarium. The former disease originates in the vagina, and has been shown by Mr. Heming to consist in a dilated state of one of the mucous follicles,* which acquires a cyst, and secretes a fluid of varying colour and consistence, from a dark to a straw-coloured serum, or a deposition purely gelatinous. Owing to the density of its walls and its general tension, the fluid contents of the tumour are not easily distinguished;

* Edin. Med. and Surg. Jour. Vol. XXXV. p. 82.

but the flaccidity which succeeds a free puncture is very striking.

The effect of conception over diseases already existing is singularly opposite; some are arrested, others (the diseased ovary for instance) are stimulated into action; a very slight enlargement then acquiring a fresh impulse, and increasing with the advance of pregnancy.* There are two forms of ovarian tumour which obstruct the passage of the child. In the one, a small cyst in connection with a very bulky cyst, or else a portion of a large cyst, passes into the recto-vaginal septum, and bulges through the posterior part of the vagina. In the other, and that which occurs by far the most frequently, the whole ovary, moderately enlarged, prolapses within the septum. The descent is peculiarly liable to happen at two periods, the first, near the end of gestation, the second, during labour—the prolapsus being promoted by the relaxation of the soft parts. The changes which the ovary undergoes when long detained in the septum will chiefly depend upon the capacity and yielding state of the parts. If the woman has not previously born children it may remain small, and scarcely retard delivery; but under contrary circumstances, it acquires a large size, and nearly fills the vagina. In rare instances the bulging is said to have appeared at the anterior part of the pelvis.

Again, the ovarium, when moderately enlarged and confined within the abdomen, may alter the course of the gravid uterus in its ascent out of the pelvis, so that the organ can neither preserve its perpendicular direction nor freely develop itself on the side on which

* See a case of malignant Ovarian Disease, which proved fatal a few days after delivery. Part XV. Cyclop. of Pract. Med. p. 231. The severe symptoms began in the fourth month.

the tumour is situated, and thus the lateral obliquity, as described by writers, is almost necessarily produced. Although this malposition of the uterus may fail directly to obstruct the entrance of the presentation within the brim; the axis of the organ, as respects the pelvis, is no longer maintained, and labour will probably prove tedious.

Diagnosis.—A tumour, situated within the recto-vaginal septum, moveable, perhaps rather elastic, and imparting to the finger, (which cannot be passed behind it,) a sense of fluctuation, may be presumed to be the ovarium. But the ovary may be immoveable, inelastic, and, so far from imparting a sense of fluctuation, may be apparently as hard as a fibrous tumour. It furnishes almost every species of morbid secretion, together with hydatids, hair, and other heterogeneous materials, and is the only description of tumour situated *within* the vaginal tissues which can possibly be raised above the brim. It is also the most likely tumour to disappear spontaneously. Besides its liability to burst under the impulse of the fœtal cranium, in common with encysted tumours, it has the chance of being drawn up by the changes which the uterus undergoes after delivery. Dropsical fluids and hernial protrusions within the septum, which yield easily to pressure, cannot be well confounded with tumours of a more consistent character.

Effect of Pelvic Tumours.—The effect of all pelvic tumours will be proportionate to their bulk, texture, and relative situation. Thus, we find pain in the back, numbness in one or both lower extremities, sciatic pains, difficult progression especially on going up stairs, hemorrhoids, and obstruction to the natural discharges. The uterus will most likely be forced out of its natural axis. But the most dangerous consequences will ensue during parturition, and to these it is intended especially

to refer. Having, during labour, detected the presence of a tumour in connection with the vagina, and obtained its history, no time should be lost in determining its exact site, boundaries, mobility, size, connections, and, as far as possible, its texture and consistence.

Examination during Labour.—To obtain the requisite information, an examination should be made in the absence of pain, and before the presentation has become engaged in the pelvis, lest the tension which the mass undergoes during strong labour should obscure the diagnosis. If the presentation be in part only below the brim, it may be difficult to determine whether the apparent firmness of the tumour is not owing to obstructed circulation. Whilst making the usual examination *per vaginam*, it will be advantageous to pass the fore-finger of the left hand into the rectum, with a view of ascertaining more correctly the contents of the tumour.

Treatment of Labour complicated with a Tumour.—Tumours which cannot be raised above the pelvic brim may be treated by puncture, incision, or extirpation; or opened subsequently to delivery with caustic. The Cæsarean operation, and the induction of premature labour, may also be included as objects of treatment. Merriman observes, "Should the case be such as to allow the difficulty to be overcome by employing the forceps or vectis, there could be no hesitation in having recourse to either of these instruments. But if there be no chance of succeeding with any instrument short of using the perforator, it would be right to pause and to consider whether to remove the tumour, or to diminish the size of the child, would be most likely to be attended with ultimate advantage, and so much will then depend upon the size, situation, and nature of the tumour, that it is impossible to lay down

exact rules upon the subject."* This author gives a summary of eighteen cases, and such of them as were treated either by version or the crotchet, terminated most inauspiciously; others were treated by puncture with a more happy result.

Burns sanctions the puncture in all these tumours which cannot be pushed up, and prefers their extirpation to the employment of the crotchet, but puncturing is elsewhere denounced as "very dangerous and highly improper."† Dr. F. H. Ramsbotham, in his comprehensive Lectures, declares the impossibility of laying down any general rule applicable to each individual case, but insists upon the principle of puncturing tumours which possess the least degree of fluctuation; though he does not seem to extend the practice to other cases. Without dwelling on the interests of the child and the feelings of the practitioner, embryotomy has doubtless too frequently proved destructive to both lives, although Professor Davis calls it "a tolerably safe measure to the mother."‡ Dr. Ramsbotham's three patients treated by embryotomy§ had favorable recoveries; but the greater number of women appear to have sunk under the violence necessarily employed in the delivery, which, in several instances, required from four to six hours for its accomplishment, and in one instance proved impracticable. As a primary measure, embryotomy is therefore highly improper, and has been justly condemned by Blundell. This measure may unhappily become necessary; for the puncture, efficient as it usually is, does not necessarily supersede per-

* Med. Chir. Trans. Vol. X. p. 50.

† London Practice of Midwifery, 2nd edit. p. 155.

‡ Operative Midwifery, p. 112.

§ Ramsbotham's Cases, Vol. I. pp. 337, 341, 343.

foration, and perforation in its turn may prove inadequate to overcome the difficulty. Notwithstanding the many testimonies which may be adduced in its favor, the practice of puncturing vaginal tumours is by no means generally acted upon, even at the present day. Can a mere puncture be more dangerous than the operation for ascites, or ovarian dropsy? I apprehend not. Instead, however, of resorting to it early in the labour, it will be proper to wait a moderate time, unless, indeed, it appears evident that the measure will ultimately be required; since the tumour, though of considerable bulk, may prove sufficiently compressible to allow the head to pass. Should this happily prove to be the case, a gentle attempt might be made after delivery, according to Mr. Chevalier's suggestion, to raise the tumour out of the septum into the abdominal cavity. Some of these tumours burst into the vagina, as in Dr. Ashwell's case,* and a case reported by Mr. Langley;† others into the rectum, as in an instance which I shall presently detail. But an ovarian tumour when loaded with fluid, and in a great measure above the brim, may produce scarcely any impediment to the delivery, yet the portion of the sac which has

* In this case the labour was obstructed by a tumour which burst into the vagina and discharged a dark offensive fluid. Delivery was then shortly effected, but death took place on the second day. On examination *post-mortem*, a large cyst was discovered growing from the left ovary, the vagina being ulcerated and gangrenous at the part where it communicated with the cyst.—See Guy's Hospital Reports, No. 2.

† An ovarian tumour, which burst during labour, and was attended by the escape of several gallons of serous fluid, is detailed by Mr. Langley in No. 140, Vol. VI. of Lond. Med. and Surg. Journal of 4th October, 1834, p. 319.

entered the septum may inflame, discharge its contents, and the patient recover.* The structures of the ovary may have become too disorganised for recovery, the patient sinking at the expiration of a few weeks, or perhaps immediately after delivery.

The annexed interesting case of labour obstructed by an ovarian abscess, and ending in death soon after delivery, was very obligingly communicated to me by my highly respected friend, Mr. J. W. Wilton, one of the surgeons of the Gloucester Infirmary.

Case I.—"On the 31st July, 1831, I visited Mrs. M. early in the morning. She had been in labour some hours. On examination, I found a tumour filling the vagina, which seemed to grow from its upper and posterior surface. It seemed to be a solid and fleshy mass, and its magnitude gave me great apprehensions for the result of the labour. I had attended the patient in former labours, when she had always done well, and no such obstruction had ever till then been met with. The pains were violent, and the head of the child made slow progress in front of the tumour. After more violent and protracted efforts, the child was born in the evening of the same day. Immediately after delivery I examined the vagina; but the tumour had disappeared, and the patient got well as usual without any thing occurring worthy of notice. May 9, 1834.—Again attended Mrs. M. in labour. On examining, I found the tumour as before, and I was

* See Davis' Elements for a case of tumour in the left iliac region, complicated with, but not impeding labour, producing dangerous symptoms and bursting in the vagina on the twenty-seventh day after delivery. The tumour disappeared, and patient recovered. Whether the disease was ovarian or uterine could not be determined.

as much at a loss as ever to ascertain its nature. The labour was accomplished with much less difficulty than on the former occasion, and again the tumour disappeared. There was some hæmorrhage; but the placenta was expelled by pains, the uterus seemed to be well contracted, and the hæmorrhage ceased. Her pulse was quick, and she complained of unusually severe after-pains, especially in the back. In half an hour, I was again called to her. She had now the appearance of sinking from hæmorrhage; but there was no discharge. The pain in the back was agonizing; opiates failed to produce relief; the exhaustion kept increasing, and she died in about two hours. Next day we examined the body, which had a very exsanguine appearance. The uterus was contracted, and without blood in its cavity, nor was there any substance in the vagina. A flesh-looking tumour was seen rising from the left side of the pelvis, which, on being cut into, was found to contain about a pint and a half of pus, mixed with a considerable quantity of hair like tow. The hair did not appear to be attached to the sides of the bag which held it, but to be loose in the cavity. This tumour I believe to have been the left ovarium, and the same which, on the occasion of the two labours, had been found in the pelvis, protruding the vagina before it, and producing the impediment to delivery." From this narrative, it appears that the ovary was in each labour forced down by the child's head, and, excepting on the occasion of the last delivery, was drawn up into the abdomen immediately afterwards.

Case II.—Some time ago, I was called in consultation upon a case of labour rendered very difficult by a tumour the size of a swan egg, extremely firm, spherical, and situated over the sacral promontory. The head was above the brim, the pains powerful, and the tumour so very

tense as to feel like bone. Under the impression that it was really osseous, puncturing it was not thought of. With great difficulty delivery was accomplished by Levret's forceps; the child respired once or twice, but could not be restored. It was now ascertained that the tumour was not bony; had it been punctured, it is extremely probable the child would have survived. Some weeks after delivery, I examined the pelvis, and found the morbid growth much smaller. A year afterwards, when I attended her again in labour, it had altogether disappeared.

The annexed highly interesting case was kindly forwarded to me by my very highly esteemed friend, Mr. William Birch, of Barton-under-Needwood, formerly lecturer on midwifery at St. Bartholomew's hospital.

Case III.—"On the evening of Sunday, August 23, 1835, I was requested (observes Mr. Birch) by Mr. Adams, of Burton, to see Mrs. H., upon whom he had been in attendance since Friday afternoon. She was in labour of her first child, although she had been married five or six years. She had strong and regular pains, and on examination I found the pelvis occupied by a round unyielding tumour, which so nearly filled its cavity, that whilst it occupied the hollow of the *sacrum* as far as the sacro-sciatic ligament, left a space (according to my computation) of barely an inch and a half between it and the *symphysis pubis*. So completely did this tumour prevent the descent of the child's head, which was above the *symphysis pubis*, that it was with considerable difficulty I could touch it with the extremity of my fore-finger. The *os uteri* was but partially and imperfectly dilated, it was hard and tumid, its anterior and posterior edges were almost in contact, whilst it had a lateral diameter of perhaps a couple of inches. The finger introduced into the rectum assured me that this tumour was placed between

it and the vagina, probably in the fold of the peritoneum reflected from one to the other. On inquiry, I found that Mrs. H. had for several years felt a tumour at the lower part of the right side of the abdomen, which she first became aware of whilst making some sudden exertion; and that after the abdomen had enlarged from pregnancy, the tumour was no longer perceptible So imperfect was the description given of the tumour, that the above facts were all that could be relied upon. She had not consulted any medical man on account of it, but had always considered it a rupture. I thought it more than probable that the tumour our patient had so long been aware of in the abdomen, was the same which was now in the pelvis, and that it was a tumour of the ovary. But what was its nature? did it contain fluid, or was it a solid mass? It conveyed to the finger the precise sensation conveyed by an osteo-sarcomatous tumour; it felt precisely like a large mass of cartilage; it was not softer in one part than another; there was no fluctuation; it was not harder during the pains than during their absence. In the belief that it was a solid mass—what was to be done? Was it possible to raise the tumour out of the pelvis? I had the patient placed on her hands and knees, with the hips much elevated, and made an effort with my hand to thrust the tumour through the upper aperture of the pelvis; but it proved as I had anticipated, perfectly immoveable. Embryotomy was impracticable;—the Cæsarean section seemed to afford the only means of delivering the woman; but before having recourse to this formidable operation, could there be any objection to thrust a trocar into the tumour to explore its nature? Knowing that the most experienced surgeons are liable to mistake solid for fluid tumours, and *vice versa*, was it not imperative so to do? I requested the assistance of my friends Dr. Rawson

and Mr. Allport, of Lichfield. Owing to some accidental delay of the messenger dispatched for them, they did not arrive before six o'clock of Monday morning. They agreed with Mr. Adams and myself in the propriety of puncturing the tumour, and accordingly I introduced a long curved trocar into it through the rectum, and on withdrawing the stillette, to our astonishment and delight, about seven ounces of a clear, straw-coloured viscid fluid, which proved to be albuminous, escaped through the canula. The tumour was very much diminished; a few pains gave the *os uteri* a circular form, and brought the head of the child within reach of the finger; and although the cyst from which this fluid had escaped was distinctly to be felt hard and of considerable bulk, yet none of us had any doubt of the possibility of delivery being accomplished by the efforts of the *uterus*, even provided they remained powerful. After a time, however, the pains began to abate. Several small doses of ergot of rye were given without producing much effect. The patient complained of tenderness of the abdomen, and became very impatient to be delivered. There was the strongest evidence of the death of the child, for the mother had not felt its movements for more than twenty-four hours; the scalp had not swelled in the slightest degree, and the child's heart no longer pulsated; of this we were assured by means of the stethoscope. In the afternoon of Monday, therefore, I punctured the head, and delivered our patient easily of a full-grown child, which had already begun to putrify. She had not one untoward symptom except a slight swelling of one leg, was down stairs the following Sunday, and has remained quite well ever since."

The remarkable circumstances of this case appear to be the extreme hardness of the tumour (which I think would have led any one to believe it was solid); and the great

diminution of its size, or rather the great increase of space in the pelvis, afforded by the evacuation of so small a quantity of fluid. These facts will for ever impress on my mind the propriety of tapping in all such cases.

Case IV.—Three years ago I was called to a case of reported difficult labour, but made no examination, the child having been delivered by the perforator and crotchet prior to my arrival. A year afterwards the patient was delivered of an immature but living child. The succeeding labour commenced on Friday, the 26th September, 1835, and her surgeon was summoned about ten p.m. My attendance was requested at eight o'clock the following morning. The pelvis, from the brim to the *coccyx*, was very nearly filled by a large and apparently unyielding tumour, (not unlike a full-sized fœtal head,) bulging into the rectum, and, from its tension, supposed to be altogether solid. The head of the child, resting over the *ossa pubis*, could barely be distinguished, and the pains had been very forcible the nine preceding hours. A long trocar was passed *(per rectum)* into the tumour obliquely upwards, and on being withdrawn ten or twelve ounces of dark serous fluid tinged with blood gushed out forcibly through the canula. The sac immediately collapsed, but the pains unfortunately disappeared, and after waiting three hours, the forceps were applied, and the patient was promptly delivered of a living child. She recovered without a single bad symptom.

I examined the vagina five weeks after delivery, and found the tumour fully as large as before it was punctured. The uterus lay very forward, and its mouth only could be reached, which touched the *symphysis pubis*. The tumour had descended as low as the extremity of the *coccyx*. Between the pubis and sacrum two fingers could not be made

to lie in parallelism. Between the tumour and the left side of the pelvis one finger only could be passed; the right side of the pelvis was quite filled up by it.

I may add, that in two instances with which I am familiar, the pressure of the prolapsed ovarium loaded with purulent fluid produced in each case a fatal form of *ileus*. In one of these the tumour filled the rectum; neither bougie nor injection could be conveyed beyond it, and such was its apparent solidity, that I did not for a moment contemplate puncturing. But the deception was fatal to the patient. The second case, very similar in all respects to the first, occurred in the practice of a surgeon in the country, who sent me its history, and the morbid parts for examination.

The liability of encysted tumours in the pelvis to form fistulous communications with the neighbouring parts, furnishes another argument in favor of puncturing them. I submit a very interesting example.

*Tumour behind the rectum.**—Case V.—Sixteen years since I visited a very healthy girl, about twelve years of age, who had fallen backwards on the ice, and was supposed to have slightly injured the sacral part of the spine. I recollect having occasion to pass the catheter once, and that the late eminent Mr. George Freer saw the case in consultation. In a few days the girl had apparently recovered, and continued in perfect health to the period of her marriage, three or four years afterwards. She speedily became pregnant, and reached the full term of gestation. On the accession of labour, she was attended

* A case is already on record of a tumour which formed behind the rectum, and from which six pints of straw-coloured fluid were discharged by puncture.—Mr. Jackson's case in Medical Repository for March, 1826.

by two most respectable practitioners, by whom it was discovered that a very large and hard tumour proceeded from the posterior surface of the pelvis, and nearly filled its cavity. After waiting a prudent time, she was delivered by embryotomy; yet so far from making progress towards convalescence, she daily decreased in strength. About eight or nine months after her delivery, I was desired to visit her. She was much emaciated and hectic, suffered considerable pain in the back and pelvis, and agony in voiding urine, which was loaded with a thick fluid. A morbid secretion was constantly oozing away both from the vagina and rectum. My earnest entreaties to examine the vagina were pertinaciously resisted, and after a few weeks additional suffering she died, attenuated in the last degree.

Examination after death.—A tumour was seen growing from the sacrum and sides of the pelvis. The bony structure in contact with the disease was perfectly carious, and portions of it were necessarily brought away in detaching the tumour from its connections. The contents of the pelvis were then removed, and examined accurately at leisure. The tumour which surrounded the rectum was large, with thickened walls, encysted, and contained a quantity of thick fluid. The interior of the sac communicated by small fistulous apertures with the rectum, vagina, and bladder, and thus the source of the morbid discharges was most satisfactorily demonstrated. The uterus, which was healthy, was destitute of its vaginal portion, a small round orifice excepted. The ovaries were natural, the vagina was slightly inflamed, the bladder greatly thickened, and its mucous coat in the highest state of inflammation. The bladder disease was productive of nearly all the patient's acute sufferings, and ultimately of her death.

The management of cases which have been treated by puncture, and also the propriety of incising and extirpating vaginal tumours, are considered in connection with similar operations upon the uterus. Allusion is also made to the Cæsarean operation, and the induction of premature labour.

6. *Tumours attached to the Uterus.*—The frequency with which fibrous tumours form in the substance of the uterus, especially in virgins after the thirty-fifth year, barren women, and women not bearing children before this period of life, is remarkably striking. It is also a somewhat singular fact that diseases of a very dissimilar kind are found co-existing in the same uterus, viz. fibrous, steatomatous, or fibro-calcareous tumours, having no malignity of character, and ulceration of the mucous lining of the most malignant kind.* As a general principle it is held that the growth of a fibrous tumour is restrained by its early induration, the structure softening with its increase, and again acquiring density on the deposition of earthy material. A tumour imbedded within the proper tissue of the uterus, but not implicating the Fallopian tube, does not prevent impregnation; thus fibrous diseases and pregnancy are frequently combined. If developed immediately underneath the peritoneal coat at the fundus, it may acquire a degree of mobility, and by projecting into the abdomen, be confounded with a moderately enlarged ovarium; but the same ambiguity cannot apply to a tumour in connection with the lower part of the womb. In the unimpregnated state, the existence of a

* I have a specimen of this nature, which presents a tumour softening in its centre, inclosed in a complete bony case, and a soft fungus growing from the cavity.

tumour of moderate dimensions may not even be suspected; but when associated with pregnancy, the increase it then undergoes will probably lead to its detection. It either remains tranquil throughout pregnancy and escapes notice, or the passive state merges into subacute inflammation, the substance being painful when examined with the hand, or subjected to accidental pressure. The constitution participates in the excitement, as denoted by deranged gastric and intestinal functions, increased frequency of pulse, and more or less emaciation. These symptoms soon yield to judicious treatment,—comprising the application of leeches, the recumbent posture, (reposing on the back, or the side opposite to the tumour,) the moderate use of anodynes, the regulation of the bowels by very mild means, the tepid hip bath, and a spare unirritating diet. In subsequent pregnancies, the tumour rarely enlarges in the same ratio, and occasions but little comparative inconvenience.

A tumour which is limited to the *fundus uteri* cannot offer resistance to labour, otherwise than by interfering with the axis of the uterus and pelvis respectively. It may, however, prove a source of great danger after delivery, by provoking hæmorrhage or inflammation; but its presence does not necessarily produce either of these evils. A steatomatous growth the size of a large orange was unexpectedly found imbedded in the *parietes* of the *fundus uteri*, of a woman who died apoplectic eight days after delivery, and similar discoveries have frequently been made. Whether in the instance referred to the cerebral affection was connected with the state of the uterus, is matter of conjecture; the brain presented a natural appearance, and (excepting the uterus) the body also. A tumour in connection with the cervix impedes labour, partly by its

bulk, but chiefly by the long axis of the uterus and that of the pelvic brim no longer corresponding.

Case I.—A lady, four months advanced in pregnancy, and suffering abdominal pain, directed my attention to a hard substance the size of an egg, tender to the touch, and situated above the left groin. The symptoms soon subsided, and she experienced little or no pain, unless she reposed on the left side. On labour ensuing, the *os uteri* lay in the right sacro iliac junction, and the substance (now greatly increased) was moveable, and situate between the umbilicus and the spine of the ischium. To obviate this inclination of the uterus, the patient was placed on the contrary side, and a bandage applied round the abdomen. The labour speedily terminated.

A fibrous growth, although more frequently attached to the body and fundus of the womb than to the cervix, is sometimes confined to this structure, or gradually extends to it, occupying the pelvic brim, and presenting a formidable obstruction to delivery. Dr. Merriman has published an instance of this kind which ended fatally; and another will be found in this section.

I have at this moment a patient in whom a large globular fibrous tumour fills up the front and sides of the brim of the pelvis, like a full-sized fœtal head; the substance commenced in the body of the organ, and produced no interruption to several successive deliveries, but it has now so completely encroached upon the neck of the womb, that delivery *per vias naturales* would be almost, if not altogether, impracticable. The bulk of some of these growths is astonishing. The most striking example which I have yet seen, consists of an apparently fibro-calcareous enlargement which resembles in size the uterus at the seventh month of pregnancy. Mr. J. Wilton had a

case of pelvic tumour, which formed very rapidly, and acquired in nine months a weight of forty pounds. Several instances of impracticable delivery from obstructions of this nature are on record. In Dr. Montgomery's very interesting case the Cæsarean section was rendered necessary by a tumour whose structures were solid throughout. When a tumour connected with the pelvis is of an almost bony or earthy structure, the less it is interfered with the better, since inflammation will almost certainly be the consequence. But it is important to recollect that the walls of a tumour may be composed chiefly of osseous materials, whilst its centre contains fluid. I once removed after death a large quantity of fluid resembling thin honey from a bony tumour, as hollow as a melon, which grew from the pelvis of an adult female. The walls of the tumour were certainly too firm to have collapsed on the evacuation of the fluid; but as respects a more yielding organization, the fact cannot be unimportant. It will apply, for instance, to fibrous tumours, some of which contain both blood and serum, and perhaps influence our practice. When labour is obstructed by a tumour of the uterus, we must ascertain as far as possible its structure and boundaries, and whether it projects towards the abdomen or uterine cavity. Instances are recorded of tumours connected to the uterus by means of a narrow basis or an unusually lax cellular tissue, having been expelled through the vagina at the time of parturition, either before the child, or quickly after delivery, as in a fatal instance recorded by Gooch.* The first thing, therefore, to be determined is whether the mass admits of elevation above the brim; an improbable,

* Diseases of Females, page 290.

but by no means an impossible event. I subjoin a short but interesting case, in which the elevation of a tumour above the brim was accomplished under circumstances of the most adverse nature.

Case II.—It was the patient's eighth pregnancy. The sixth labour was impeded by a tumour, but terminated naturally. The seventh pregnancy terminated at the sixth month. In the eighth the patient went on to the completion of the term. The tumour, grooved in form, proceeding from the right and back of the uterus, and embracing half its neck, so completely filled the pelvic cavity as to resist the passage of the finger beyond it. The effect of the uterine contractions caused it to descend still lower. A portion of the fœtal head was at length touched, on passing the finger through the small aperture, between the pubes and the tumour. At this juncture, and after the Cæsarean operation had been fully resolved upon by four practitioners, an attempt was made in the intervals of pain to push up the tumour towards the posterior part of the right iliac fossa. It succeeded admirably. Under violent action the head descended and occupied the place from which the tumour had been raised, and a fresh contraction was followed by the birth of a living child. The tumour now descended again to the pelvic cavity. The neck of the uterus appears to have been slightly torn, but the patient recovered very favorably.*

From this, in addition to a case I have already described, we derive the strongest encouragement in favor of a cautious but persevering effort to elevate a tumour of this nature above the pelvic inlet. "If (observes Mad. Boivin)

* Bulletin Medical Belge (No. 9, for September, 1835,) par lé Docteur Thirion de Namur.

the tumour cannot be pushed above the brim, the practitioner will apply the forceps, or deliver by the feet, or possibly have recourse to the division of the *symphysis pubis*, or the Cæsarean section."* The operation of turning is rarely if ever admissible in these cases, and *symphyseotomy* was never tolerated in England.

Supposing, then, the attempt to elevate the tumour to have failed, and the forceps to be inadmissible, four plans present themselves for selection, viz. the puncture or incision of the tumour, the diminution of the child's head by embryotomy, the extirpation of the obstructing medium by the knife, and lastly, the Cæsarean section.

Puncture and Incision of Tumours.—The practice of puncturing tumours having been fully considered, any further allusion to this subject will be brief and incidental. Before proceeding to the dreadful operation of embryotomy, the fœtus being alive, how important if it could be ascertained whether the tumour contains a fluid. The stethoscope, as a matter of course, will previously have been employed. Assuming the contents of the tumour to be in some measure fluid, and yet too consistent to pass through a canula, we have to consider whether they admit of being discharged by an incision. The case is far from imaginary. In support of the beneficial effects of opening tumours of an apparently solid character, I refer with much satisfaction to an instructive paper published by Mr. Evans, the intelligent surgeon of Belper, in Derbyshire, the gentleman by whom the whole uterus was extirpated so successfully. It appears that Mr. Evans was called to a woman in the middle months of her first pregnancy, on account of pain and inflammatory symptoms about the pelvis and ab-

* Practical Treatise, p. 185.

domen, attended with a complete suppression of urine. On introducing the finger into the vagina, "I was astonished (he observes) to find a large tumour the size of a child's head, and incompressible, and feeling like a bony or cartilaginous substance, connected to the upper and back part of the vagina. I could not feel the *os uteri*, nor indeed any part of the uterus from the vagina. The patient was delirious, and the symptoms generally formidable. On puncturing the tumour, only ʒ ij. of thick jelly-like fluid were drawn off, and an anodyne enema was afterwards administered. Relief was obtained for twenty-four hours, when the bad symptoms returned with every mark of approaching dissolution. I immediately determined on making a large and free opening into the tumour. This I accomplished by means of a double-edged scalpel, but not without some difficulty. The walls of the tumour felt almost as hard as cartilage, and were about half an inch thick. The same jelly-like substance came slowly away on introducing the finger still farther into the wound, and I could feel several tumours of various sizes growing to the inner surface of the sac; some of them came away in a few days, and put on something like the appearance of spermaceti."

The patient completely recovered, and although there does not appear to have been any immediate collapse of the tumour, it had entirely disappeared before pregnancy had arrived at term, when she was safely delivered, and remained in perfect health some years afterwards.*

But since this case may not be considered directly applicable, an example will be adduced, which bears closely upon the point, premising incontestible evidence that the

* See Transactions of the Associated Surgeon-Apothecaries, Vol. I. page 211.

process of softening which this particular tumour underwent is common to other cases. After Dr. Lee's able exposition on tumours of the uterus, it can scarcely be doubted that a very close analogy subsists between the pediculated and non-pediculated growths. A most striking case in support of this doctrine is given in the succeeding section. It has been shown by Mad. Boivin in particular, that the interior of *polypi* are sometimes quite hollow; and Andral says, "we occasionally meet with serous cysts of various sizes within the walls of the uterus."* M. Jourel's celebrated case of *alleged* retroversion, in which the *liquor amnii* was supposed to have been evacuated by puncturing the uterus, but which was never followed by the fœtus or membranes, now turns out to be a tumour with fluid contents. "It is plain (says Mad. Boivin) that there was neither pregnancy nor retroversion in the case, but rather an encysted tumour, pushing and curving the uterus, emptied by the puncture, and healed by the inflammation and suppuration of its parietes."† In reference to the structure of fibrous tumours of the uterus, Dr. Lee observes:—"Cavities, containing a bloody or dark-coloured gelatinous fluid, are sometimes formed in the central parts of the tumour by a process of softening which its substance undergoes."‡ Ashwell's sentiments are nearly the same. These quotations appear quite conclusive. It is not contended that *fibrous* tumours usually contain fluid, for this is not their ordinary character, and the following case is submitted, rather in support of the exception than the general law:—

A skilful practitioner perforated the cranium on account of a large and unyielding fibrous tumour of the *cervix uteri*, which appeared to be entirely solid, and completely

* Path. Anat. translated, p. 673.

† Boivin, Pract. Treat. p. 80.

‡ Medico-Chirurgical Transactions, Vol. XIX p. 96.

obstructed labour. It was impracticable to apply the forceps. The patient died a few days after delivery. On examination, it was found that several small solid fibrous tumours had formed in the uterine *parietes;* but the large tumour which obstructed the labour, though firm in its exterior coverings, contained a space which was filled with a glairy fluid. The case was most ably treated. I am far from inferring that the tumour could have been sufficiently reduced by puncture to have superseded embryotomy; I believe it could not, and am desirous of raising the question of puncture in reference only to cases which appear altogether adapted for it. Before resolving to perforate the cranium of a living child, on account of a fibrous tumour of the uterus, would it not be allowable to pass into the tumour a long stout needle, (like a couching-needle, having a groove in the centre,) or otherwise a very fine trocar, and provided it is proved to contain fluid, to make a free puncture? I merely submit this as a question of great moment. The risks which attend puncturing are twofold, hæmorrhage and inflammation. The practice, if ever adopted, should be limited to tumours which have softened but evidence no signs of *present* inflammation, and enforced with the double view of preserving the child, and averting the formidable effects which result from a long continued pressure on the soft parts. Doubtless the quantity of fluid may be found too small to compensate for the risk of puncturing,—an objection equally applicable to vaginal tumours. The enlarged and prolapsed ovary, for instance, has been found almost solid; indeed, in one of Mr. Parke's cases nothing but blood followed the puncture, and yet the fœtal head immediately descended.

The coincidence of pregnancy and *polypus in utero* is rather unusual. In an instance related by Dr. F. Rams-

botham, the *polypus* in its exit from the vagina preceded the child's head, and it was determined very judiciously to return the *polypus* into the vagina, and remove it after a given period by ligature.* In a similar instance to this the ligature was applied directly after delivery; but it produced a fatal effect.† M. Deguise applied the ligature after a twin delivery, and the polypus "du volume d'une poire de bonchretien," separated on the eighth day.‡ I have elsewhere detailed a successful case of this complexity; the connection between the *polypus* and the uterus being dissevered by the efforts which attended the expulsion of the child. The prompt removal of a *polypus* which descends into the vagina and obstructs labour may become quite necessary. The ligature and excision should be here combined.§

In illustration of the points here adverted to, a brief summary of two of the most interesting cases on record seems desirable. In Mr. Bell's case of difficult parturition,‖ a fleshy tumour projected a little way through the uterus and made so much pressure over the rectum as rendered it impossible to administer an injection. Its nature and attachments were uncertain. It descended with the increase of the pains, but it could not be returned, and Mr. Bell was at a loss how to act. Excision was out of the question, for it was impossible to pass a finger between the tumour and the fœtal cranium. The lever was inapplicable, and em-

* A fatal case is recorded of the expulsion of a polypus after delivery.—See Med. and Phys. Jour. Vol. XXVI.

† Davis, Obstetric Medicine, pp. 29, 641.

‡ Nouveau Journal de Médecine, Tom. II.

§ Pugh tied and then excised during labour a fleshy excrescence from the *os tincæ*.—Pugh's Midwifery, p. 121.

‖ Edin. Med. and Surg. Journal, Vol. XVI. p. 365.

bryulcia was considered "both doubtful and dangerous." It was resolved to wait still longer; hæmorrhage came on, and the pains entirely ceased; but the tumour, being now within reach, was grasped and brought through the external parts. As the stem was too bulky to justify its excision, the child was delivered by the perforator and crotchet. Two ligatures were then applied to the stem; the next day the tumour was cut off, and the ligatures, with a portion of the stem, came away the same evening. The tumour was strictly steatomatous, and weighed six pounds. The patient recovered.

Dr. Macfarlane, in his very excellent communication,* describes an instance of this disease in connection with labour. Very soon after the delivery of the child an immense polypus having the placenta morbidly adherent to it (at first mistaken for the inverted uterus) passed into the vagina almost as low as the perineum. It was of nearly cartilaginous hardness, larger than a child's head at birth, and having a pedicle as thick as the wrist. A good deal of hæmorrhage took place from the surface of the polypus on the placenta being detached, and the most powerful stimuli were necessary to sustain life. The great size of the polypus is mainly referrible to its connection with the placenta. Dr. Macfarlane very judiciously recommends the operation to be delayed for a short time on the ground that, whilst the shrinking of the tumour (as in his own case) may be fully calculated upon, the danger of encountering peritonitis from the ligature (of which Denman, Levret, and others have given instances) will be very materially lessened. Dr. Hamilton is certainly in error when he tells us that "the only danger attending the ligature arises from the risk of including a portion of the

* Glasgow Med. Journal, No. IV.

uterus,"* unless his remark is intended to apply merely to the lining membrane. I have already shown the contrary, and Dr. Macfarlane has adduced several instances.

The selection of the part through which a tumour originating in the vagina, or lying in the septum, should be punctured may demand some consideration. It might be preferable to puncture through the rectum, provided the bulging is felt more distinctly there than elsewhere, and the wound will neither be irritated by the finger, nor directly exposed to the pressure of the child in its delivery, the difficulties attending which cannot be anticipated. On the other hand, the rectum might be considerably irritated by a fistulous wound; but a wound thus situated would probably heal very soon, and a second puncture at some distant period be rendered necessary. A wound in the *vagina* would be less liable to heal, on account of the *lochiæ* passing continually over it. If it were determined either to incise or extirpate the tumour, the *vagina* will of course be selected, and not the rectum.

The practice of making the puncture through the rectum seems to derive some support from the annexed case:— My opinion was requested by Mr. Bracey, a respectable surgeon of this place, relative to a labour obstructed by a tumour in the vagina of considerable dimensions, occupying the pelvic cavity, and closely adhering to the vaginal membrane, but without perceptible fluctuation. In the absence of pain, the tumour could be slightly raised; but during strong uterine action, it was forced upon the perineum, distending it as in natural presentation. Towards its vaginal surface the coverings of the tumour were thick; but, towards the rectum, so thin as to impart to the finger a feeling not unlike the membranes of the ovum. After

* Pract. Obs. p. 65.

resisting eight hours of strong pains, the tumour suddenly burst into the rectum, and discharged several ounces of a green serous fluid, leaving an aperture sufficiently large to allow the end of the finger to pass into the sac. The collapse of the sac was complete; the head immediately descended into the pelvic cavity, and was rapidly expelled. It appears that the patient experienced during pregnancy considerable difficulty in passing the alvine discharges.

The site for puncturing a tumour which originates behind the rectum requires no observation.

Excision of Tumours from the Vagina or Uterus.—The proposal of excising a tumour in close connection with the internal genitals demands the gravest consideration. First, let us suppose a tumour originating from the vagina, increasing in size until it fully occupies its cavity, sensibly affecting the neighbouring parts, and during labour actually obstructing the descent of the child. The forceps are inapplicable. Is the tumour susceptible of diminution by puncture? If not, should it be laid open, or excised, or must the cranium be perforated? But an important inquiry here arises, what is its nature? Can it possibly be an adherent ovary—the excision of which might occasion serious hæmorrhage, or *peritonitis;* or does the tumour arise from the vagina? It may assist us to examine a few cases and authorities on this question.

M. Pelletan excised two tumours which had formed in the vagina, the one of an adipose, the other of a fibrous texture.* Dr. Drew's two cases of tumour,† proceeding from the sacro-sciatic ligament, have often been referred to. The first patient died, and it was then discovered that the tumour could have been easily removed. In the second

* Clinique Chir. Tome I. p. 203 and 204.

† Ed. Med. and Surg. Journal, Vol. I. p. 20.

case, in consequence of the obstruction occasioned to labour, the tumour was extirpated by cutting through the right side of the perineum and anus, and the patient then delivered by the forceps of a living child.

A somewhat similar operation in a case of fatty tumour was performed by Professor Burns.* The incision was made on the left side of the vaginal orifice, perineum, and anus, through the integuments, cellular tissue, and *transversalis perinei*, and the tumour dissected away from its connections. Delivery took place four hours afterwards; and, notwithstanding an attack of peritonitis, the woman recovered.

If the forceps or vectis are inadmissible, and the question of embryotomy arises, Merriman asks, "Whether the solid ovarium in this situation should not be incised and its contents removed, or the ovarium extirpated?" Having commented on the practicability of the measure, and on the danger attending operations on parts connected with the uterus, he observes:—"If the ovarian tumour were so extensive as either to impede the descent of the child's head by its bulk, or to prevent the action of the womb by its weight, or, by its confined and imbedded position in the pelvis, the safety of both mother and child might be promoted by the operation." And again, "I am disposed to believe, that where the tumour in the vagina occupies a large space, it would be a more warrantable practice to remove it by excision if it consisted of a solid substance, and certainly to puncture it if it contained a fluid, rather than expose the child to certain death, and the mother to great hazard, by employing the perforator."†

* Principles of Midwifery, eighth edition.

† Med. Chir. Trans. Vol. III. p. 54 to 56.

The excision of a fibrous tumour from the superior part of the *cervix uteri* cannot be contemplated. Provided, however, the tumour is limited to the vaginal portion of the uterus; that it is loosely connected, or has a narrow basis, and is in other respects tolerably accessible, its removal may certainly be accomplished; but a combination of these favorable circumstances seldom occurs. "The laxity of their connection with the uterus is such (says Andral) as to be capable of being removed with the greatest ease, without injuring the substance of the organ."* Lisfranc removed a tumour by making incisions through the uteri; but, as Dr. Lee observes, "In most cases fibrous tumours cannot be removed by art while they remain within the cavity of the uterus."† The ligature has unquestionably been applied to pediculated tumours, although confined entirely within the uterus, but the instances are very rare. At present I am treating a number of cases, in which fibrous tumours have formed in the substance of the uterus, and in no one case would an operation be practicable. An instance to the contrary is occasionally met with; and very lately Mr. Samuel Evans, of Belper, (formerly a most intelligent pupil of the author's class,) very much to his credit, successfully removed a fibrous tumour from the uterus of a woman after a premature delivery. Through Mr. Evans' kindness, I have the satisfaction of stating the particulars:—

"Mrs. G——, ætat. 41, a stout healthy woman, was confined on the 1st of July, 1834, of her ninth child (still-born) at the full period of gestation. I was called to her the second day after her confinement, when she informed

* Path. Anat. translated, p. 672.

† Cyclop. of Pract. Med. Vol. IV. p. 393.

me that a large substance had suddenly appeared in the vagina, which caused urgent bearing down pains, tenesmus, and difficult micturition. Upon examination, I found a tumour of a firm and smooth texture, immoveable, and about the size and shape of a large orange situated at the upper and back part of the vagina. I was unable to feel the *os uteri* until the whole hand had been introduced into the vagina, the size and locality of the tumour preventing the descent of the uterine orifice to the situation it usually occupies after delivery. From the sudden appearance of the tumour, and the circumstances under which it occurred, I concluded that an enlarged ovary had fallen into the recto vaginal septum. Having made an unsuccessful attempt to raise the tumour above the brim, I left the case to nature, hoping that the further development of the tumour would occasion its ascent into the abdomen. After the first week my patient experienced little or no inconvenience, and nine months elapsed before I had again occasion to see her. On the 15th of April, 1835, I was requested to visit her. I found that she had miscarried the preceding day, at the third month of utero-gestation; but for some time previous to this her sufferings had gradually increased, owing, I concluded, to the effect of the pregnancy upon the tumour. The abortion was followed by constant and severe bearing down pains, constipation, tenesmus, difficult micturition, (requiring the frequent use of the catheter,) distressing vomiting, and a profuse flow of saliva. There was also great excitement of the circulation, the pulse varying from 120 to 130. The tumour had now attained the size of a large cocoa-nut, and a thin mucous discharge issued from the vagina. These symptoms became daily more urgent; she emaciated rapidly, and it was quite evident that unless some means were adopted to diminish the bulk of the tumour, the result

must soon be fatal. On the 4th of May, (nineteen days after miscarriage,) still under the impression that the tumour was an enlarged ovary and contained fluid, I punctured it with a trocar; but finding its structures perfectly solid, I did not hesitate to attempt its removal by the knife, which I effected on the 6th of May, in the following manner:—Having guarded the soft parts with my right hand, (though with some difficulty, as the tumour nearly filled the cavity of the pelvis,) I made a free longitudinal incision in the median line through the whole extent of the tumour, and then seizing one half with a pair of Lisfranc's double-hooked forceps, I cut away as large a portion as I could; the forceps were then re-applied, and another portion removed in the same manner, and several portions in succession, until the whole was removed. The mass consisted of healthy fibrous structure, and presented all the characters of what has been called the fibrous tumour of the womb. It was intimately connected with the uterus, arising by a broad base from the enlarged portion of the cervix posteriorly. The operation was not so formidable as I expected it would have been. It was the only proceeding which could be adopted, as, from the firm manner in which the tumour was impacted in the pelvis, it was quite impossible to cut it away entire, and its broad basis rendered the application of a ligature impracticable. The patient suffered but little during the operation, for the tumour itself was nearly insensible, and the quantity of blood lost did not amount to ℥vi. The progressive recovery of my patient to a state of convalescence presented no feature worth recording. I shall only add, that in three weeks after the operation she was perfectly relieved from all suffering, and so much improved in general health as to undertake a long journey. I lost sight of her for some months; but, upon making inquiry a few weeks ago, I

found that she continued entirely free from local complaint, and in good health."

Assuming the removal of a tumour to be correct in principle and feasible in practice, the period for its accomplishment should be regulated by the necessity of the case. The increase which these bodies acquire during pregnancy has been urged in favor of an operation even then. Thus a case is related by Merriman of the removal of a fibrous tumour from the *os uteri* by ligature under that condition of the system.* The whole cervix might indeed be excised; but, judging from my own personal experience, this operation is by no means so simple in its nature as said to be by the French.

Induction of Premature Labour.—Premature labour may with great propriety be proposed on pregnancy recurring, assuming the delivery of a living child at term to have already proved impracticable, the tumour to remain unchanged, and its excision not deemed expedient. Particular changes in the interior of the tumour are also said to justify the measure, but this question is fully discussed in the following section.

Cæsarean Operation.—I have merely to refer to Dr. Montgomery's case and observations in support of the indispensible necessity of this operation in the extreme class of cases under consideration.†

Dystocia from Scirrhus Uteri.—Instances are on record of delivery having been rendered impracticable by extensive scirrhus of the uterine orifice. Small incisions have

* Synopsis, p. 234.

† Dub. Journ. of Med. and Chem. Science, No. 18, Vol. VI. p. 418. Dr. Davis thinks that if it were feasible to make a material incision into the abdomen with a view of extirpating the tumour, whatever it might be, it would be preferable to the Cæsarean section.—Operative Midwifery, p. 111.

been recommended as best adapted for cases of this description.

Treatment after the Puncture or Incision of Tumours.—The evils consequent upon a morbid growth within the soft parts may or may not terminate with the labour. The enlargement when originating in the vagina will probably disappear; but this will mainly depend upon the evacuation of its fluid contents, the perfection of the adhesive process, and the absorption of the thickened walls. It will be very important to examine the canal soon after delivery, in case any difficulty arises in the evacuation of the bowels. One of Mr. Park's patients died of vomiting and constipation three days after parturition, although delivery was accomplished solely by the natural powers. Examination may be also necessary to prevent the formation of stricture, which has been known to attend the healing and consolidation of tumours extensively opened during labour, and also to ascertain whether the fluid may not have been reproduced. Should the disease have returned, a favorable period must be selected for renewing the puncture and producing consolidation of the sac, or discharging its contents by a free incision.

It has already been remarked, that the structures of a tumour connected to the uterus may inflame and occasion an acute peritoneal disease, which, if not immediately checked by vigorous measures, will terminate fatally. Subacute forms of inflammation should be treated by leeching the hypogastrium and vulva, fomentations, soothing vaginal injections, aperient enemata, opiates, and the tepid hip-bath. In the chronic state, the hypogastrium may be covered with a plaster composed of soap, iodine, and belladonna, and hydriodate of potash given internally in *syrup sarsæ*. The regular evacuation of the bowels should be maintained, and the hair mattrass substituted for the feather bed. By these means the tumour, if not partially

absorbed, will become passive, and the patient scarcely conscious of its existence. When pain has been produced by the pressure of the tumour on the pelvic nerves, mercury given to produce its specific effect gently, but steadily, has, in my own experience, been productive of very beneficial effects.

Friction is only adapted for the most inactive forms of disease, and always requires to be employed with caution. In the case of a lady who has an immense fibrous tumour of the uterus of fifteen years' growth, friction with iodine was followed by inflammation and partial softening of the mass, and most severe constitutional disturbance. The symptoms, however, yielded to mild treatment. The practice of supporting a large uterine or ovarian tumour by means of a belt, unless composed of the most yielding materials, cannot fail to increase the pressure over the nerves and great blood-vessels, promoting the numbness, pain, and œdematous swellings common to the larger description of tumours.

Note to the remarks on Polypus Uteri, in page 143, *third line from the top:—*

Dr. Hamilton "witnessed upon one occasion a case of fatal uterine hæmorrhagy, three weeks after delivery, where the only apparent cause was a polypous excrescence, not larger than a horse-bean, situated upon the internal posterior surface of the uterus, about three inches about the orifice."* A small polypus connected to the cervix uteri by a narrow stem, and keeping up hæmorrhage, may, when tolerably accessible, be excised with safety at any time. Under less favorable circumstances, the hæmorrhage may be restrained by the plug and cold applications until the risks incident to the puerperal state are over. The plug may be used with safety, provided the uterus is moderately contracted. Hæmorrhage and a well contracted uterus are by no means incompatible.

* Pract. Obs. p. 44.

For detailed information on tumours and obstructions in the soft parts to the progress of labour, I refer to the following works :—

Giffard's Cases, (Case 100,) 1734.
Smellie, Vol. II. Coll. xxi. No. 2. Case 3, 4, 1754.
Perfect's Cases, Vol. II. p. 341, 1781, 1783.
Denman, Vol. II. pp. 65-75, 1795.
Edinburgh Medical and Surgical Journal, Vol. I. p. 20. (Drew's Cases.)
Edinburgh Medical and Surgical Journal, Vol. XXXV. p. 82. (Heming's Cases.)
Medico-Chir. Trans., Vol. III. X. and XVII. (Park's and Merriman's Cases, and a case by Mr. Hewlett.)
Merriman's Synopsis, fourth edition, p. 57.
Clinique Chirurg., Tome I. pp. 203, 250. (Pelletan's Cases.)
Boyer, Traité, Tome X. p. 394.
Burns' Principles of Midwifery, eighth edition, p. 34.
Gazette Med. de Paris, March, 1835.—Lisfranc, Leçons sur les Maladies de l'Uterus.
Davis' Elements (p. 105) and Obstetric Medicine.
Ramsbotham's Cases, Vol. I. pp. 337, 341, 343.
Baudelocque, des Accouchemens, Tome II. p. 260.
Do. in Recueil Periodique, Vol. V.
Gooch on Diseases of Females, p. 290.
Journ. Gén. de Médecine, Tome LXXII. p. 242.
Dublin Med. Trans., 1824, Vol. IV. p. 258.
Blundell's Lectures, London, 1834.
Ramsbotham's Do. in London Med. Gazette.
Rigby's Lectures in London Medical and Surgical Journal.
Ashwell's Paper in No. II. of Guy's Hospital Reports.

SECTION IV.

ON THE INDUCTION OF PREMATURE LABOUR IN CASES OF ORGANIC DISEASE.

Any operation which is intended to supersede the ordinary laws of nature, should be based not only on the principles of science, but on the soundest experience, more especially when for the purpose of inducing premature labour. This operation, hitherto limited to cases of pelvic deformity, not only affords the infant a fair chance of surviving, but has the effect of greatly mitigating the sufferings of the mother.* With the exception of some remarks in Dr. Merriman's well known contribution, and a paper by Dr. Ashwell, I am not aware that the principle of extending the operation beyond its original object† has been *formally* noticed by any of our authors on midwifery. As respects its application to the dangerous vomitings of gestation, Burns is altogether silent. Blundell merely refers to the operation as a last remedy; but it does not appear whether he ever tried it. Conquest remarks, "now and then premature labour is essential to the safety of such women." Dr. Merriman, after expressing a great doubt whether an extension of the practice would benefit either the mother or the child, and apprehending that it might be open to alarming abuses, observes, "I must take leave, there-

* See the author's paper on the subject, in Lond. Med. and Surg. Journal, Vol. II. No. 28, p. 39.

† I was consulted, on the propriety of the measure, in the two following cases. In the first case, a lady who had given birth to

fore, to express my humble opinion that the inducement of premature labour by art ought to be strictly confined to those melancholy cases of distorted pelvis only for which

several dead children, suffered severely from cramp, not only during her labours, but for several months afterwards. Her surgeon, attributing her distress to the pressure of the full sized cranium, proposed to bring on premature labour. In this proposal I was reluctant to concur, and it was carried into effect on his own responsibility, both on this and a subsequent occasion, very successfully. In the second case, a poor woman had suffered extremely from spasmodic asthma during her several pregnancies, and was suddenly cured by labour occurring spontaneously at the sixth month. In the last pregnancy the distressing respiration came on earlier than heretofore, and the ergot was given to procure abortion, but without effect. The thirty-eighth week arrived, and her respiration had become intolerable. I was now desired to see her, and my friend Dr. Rigby, then at my house, accompanied me. The propriety of rupturing the membranes was strongly urged upon us. We declined assenting. Labour, however, ensued the same evening; yet notwithstanding the delivery was rapid, the patient sunk within the hour. The preservation of the child *solely* has been supposed to justify the measure. Take, for instance, the case of a healthy mother, never affected with syphilis, giving birth, at term, to six or seven dead children in successive pregnancies, the evidences of the extinction of life in the ovum having on every occasion ceased three or four days before the accession of labour,—as respects the safety of the infant, a stronger case cannot be supposed. In this point of view the measure seems to be advocated by Dr. Hamilton. A lady in her two first pregnancies was supposed to have carried the infant to the eleventh menstrual period. On each occasion the infant was still-born. Under the impression "that the uterus had ceased to furnish due nourishment to the infant for some time before labour had taken place," Dr. H. undertook the operation in the three succeeding pregnancies with perfect success. The lady "has three living children artificially brought into the world *after* she had passed the tenth menstrual period."*

* Pract. Obs. p. 173.

it was originally recommended."* Such is the deliberate opinion of this eminent author.

Dr. Ashwell has very recently proposed an extension of the principle to cases in which tumours have formed within the uterus, or in connection with enlargements of the ovary, and also to extraneous growths in the vicinity of the uterus, such as are liable to inflame during gestation, or calculated to offer a formidable obstacle to parturition. Although the cases† which accompany Dr. Ashwell's paper are deeply interesting and important, yet it is questionable whether they afford sufficient data to establish as a general principle the adoption of the proposed measure in similar cases. It, therefore, still remains to be determined whether the principle is ap-

* Med. Chir. Trans. Vol. III. p. 142.

† Case I.—A tumour growing from the *fundus uteri*, and scirrhous tubercles imbedded in the walls of the organ. Premature labour came on spontaneously at the sixth month. The result was fatal. Pathology.—Peritonitis, and softening of the tumour.

Case II.—A tumour, complicated with placenta presentation and hæmorrhage. The patient died in a few hours after delivery. Pathology.—Pale serum effused in the peritoneal sac, and several tumours within the walls of the uterus.

Case III.—A tumour, supposed to be an ovary. The patient was delivered at term, after a natural labour. Pain in the tumour, and dangerous symptoms ensued, but she fortunately recovered.

Case IV. This was an instance of *osteo sacroma* of the thigh, and premature labour was had recourse to, merely with a view of an early amputation of the limb.

Case V.—Labour was obstructed by a tumour which burst into the vagina, and discharged a dark offensive fluid. Delivery was then shortly effected. Death occurred on the second day. Pathology.—A large empty cyst was discovered growing from the ovary. The vagina was ulcerated and gangrenous at the part where it communicated with the cyst.*

* No. I and II. Guy's Hospital Reports.

plicable to cases of pregnancy complicated with a dangerous bodily disease, whether it commences with the period of conception, or whether the development of the disease be antecedent or subsequent to it. Thus having reason to doubt the accuracy of some of Dr. Ashwell's views, and the deductions arising from them, a few plain remarks on this momentous question will be in strict accordance with the subject of the last section.

The coincidence of conception with a disease of the uterus, already malignant, is exceedingly rare. The fleshy tubercle, one of the most common diseases to which the uterus is liable, is by no means malignant in its tendency, yet Dr. Hodgkin, who denies their fibrous nature, is of opinion, "that these growths essentially possess the structure of compound adventitious cysts, to which the malignant heterologue formations are to be referred."* Their density and hardness is said to be owing to the firm pressure of the fibrous tissue in which they are imbedded. The process of softening, together with the formation of cells, appears to be occasioned by an increased supply of blood, which extends to the whole organ, enlarging its substance, even in the unimpregnated state. This augmentation bears no absolute ratio to the bulk of the tumour. Indeed, the proper structure of the uterus, so far from increasing in proportion to the growth of a tumour originally imbedded within it, is sometimes completely absorbed, the peritoneum only being left between the tumour and the abdominal cavity. This circumstance is pointedly alluded to by Mad. Boivin. Thus, with the first changes after delivery, there is a peculiar tendency to peritonitis in its acute form. The opinion that these tumours invariably become encysted

* Guy's Hospital Reports, Part II. p. 334.

requires confirmation. In most instances they are very slightly connected with the uterus, and visibly encysted; in others they are nearly identified with the proper tissue of the organ, and are apparently destitute of an encysted structure.

The presence of the fleshy tubercle in the unimpregnated uterus is rarely attended with immediate danger to life. The distress will be either of a neuralgic or a subacute kind. It is the combination of pregnancy with this disease of the uterus which so materially affects the welfare of the patient. In the middle months of pregnancy the neuralgic distress incident upon a high degree of pressure will probably diminish, although the yielding structures of the organ may no longer restrain the further increase of the disease. "The tumours (according to Ashwell) soften during the latter months, the increased vascular supply leads to increased inflammation, unhealthy and imperfect suppuration is established in them, and death occurs soon after parturition." With the view of preventing or removing inflammation, and averting the pressure and contusion which the gravid uterus is supposed to make upon the diseased growth, Dr. Ashwell strongly recommends the induction of premature labour. But do the changes of structure here described usually take place? If so, at what period of pregnancy? By what signs are they indicated,* and what treatment can be most judiciously pursued?

Unquestionably, the degeneration of a large tubercle, whatever be the process, is far more likely to arise during pregnancy than under any other condition of the system. But it may be doubted whether the fatal results

* The existence of a fibrous tumour situated at the *posterior* part of the uterus, above its vaginal portion, and not within reach of the finger, is best ascertained through the walls of the rectum, counter pressure being at the same time made over the abdomen.

arise from disorganization of the interior of the tumour so frequently as Dr. Ashwell supposes; for in two very striking instances contained in the present work, death took place soon after delivery from acute peritonitis; and in neither case was there any appreciable change of structure in the tumour except a mere softening of the interior.

When fibrous tumours exist in the gravid uterus, the structure surrounding them is more vascular than when they exist in that organ in the unimpregnated state. It would thus appear that the tumours will be more predisposed to put on inflammatory action in the former than in the latter state of the uterus. Granting, then, that the tumour becomes inflamed during gestation, is it warrantable to have recourse to an operation so responsible as the one in question? In all acute diseases, is not the danger known to be greatly increased during a state of pregnancy, the premature expulsion of the ovum being a common result of the prevailing excitement? The propriety of bringing on labour whilst a tumour is in a state of active inflammation, may very justly be questioned; for the contraction of the uterus necessary to accomplish the separation of the membranes, and the expulsion of the fœtus, would most probably increase the irritation in the tumour, and thus exasperate the inflammation. Thus the diminished supply of blood may hardly compensate for the extra pressure which the uterus in its progressive contractions will make upon the tender parts. Neither is the softening of the tumour necessarily accompanied by, or dependent upon, an acute inflammatory process. I have mentioned a case in which a *glairy* fluid had formed in the interior of a fibrous tumour. Death took place, as already observed, from peritonitis, a few days after delivery, though up to the hour of labour the patient was in perfect health, the existence of the tumour not having been suspected.

These facts are certainly calculated to influence our views of treatment.

The necessity for inducing premature labour implies that the mischief cannot be obviated by other means. This is not absolutely the fact; for a series of symptoms have been observed which appeared to indicate inflammation and softening of the tubercle not only of the gravid, but also in the unimpregnated uterus. The inflammatory symptoms having persisted for some time now begin to diminish; the pain and constitutional disturbance subside; the tumour diminishes, and the patient remains for a variable period free from any material inconvenience. An illustration of these changes has lately occurred in the case of an unmarried lady now under my care, who has had a very large uterine tumour for fourteen years. The general and local symptoms indicated active inflammation in the tumour; which having subsided, the tumour became softened in different points, and afterwards diminished in volume.

Dr. Hamilton also mentions a similar case:—"The patient, a married lady, twenty-five years of age, had a chronic enlargement of the uterus, to such an extent that it equalled the size of the gravid uterus at the end of the fifth month at least. In this case, the first evidence of the mode of treatment becoming efficacious, was the softening and pitting of the tumour. Within a month from that date, the uterus was reduced to its natural small size."* The accession of inflammatory symptoms in tumours of the gravid uterus, and their cessation after a certain time, have been observed by the author more than once; but there was no diminution in volume of the tumour as in the above cases of unimpregnated uterus. Respect-

* Hamilton's Pract. Obs., p. 104.

ing the suppuration (said to be always imperfect) of these growths, I possess scarcely any information, and am unable to say whether the fact, if previously known, would furnish a legitimate motive for inducing labour.

The period for bringing on labour, assuming its necessity, must be regulated by the urgency of the case. Dr. Ashwell considers that the tumour will not only become large and painful about the sixth or seventh month by the increasing supply of blood, but be rendered additionally so by the encroachments of the uterus. The increase in the tumour will probably be in proportion as the period of pregnancy is advanced; but the symptoms indicating inflammation may occur at a much earlier period, in fact, previous to the existence of pregnancy, or even before the disease has been suspected.

Let it not then be assumed that the distress must be proportionate to an advanced state of pregnancy. So far from this being the case, severe constitutional sympathies may be almost coeval with conception, and yet presently subside. I have had several marked proofs of the stomach and heart having been fearfully excited in the early weeks, and yet about the fourth month the distress has nearly ceased, the active condition having merged into the passive. The sudden afflux of blood to the uterine system may be supposed to produce a tender state of the tumour, to which its vessels gradually become accustomed, ultimately bearing an increasing quantity of blood with little inconvenience. Several years ago I attended a woman during the first few weeks of pregnancy, in consequence of emaciation, loss of appetite, costiveness, severe vomiting, and pain not unlike the passing of gall stones. Presently a moveable tumour, the size of an orange, and tender to the touch, was discovered in the inguinal region, apparently connected with the fundus uteri. Under mild

treatment the distress progressively diminished, and had disappeared considerably before the ninth month, although at that time the size of the tumour had materially increased. She has subsequently experienced two dangerous abortions,—and the tumour, continuous with the cervix uteri, rests over the ossa pubis, and in size, figure, and situation resembles the mature fœtal cranium. The functions of the bladder are occasionally disturbed.

The elevation of the uterus will in due course carry the tumour out of the pelvis, and the pressure which the gravid uterus may be supposed to make upon it will be inconsiderable until the period of labour approaches. Indeed, the distress incident upon mechanical pressure will partly depend upon the period of gestation, and partly upon the situation of the tumour. Thus a woman may suffer inconvenience at an early period, and but little afterwards. The following case affords a good example:—

A respectable woman, aged 33, had been married nine years, and had ceased to entertain all ideas of a family. Two or three years ago she was under medical treatment, on account of a varicose state of the veins of the rectum and lower extremities. In July, 1836, (the beginning as it proved of pregnancy) her distress increased very greatly. I was called in consultation on the 19th of September. The veins of the lower extremities and of the rectum were in a highly varicose state; the ancles œdematous, the breasts painful, and so inordinately bulky as to require suspending and the application of leeches. The respiration was much oppressed on exertion, and the abdomen rather tumid, flatulent, and uneasy. The uterus was very low in the pelvis; the orifice and cervix appeared quite natural, but the body of the organ was evidently enlarged, bulging particularly towards the rectum. Con-

sidering these symptoms merely as an aggravation of her former distress, the idea of pregnancy never occurred to us. The uterus appeared to be forced into this unnatural situation by a disease either of its own structure or the ovary. Presently her pregnancy became manifest; the distress vanished; she remained well for six months, when she was safely delivered, after an easy labour, of a full grown living child. This was on the 23d of April, 1836, being exactly thirty-one weeks from the period of my first visit. Thus at the second month of pregnancy the pressure was intense, and the mammary sympathies peculiarly strong; and yet, with the advance of pregnancy, the turgidity of the vessels disappeared, and the mammæ not only diminished, but became progressively smaller, and this without any hæmorrhage or apparent cause, except the removal of pressure over the great blood-vessels. After delivery the flow of milk was excessive, and, from the general debility, it was deemed necessary to wean the child. The emaciation, however, progressed, accompanied now by a fixed pain and a slight enlargement in the left groin. On examination three months after delivery, a tumour was discovered partly above the brim, and partly in the recto-vaginal septum, excessively painful to the touch, and evidently productive of all the distress the patient had endured. A suitable treatment was immediately enforced.

Dr. Hamilton seems to consider a prolapse of the uterus as an inevitable sequel of enlargement of the ovary, but this must be subject to considerable uncertainty.

The following case proves that the constitutional excitement does not always re-appear in succeeding pregnancies. Mrs. ——, was seized, November, 1829, after a meat supper, (having previously been subject to gastrodynia,) with intense pain in the stomach, followed by vomit-

ing, pain and tenderness over the abdomen, most obstinate constipation, and hiccup. The pulse was 120, with pyrexia and very hurried respiration. She was now bled generally and locally, and injections of cold water, turpentine, tobacco, &c., administered from time to time, in order to assist the action of purgatives taken by the mouth. The liberal employment of opium was indispensably necessary. Three days after this seizure the pulse was too rapid to be counted, and in December averaged from 130 to 160. At this time she began to complain of a fixed pain in the left side. In February a mitigation of the symptoms took place, but the pulse was seldom under 120, even in her most easy moments. At the time of her seizure she had missed a single menstrual period. About February the existence of pregnancy was no longer doubtful, and it was equally evident that a large tumour had formed in the abdomen, apparently distinct from the uterus. The formidable symptoms soon returned, with the addition of sickness and vomiting, scarcely anything remaining on the stomach. About the middle of May I was desired to meet her attendants, the late Drs. De Lys and Darwall, and Mr. F. Elkington, and to consult upon the propriety of inducing premature labour. She had now kept her bed six months; the emaciation was considerable; the pain and sickness constant; the pulse small and rapid, and the tumour tender when pressed upon. The tumour, stretching from left to right, lay above the uterus, from which it appeared to be separated by a distinct sulcus or transverse line of demarcation, half an inch in breadth. We first resolved upon giving much larger doses of the opiate. For a fortnight she remained much the same. The 30th of May an aggravation of the symptoms took place, and it was determined, at our morning visit, to bring on labour in the evening, in case she was not relieved. Fortunately, as

soon as we left the house the membranes spontaneously gave way, labour speedily ensued, and in the afternoon she was safely delivered of a fine living child. The symptoms were decidedly relieved, and she soon recovered her health and strength. The tumour, however, remained quite as large as before delivery; the hardness of the epigastric region was manifestly caused by a large tumour extending from the left side to the right, prominent, and somewhat globular anteriorly. It was clearly not connected with the liver, and there was a sharp edge within an inch of the umbilicus. Some time after delivery Mr. Hodgson examined the tumour, and considered it doubtful whether it proceeded from the uterus or the ovary. Subsequently the patient was seen by Sir A. Cooper, who regarded the tumour as encysted, an ovary, I presume. Since her alarming illness the patient has had two children, and passed the periods of gestation without any recurrence of the former symptoms. The abdomen presents the appearance of the gravid uterus at the seventh month of pregnancy. The general health is very good.

Fleshy tubercles situated within the walls of the uterus undergo a modification not only in their structure, but also in their final course, protruding into the uterine cavity; they then correspond to polypi of the fibrous kind. "Without being pediculated (observes Mad. Boivin) like the interior polypi, the fibrous bodies may also project into the cavity of the uterus, fill it, and derange its form."* These facts seem to corroborate the doctrine that a tumour originally surrounded by the proper tissue of the uterus, derives its character from the direction it ultimately takes, whether towards the peritoneal or the mucous surface. The greater number of polypi possess a soft structure, but

* Heming's Trans. p. 179.

others the very reverse. Indeed, the fleshy tubercle was considered both by Baillie and Gooch as differing from polypus merely in its locality and attachment. In support of this doctrine it is scarcely possible to adduce stronger evidence than is contained in the annexed case. Some years ago I was called to visit a woman about six weeks after the delivery of her first child on account of an œdematous state of the inferior extremities in connexion with a very great enlargement of the uterus, equal in size to the organ immediately after delivery. After a few weeks the œdema disappeared; the uterus diminished; she recovered her health, became pregnant, and was delivered at term. About a year afterwards I again saw this woman several times in very alarming illnesses. A distinct tumour of a firm nature, exceedingly tender to the touch, occupied the hypogastric region, accompanied by vomiting, constipation, and a pulse indicating peritonitis. Under the frequent application of leeches and other means the attacks repeatedly gave way, and the patient attained good health. Nothing unusual occurred in the puerperal state. A year ago I was again consulted. The uterine tumour distended the hypogastrium, almost filling the pelvic brim, and about this time violent hæmorrhage from time to time appeared. Some of the attacks were most alarming, still the os uteri was closed. At length, in proportion to the frequency and severity of the discharges, the orifice expanded, enabling me, though with difficulty, to pass the end of my finger, and barely to touch the tumour. Each week the tumour distended the orifice more and more, till at length it passed quite into the vagina, and now, presenting all the characters of a fibrous polypus, was successfully removed by ligature. The patient has entirely recovered. Several very interesting physiological questions arise from

this case, but it would be out of place to enter into them here.

Whatever may be the precise nature of these organic diseases, the premature expulsion of the ovum cannot be justifiable, (excepting in perhaps a few very rare cases,) unless a formidable obstruction is likely to arise to the course of labour. Indeed a tumour, whatever may be its sensibility, situated within the tissues of the fundus or body of the uterus, cannot fail to become more or less affected by a severe and long continued uterine contraction. It need scarcely be remarked, that this objection cannot directly apply to a tumour in connection with the cervix uteri; but surely the gradual expansion of the cervix in the last weeks of gestation is far more desirable than the forced and painful stretching which attends its premature dilatation. Moreover, the changes which precede labour at term—changes so conducive to its favorable termination, viz. the sinking of the uterus, the shortening of its fibres, and the secretion of mucus, will be mainly wanting. The fleshy tubercle may be either wholly imbedded in the proper structure of the organ, as at an early period of its growth, or only partially so after it has acquired a large size. Although this objection cannot apply to ovarian diseases, the liability to form an erroneous diagnosis must not be overlooked. The non-malignant ovarian tumours usually contain fluid, and perhaps admit of diminution by puncture.* In tumours of ascertained malignancy the artificial evacuation of the uterus could only be undertaken with the hope of prolonging a miserable existence.

* An interesting case of pregnancy and ovarian disease, recorded elsewhere: tapping was several times performed with marked advantage.—See Dublin Journal of Med. and Chem. Science, pp. 349, 350.

The most mature judgment is indispensably requisite in order to form a right conclusion relative to the actual kind of inflammation existing in a tumour consisting of the diseased ovarium. Its progress, symptoms, and changes from pregnancy being considered, have we good grounds for believing the disease to be malignant? or is it likely to become so? And, assuming this, can so fatal a consummation be averted by diminishing the supply of blood *e. g.* by emptying the uterus? The very responsible duty of determining these points, has more than once devolved upon me. In two of the cases the operation seemed to be warrantable. In the first (already detailed) nature gently anticipated our determination with a most happy result. In the second, we had to regret the insufficiency of art. The full particulars are here transcribed, with a trivial alteration, from the work in which they first appeared:*—"This case occurred in a woman supposed to be in the sixth month of pregnancy, who for a year preceding had been affected with an organic disease which came on suddenly with fulness and a tympanitic state of the abdomen. The distension was so great that it was impossible to determine the real nature of the disease; but a fluctuation, together with the hardness of the swelling, favored the presumption that it was ovarian. Its progress, though very rapid at the outset, had but little influence upon the constitution, until the period when pregnancy occurred. The patient then began to experience much greater pain and inconvenience, which seemed indeed to be proportionate to the increase of tumefaction. Her sufferings, however, were suddenly augmented in consequence of a fall against a chair. The day following this accident, the symptoms assumed a cha-

* Treatise on Uterine Hæmorrhage, p. 42.

racter imminently dangerous. The pain in the abdomen was constant, the pulse so rapid and feeble as scarcely to be distinguished, the countenance indicative of great distress, and the stomach rejected alike food and medicine. At this time (about twenty-four hours after the accident) I visited the patient conjointly with her medical attendant. We at once resolved, first to ascertain whether she were really pregnant (for the characteristics of gestation had been very faint) and secondly, in the event of her being so, to rupture the membranes. As the head did not present, it was found impossible, without passing the hand in the vagina, to determine the fact of pregnancy. From the early period of gestation, the dilatation of the os uteri so as to admit the fore-finger was not accomplished without difficulty, and the membranes were barely felt when the finger was passed its entire length in the uterus. The recession of the membranes made it necessary to use a long instrument in order to perforate them; a knitting-needle was employed for this purpose, and answered very well. About five ounces of water were immediately discharged, and no more escaped at any subsequent period. The knee was found to present; but we had previously determined, whatever might be the presentation, to rupture the membranes, and thus afford the patient, as we believed, the only chance of relief, without regarding the difficulty which might attend the operation. She remained free from sickness, and in all respects greatly improved, until the next day, when she experienced a temporary return of vomiting. Labour pains commenced on the following morning, and terminated, after two hours, in the expulsion of a small fœtus not exceeding the age of five months. The placenta quickly followed—very little suffering and scarcely any discharge attended the process. It is com-

puted she did not lose three ounces of blood. Relief, however, did not follow. The abdominal pain continued very distressing, the symptoms of exhaustion recurred, and death took place the following day. On examining the abdomen after delivery, a hard tumour was found extending from the pubes to the umbilicus, so that the trocar must have been used above the umbilicus had tapping been resorted to. Post-mortem examination was refused.

It may be asked, why was not paracentesis abdominis had recourse to, in preference to the induction of premature labour. The answer is simple. We had reason to believe that the dropsical effusion was either ovarian, or the consequence of some diseased growth. Had the former state existed, the operation would have been unavailable, either on account of the uncertainty as to the number of cysts and the difficulty of emptying them, or the rapidity with the effusion is re-produced when it takes place in a large cyst. If the latter, whilst the state of exhaustion would scarcely have warranted the removal of a very large body of water, the pressure of the tumour would have been diminished temporarily only; and under either supposition, if inflammation had taken place in consequence of the accident, the principle of tapping would have been highly objectionable. Objections certainly attach to the rupture of the membranes. The period of pregnancy may not be properly defined, the liquor amnii very small, the presentation unnatural, labour tedious in coming on, and the fœtus will most probably be deprived of life: but in the present instance we had only a choice of evils.

In dropsical accumulations within the peritoneal sac complicated with pregnancy, whether occasioned by a plethoric or an inflamed state of the blood-vessels, paracentesis is infinitely preferable to the evacuation of the liquor

amnii.* Denman strongly discountenances paracentesis abdominis during pregnancy, and as a *general* rule his objections would hold good; circumstances may, however, occur to render that operation essential, not merely for the alleviation of aggravated sufferings, but also for the preservation of life."

Without questioning the validity of Dr. Merriman's general objections against extending the induction of premature labour beyond its original design, instances have unquestionably occurred to justify its adoption. Dr. Montgomery's Cæsarean operation is an example in point. Admitting that an emergency may arise to justify the measure, experience derived from several cases of this kind, corroborated by much subsequent reflection, leads me to doubt whether Dr. Ashwell has sufficiently restricted and defined the principle which he so ably and zealously advocates.

The operation should embrace the history of the tumour in general:—

First, Its precise locality; its size and growth, both

* Mr. Langstaff, in the 12th Vol. of the Med. Chir. Trans., has published a case of ascites occurring towards the close of pregnancy and occasioning very great distress, for the relief of which rupture of the membranes was determined upon in preference to tapping. The next day, labour not having ensued, and dissolution being threatened, paracentesis was performed, and twenty-five pints of water drawn away. Symptoms of inflammation rendered an active treatment, including depletion both general and local, quite necessary. Labour followed on the fourth day, and the patient entirely recovered. There is an important distinction, however, between these cases, which will account for the difference in their results, and justify the practice pursued in each. In the case I have detailed, the dropsy was secondary to organic disease. In Mr. Langstaff's, the effusion depended upon simple inflammatory action, the consequence of pregnancy. After delivery, therefore, there was no re-accumulation of fluid.

relative and absolute. A tumour in connection with the lower part of the womb, having little or no mobility, possessing an ascertained firmness of structure, and not leaving room in the pelvic brim for four fingers to lie in parallelism, (the available space scarcely exceeding three inches,) would seem peculiarly adapted for the operation.

Secondly, Its actual structure and mobility. We have to consider whether the mass can be elevated above the brim, and provided it has but little sensibility, and is unattended by constitutional disturbance, whether its contents may not be sufficiently fluid to justify the operation of puncture.

Thirdly, It is to be viewed in reference to its effects on former labours, if any. A mere conjecture that the forceps cannot be used with safety will not suffice. There ought to be a conviction that parturition, at term, will be either impracticable or incompatible with the parent's safety.*

Fourthly, The axis of the uterus, as respects the pelvis, ought not to be overlooked. In a case already stated, the tumour from its bulk and situation at the posterior part of the cervix uteri forced the os internum above the symphisis pubis, and several days of labour pains elapsed ere the uterine orifice came within reach of the finger.

Fifthly, The sensibility of the morbid growth, its changes from pregnancy, and its influence, local and general, will claim especial attention. As respects a uterine tumour, whose structures are severely inflamed, I desire merely to express a doubt as to the propriety of bringing on labour at such a moment. Provided there is no obstruction to the natural discharges, would not the interests of the patient be best consulted by treating the case as an acute or subacute disease, and deferring the operation until the excitement is

* I say nothing about the life of the infant, this being entirely a separate consideration.

diminished? I am deeply sensible of the importance of the subject, and merely anxious that it should be viewed dispassionately.

Under any circumstances, it will be most important to consider whether the disease is likely to prove fatal; for in sanctioning the operation we must not only believe that such a result will happen if gestation is suffered to continue, but ought to entertain a strong conviction that the evacuation of the uterus is essential to the removal or the marked mitigation of the disease. As a matter of conscience, the concurrent testimony of several eminent midwifery practitioners, in its justification should previously be obtained.

SECTION V.

ON LACERATION OF THE UTERUS AND VAGINA.

Laceration of the uterus or vagina constitutes one of the most fatal injuries incidental to pregnancy and parturition. In this respect the experience of Hunter, Denman, Ramsbotham and Collins, is too often confirmed by practitioners in general. Let us, however, be animated by the spirit of Dewees, neither to regard these injuries as hopeless, nor relax our exertions towards their reparation, so long as life remains, since several successful cases, which appeared most unpromising, are already on record,* and others, similar in character, but equally auspicious in their issue, remain to be added.

From these injuries no class of women are exempt. Their comparative frequency, which is by no means well ascertained, is said to vary from one in three hundred to one in four thousand cases. In hospital practice, the proportion is very great, "principally owing to such patients being sent to public institutions *after* the occurrence of the injury."* According to Dr. Collins, out of 16,414 deliveries, 34 were of this description, being an average of 1 in 482. I am disposed to regard their occurrence as much more frequent than is generally believed, and as connected with sudden instances of death.

* Collins' Pract. Treatise on Midwifery, p. 241.

Laceration, (independently of any misplacement of the ovum,) though said to have been noticed at the fourth month of pregnancy, rarely occurs before the completion of the natural term. In an instance of abortion at the *fifth* month the violence of the pains seemed to me quite equal to produce a breach of surface—a mere exception, however, to the ordinary rule. In one of the cases detailed by Collins the laceration actually happened at this early period.

On general principles it might be inferred that lacerations would arise more frequently in first than in subsequent labours; but the contrary, I believe, is the truth. Mr. Roberton, in particular, in his valuable paper on this subject,* has proved most satisfactorily that the accident very *rarely* happens in a first labour; and in twelve cases seen in consultation by Mr. Vickers, a most respectable and now retired practitioner of this place, the majority occurred in women who had suffered from previous severe labour. Ramsbotham never met with an instance of ruptured uterus in a first lying-in; but Collins' 34 cases include 7 pregnancies of this description. An opinion has prevailed that the uterus will sustain with impunity a more powerful contraction in a first labour, than its textures are afterwards equal to—that these textures become impaired by frequent child-bearing, and easily lacerate, but the deduction is unsupported by evidence. In the disease termed *malacosteon*, the sacral promontory undergoes a sensible change in its figure, *antecedent* to any apparent softening of the pelvic bones in general, and the reason is obvious. This yielding, which is at first very slight and is arrested

* Edinb. Med. and Surg. Journal for July, 1834, p. 49.

after delivery, returns with a recurrence of pregnancy, rendering each act of parturition more difficult.*

Thus we understand why lacerations occur more frequently in women who have borne children, than in primiparæ; and the explanation is far more consistent with the principles of physiology, than to ascribe the injury to attenuation of the uterine tissues. In confirmation of this opinion, I have the satisfaction of adducing the experience of my valued and intelligent friend, Mr. J. M. Coley, of Bridgnorth. In his description of two cases, which he very kindly sent me, I find the following observation:—"In both cases the parietes of the uterus were unusually thick, a circumstance which leads me to doubt the truth of the opinion entertained by accoucheurs of the first rank, that this accident *generally* arises from an attenuation of the womb, occasioned by repeated pregnancies and the pressure of the projecting bones of the pelvis. In both instances, besides the remarkable firmness and thickness of the organ, the situation of the rupture would negative such an explanation of the cause of the injury. The contractions of the uterus were excessive, and in one of the cases the ergot was given in very large doses, and the forceps applied during strong pains."

Several women, who present rare instances of recovery from rupture of the uterus, have subsequently borne chil-

* The commencement of *malacosteon*, by pain about the pelvis, and difficult progression, is liable to be confounded with rheumatic and neuralgic affections. An instance of this recently presented itself in a woman whose pelvis had become distorted to an extreme degree. We know very little of the actual state of the system which predisposes to *malacosteon*; but the opinion generally held that the bones in this disease never regain their natural solidity is incorrect. In confirmed cases the softening remains, but not in recent cases.

dren without any recurrence of injury: yet we can make but little practical use of this fact, since so much depends upon the fœtal cranium, both as respects its dimensions and structure. If the cause still exists, the risk must be very great. The woman, for instance, whose case was so successfully treated by my friend Mr. Birch,* fell a sacrifice some years afterwards (but not in her succeeding labour) to a similar injury. It seems scarcely probable that the cicatrix would remain sufficiently distinct to permit a second rent to be traced to it, supposing the second to have passed more or less in the course of the first.

Laceration may be considered under two principal heads; in the first there is an unusual resistance, and the womb acts with extreme violence; in the second, its powers of resistance are defective, slight causes being equal to produce a breach of surface. The first head embraces difficult parturition in general, and occurs under all circumstances of the presentation, and in every stage of labour, and state of the uterine orifice from the smallest to the greatest amount of dilatation. Usually, the laceration arises after a few hours of severe pain, the *os uteri* being partially dilated, but unattended by a corresponding descent of the presentation. When the rent speedily follows the accession of labour, before the pains have become severe, or the uterus has scarcely began to dilate, its structures will probably be found diseased.

The coincidence of pregnancy with unsound states of the uterine tissues, scirrhous and cancerous ulceration in particular, has occurred too frequently to need comment. Scirrhus of the os uteri can scarcely fail to impede the first stage of labour, and one of the worst cases which I have yet attended arose from this cause. A firm or fibrous

* See Med. Chir. Trans. Vol. XIII. Part II. page 360.

degeneration, affecting a limited part of the uterus, will necessarily interrupt the parturient action, and an irregular contraction of the surrounding structures most likely ensue.

It is more probable that a breach of surface will take place when the action of the uterus is irregular, than when it is uniform: thus we find Velpeau referring certain cases of laceration to the violence attending the convulsive paroxysm, and of this I have given an instance. In three of Collins' cases "the laceration was complicated with convulsions;" but such instances, as well as lacerations said to be produced by the violent movements of the child, are, indeed, of unfrequent occurrence.

The first head admits of the following classification:— first, the laceration occurring when the presentation is above the brim, and entirely within the uterus; secondly, during the entry of the presentation within, or its passage through, the brim; thirdly, when the presentation is impacted within the bones; (in the second and third subdivisions the presenting part may be partially inclosed within the uterus when the laceration happens;) fourthly, during the actual delivery.

In these several states an undue resistance is offered to the expulsion of the child in connection with an inordinate action of the uterus, rendered so in some instances by the premature exhibition of the ergot of rye. The causes of this resistance include rigidity of the soft parts in general, and the *os uteri* in particular, an unyielding, or greatly enlarged, and perhaps hydrocephalic cranium, transverse presentation, malposition of the head, and, lastly, a want of correspondence between the axis of the uterus and the axis of the pelvis. This last mentioned cause, though pointedly stated by Douglas, has been but little noticed by succeeding writers. In two examples of the kind de-

tailed in this section, the uterus was pendulous in a very marked degree, and in one of these (a case of malacosteon) the posture which the patient observed throughout the last weeks of gestation was exceedingly restrained. The same effect may be produced by tumours situated either above or below the brim, or whatever prevents the uterus from acting in the axis of the pelvis. "If the fundus is thrown much forward," says Douglas, "the fœtus on the return of every pain will be forced against the *lumbar vertebræ* or anterior edge of the *ossa pubis*, in a direction very different from that of the axis of the pelvis."* Under these circumstances the vagina, as well as the uterus, will be very liable to rupture. But by far the most frequent of these several causes consists in an unnaturally small or projecting state of the pelvis, very generally of the sacral promontory.

Exostosis of the pubis, in connection with uterine laceration, has been distinctly noticed both by Denman, Douglas, and Roberton, the latter having described three cases of the kind to which the laceration was attributable. In one of the instances mentioned by Douglas, not only was the brim contracted, but a thin, bony ridge, almost as sharp as the edge of a knife, was attached to the upper part of the ossa pubis. Mr. Roberton's paper contains two highly important facts: the first, that in the great majority of his cases the degree of contraction was slight, the deficiency not exceeding half an inch in the conjugate diameter of the brim, yet producing the most formidable and fatal results.† The second,

* Essay on Rupture of the Uterus, p. 99.

† I have to regret not having examined the pelvis in every instance of laceration which I have seen, with a view of ascertaining the minor degrees of contraction. In the last case which I examined the conjugate diameter was defective about half an inch. Within the last

that out of thirty-six cases, the laceration happened in a very large proportion of them within twelve or thirteen hours of labour, calculating the time from the first indications of labour, and not from the occurrence of actual pain. In some of Dr. Collins' cases the laceration occurred under circumstances of protracted labour, but not in the majority of them—a remark which equally applies to my own.

Under the second principal head, or laceration from defective resistance, the rent may arise from mere attenuation; from some unnatural state of the peritoneal tunic of the womb; from causes of a spontaneous kind, and independently of labour; from external injury, and from obstetrical violence.

The attenuation which the uterus sometimes undergoes during the latter weeks of gestation, is a matter of practical interest; but the opinion that thinning of the cervix is owing to the fœtal head having rested upon it through the last weeks of gestation, in connection with a deficiency of liquor amnii, far from conclusive. I once observed this attenuation in a very marked degree, the whole vaginal portion of the uterus was extremely thin, resembling very thin brown paper, and when dilated to the extent of a crown piece, was so closely in contact with the membranes that the line of demarcation was scarcely perceptible. Had not the child been small and premature, it is probable that laceration would have been the consequence. In one of the specimens in my possession, the parts surrounding the injury appear thinner than the tex-

month an opportunity presented itself of measuring the pelvis in a woman who died very suddenly during labour, from laceration, and the conjugate diameter was found to be only three inches. The patient was attended by a midwife.

tures in other parts of the organ. An attenuated state of the uterine and vaginal structures is incompatible with the ordinary contractions of the womb, and a very inconsiderable power, under such circumstances, is equal to produce a breach of structure. Thus, in a case mentioned by Dr. Denman, the laceration followed a few slight pains, the patient being in a state of weakness from the hæmorrhage which attended a presentation of the placenta. When deformity of the pelvis is superadded to a thin or diseased state of the uterine tissues, laceration will be almost inevitable. "Independently of disease, (says Denman,) the uterus may be worn through mechanically, in long and severe labours, by pressure and attrition between the head of the child and the projecting bones of a distorted pelvis, especially if they be drawn into points or a sharp edge."

In softening of the uterus there will be no elasticity, and a rent will easily be produced. An opening through the walls of the uterus may be connected with ulceration. Ulcers are found in the lining membrane of the organ; some of these have either followed strong injections, or could be traced to common inflammation. Others again have been regarded as syphilitic, and to this cause the laceration in Collins' 34th case is clearly attributable. Should an ulceration commencing in this structure be combined with softening and attenuation of the organ generally, the breach of surface (like an ulcer in the stomach or intestines) would inevitably pass quite through its parietes on the occurrence of uterine contraction, the process of ulceration, and the action of the uterus, combining to convert the superficial breach into direct communication with the abdominal cavity. Such a case lately happened. A portion of disrupted placenta was left adherent to the uterus in a greatly attenuated and ulcerated state—what was to prevent the diseased part from giving

way whilst the organ was contracting to expel the offending substance? The presence of a piece of placenta, the circumference of a half-crown, or less, will provoke violently expulsive efforts; to such a degree indeed did this take place, in a case to which I was called, that the os internum was forced absolutely through the external orifice, where it was for some time visible.

When the natural elasticity of the peritoneum is considered, as well as the extension it undergoes both in diseases and pregnancy, (particularly when pregnancy is associated with dropsy of the amnios,) it may reasonably admit of doubt whether the healthy membrane will give way from mere distention. That this peculiar laceration may depend upon force, suddenly exerted, preternatural tenuity or unsoundness of the peritoneum, or something unnatural in its connections with the fibrous tissue, I am not prepared to deny. From the cases already on record, the last especially,* in which the peritoneum appeared quite healthy, I am more disposed to refer the laceration to an irregular contraction of the uterus, either of the active or passive kind; the active arising during labour, the passive during the shortening of the uterine fibres, preparatory to the accession of pains.

With respect to spontaneous laceration, a case is on record which possesses an unusual degree of interest,† and cases in evidence of the other positions will be found in this section. It will be seen that the laceration in one of the cases was produced by falling on a step, and as the abdominal coverings presented no appearance of injury, it may be presumed that the muscles made no resistance, and allowed the force to concentrate upon the uterus.

* Med. Chir. Trans. Vol. XIX. page 72.

† Vide Mr. Ilott's case, in Vol. VII. London Medical Repository.

Laceration of other organs from external violence may be explained on the same principles; for instance, a poor man, feeble, but convalescent from fever, in taking exercise in the dusk of a summer evening, walked unexpectedly, but gently, against a post; abdominal pain and vomiting immediately occurred, and death ensued within three days. The colon was found to be ruptured. A boy who received a kick from a horse on the abdomen, sustained a similar injury. A cart-wheel passed over the abdomen of another boy, and the kidney was very extensively ruptured. In none of these cases were the abdominal parietes apparently injured.

It is a singular fact, that the contractions of the uterus will act upon the child, even to the laceration of the vagina, without producing a breach of its own surface. More commonly the rent commences at the point of junction between these parts implicating the vagina, the uterine orifice, a small portion of its cervix, and sometimes the bladder.* Such an injury cannot be considered as less fatal than a laceration of similar extent, but confined to the uterus. According to Professor Boer, an extensive laceration and separation of the vagina from its attachments, are the result of a large effusion of blood within its cellular substance.† Undoubtedly the canal may lacerate, partly by the power which it acquires in common with the uterus, during the latter period of gestation; and allowing that it performs a very subordinate part in the actual expulsion of the child, we know that its contractile power is sometimes equal to expel the extremities of the fœtus, as well as the placenta and coagula of no ordinary magnitude.

* The diaphragm also has been known to lacerate during labour, and the contents of the abdomen to pass into the chest.

† Medicina Obstetricia.—See Merriman's Synopsis, page 3.

The vagina may also be lacerated by unskilful obstetricism, especially in the operation of version; thus in attempting the delivery of a woman by turning, the practitioner passed his hand through the anterior part of the vagina into the abdomen, the intestines protruded, and the patient soon expired.

But whatever may be the strength of the uterine or vaginal textures, it is impossible either to predict the amount of contraction they will bear, without involving a breach of continuity, or to determine the degree of compression which the fœtal head will undergo in its transit through a contracted brim;* consequently, it is impracticable to determine from any single circumstance of the labour, how long a case may be safely trusted to the efforts of nature.

* A very interesting case, illustrative of the powerful action of the womb upon the full-sized fœtal head in its passage through a slightly contracted brim, has recently occurred in my practice. A midwife, in attendance upon a young woman of low stature in labour with her first child, being unable to ascertain the nature of the presentation, applied to a surgeon for the purpose, who, being equally foiled, requested my opinion. I found the vagina filled with a large soft body, connected above the brim of the pelvis with the bones of the head. The soft body was evidently the scalp extensively detached, and in an inordinately tumefied and pulpy state. Auscultation indicated the extinction of fœtal life; but as no symptoms of danger had appeared, instead of resorting to instruments, I recommended a few hours delay. In eight hours a still-born child was expelled by the natural pains. On examination of the head a very deep and extensive extravasation of blood and serum covered the whole of the right parietal bone, extending to the adjacent bones. The vessels of the brain were also excessively congested, but there was no escape of blood within the skull, yet the pressure of the effusion through the sutures, in connection with the internal congestion, proved fatal to life. Forensically speaking, the case is both interesting and important. The conjugate diameter of the brim was defective half an inch.

At the commencement of labour a careful examination, *per vaginam*, will afford a person conversant with these subjects tolerably conclusive information of the capacity of the brim, and should never be neglected. But when the descent of the head is attended with unusual difficulty, and the labour pains have squeezed a quantity of the tumefied scalp, and, perhaps, part of the bony structure within and rather below the brim, unless the presentation admits of being raised in the absence of pain, it will be impracticable to acquire minute information. We may ascertain the existence of contraction, but its actual extent cannot be known. It becomes, therefore, of some moment to ascertain this point very early in the labour, or indeed prior to its accession, in persons who have already had difficult labours, and given birth to full grown but dead children, as the cavity of the pelvis will usually be found defective. The depression which the sacral promontory leaves over either parietal bone, is sometimes very marked; but an unnatural projection of the sacrum, will not even be suspected, unless the part is easily reached with the finger; this delusion I have adverted to elsewhere.

Whenever it becomes necessary to pass the hand, the importance of attending to the axis of the brim is obvious; and I have alluded to a case of vaginal laceration, which would not have happened had not this rule been violated. Considering that the rent sometimes takes place during the actual expulsion of the child, it would seem desirable to examine, after every delivery at term, not only the perineum, but also such parts of the internal genitals as are within reach of the finger.

When laceration is suspected to have taken place, not a moment's time should be lost in ascertaining its ex-

istence. In the words of Dewees, "This is to be done by a careful examination of the abdomen and the uterus: the first, by the application of the hand externally; and the other, by the finger or hand *per vaginam*." By passing the fingers through the rent, and by feeling their extremities against the inner surface of the abdominal parietes, we obtain, in the words of Ramsbotham, "an indubitable test of the accident."

Laceration may arise in any part of the uterus, but the cervix gives way more frequently than either the fundus or body, tearing, as Mr. Roberton observes, "with nearly equal readiness in all parts of its circumference;" indeed, its whole circumference has been involved in the mischief. With a single exception, the cervix uteri has been more or less lacerated in every instance which I have seen, the rent being oblique in its direction rather than longitudinal, extending to the body and side of the organ. The transverse direction has been erroneously represented as occurring most frequently, but of this I have only seen a single case; the rent being confined to the fundus, and the result of accident.*

Laceration of the vagina rarely extends to its inferior portion; the rent is usually more or less oblique, sometimes including nearly its entire circumference, and thus virtually dissevering its connection with the uterus. Laceration of the substance of the uterus, attended with pelvic deformity, commences, according to Mr. Roberton, in that portion of the organ which is contiguous to the obstruction, or, in the words of Denman, "at that part which is opposed to the sacrum, if this be distorted; and more especially if there be a pointed bone on any

* I have given the case in detail. Neither Collins or Clarke ever met with an instance of it.

part of the internal surface of the pelvis."* In whatever part it may commence the rent is usually complete, communicating with the abdominal cavity; but it may be incomplete at first, implicating only the mucous and fibrous tissue, leaving the peritoneum entire,† and probably passing into the abdomen on uterine action being renewed. Again, the peritoneum may be largely detached, whilst the rent in the fibrous tissue is comparatively slight. Lacerations of trivial extent, and confined to the lining membrane at the uterine orifice, occur not unfrequently, especially in first labours; and similar injuries have been produced by the detachment of the morbidly adherent placenta. Usually they prove unimportant; but I once examined the body of a woman who died suddenly in a fit of eclampsia, after an attempt had been unsuccessfully made to remove the placenta, and many parts of the lining membrane had been lacerated by the finger nails. Another patient recovered with the greatest difficulty after vomiting, intense fever, tympanitis, and symptoms of the most aggravated kind. One of the most intelligent surgeons of the present day (Mr. Evans of Belper) informs me, as the result of his own observation, that laceration of the fundus uteri is less immediately fatal than laceration of the cervix. This we can fully understand. The whole of the discharges from the uterus may pass through a laceration which occupies its cervix or the vagina. But when situated at the fundus the lochiæ, proceeding partly from the body of the organ, will be more likely to escape through the natural outlet. It is to this circumstance that the little danger which attends lace-

* On Rupture of Uterus, pp. 8 and 9.

† In nine of the thirty-four cases referred to by Collins, the peritoneal coat was uninjured.

ration of the vaginal part of the uterus merely, may be ascribed. The only instance of the injury, thus limited, which has come before me was occasioned in the following manner:—A practitioner, in a violent effort to extract the head with a long pair of forceps, permitted the blades to slip off, and such was the extent of mischief, that the whole circle of the vaginal part of the uterus sloughed away,* together with a considerable part of the posterior surface of the bladder, an incurable vaginal fistula being the result.†

Laceration which arises before labour is said to be denoted by certain precursory signs, viz. tightness of the abdomen, cramp, or an excruciating pain in a defined spot, together with a degree of tenderness on making pressure over the hypogastrium, and great restlesness: little reliance, however, is to be attached to these signs.

The presumptive signs which appear during labour are less ambiguous. Thus if the cranial bones are pinched between the sacral promontory and the symphysis pubis, or only the tumid scalp is squeezed within or below the obstruction,—if the os uteri remains unusually high, and one or both lips are œdematous,—if the waters are discharged, the soft parts relaxed, the pains powerful, but unattended with any material descent of the bony structure, we may presume upon the probability of the injury, and adopt measures for promoting the delivery as speedily as possible. Besides the duration and progress of labour,

* In this respect the case resembles Mr. Scott's in the 11th Vol. of the Med. Chir. Transactions.

† After a time the patient became pregnant, and aborted at the fourth month. Notwithstanding the statement of the French, that parturition is particularly easy in women who have suffered excision of the cervix uteri, the dilatation of the orifice was in this instance, attended with very great difficulty and danger.

we are to take into account the existing state of the constitution, the result of auscultation, and the circumstances of preceding deliveries.

As it is very possible to *prevent* laceration, the skilful management of the labour becomes a matter of the highest moment. If the pelvis is contracted even in a slight degree, and the previous labours have been attended with difficulty, our suspicions should be raised, since a continuance of the symptoms just enumerated will be quite incompatible with the patient's safety. In this respect the facts adduced by Mr. Roberton ought especially to influence our practice. Rashness, it is true, is worse than indecision; but under these circumstances delay is inadmissible, the uterus having in many instances very unexpectedly given way. Two cases of this nature, with which I am acquainted, (and many might be adduced,) afford apt illustrations. In the first, the pains were powerful, and the head within reach of the forceps; the laceration occurred during a violent pain and suddenly extinguished life. The second occurred in a woman who had borne several children, and was then bedridden from malacosteon. Whilst the practitioner had walked into the adjoining street for the perforating instruments, the uterus burst, and on his return the child had passed into the abdomen. The result was speedily fatal. Dr. Hamilton's rule of practice whether applicable or not to labours in general, is peculiary applicable to labours of this character. Not that interference can be justified merely on account of a trifling defect of space in the antero-posterior diameter, for though hesitation may be quite unallowable in the higher kinds of contractions, it is far otherwise where the defect does not exceed half, or perhaps three quarters of an inch, provided the cranium is tolerably yielding, and does not

exceed the standard size. With much propriety then does Ramsbotham declare this question to be one which "can only be decided by sound judgment exercised on a sight of the case."* A large sized cranium may indeed prove very yielding, and by its elongating properties admit of its safe propulsion through a contracted brim; whilst a firmly ossified cranium, even of a standard size, will, under the like circumstances, resist the most powerful uterine action. The head, however, may be too large to pass the best formed pelvis without endangering the integrity of the uterus. "It has been calculated (observes Professor Burns) that in three-fourths of the cases of rupture the child has been a male."† The great influence which the full sized and firmly ossified head exerts in producing laceration cannot be doubted. The average circumference of the fœtal cranium in the female is thirteen inches and five-eighths; in the male, fourteen inches. The difference is trifling in reality, but of no slight importance where the pelvis is at all contracted. It is impossible to read attentively many of the cases hitherto recorded, without being able to trace the laceration to a *direct* impediment affecting the progress of labour. Impaction, properly so called, is inseparable from danger, and may be regarded as a test of the practitioner's skill and discernment. Its characters have been admirably described both by Burns and Collins. The impaction cannot be allowed to remain even a comparatively short period of time without hazarding the lives of both mother and child. In addition to the local indications, if the pulse is acquiring rapidity, and the stomach becoming irritable, our duty is clear. Other peculiarities may endanger laceration, mal-

* Practical Observations, Vol. I. p. 385.

† Burns' Midwifery, eighth edition, p. 491.

position for instance, but this admits of rectification either with the hand or forceps. States of rigidity also favor laceration, but these yield to the relaxing influence of ant. tart., ipecacuanha, bleeding, and the warm bath. The unnatural inclination of the uterus forwards yields to position, the application of a firm bandage, or a support equal to maintain the organ in the axis of the brim. Douglas, indeed, recommends turning in a labour of this description, an operation which can scarcely be needful. Laceration is also endangered in very difficult transverse presentations. Mr. Radford, in a very interesting and valuable paper,* has proposed, in cases of turning, that one leg only shall be brought down, the other being left to aid the breech in dilating the os externum, and thus expediting the delivery of the head. That the life of the child will be consulted by acting upon this proposal is quite clear; indeed Mr. Radford's authority is a sufficient guarantee in its favour. Where the quantity of liquor amnii is moderate, and no unusual difficulty to the delivery presents itself, the advantages of this proceeding are conceded, but I doubt the propriety of extending the plan to cases indiscriminately. If, for instance, the action of the uterus be very powerful, the liquor amnii nearly drained away, and the feet within reach, I certainly would secure both in preference to one, under the impression that I might not only fail to alter the position by means of a single foot, but encounter a degree of resistance which might end in laceration; indeed I have related a case of this description. In a similar instance of difficult turning, in which the head, arm, and foot, were in the vagina simultaneously, the patient died soon after her delivery. The body was not

* See Edin. Med. and Surg. Journal for 1st April, 1832, p. 256.

examined, but I am persuaded the uterus had ruptured. In a third instance, I succeeded in seizing a foot, after several unsuccessful attempts had been previously made, but the difficulty of completing the version was even then far greater than I could have supposed.

Notwithstanding the respect I have for Mr. Radford, and the deference which is due to his experience, I cannot but make this exception to his conclusions. In general his directions will necessarily lead to a material improvement in practice. Under a very violent action of the uterus, the tightness instantly cramping the hand, and imparting to it a sensation of fresh cut Indian rubber, it is surely better to deprive the organ of some of its resistance either by venesection, or by creating nausea, antecedent to renewing an attempt to turn. Opium, in safe doses, may be too tardy in its operation. Loss of blood produces an instant effect. Thus, in a most difficult and almost hopeless case of turning, in which I was consulted, the practitioner accidentally separated a portion of the placenta, and such was the effect of the hæmorrhage, that the next attempt proved successful. Where turning is impracticable, perforation and evisceration of the thorax, (if within reach,) with a view of facilitating "the spontaneous evolution," ought to be undertaken without delay. Mr. F. Elkington and myself once resorted to it with admirable effect. I am assuming that the fœtus is dead, and that auscultation is decisive in its result. These are points of great moment. A short time since I was called to a case of shoulder presentation in consultation with two other practitioners. The arm had for many hours been through the external parts. During a pain the ribs were forced upon the outlet, and yet turning was not only accomplished with safety to the mother, but to the child also, which survived the opera-

tion. Where turning is impracticable, the practice of perforating the chest is sanctioned by Drs. Douglas, Simms, and Robert Lee, in preference to dividing the neck as advocated by Dr. Davis. "I separate (observes Dr. Lee) the arm from the body, perforate the thorax, and having fixed the crotchet on the pelvis or lower part of the spine, make such a degree of traction as may effect the delivery without laceration or contusion of the soft parts of the mother."* Barlow's essay on shoulder cases is well worth perusing.

The symptoms which denote laceration will correspond with the circumstance under which it happens. When occurring during labour the injury is usually characterised by the following assemblage of symptoms. The patient may possibly be conscious of the rent, and has been known to utter a sudden shriek, the noise, according to Denman, having been heard by the bystanders. It is more probable that she will be merely conscious that the child has suddenly risen high in the epigastrium, and its limbs may perhaps be traced by the hand; but this cannot be done when the breech and back are opposed to the abdomen. The pains suddenly become feeble, or cease altogether, especially when the laceration is situated at the fundus. In rare cases (as will be shewn) the pains continue with little abatement. Vomiting, first of the aliment, and then of dark-coloured secretion, speedily supervenes; the countenance becomes pallid and anxious, the pulse feeble and rapid, the surface cold, attended, perhaps, with hiccough, cold perspiration, a progressive sinking of the vital powers, and quick respiration; the abdomen becomes tumid, tender to the touch, and peculiarly painful on disturbing the position of the child. When life is not soon

* Edin. Med. and Surg. Journal, Vol. XXIX. p. 239.

destroyed, the pulse acquires a very feverish character; the thirst becomes intense; the tongue dry; the pyrexia, in fine, general and aggravated. The amount of hæmorrhage, both *per vaginam*, and within the peritoneal sac, may either be trifling or very considerable, for this will mainly depend upon the state of the placenta and the situation of the head. Under a state of impaction the escape of blood *per vaginam* must be very limited. If the transmission of the cranium through the superior aperture has been very difficult, and the presentation impacted, it can scarcely recede. Its recession, therefore, is rather an incidental than a necessary result, and will mainly depend on the circumstances just stated. When the rent arises at the moment of delivery, the symptoms will be more or less obscure, and the abdominal pain too inconsiderable to warrant a suspicion of the injury.

In connection with the symptoms of uterine and vaginal laceration, it will be perfectly revelant here to make a few more general observations. Notwithstanding that the pains usually disappear after the injury, no certain inference can be drawn as to the integrity of the uterus from the fact of the pains continuing, since they will be defective rather in proportion to the depression of the vital powers than to the extent of laceration. In one very remarkable example, although the pains were weakened by the laceration, they continued powerful for many hours, and created a doubt as to the actual nature of the case. In a severe instance of eclampsia, the cervix uteri lacerated in its anterior and superior part, and permitted the finger to enter the abdomen, but notwithstanding this, the child was subsequently expelled by the natural powers, and the result was successful. I mention this case on the authority of Mr. Smith, a most respectable surgeon of Lancaster, in whose practice it occurred. When the

fundus uteri is not implicated in the rent, the pains will perhaps continue, and when the laceration is confined to the vagina, powerful pains may suddenly cease although the head is quite at the outlet. After-pains seldom come on; then appearance would be desirable, and highly favorable to the adhesive process. According to Burns, the pains will continue more or less as long as the child remains *in utero*.

The symptoms of laceration of the vagina are said to differ *in toto* from those denoting laceration of the uterus, especially by Denman, who refers to Mr. Goldson's pamphlet for a correct diagnosis. Any difference must apply to the early stages of the injury, for, after a time, the symptoms will be nearly the same. It is not always practicable to ascertain the exact boundaries of a laceration: the peritoneum, though detached for some extent, may not be disrupted, or very disproportionately to the extent of detachment. The situation of the uterus will depend chiefly upon the state of the vagina, which, when extensively separated, may permit the uterus to rise in the abdomen, and it may then be impracticable to reach the organ. Thus in very difficult turning cases, the extensive separation of the vagina from the uterus has occurred whilst the practitioner was engaged in changing the position of the child; the uterus instantly passing into the abdomen beyond his reach. I am acquainted with two such instances. From these and several others of a similar kind, which have been reported to me, it appears that a laceration of the superior portion of the vagina, including nearly its whole circumference, and the consequent recession of the uterus beyond the reach of the finger, is an occurrence by no means unfrequent. Nor is it always easy to determine whether a laceration of the cervix uteri has extended to the vagina, on account of

the parts sometimes presenting an apparently continuous surface.

Most of the reported cases of ventral pregnancy are supposed to have resulted from rupture or ulceration of the uterus or one of its appendages, and the consequent escape of the fœtus into the abdominal cavity. The symptoms denoting these peculiar forms of laceration are usually those of collapse, but their obscurity is such as to defy an accurate diagnosis. Laceration of the uterus and vagina commonly terminates in death, and the patient sinks either from collapse, hæmorrhage, or inflammation and its consequences.* The prostration which so frequently attends these injuries seems referrible to the suddenness of the shock on the nervous system, which is usually incapable of an efficient reaction. For some hours the discharge may be inconsiderable, but on reaction taking place, the lochiæ pass in large quantities into the abdominal cavity. I once found seventy ounces of dark-coloured blood effused in the abdominal and pelvic cavities. In another example the effusion took place within ten hours, and amounted to forty ounces.

Inflammation, common to almost all cases of laceration, is more likely to arise from the presence of the child amongst the viscera, than from any other cause. It is also

* The absolute separation of the whole uterus from the vagina, as the result of laceration or sloughing, would seem quite incompatible with the preservation of life; but an instance of this kind, which terminated favorably, has been recorded by Mr. Cook, of Coventry. The separation took place the second day after delivery, and the specimen, which embraces the uterus in a state of inversion, together with its ligaments and a small portion of the vagina, has just been deposited in the anatomical museum in this place. The perfect recovery of the patient constitutes the singular and interesting feature of the case.

soon produced by the effusion of lochiæ within the peritoneal sac—the pain, feverishness, vomiting, and rapidity of pulse, being commensurate with the extent of effusion. The prognosis, it need scarcely be observed, should be considered unfavorable in every case of laceration which communicates with the abdomen.

The post-mortem appearances will depend upon the period which has intervened between the receipt of the injury and death. When life is not immediately destroyed, more or less blood and lochiæ will be effused, and the intestines will present an injected and dark appearance. In a few instances the organization of the wound had been found progressing—the patient having sank before the reparation could be accomplished. We find also the ordinary results of peritonitis, viz. false membrane, and serous effusion. The membranes of the placenta have been found adherent to the viscera by lymph. The edges of the laceration may either be perfectly healthy, or present a very dark appearance—but if the labour has been protracted the wound will most likely have become gangrenous. The fact of the membranes of the placenta having been found connected to the viscera by coagulable lymph, seems to countenance an idea of existing vitality. Douglas, in his account of a post-mortem examination, observes, "It was remarkable that whatever the membranes or placenta had come into contact with the internal surface of the abdomen, they adhered with a considerable degree of firmness, and that on the coats of the intestines there were everywhere signs of inflammation."* J. Hunter thought that he once observed motion in the placenta after its removal from the body. In cases of laceration

* Douglas on Rupture of the Uterus, p. 48.

which have terminated in recovery, the point of union is said to have been distinguished at a remote period after the injury.

In treating uterine laceration before delivery, and in the last three months of gestation, we have to consider, first, the condition of the uterine orifice; secondly, the situation of the child; and thirdly, the state of the general system. Respecting the treatment of this injury, under its least complicated form, by immediate delivery, little need be said. It is generally acknowledged in this country, that if the head be accessible to the forceps, it should be promptly abstracted—and if above the brim, provided it does not retreat when moderate pressure is applied against it, or can be sufficiently steadied by pressing the uterus externally, perforation must always supersede the dangerous operation of version in the abdomen. Dr. F. H. Ramsbotham seems to think perforation scarcely applicable to these cases; but I have resorted to the measure with admirable effect. The case was peculiarly adapted for it, the body of the child being in the abdomen, and the head far above the brim, and completely beyond the reach of the long forceps. In justification of the practice of perforating, Dr. Collins, with great propriety, reminds us that the pelvis is frequently contracted, and the child almost invariably still-born. Immediate delivery, by passing the hand through the rent, is also very generally practised in this country, but with what success I am unable to say. Notwithstanding every precaution, the intestines will be very liable to protrude through the wound, a circumstance which renders version in the abdomen so extremely hazardous. In one instance of the kind with which I am acquainted, the extraction of the child was followed by a large protrusion of the intestines and the speedy death of the patient, and the same re-

sult took place antecedent to delivery in a laceration of the vagina. The practice of version in the abdomen could not be justified in a case of materially deformed pelvis. Baudelocque advocates gastrotomy wherever the forceps are inapplicable, and limits the extraction of the child through the laceration to cases where the feet present, or else where the injury is confined to the vagina. The structure and functions of the vagina being considered, sloughing or mortification seems more likely to ensue after laceration than peritonitis; but when delivery is promptly effected, there is no substantial reason to doubt nature's competency in repairing the breach, especially when the integrity of the bladder is preserved.

Laceration of the uterus, during labour, was so generally fatal, that Dr. Denman's great experience did not afford him a single undoubted instance of recovery, and he submits this question: "What benefit can result to the patient or to society, or what credit to profession, from an operation by which her present feelings are in some degree aggravated, and by which neither the lives of the parent or child were ever known to be preserved?" Since the time of Denman cases of recovery have unquestionably occurred, and modern practitioners, so far from acceding to the doctrine advocated by this truly admirable writer, enforce the propriety of immediate delivery *per vaginam* whenever the state of the os uteri and the laceration admit of it. Although the risk of dilating the uterine orifice under considerable resistance does not admit of question, it is not to be compared with the consequences likely to ensue from the child being allowed to remain in the abdominal cavity. Averse, as every rational practitioner must be, to the employment of force, I would maintain a gentle, but persevering endeavour to open the uterus, until it was evident that the resistance could not be overcome by safe means. Col-

lins thinks the uterine orifice will always allow this to be done, except the laceration arises from violence. The escape of the child within the abdominal cavity is not only highly dangerous, but becomes increasingly so, and surely we are warranted in incurring a trifling risk to remove a certain and great peril. Dr. Ryan* alludes very pertinently to the fact of the uterus not contracting after the rupture, and from this urges the propriety of passing of the hand with rather more than usual perseverance. The chance of effecting this will of course be lessened when the injury is confined to the body and fundus. In two post-mortem examinations the uterus was found in very different states, the rent being very little contracted in one of the cases, and very greatly so in the other. We must not be deferred from dilating the orifice by a trifling resistance, which will frequently yield to perseverance; and although violence is never allowable, I am persuaded that the dilatation may be accomplished under somewhat adverse circumstances. The earlier the operation is undertaken the better, a few minutes hesitation may be fatal. The practitioner, however, may not be on the spot, and collapse may have set in ere his assistance is obtained. In such a case, desirable as a speedy delivery is, unless the head lies within reach of the forceps or perforator, it may be necessary to wait until the patient is somewhat recruited. Unsafe as it is to act during a formidable exhaustion, delay will be inadmissible when signs of reaction appear. By waiting we may perhaps encounter a very formidable resistance, the contraction of the rent being regulated not only by its precise situation and the period which may have intervened from the injury, but also by the state of the vital energies. That a firmly contracted uterus and

* Manual, p. 511.

an exhausted state of the system soon after delivery are perfectly compatible, is a fact with which I am familiar; indeed the uterus has been known to contract very sensibly even after the extinction of life. But unless the laceration is confined to the fundus of the organ, the degree of resistance can scarcely prevent the passage of the hand, especially when the injury extends to the vagina. Assuming, however, the impossibility of delivery *per vaginam*, either by reason of the contracted state of the wound, or the firm closure of the uterine orifice, (the child having escaped into the abdominal cavity,) is it justifiable to open the peritoneum? if so, at what period, and in what state of the system? Several of our most eminent authors are opposed to the principle of this operation, and, with a single exception, I have never seen a case sufficiently early after the injury to allow the question of gastrotomy to be raised. The performance of the operation instanter, with a view of preserving the life of the child, presupposes a presence of mind which few practitioners possess, and time will scarcely allow the consent of the patient and friends being obtained sufficiently early. The chance of the infant surviving in this unnatural situation must depend partly upon it being still enclosed within the membranes, and partly upon the placenta continuing more or less in apposition with the uterus. In an interesting example of laceration of the fallopian tube at the fifth month of pregnancy,* the movements of the fœtus in the abdominal cavity were sensibly felt by the mother for several hours after the laceration had occurred, but the membranes were entire, and the placenta preserved its connection with the tube. Douglas, who ridicules the idea of the child surviving within the abdomen, says it

* Edin. Med. and Surg. Journal for 1st October, 1834.

would be performing the Cæsarean operation with every disadvantage,* an opinion I cannot accord in, since the result of two cases of Cæsarean operation, in which I have been engaged, leads me to view the mere abdominal incision with very different feelings. The operation is not half so dangerous as the Cæsarean, whilst the celerity with which it is done, the absence of hæmorrhage, and the facility with which the intestines are confined within the abdomen, tend to divest it of much of its terror. When properly timed, it would appear to be infinitely safer than the alternative of allowing the child to remain in the abdominal cavity. Several cases of gastrotomy are recorded in which the mother has perfectly recovered.†

It is, indeed, a most serious affair to expose so great an extent of peritoneum, to the risk of more or less inflammation; but under an impression that the presence of the child amongst the viscera will be *more* dangerous, I would not hesitate (assuming circumstances to be favorable) to recommend the abdominal incision, as affording the patient the best chance of recovery. Unless a formidable exhaustion should supervene, delay will be inadmissible, and under any circumstances, the operation should be undertaken as early as the nervous system has overcome the immediate shock, lest reaction should rapidly pass into inflammation.

A most important enquiry here arises, viz. what is the smallest diameter of the upper strait through which a full grown child whose head is well ossified will pass after craniotomy has been resorted to, and the bones removed? What says the latest author on this sub-

* Edin. Med. and Surg. Journal for 1st October, 1834, page 106.

† In M'Kay's case, the operation was undertaken too late, and yet it produced marked relief.—See Liverpool Med. Gazette, No. I. p. 26.

ject, Dr. F. H. Ramsbotham? This gentleman considers that a full grown child may be extracted through a pelvis which averages three inches in the lateral, and two, or even an inch and three-eighths in the conjugate diameter. I do not think that extraction could be safely if at all accomplished, even by the most expert obstetrician, through such an aperture, assuming the child to be mature, and the bones to possess their average amount of ossification. It is no easy matter to fix the instruments so as to ensure the naso-mental diameter passing first. I much doubt whether in case V. the extraction of the child through the abdominal parietes would not have been safer than the violent exertions which we were compelled to resort to for nearly three hours. I was scarcely prepared to find the presentation in utero, for when it is impacted within the bones at the moment of laceration its recession will be improbable; but when above the brim, as in this instance, I believe the child usually passes at once into the abdominal cavity. In a case which has just occurred in this town the head of a seven months child could only be brought away piece-meal. The patient died speedily after delivery, and the pelvis, which is preserved, measures exactly two inches, exclusive of the soft parts. I trust the highly respectable surgeon, to whom the management was committed, will give the case publicity. It is most important in reference to this long debated question.

Whatever treatment be adopted, it will be most important to prevent inflammation; but how is this to be accomplished? The effusion of lochiæ in the abdomen will be influenced partly by the site of laceration, and partly by the actual state of the wound. If the contraction of the uterus fails to detach both the placenta and its membranes, there can be no closure of the wound, and the lochiæ must enter the peritoneal sac. This, it will be seen, happened

in one instance in consequence of the membranes retaining their connection with the uterus. Provided the patient can bear the fatigue, a stout infant should be put to the breast every now and then, partly to excite the secretion of milk, but mainly to provoke a sympathetic action in the uterus, and thus assist in closing the edges of the wound.* In common cases, we know that the uterus contracts most sensibly for some days after delivery, whenever the child is put to the breast. The passage of the lochia *per vaginam*, will be further promoted by applying compresses, together with a firm support over the abdomen, and placing the patient upon an inclined plane. To lay open the abdomen, after peritonitis has ensued, would be a most injudicious measure, and opposed to the best principles of surgery, since the products of inflammation, viz. effusion of serum, deposition of lymph, and the consequent adhesions, would be in course of formation. Inflammation, whether affecting the peritoneum generally, or the intestines in particular, will be recognised by extreme tenderness over the abdomen, greatly aggravated by moving the child, and by the symptoms common to this disease. It must be treated on general principles, and the foreign bodies consigned to the usual course of nature. Should the patient surmount the inflammation, she will have to contend against a long and harrassing ulcerative process, attended with great pain, purulent discharges, and constant irritation, which will greatly impair the general health, if not occasion a fatal result, for according to Dr. Dewees, these persons ultimately perish. The child, insulated and surrounded by a membranous

* In Mr. Knowles' case of Cæsarean operation, I recommended the infant to be frequently put to the breast, with, I think, a good effect, on the principle of producing after pains, and aiding the closure of the wound.

cyst, cretaceous incrustation or other substance, has been known to remain in the abdomen, innocuous for an indefinite time; but such a termination we are by no means entitled to expect, and it is probable that some of the reported cases of recovery were really extra-uterine at their origin. Douglas was of this opinion, and thought death inevitable, whenever the child was allowed to remain in the abdomen.

Whether the child be removed or not, the principles of treatment are nearly the same. The leading indications are, to prevent or remove inflammation and to support the strength. Reaction being restored, a purgative should be administered, and a gentle action maintained by such medicines as seem best adapted to the state of the stomach. Perhaps a dose or two of calomel, followed by glysters, castor oil, or mild saline aperients, will accomplish all that we can expect. States of inflammation must be met by the repeated application of leeches, fomentations, the warm bath, and opium. The diet should consist of the blandest liquids, whey, milk, &c. resorting to cordials and a generous diet when the period for active inflammation is past.

I shall now adduce the heads of a few cases, each possessing an interest peculiar to itself, and illustrating some of the positions here laid down. I have thought it desirable to state three of the cases very fully. Two of these terminated in the patients' recovery; the third is important in several points of view, and possesses an unusual degree of interest.

Case I.—*Laceration of the Vagina. Result fatal.*—This was the patient's third pregnancy. The membrane gave way at 5 a. m., and at 7 the practitioner expected the labour to terminate instantly. The pains continued violent, but the child did not advance, and at 2 p. m. the lacera-

tion happened during a strong pain. The patient expressed a conviction that something had given way. The pains ceased; she vomited; experienced great pain in the epigastric region, and was much exhausted. The pulse became rapid; the tongue brown; the countenance deathly, and the vomiting (coffee ground secretion) very distressing. I was called to the case about sixty hours after the injury, but the patient had expired a few minutes before my arrival. I pronounced it a case of rupture; but the practitioner who had been waiting for a return of pain dissented from this opinion.

Post-mortem Examination.—The body was examined thirteen hours after death. The presentation was natural, and the head had descended to the outlet, and might have been delivered with the forceps without difficulty. The abdominal tumour was almost as natural as in common cases, and it was impossible to feel the limbs of the child through the integuments. Two or three quarts of black coloured and dreadfully offensive fluid escaped on exposing the abdominal cavity. The child was now seen lying over the intestines with its breech and back opposed to the parietes of the mother's abdomen. The placenta was in the belly. The peritoneum lining the abdominal muscles was not inflamed, but the intestines appeared to be unusually vascular. The uterus and appendages were perfectly natural. The vagina was lacerated in an irregular and shaggy manner at its superior part, almost immediately where it is attached to the cervix uteri, but inclining to the left side.

Case II.—*Laceration of the Vagina and Cervix Uteri, probably from unskilfulness. Result fatal.*—December 4, 1833, I was called mid-day to a poor woman in labour, in consequence of two midwives being unable to reach the presenting part of the child. On applying my hand

over the abdomen the head was felt resting quite over the ossa pubis, the abdomen being pendulous in an extraordinary degree. I have now to regret that I did not make a more careful examination *per vaginam*, but I thought I had obtained the necessary information. The parts being fully relaxed and the pains feeble, I recommended the application of a bandage, and the exhibition of the ergot of rye; and with a view of favoring the descent of the head in the axis of the brim, directed the patient to lie upon her back. Delivery took place in about three hours, and the woman was supposed to be as comfortable as under ordinary circumstances. She remained tolerably well the whole of the following day, Thursday, and until the afternoon of Friday, when a considerable degree of feverishness took place, accompanied with vomiting and swelling of the abdomen. I visited her on the following morning in company with a neighbouring surgeon who had been called to her, and who considered her dying from puerperal fever. On entering the chamber the peculiar countenance; the black vomiting; the soft but tumefied state of the abdomen; the absence of pulse, and the coldness of the body, led me instantly to hazard an opinion that the symptoms were the result of laceration. This proved to be the case. The patient died almost immediately. On examination, the os uteri was found widely open. Just below the centre of the posterior uterine lip and close to it, I detected a circular aperture in the vagina which *barely* permitted the finger to pass into the abdominal cavity. This opening, which had a very thin margin, so completely resembled the os uteri at the commencement of labour in a first pregnancy, that my friend did not at the moment comprehend its true character. In order to determine whether the uterus was implicated in the mischief the first and second

fingers were passed into the vagina in nearly parallel lines, the second finger being carried through the circular aperture in the vagina, and the index finger through the os internum; and just above the vaginal part of the uterus there was a second aperture which permitted the fingers to come into direct contact, and through which the lochiæ in abundant quantities had passed into the abdomen. Two interesting questions are here suggested—first, How were these lacerations occasioned? and secondly, To what is the absence of the symptoms for so long a period attributable? To the first, it may be replied that the head of the child being pendulous over the ossa pubis would cause an unnatural extension of that portion of the vagina which embraces the cervix uteri posteriorly, and when the efforts repeatedly, but fruitlessly, made by the midwives during a whole night and part of a day are considered, the penetration of this part with the finger will appear not improbable. This opinion obtains support from the circular form of the aperture; but the manner in which the cervix was lacerated may admit of some doubt. As to the second question, touching the absence of all symptoms for nearly forty-eight hours, it may be observed that the effusion of lochiæ in the abdomen, though progressively increasing, would be gradual, in consequence of the very limited extent of the openings. The intensity of the symptoms would probably bear a ratio to the amount of the effusion.

Case III.—*Laceration of the Vagina and Cervix Uteri from contraction of the brim of the Pelvis. The result fatal.*—A woman who had experienced several very difficult labours obtained the assistance of a most respectable practitioner to conduct the labour which forms the present history. Before twelve hours had elapsed the os uteri was fully dilated, and as it was considered that the head must

be perforated, a consultation was held preliminary to the operation. On the first attempt to perforate, the head receded—a laceration having, in fact, already taken place. The delivery was accomplished by turning, and the placenta was expelled by the spontaneous action of the womb. Although the symptoms were at first unusually mild, they increased in severity in proportion as the abdomen became distended. The case terminated fatally. *Pathology.* A great quantity of the lochial discharge had passed into the abdomen, and the intestines were agglutinated by lymph. The brim of the pelvis measured exactly three inches, and the cervix uteri and vagina were found extensively lacerated exactly opposite the projecting part of the sacrum.

Case IV.—*Laceration of the Cervix Uteri in arm presentation, followed by Hæmorrhage and Collapse. The result fatal.*—Mrs. —— has had two children. In the present labour the membranes gave way at 11 p. m. followed by strong pains, and the midwife arrived at 1 p. m.; but prior to this the pains had become much weaker. An arm having passed externally, Mr. Hall was called in at 4 a. m., and finding a foot close to the os uteri, he brought it down, and completed the delivery under very feeble pains. The removal of the placenta was unattended by hæmorrhage, but in a few hours afterwards a discharge of blood, amounting probably to twenty ounces, took place. At this time Mr. Hall detected a large rent in the uterus, and requested my attendance. The temperature of the parts around the laceration (easily felt) was very low, and the pulse barely perceptible. The patient died at 12 a. m. the following day.

The body was examined twenty-four hours p. m. A few very small coagula were found in the cavity of the

belly. The cervix uteri was torn to the extent of five inches almost directly upwards. The muscular substance of the organ was very distinct, and its parietes thin and weak at the point of rupture, but thick and strong elsewhere.

Case V.—*Laceration of the Cervix Uteri extending to the Vagina in an arm presentation. The result fatal.*—Mrs. —— was taken in labour of her third child during the night of Tuesday the 9th, and was seen by the dispensary midwife about half-past three o'clock on Wednesday morning, about which time the membranes ruptured, and the left arm descended to the os externum, the palm of the hand presenting to the pubes. Mr. G. Elkington the surgeon of the district was called in shortly before five o'clock; and, having passed his hand into the anterior part of the uterus, brought down the right foot, the left not being within reach. Unable, by powerful extraction, either to bring the extremity through the external parts, lower than the knee, or to reach the other foot, he requested my attendance, and I saw the case at half-past seven. Besides a large protrusion of the funis, (which had ceased to pulsate,) both arms were in the vagina, together with a considerable part of the thorax. The pains were at this time exceedingly violent, and the uterus so firmly contracted upon the child, that although I passed my fingers just within the uterine cavity, the resistance and tension, induced me to withdraw them altogether, dreading an instant breach of surface. Under this impression, and thinking it possible that the spontaneous evolution might take place, I recommended that the attempt to pass the hand should be suspended for an hour, and that a full dose of opium should be administered without delay, and engaged to return presently. The pulse at this time was very frequent, and too feeble to justify

bleeding. Before the opium could be obtained she was sick and vomited, the pulse became more feeble, and the countenance sunken. She now complained of pain in the belly, quite distinct from the pains of labour, and rubbed the surface with her own hand. At half-past nine I returned in conjunction with my colleague, Mr. Baynham. The position of the child was unchanged, the pains had materially subsided, but each pain was still attended with a very sensible depression of the sternum. In the interval between each contraction the abdomen was singularly flaccid. The child lay with its face towards the right sacro iliac junction, the occiput being forced upon the spine, and it occurred to us that by means of a decapitator, the division of the neck might be effected, but we failed to obtain an instrument with a suitable curve. Circumstances being now more favorable for the introduction of the hand, Mr. E. renewed the attempt to reach the left foot, and after much difficulty succeeded in turning; but on the expulsion of the breach the funis being put very greatly on the stretch was promptly divided lest hæmorrhage should be produced. Unfortunately the division was made within about three inches from its insertion in the placenta, and it immediately receded beyond the reach of the finger. On the delivery of the child a laceration in the vagina was detected having the intestines close upon it, and also a body which had some resemblance to the placenta, but from the uncertainty of this, together with the moribund state of the patient, and the circumstance of a profuse hæmorrhage attending every examination, we were compelled most reluctantly to abandon the attempt, at least for the moment.* It was impracticable either to distin-

* This hæmorrhage was probably the large effusion of blood which had escaped into the abdomen.

guish the os uteri, or to trace the outline of the uterus over the pubes. The abdomen continued painful and tender to the touch, but there was neither tumefaction nor vomiting. Death took place twenty-six hours after delivery.

Pathology.—The body was examined early the following morning. On exposing the abdominal cavity, the placenta in a state of inversion quite covered the uterus, the uterine surface of the mass constituting the interior of the amniotic bag. The membranes covering its fœtal surface were tenaciously adherent by coagulable lymph to the serous surface of the uterus, to the peritoneum covering the abdominal muscles, and also to the intestines. It is worthy of notice that there were no other marks of inflammation, the intestines being merely stained with blood. The laceration extended from the cervix uteri to the vagina, and the peritoneum in the vicinity of the uterine wound was most extensively detached.

It would be interesting if it could be shewn how and when the laceration commenced, whether by the spontaneous action of the uterus just before the vomiting commenced, and previous to turning, or during the operation itself. It may have happened at two distinct periods, the first rent not implicating the peritoneum. However this may be Mr. Elkington experienced very great resistance in passing his hand which was actually cramped at the moment of turning, and yet he could not ascertain that any injury had taken place. Moreover it is quite certain that the child and the placenta were in uterum until the moment of delivery. It is a matter of regret that the thorax was not perforated, but we were not quite unanimous respecting the advantage of such a step. The attempt to extract the placenta was not given up until the sufferer appeared to be actually dying, and the opportunity did not again occur.

Case VI.—*Laceration of the Uterus from deformity of the brim of the Pelvis. The child delivered by the crotchet. The result successful.*—Mrs. F——, of short stature, had borne five children prior to the present labour. The two first were born living; the three last were still-born—a circumstance which seemed to depend upon an undue projection of the sacrum. Mr. Evans attended her in every labour except the first, and each labour was more severe than the foregoing. Labour-pains of the sixth pregnancy commenced on Saturday, the 11th day of October, 1834. Mr. Evans was called to her about six o'clock p.m. The vagina was filled with the membranes, which ruptured immediately, and he was sensible that the sacral projection had much increased since the last delivery. At half-past one o'clock a. m., being seven hours and a half after the discharge of the waters, a portion of the scalp descended just within the brim; the uterus was fully dilated, the pains were very powerful, and she complained of pain in the direction of the right sacro-iliac junction. Mr. Evans, considering the tardiness of her former labours, returned home for a time. In half an hour afterwards the pains entirely ceased, and the patient observed that the child had suddenly risen very high, and occasioned her to vomit. The vomiting continued until six o'clock, at which time Mr. Evans was recalled. The scalp had now receded quite beyond the reach of the finger; and, believing the uterus to have ruptured, Mr. Taylor and myself, at his request, met him in consultation. The pulse was at this time by no means unfavorable, but a considerable hæmorrhage had taken place. A limb could be felt below the umbilicus, and to the left; but to the right of the umbilicus the abdomen was soft and unoccupied. The parts above the umbilicus were distended by a round substance.

Moving the child occasioned excessive pain. The hand being passed into the vagina, the head was distinguished *in utero*, almost as high as the umbilicus, having the fingers of one hand by the side of it. The placenta was also partially detached. Perforation was instantly resolved upon. From the elevation of the uterus, the craniotomy forceps could not be applied, and it was equally impracticable to pass the hand above the brim, as a guard to the crotchet. The bones were removed piece-meal; but notwithstanding this, the efforts to extract the head were of little avail, until at last the crotchet was firmly fixed under the chin, and thus the diameter, from the chin to the nose, and subsequently the other parts, were brought through, and the delivery completed at 10 o'clock a.m. The placenta was instantly removed. The hand was now passed *in utero*, and an oblique laceration in the direction of the right sacro-iliac junction allowed it to pass laterally upwards into the belly, where it came into immediate contact with the liver and intestines. The conjugate diameter was now correctly ascertained to be under two inches and a half. I passed my hand within the brim, but the fingers could not be made to lie in parallelism, even at the first joint. The abdomen was moderately bandaged, and a dose of opium administered. The child was rather large, and the basis cranii measured exactly two and a half inches in width, exclusive of the external integuments. There was very little collapse of the system, either after the laceration happened, or after the delivery, notwithstanding considerable hæmorrhage, and the exertions which were necessarily made in the extraction of the child. After many weeks of severe suffering from repeated attacks of peritonitis, and an attack of inflammation and abscess of the lungs, complicated with an abscess over the

epigastrium, this poor woman recovered. The uterus seems to be adherent to the abdominal parietes.

Case VII.—*Extensive Laceration of the Cervix Uteri after thirty-six hours of strong Labour-pains. The result successful.* (Mr. Coley's.)—"May 31, 1822. Mrs. —— had been in labour thirty-six hours with violent pains, under the care of a midwife. When I arrived I found the pains had suddenly ceased, and the patient was faint and had frequently vomited. The os uteri was dilated, and the fœtus high up in the abdomen being partly within the uterus, and partly not, I lost no time in reaching the feet, and delivering the woman of a dead child. I then passed my hand, directed by the funis, through a laceration of the uterus on the right side, extending from the cervix nearly to the fundus, and extracted the placenta which lay loose on the left side of the abdomen surrounded with extravasated blood. The uterus was in a state of contraction, oblong in shape, and while my left hand was in the abdomen, by applying the other externally I distinctly ascertained that nothing intervened between them except the abdominal parietes. Violent pain, vomiting, and convulsive respiration immediately followed the laceration, and continued for some time after the delivery, accompanied with cold extremities. I administered thirty-five drops of tincture of opium which afforded relief at the end of an hour, when I left her with very slight hopes of recovery. Pulse 120.

"June 1. The abdomen amazingly distended, tense, and painful, the pain increasing at intervals attended by vomiting; she had passed urine but no stool. Pulse 120. Had slept two hours in the night, and had a moderate discharge of blood. Capiat. P. Jalapæ. ℈ii.

"June 2. Pain and vomiting increased. No discharge

from the bowels. Lochiæ natural. Sumat. Hydr. Submur. gr. xx.

"June 3. About one hour after the calomel was taken four or five large stools were discharged, and afforded great relief. The abdomen is more swollen, but the pain is reduced, and returns at longer intervals. Tongue furred. Pulse 120.

"June 5. Slight pains in the hypogastric region. The size of the abdomen is stationary. Tongue nearly clean. Pulse 114. Has taken food and retained it for the last two days.

"June 6. Delirious.

"June 7. Delirium gone. Better in all respects.

"June 17. Pain entirely gone. Abdomen reduced to the natural dimensions and soft. Stools and urine natural. Can sit up about one hour at a time; but, on endeavoring to stand erect, she felt as though the contents of the abdomen were forcing their way out. Appetite good. No thirst. Tongue clean. Pulse 114.

"July 3. Violent pain in the abdomen occurring at short intervals.

"July 4. Good night. Perfectly easy and recovering.

"November 1. Has remained quite well. Menstruation has returned."

Case VIII.—*Laceration of the anterior surface of the Uterus in connection with slight contraction of the Brim of the Pelvis.*—Mrs. ——, has borne seven children. Towards the close of her fifth pregnancy, her locomotive powers nearly left her, but returned in part after delivery; yet from this time she was unable to walk without crutches. The fifth labour proved easier than any of the preceding, but the child was dead, and the cranial bones probably softened. In the two following pregnancies the disability increased, and the labours were very difficult.

During the last three months of the seventh pregnancy she was unable to stand or move. Labour commenced on Sunday, at one o'clock a.m. The membranes gave way at four, and her medical attendant shortly arrived, but could barely reach the presentation, which remained above the brim. During the night the pains gradually ceased. I accompanied him to the case at ten o'clock the next morning. We found the patient very much exhausted; the pulse 130, and the abdomen painful on the slightest motion. Vomiting was very distressing. Unable to examine the presentation with the finger, I passed my hand into the vagina. The head lay above the brim, a very small portion of it excepted, which was entering the brim in a compressed form—a finger could be passed between the head and the symphisis pubis, but not between the head and the sacral projection. At this moment, therefore, there was no impaction; but I believe it was impracticable on the preceding evening to pass the finger between the head and any part of the pelvis. At that time the impaction was absolute, but subsequently the presentation receded. A part, corresponding to the posterior lip of the uterus, could be felt between the head and the sacrum, but the anterior lip could not be distinguished. It was impracticable to feel any laceration. Under a conviction that the child was dead, and delay inadmissible, the perforator and crotchet were immediately resorted to. Having evacuated the brain, my friend employed all the power he could prudently exert to extract the head, but without effect. The exhaustion was now extremely formidable; and, as a larger amount of blood was escaping from the vagina than could be supposed to proceed from the head of the child, he desisted from acting, and death took place within a few minutes.

Pathology.—The abdomen was rather unevenly dis-

tended. On laying it open, the back and breech of the child was exposed to view; the legs were drawn up to the abdomen, and the right hand lay upon the side of the head. A laceration was discovered in the anterior surface of the uterus, about half an inch from the side. The organ was well contracted, and the rent included nearly two-thirds of its length from the body to its termination in the orifice. The edges of the laceration were not thinner than the surrounding parts. A very small portion of the placenta, about an inch perhaps of its circumference, was still adherent to the uterus—the remainder, together with the membranes, were in the abdomen. A very large coagulum lay partly upon the intestines, and partly on the child's back, and a considerable amount of liquid blood had passed into the abdomen and pelvis. A part of this effusion must have escaped, *per vaginam*, during the attempt to extract the child. The short diameter of the brim of the pelvis measured three inches and a half. It was impracticable to examine the joint and ligaments on account of the presence and impatience of the friends. The head of the child was an average size, the circumference being from 13 to 14 inches.

Case IX.—*Laceration of the Fundus Uteri from external violence, followed by the escape of the child into the abdomen. The result fatal from inflammation.*—Mrs. ——, aged 25, eight months advanced in pregnancy, fell on a step, the abdomen being in direct contact with it. She felt as if something had burst, but by placing both hands below the umbilicus, and thus supporting the injured part, was enabled to regain the erect position. She was now sensible of feeling the motion of the child on the right side of the belly very close to the skin, and instantly became faint, and vomited. A practitioner immediately saw her, but misunderstood the nature of the

case. The injury happened on Friday, and on Sunday a discharge of blood and mucus took place. Mr. Porter was called in on the following Tuesday, and immediately ascertained that the child was not in the uterus. The abdominal tenderness was extreme, especially on moving the limbs of the child. Milk was freely discharged. Leeching afforded great relief. I visited this case on Saturday, being the ninth day. The different parts of the child were easily distinguished through the abdominal coverings, and very moveable, consequently the shape of the tumour was irregular. On passing the finger into the vagina I found the os uteri about as much open as it usually is a day or two after delivery. The uterus was sufficiently shortened to allow the finger to reach the fundus, but the laceration could not be distinguished (a circumstance accounted for at the post-mortem examination.) There was very little discharge; the pulse was very full, and near 140; the countenance pale, and expressive of much distress; the breasts were becoming flaccid—a little milk, however, could still be pressed out.

10th day. Much the same. Pulse 160.

11th day. After considerable pain hæmorrhage came on which saturated three napkins, and continued more or less the greater part of the day, attended with vomiting. I now advised the removal of the child by incision, to which the patient was quite agreeable; but it was proposed to take another opinion, and Mr. Hodgson was called in.

Objections to the Operation.—The feeble, and rapid state of the pulse, being 140—the vomiting—the existing peritoneal inflammation—the prospect of the inflammation being created by the proposed incision—the possibility of a spontaneous recovery.

Recommendations in favor of it.—A progressively in-

creasing inflammation—the little chance of this subsiding whilst the child is lying amongst the intestines —the risk of the incision not equal to the danger attending the process of ulceration. During our consultation the patient felt herself much worse, and declined assenting to our proposal.

Tuesday. The vomiting continues; the pulse is 165, and sinking.

Wednesday. No change.

Thursday. Three p. m. She has vomited a large quantity of liquid fœces. Florid blood issues constantly from the vagina. She died in five minutes after this visit.

Pathology.—The body was examined twenty-four hours after death. On opening the abdomen, the child was seen lying in the course of the linea alba, rather to the right side of the mesial line of the mother, the hips and loins being completely covered by the right lobe of the liver; the bones of the head were entirely separate, and loose within the scalp; the child was full grown, and in a state of putridity. The liver and diaphragm were forced considerably higher up than ordinary, and seventy ounces of blood was effused into the peritoneal cavity. The uterus was contracted to about the size of a fœtal head: the rupture was found at the fundus over its anterior surface about an inch below the summit, extending transversely nearly from side to side, and from four to five inches in length. The placenta lay over the uterus quite concealing it; it was still attached to this organ by a portion of the membranes, and a considerable quantity of blood was extravasated over and throughout its substance. The peritoneum was of a dark green colour, in some places perfectly black, and the uterus itself was of a dark colour throughout.

Case X.—*Laceration of the Peritoneal Coat of the*

Uterus.—I was called to this very interesting case by Mr. W. H. Partridge, of this town, in whose practice it occurred, and by whom the particulars have already been published.* The patient had expired before I reached the house; and, although I am not aware of any symptoms by which this peculiar injury can be known, Sir C. Clarke's case came forcibly to my mind, and I expressed a conjecture to Mr. Partridge, that a similar injury might be found here. It is not my intention to enter into detail. I will only observe, that the patient died from ventral hæmorrhage, soon after delivery. A great number of lacerations were discovered on the posterior part of the uterus, the largest being upwards of four inches in length, and nearly three in breadth, the flap hanging down, and exposing the fibrous structure. I have found only four analogous cases on record. The symptoms in these several cases do not exactly correspond. In Mr. Partridge's case, the rupture of the peritoneum occurred, I think spontaneously, antecedent to active uterine contraction taking place, followed by an effusion of blood within the abdomen—painful contractions of the womb—the expulsion of twins—external flooding—syncope—and death.

* Med. Chir. Trans. Vol. XIX.

Transactions of a Society, &c. Vol. III.—Sir C. M. Clarke's.

Practical Observations on Midwifery, Vol. I. Case LXXXVI. p. 409. —Dr. Ramsbotham's.

Dub. Journal of Med. and Chem. Science.—Mr. White's.

Lond. Med. Gazette for August, 1832, p. 630.—Mr. Chatto.

SECTION VI.

INVERSION OF THE UTERUS.

Inversion of the uterus is considered one of the most dangerous occurrences in midwifery, and demands the most serious attention of the practitioner. I have been induced to offer a few brief remarks upon this subject, in consequence of several cases on which I have been consulted, possessing a more than ordinary degree of practical interest.

The cause of this displacement implies the existence of softening and enlargement. It may be traced to an attempt to withdraw the placenta from the fundus uteri in a relaxed state, either by means of the funis or a portion of its own structure—or else to a sudden delivery, in connection with a preternaturally short chord. It has also taken place during the expulsion of a polypus, both in the unimpregnated state, and in connection with natural delivery. Hunter is said to have compared the facility with which the uterus in a flaccid state is inverted, to the inversion of the finger of a glove. Considering how generally the last stage of labour is mismanaged, it is a matter of much surprise that the accident should occur so rarely. On two occasions I have traced its occurrence to unskilfulness in separating the adherent placenta. The operator in a state of embarrassment tears the placenta *nearly* away, leaving a portion attached, which inverts the uterus. I am also acquainted with two instances where the inver-

sion occurred spontaneously directly on the birth of the child; but in both of them the practitioner instantly returned the organ, without reference to the placenta. Whether the chord was short in these instances I did not ascertain; but in Dr. King's cases,* the inversion was clearly owing to this circumstance. The centre of the placenta adhered to the fundus; and Dr. King, having detached the placenta, reversed the displaced parts.

Four principal degress of inversion are described by the French; but it is obvious that inversion may exist in any degree from simple depression of the sides and fundus of the womb to its complete state—the fundus protruding externally, and in its descent partially inverting the vagina. The tumour in the vagina formed by the uterus in a complete inversion resembles a small fœtal cranium; but when suffered to remain, shrinks, and gradually assumes the shape of a polypus. When the placenta is still in connection with the completely inverted uterus, the nature of the displacement cannot be misunderstood. Inversion in its least considerable degree is with difficulty ascertained, and the introduction of the hand may be necessary for the purpose. There is a form of inversion of the uterus in the course of its longitudinal fibres which has not, I believe, been noticed by authors. The following is an instance of this:—I was compelled, in conjunction with another practitioner, to apply the forceps under the disadvantage of uterine inertia. After the delivery of the child there was no tendency to expel the placenta; but a portion of the mass having separated, a slight effort was made with the funis. The placenta descended considerably beyond the os internum, together with a quantity of the uterus, apparently the whole of its right side, the left not being sensibly de-

* Glasgow Med. and Surg. Journal for 1828, p. 171.

pressed. Flooding ensued. At the moment we were rather perplexed, but the nature of the displacement became evident, and the inverted part was immediately returned together with the placenta. The adherent portion of the mass was then separated without delay, and the case treated in the usual manner.

The symptoms and the degree of inversion do not always correspond. The immediate symptoms (which can hardly be misunderstood) are violent pain followed by syncope, vomiting, hæmorrhage, a feeble pulse, and the usual consequences of loss of blood. In reference to the hæmorrhage which attends inversion, Professor Burns remarks that it is usually more profuse in the partial than in the complete form. Under any circumstances its severity may speedily terminate life, as in a case of complete inversion to which my late colleague, Mr. J. S. Blount, was called. The patient survived the accident four or five hours, and expired just as he reached her dwelling. The uterus, with the placenta partially adherent, lay external to the body, the practitioner not having attempted to reverse the organ. Professor Burns, in describing the symptoms of inversion, observes, that the hard uterus cannot be discovered in the hypogastrium—and as respects a complete inversion the remark is strictly correct. But in the incomplete form, even although the fundus has passed some distance beyond the uterine orifice, the body of the organ may still be distinguished above the brim. Of this I have given a very striking example. After a few hours the patient probably becomes unable to void urine. The chronic form of inversion is characterised by the symptoms common to prolapsus and visceral displacement. The countenance is pallid, the feet œdematous, and a general anæmia prevails. There is also a sense of bulk and weight in the vagina, and it becomes necessary when passing an

evacuation to make strong pressure against the vulva to prevent the organ from passing externally. After a short time the hæmorrhage alternates with sero-mucous discharges; but at the menstrual periods the former becomes excessive, and the patient has scarcely recovered its immediate effects before another menstrual period has arrived.

Inversio uteri may be confounded with prolapsus and polypus uteri. From the former it is known by the absence of the orifice at the usual part of the organ, and not having the vaginal membrane as a covering. By the latter it is distinguished by many circumstances. The shape of the inverted uterus will be modified by the period it has lasted. When complete, although pyriform, the cervix is neither so round nor so smooth as the stem of a polypus. It may or may not have acquired a covering by exposure to the air. It is moreover sensible, and a ring corresponding to the edges of the orifice will be felt beyond the cervix and behind the cul de sac formed by the vaginal membrane. From these circumstances, together with the history of the case, we derive strong evidence, for considering the tumour as the uterus in a state of inversion.*

In treating a case of inversion, with the placenta still adhering, the rules laid down by Merriman are the best

* Candour induces me to confess having once excised a polypus for the inverted uterus. The most eminent in our profession have done the same; and, in this case, three very judicious practitioners agreed with me in opinion. The patient, who had suffered from hæmorrhage for ten years, was cured in a minute. The error in diagnosis was owing to the circumstance of the uterine orifice being so extremely tight around the stem of the polypus as rendered it impracticable to pass a probe between the surfaces. The uterus was, moreover, forced out of its natural situation, and nowhere to be felt.

which can be followed, namely, to reverse the organ, without reference to the placenta; and in case this should be found impracticable, to peel away the placenta—using every precaution against the occurrence of hæmorrhage, and then to return the part without delay.

The mode of returning the inversion through the stricture is sufficiently simple. An effort must be perseveringly made in compressing the tumour until it shrinks and passes up in the axis of the pelvis—accompanied by the hand, which must be retained within the uterine cavity, both to remove any depression of its sides or fundus, and to induce contraction—the other hand resting over the hypogastrium. We thus ascertain that the uterine tumour possesses its natural uniformity. Cold may be applied, if necessary, to promote the requisite degrees of contraction. If the inverted uterus is quite within the vagina, and the space will not permit a free compression to be made with the hand, we may effect our object by means of the knuckles or the points of the fingers, even under circumstances of a very adverse kind.

When the inverted uterus is in a state of inflammation, the attempt should be suspended for a time, and leeches, with other suitable treatment, employed in the interim. I have seen but a single instance of this description of case. A large round tumour, resembling a child's head, evidently the uterus, but without the slightest appearance of orifice or neck, and covered by a scaly substance, had passed entirely through the *os externum*. From its inflamed and thickened state, it was found impracticable to return it within the vagina.

The prospect of success will be materially lessened by delay, however short. The uterus becomes contracted, unyielding, perhaps inflamed, and the stricture acquires

additional firmness. Burns merely observes—"If inversion be discovered early, the uterus may be replaced." And, again,—"If inversion have not been discovered early it is more difficult, nay, sometimes impossible to reduce it, owing chiefly to the contraction of the os uteri." These statements are rather indeterminate.

Dr. Hamilton remarks:—"Cases of *partial* inversion of the uterus after delivery, are, in the present improved state of practice, rare occurrences, and when they do happen, they generally prove immediately fatal. In the whole course of the author's practice, he has not met with more than six or seven instances where the patient survived the accident above an hour or two."*

Influenced too implicitly by general opinion, practitioners seem to have yielded to despair, and generally consigned the patient to her fate. Several very competent practitioners were called to one of these accidents the fourth day after delivery, but no attempt was made to restore the organ to its natural state. Some months afterwards the patient was placed under my care—I acquired fresh interest in these unhappy cases. I had a recollection that White returned the inversion at the end of the second hour, and that Denman always failed four hours after it occurred. But on conversing with Mr. Wynter, a highly respectable practitioner of West Bromwich, I ascertained that he once succeeded in restoring the uterus at the end of twenty-four hours; and I had a distinct recollection of the late Mr. Kinder Wood having mentioned to me a very similar instance. [This case is alluded to by Mr. Dickenson. The inversion was returned two days after delivery.] I had also notes of two cases, the circumstances

* Pract. Obs. p. 49 and seq.

of which were still more encouraging. In the first of these, (Mr. Dickenson's,*) the completely inverted uterus was successfully reversed twenty-seven hours after the displacement; in the second, (Dr. Belcomb's,†) the replacement was effected twelve weeks after the inversion had happened. The fundus uteri had passed completely through the orifice, and its return was accomplished by firmly pressing the part, and pushing it steadily upwards. The operation proved very painful, and it was thought the stricture would not yield, "but by unwearied exertion" the effort proved successful. Strongly impressed by these cases, and regretting having once given way to despair, and lost the chance of reversing this state of the uterus, I resolved to make a persevering effort in the event of another opportunity presenting itself. The opportunity soon occurred.

Mrs. —— was delivered of her first child on Thursday night, the 17th. The practitioner informed me that immediately on the removal of the placenta, syncope took place, followed by profuse hæmorrhage, which subsided a little the next morning. She was harassed by frequent vomiting, pain in hypogastrio, and an occasional increase of hæmorrhage, until the succeeding Thursday night, the eight day after delivery, at which time I was requested to see her. I found her nearly without pulse, exsanguine, comatose, delirious on being roused, and apparently moribund. On laying my hand over the pubic region, the uterus, which felt very hard, presented two singular features, its form being almost conical, and its circumference particularly small. I ascertained that the vagina was filled by a very bulky round tumour, which almost reached

* Lond. Med. Gazette for 17th January, 1835, p. 551.

† Ibid. Vol. VII. p. 783.

the os externum, corresponding to the fundus uteri, and resembling a very large sized polypus. On carrying the finger as high as I could possibly reach, I distinctly felt the os uteri encircling the tumour like a firm stricture. It was clearly a case of inversion of the uterus, the body of the organ being above the brim, and the os internum occupying about the centre of the inversion. Under the impression that the sufferer was dying, her relations resisted for some time our earnest entreaties to be allowed to make an effort for her relief. Yielding partly to persuasion and partly to remonstrance, they at length assented. In about five minutes the stricture gave way to the compression which was employed—the left hand gained full possession of the uterine cavity, the fingers being distinguished through the abdominal coverings by means of the right hand placed over the hypogastrium. A piece of placenta was felt adhering to the body of the uterus, but allowed to remain, the organ being then perfectly flaccid, and neither the presence of the hand within its cavity, with friction and a cold napkin over the hypogastrium, nor the administration of ergot and diffusible stimuli produced the slightest contraction. The injection of cold water, considering the state of the vital energies, was thought too hazardous. The withdrawal of the hand was not followed by a return of the inversion as in Dr. Loffler's case, notwithstanding the flaccidity of the parts. [This gentleman was obliged to support the fundus in its natural situation by a curved tube.]* The hand was therefore withdrawn, and the stimulating plan persisted in during twelve hours before the pulse could be distinguished. The return of the pulse was almost immediately followed by the return of uterine contraction, and the expulsion of the piece

* Med. and Surg. Journal, Vol. XI. p. 207.

of placenta, being about one-fourth of the entire mass, in a highly decomposed state. The bladder had lost its power, and a very large quantity of urine was drawn off by the catheter. The following day the patient was wonderfully improved, and gradually recovered. I believe that the continuance of the hæmorrhage greatly promoted the success of the operation.

Several important practical deductions arise out of this case:—

1. It is quite certain that the inversion was occasioned by the removal of the placenta, although I understood that the effort made with the funis was inconsiderable.

2. The circumstance of the hypogastrium containing a portion of the uterus (the body of the organ as in this instance) may prove exceedingly deceptive. How important then to ascertain whether the hypogastrium is occupied by the *fundus uteri* characterised by its firmness, roundness, and superior size.

3. The importance of ascertaining after every delivery whether the os internum is in its natural situation is clearly shewn by this case.

4. The success which attended the efforts made to restore the parts so late as the eighth day after delivery, furnishes a strong incentive for persevering, even under circumstances of the most discouraging kind.

The completely inverted uterus has been known to slough away, and yet the patient to recover.*

* See case of loss of the uterus, published by Mr. Cook, of Coventry. It is also on record that a midwife cut away the recently inverted organ. A few days ago an eminent country practitioner told me that within the last twenty years a surgeon who had inverted the organ committed the same offence. The practitioner alluded to saw the parts almost immediately afterwards, but the patient had expired before his assistance could be obtained.

When the attempt to replace the organ should fail, the patient's existence is afterwards attended by severe suffering, and great debility of the system. In the cases of this nature which I have seen, the fundus was situated nearly the same distance from the external orifice as the os internum usually is, liable however to prolapse, or actually to pass through the vulva on the slightest bodily exertion. This tendency is maintained by the discharges which perpetually issue from the vagina. In a recent case the vagina is plugged up, but not in a case of long standing. The nearer the critical period of life the greater is the prospect of ultimate recovery, as the shock which the constitution invariably sustains can then be more easily borne.

Many circumstances concur, the patient's age especially, in rendering the removal of the part either by excision or the ligature very desirable. Several cases of success are on record. If it could *a priori* be ascertained that the interior of the cervix was obliterated, excision would be preferable to the ligature. The only danger would be the apprehension of hæmorrhage—but hæmorrhage might be controlled by plugging the vagina with lint and oil, and applying cold over the pubes. Even if a direct communication should be found to exist, little or no blood would enter the abdomen. Still, the risk of an open communication cannot be unimportant. In Dr. Symonds' case the cervix was not obliterated, and yet the inversion was from two to three years' duration.* The situation of the patient may be materially relieved. The tendency

* Dr. Davis recommends the double ligature; but this is rather objectionable on account of the impossibility of lessening the pressure in case of severe pain being excited by it. For authorities see Burns' Treatise, 8th edit. pp. 517-23; Davis' Principles, pp. 1084-8; and Ramsbotham's Lecture, Lond. Med. Gazette, of 25th July, 1835, p. 565.

to procidentia may be greatly diminished by the T. bandage having a pad of horse-hair enclosed in Indian-rubber composition to correspond with the vulva, or by a pessary, if the bandage should not be found to answer. This, with the daily use of the cold hip-bath, injections of alum, and tonic medicines, of which the muriated tincture of iron is the best, will afford great relief. Constipation and purging must be equally avoided; the bowels should be acted upon by extract of rhubarb, or the mildest class of opening medicine.

SECTION VII.

ON THE SIGNS AND SYMPTOMS OF PREGNANCY—THEIR OBSCURE AND DECEPTIVE CHARACTERS—THEIR COMPLICATION WITH DISEASE, AND THE SIGNS WHICH DENOTE THE EXTINCTION OF LIFE IN THE FŒTUS.

The subjects here considered involve questions not less interesting than important, and consequently present the strongest claims for attentive examination. To the practitioner in midwifery a thorough knowledge of the many difficulties he may have to encounter, and a just appreciation of their various modifications, are so indispensably necessary, that they not only affect his own reputation, but the comfort and welfare of the community. But exclusive of moral obligations—parental solicitude and family considerations offer powerful incentives for acquiring a familiar acquaintance with these subjects of practice. We are constantly called upon to pronounce upon the question of supposed pregnancy, and not only does the due administration of public justice rest upon the accuracy of medical opinion, but frequently the moral character of the individual also. Again, the propriety of provoking uterine contraction by the ergot of rye,* or the

* Very recently premature labour was induced in two cases, by the action of the ergot. It clearly *originated* uterine contraction. I prescribed it as an experiment in cases of projection of the sacrum, in preference to the evacuation of the liquor amnii. The child was born dead in one case, but living in the other. For similar cases, see Dr. F. H. Ramsbotham's Lecture, in Lond. Med. Gazette for 28th June, 1834, page 434.

discharge of the liquor amnii in the early and middle months of pregnancy, and the most eligible mode of effecting delivery in the latter months, whether by turning, the use of the forceps, or the perforator—must be determined mainly by the supposition of the fœtus being alive or dead. Of the existence of early pregnancy, the suppression of the menses, and vomiting, form prominent features. But the excited state of the nervous and sanguiferous systems, (explanatory of the marked sympathies which the uterus maintains both with near and distant parts,) the activity of the absorbent system, together with a slight descent of the uterus,* afford us (even collectively considered) merely presumptive evidence; and pregnancy may have existed some months, and yet not be denoted by a single obvious symptom.† The pulse is more frequent than usual in the early weeks, and the urine sometimes deposits a milky sediment, especially on the addition of a few drops of rectified spirit. The blood is usually (but, according to Dr. Maunsell, not necessarily) buffed during any period of gestation. Included in the signs of pregnancy, are a capricious appetite, nausea, salivation, tooth-ache, wandering pains, fretfulness, &c., but these are not entitled to much attention. My object is not to enter at large upon the signs of pregnancy in general,‡ but to comment briefly

* Mad. Lachapelle denies that there is any actual descent, and considers the change as arising from the generally increased size of the organ.

† Dr. Hamilton undertakes to prove "that both in the early and latter months of pregnancy, there are invariably signs marking that condition of the system." How far he has succeeded his readers will judge for themselves.

‡ I beg to refer the reader to the researches of Gooch, and to Dr. Montgomery's admirable work on this subject.

on some of the chief evidences, real or supposed—on the difficulty of forming a clear diagnosis, (especially when pregnancy is complicated with disease,)—and to advert to the signs which denote cessation of life in the fœtus,—pointing out also their absence, modification, and uncertainty. A few words are added respecting still-born children. Mauriceau has, with great truth, declared that no part of midwifery demands more serious consideration than the question whether the child be living or dead. Whatever may be his ability, the practitioner will have occasionally to regret that his judgment is quite unequal to the difficulties with which he has to contend.

A physician accoucheur of high attainments (my friend Dr. Rigby) has divided these signs, first,* into such as appear antecedent to labour; and secondly, into such as appear during actual labour; a very practical division of the subject. The following classification will assist us in our proposed illustrations:—

I. Vomiting.

II. Sanguineous discharges.

III. The state of the breasts.

IV. Twin cases, and the expulsion of foreign bodies from the uterus.

V. Fœtor of the discharges.

VI. Ascent of the uterus, and the state of the cervix uteri.

VII. State of the hypogastrium, and examination *per vaginam*.

VIII. Obliquity of the uterus.

IX. Size of the abdomen apparently stationary.

X. Dropsy of the abdomen.

* Lond. Med. Gazette for 23d February, 1833, p. 698.

XI. Diminution of the size in the abdomen.

XII. Irregularity in the form of the abdomen.

XIII. Fœtal movements.

XIV. Auscultation.

XV. State of the funis.

XVI. Looseness of the cranial bones, puffiness of the scalp, desquamation of the cuticle, changes in the fœtal presentation, and sundry constitutional symptoms.

XVII. Still-born children.

Vomiting.—Vomiting, whether coeval with conception, or arising soon afterwards, usually ceases directly after quickening, but sometimes increases in severity, harassing the patient up to the hour of labour. It is materially influenced by position, and now and then *commences* in the middle and latter months of pregnancy, continuing until the uterus has expelled its contents. Such instances have occurred within my own observation. The influence which the mind exerts over this sympathetic action is exceedingly striking. Whilst attending upon a lady in the seventh month of her first pregnancy, on account of a most obstinate form of vomiting, her husband was suddenly seized with an acute disease, and died in a week. Her mental energies were instantly called into action—her vigilance was unremitting day and night; and from *the moment* of the seizure the vomiting ceased, and never returned. A month afterwards premature labour ensued, and she gave birth to a living child. This sympathetic action is strongly in favor of the preservation of fœtal existence, and I do not recollect an instance of it continuing after vitality in the ovum had ceased. An attack of hæmorrhage, and other circumstances, may also suddenly arrest it. Some time ago I was attending a lady in the sixth or seventh week of pregnancy, on account of a most unmanageable form of vomiting, when suddenly a dis-

charge of blood appeared, *(per vaginam,)* the forerunner of abortion. Although the expulsion of the ovum did not immediately take place, the vomiting ceased almost momentarily—a circumstance which shows the excellent effect which venesection exerts over the obstinate and protracted vomitings of pregnancy. Vomiting may or may not be connected with organic disease. M. Dance has described two cases which terminated fatally, without any appreciable lesion.*

Sanguineous Discharges.—A single attack of hæmorrhage may not only prove at once destructive to the embryo, but to the mother also,† even in the early weeks of pregnancy; or the fœtus only may perish, and yet be retained in utero until the ninth month. On the other hand, a protracted hæmorrhage may not necessarily destroy the fœtus, or terminate in abortion, notwithstanding the well-known tendency. As an illustration, a lady whom I recently attended in her confinement, had an unceasing hæmorrhage during the first three months of pregnancy, and yet abortion did not happen, and she was delivered at the full term of a living child. I could state another instance almost equally striking.

Notwithstanding Dr. Hamilton's opinion that menstruation cannot take place during pregnancy, it is certain that a discharge, possessing all the characters of healthy menstrual fluid, has now and then appeared periodically during the first two or three months of gestation—sometimes during its whole term, without exerting any apparent influence over it.

Menstruation, which occurs *subsequent* to conception,

* Med. Chir. Jour. and Review for January, 1828, p. 149.

† See a case by the Author, published in the London Med. and Surg. Journal for 11th January, 1834, page 752.

is undoubtedly contrary to the ordinary laws of nature, but its influence in *preparing* the uterus for conception, is exceedingly marked. In the case of a woman who has borne nine children, and nursed each child until the recurrence of pregnancy, conception has uniformly followed the first return of menstruation, so that between each successive impregnation the discharge appeared once only. It is true that some women have become pregnant during lactation, even many times in succession, in whom menstruation has not intervened, but such cases are very unfrequent. Amenorrhœa, when preceded by a bad state of the general health, must be received as *a very* equivocal evidence of pregnancy.

State of the Breasts.—After conception has taken place, the glandular part of the breast sensibly increases, and acquires a degree of firmness very unlike a mere fatty deposition; the part becomes uneasy, and the superficial veins are rendered unusually distinct. The determination of blood sometimes shows itself in scarlet streaks pervading the whole surface of the breast, and producing a sense of heat. The nipple is thick, prominent, of a dull colour, and sometimes occasions a tingling or smarting sensation. The discoloured state of the areola forms the principal characteristic, and is most distinct in brunettes and in persons having dark eyes and hair. The circle surrounding the nipple becomes sensibly turgid, and, in place of its slight rosy hue, acquires a yellow, or, more frequently, a deep brown or very dark colour; its diameter also increases, and the follicles enlarge and yield moisture. These changes, according to the high authority of Hunter, Gooch, Hamilton, and Montgomery in particular, are occasioned by pregnancy only. As applicable to a *first* pregnancy, this opinion may be so universally correct as not to admit of an exception,

but when the colour of the integument around the nipple has been once modified by pregnancy and nursing, it is no longer, I think, a conclusive criterion. I have certainly noticed a tolerably well marked areola unaccompanied by pregnancy, and also an areola of an imperfect character, in an advanced state of pregnancy.

Two singular changes, not distinctly described by authors, remain to be noticed. The first consists in a very scaly state of the cuticle covering the areola; the second, in a discolouration, not very unlike the areola, and partially affecting the whole surface of the breast. The breast presents a curious mottled or checquered appearance of an irregularly brown hue, with intervening spaces, defined in extent, circular in form, and as white as the skin over the body in general. The last mentioned appearance is strongly presumptive of pregnancy.

Little importance attaches to the mere fact of milk being secreted, but when the secretion follows the ordinary signs of conception, it affords strong but not conclusive evidence of pregnancy. These changes, when collectively considered, are not peculiar to the healthy state of the ovum; hydatids and visceral diseases have been known to produce them. The secretory functions of the breast have also been performed at unnatural ages—altogether exclusive of parturition; and the circumstances by which they are provoked are sometimes very obscure. In the case of an unmarried lady of high respectability, the areola had darkened, a serous discharge exuded from the nipple, the abdomen had enlarged, and so nearly resembled in its form the gravid uterus at the full term, that pregnancy was strongly suspected, but ultimately the enlargement gave way to medical treatment. Although a serous discharge from the nipples may arise from mere irritation of the uterus, it is usually con-

nected with more or less enlargement of its substance. I subjoin a marked case of this kind.

A young woman, of spare habit of body, declared that she had attained the tenth month of her pregnancy; the usual morning sickness was followed by a discharge of milky serum, which kept her linen constantly wet, and subsequently, by movements which distinctly simulated those of the fœtus, and such as she had experienced in her two preceding pregnancies. On examination, *per vaginam*, in place of an impregnated uterus, I detected a firm tumour, the size of a large egg, situated at the posterior and lateral parts of the neck and body of the uterus, and bulging into the rectum; menstruation was regular, but, as might be expected, excessive. The pulsations of the abdominal aorta were very strong, but she declared that these were not the movements which occasioned the deception. I could not determine their character.

It will usually be found that the enlargement of the mammæ, common both to pregnancy and diseases of the sexual system, will disappear when unconnected with the former after the lapse of a few weeks, although the primary affection may continue progressively augmenting. The following are the principal changes which commonly result from the extinction of life in the ovum: the areola loses a portion of its darkness, the follicles and nipples shrink, the nipples cease to yield a serous or milky discharge, and the mammæ suddenly diminish in bulk. But these changes, whether absent or present, are by no means conclusive of the state of the fœtus. Towards the close of an ordinary menstrual period, the congestion of the mammæ, which immediately precedes it, begins to subside. In an hæmorrhage connected with pregnancy, this subsidence ought to be more strongly marked, but it is sometimes otherwise. In a very protracted case of flooding, which ended in abortion and death, not the

slightest diminution in the size of the breasts could be detected. But occasionally we find that hæmorrhage is followed by a marked collapse of the breast, a change perfectly compatible with the life of the child. A few months ago, I was called into consultation, on the case of a lady who had nearly reached the full term of her first pregnancy, and was the subject of a complete presentation of the placenta. The first attack of hæmorrhage occurred a fortnight previous to her delivery, and the second on the day preceding it. Neither of these effusions were dangerous in amount, but the drainings were considerable, and had produced a marked impression upon the system.* The glandular part of the breast, previously much increased in volume, was now remarkably soft and small, and a dead weight, which fell to either side with the inclination of the body, was accompanied with a sense of coldness in the abdomen. The perceptible movements of the infant having ceased, life was presumed to be extinct. Under the skilful management of her surgeon, (Mr. Homfray, of Alcester,) the delivery was successfully accomplished, and notwithstanding that the placenta was necessarily perforated, and the child apparently still born, resuscitation was effected by the inflation of the lungs, and other appropriate means, but an hour elapsed before we considered respiration as satisfactorily established.†

* A very experienced accoucheur (Dr. Ramsbotham) has not found these drainings of much importance. It was otherwise in this instance.

† In justice to a respected teacher of midwifery (Mr. Radford, of Manchester) it should be remarked, that the preservation of the child's life is attributable, in a great measure, to his plan having been adopted of seizing one foot in preference to both, (thus leaving a larger circumference—the breech) to distend the external parts, and occasioning less delay in the delivery of the head.

Twin cases, and the expulsion of foreign bodies from the Uterus.—In twin cases it is well known that one of the fœtuses may perish at an early period of gestation, and yet be retained *in utero* for an indefinite term. The period of its expulsion will, in a great measure, depend upon the state of its own textures. On the extinction of fœtal life, the structures of the ovum rapidly putrefy when exposed to atmospheric influence, although a high degree of decomposition is not incompatible with an *entire* state of the membranes. Whatever may be the condition of the dead fœtus, the tenantry of the living one, even up to its maturity, may in no respect be affected. A few weeks ago, on examining a mature placenta, the expulsion of which was attended with severe hæmorrhage, a fœtus of four or five months' growth, flattened, but not putrid, was found within the membranes, closely adherent to the uterine surface of the mass, and yet a full sized living child, in connection with this placenta, had just been expelled. It is singular that although the placenta consisted of one solid mass (not two placentæ connected by membrane) one half of the mass, and the small fœtus attached to it, are reduced to a white substance, the line of demarcation between the dead and living portion being very apparent. It could not have been exposed to atmospheric influence. When abortion happens in the middle months of gestation, the retention of the placenta is of frequent occurrence. On the expulsion of a twin, three, four, or five months old, having its own proper membranes and placenta, the uterine orifice may close quite as promptly, without any suspicion being raised of the presence of a second ovum; and if the woman be corpulent, the bulk of the uterus may not be easily determined. After the expiration of a given period, varying from a few hours to a few days, the uterus

will probably expel the second ovum, and thus a charge of ignorance may be most unjustly and vexatiously preferred against the practitioner—a circumstance which I know to have occurred. In cases similar to this a difficulty respecting the vitality of the fœtus yet in utero is likely to occur. On the expulsion of a large mole, or a diseased ovum from the uterus, the same difficulty may arise, supposing a fœtus enclosed in its proper membranes to be still retained. Of this complication, my own practice has furnished a striking example. After a long continued hæmorrhage, a diseased placenta (of the grape kind) was cast off, but without any apparent fœtus; the os uteri closed, and, to the surprise of all parties, the patient was delivered a few weeks afterwards of a mature child and secundines. From this case and several others of a similar kind, we see the propriety of carefully ascertaining the *bulk* of the uterus whenever any large substance has quitted its cavity—the practitioner's reputation may suffer by the neglect.

Fœtor of the Discharges.—One of the most prominent indications of the child's death consists in a fœtid state of the discharges. Blood, when confined only for a short time within the uterus, and exposed to atmospheric influence, soon becomes fœtid. But exclusive of this, a very high degree of fœtor may be imparted to the natural mucous secretion which lubricates the vagina. This peculiarity is compatible, not only with a healthy constitution, and a living child, but also with a natural state of the placenta and its membranes, and therefore not very explicable. During my attendance upon a labour, on ascertaining this secretion to be extremely fœtid, and the movements of an infant very evident, thinking there might be a plurality of children, and vitality extinct in one of them, I suggested to the husband of

my patient the probability of such an event; my conjecture was ill founded, for the uterus contained only a single child, and nothing unusual was detected, either in the secundines or liquor amnii. A very fœtid state of the liquor amnii is quite compatible with vitality in the ovum.

The natural mucous secretion may acquire a degree of fœtor and darkness of colour by blood extravasated prior to the accession of labour, and detained in the form of clot between the edge of the placenta, the membranes, and the uterine surface. It may be observed also, that by imbibition the qualities of the liquor amnii may be materially changed without at all affecting the fœtus. A rupture of a vessel from the fœtal surface of the placenta will also produce a change in the colour of the liquor amnii, but this will be incompatible with the preservation of the child's life. An offensive discharge, of a brown, deep yellow, or bright orange colour from the uterus, and often consequent upon protracted labour, merely evidences an unhealthy state of its lining membrane. In what particular manner the dead fœtus undergoes decomposition, whilst the membranes remain entire, I am unable to explain.

Ascent of the Uterus, and the state of the Os and Cervix Uteri.—Although quickening usually takes place about the fourth month, sooner or later, the period when the uterus will ascend is uncertain. The ascent of the uterus will be regulated, partly by its own development, and partly by the size of the pelvis—whilst its progressive degrees of elevation will be influenced by the free or confined state of the abdomen generally, both as respects its coverings and cavity. The ascent will occur prematurely—when the amount of liquor amnii is in excess—when the pelvis is small,—and when the uterus is

enlarged by disease. In the practice of my friend, Mr. George Elkington, a woman was seized in the early weeks of pregnancy with an active hæmorrage from the uterus, and it was supposed she would miscarry: presently, however, the case was rendered unusually obscure, by the vastly disproportionate increase of the abdomen. Instead of the uterus being found near the brim of the pelvis from the third to the fourth month, the abdomen had become suddenly and generally distended by it. Vigorous contraction soon came on, and the expulsion of an immense quantity of hydatids, and a small fœtus was the result. Hydatids simulating natural pregnancy is not an unusual circumstance. I am not aware that the presence of hydatids can be distinguished with certainty from the healthy ovum, at least not before a considerable period has elapsed—they produce a train of symptoms which characterise an early conception, and their evacuation from the uterus is generally attended with the usual marks of abortion. A surgeon of high repute in this town assured me, that a young married lady, who had experienced the ordinary symptoms of conception, was seized with an hæmorrhage, which terminated in the expulsion of a large but single hydatid. The received theory of hydatids is not supported by this case.

In the following example, the premature elevation of the uterus appears to have been influenced by an unusually small pelvis. A lady whom I had delivered at the full term a few months previously, consulted me on account of frequent and sudden attacks of uterine hæmorrhage of six weeks' duration. The catamenia ought to have appeared a fortnight prior to the hæmorrhage commencing. From this and other circumstances, not necessary to mention, she could not have passed the third month of gestation. On examination, I found the body of

the uterus enlarged, and the summit of the fundus within an inch of the umbilicus; expulsive pains shortly ensued, which terminated in the discharge of the liquor amnii—a very small fœtus, and an imperfectly formed placenta.

The development of the uterus, although progressive, may be late, relative to the period of pregnancy. This retardation is sometimes connected with a diseased state of the ovum; the embryo perishes in the early weeks, but the placenta, retaining a low degree of vitality, acquires a diseased organization, and an indefinite shape. Its expulsion may be delayed, even beyond the ordinary period of gestation.* In hydatid formations the phenomenon of *ballottement* cannot take place.

The gravid uterus may also remain within the pelvis as late as the sixth month: a single example is annexed.

Mrs. ——, ætat. 20, has been married about a year, and the last act of menstruation terminated in the first week in January, 1834. The non-recurrence of the catamenia was not followed by any of the early signs of pregnancy, but about the end of May, a peculiar fluttering sensation favored the idea of pregnancy. The fluttering continued very sensibly increasing until the end of June, when it entirely ceased. Accustomed to menstruate with great regularity, no doubts were entertained respecting the existence of pregnancy, until it was discovered that the abdomen had not at all increased in size. I was consequently desired to see her on the 10th of August. There was neither vomiting, sickness, discharge, sense of weight, coldness nor pain; the breasts were slightly enlarged, the superficial veins peculiarly distinct, and the areola but imperfectly formed; the abdomen was in no respect enlarged. Notwithstanding the patient's spare habit, I

* Treatise on Hæmorrhage, p. 104.

could not feel any part of the uterus above the brim. On internal examination, I found the cavity of the pelvis occupied by a large tumour, resembling the head of a child, which had descended within nearly an inch of the vaginal orifice. The cervix uteri had very nearly disappeared, and the os internum was soft and slightly open. Although the *ballottement* of the uterus was quite impracticable, I felt certain of the fact of pregnancy, and testified accordingly, but my opinion as to the vitality of the ovum was very guarded. Four days after this visit, a slight hæmorrhage ensued, which was followed by pains, and the expulsion of a still-born and decomposed six months' child.

Again, the gravid uterus, instead of rising out of the pelvis at the fourth month, may lie completely without the os externum. In one instance of this kind, I succeeded both in returning the uterus within the pelvis, and retaining it there by means of a very large globular pessary, until the natural elevation had taken place.

Soon after conception takes place, the os uteri acquires a degree of softness and fullness which it did not previously possess. The flatness and roundness of the uterine lips and their final disappearance leaving a mere circular depression, together with the descent of the inferior segment of the uterus, (the orifice being directed backwards opposite the second sacral vertebra, whilst the fundus inclines forward,) are strongly characteristic of pregnancy. The shortening of the vagina both in the early and the latter weeks, and its elongation in the middle period are also presumptive of the same state. In primiparæ the uterine orifice is closed almost from the time of conception to the period of labour; but, as Dr. Rigby has observed, such is its irregularity and knotty state in women who have had many children, that "it is gene-

rally open during the last months of pregnancy, and thus furnishes us with the means of ascertaining with a tolerable degree of accuracy whether the patient be pregnant for the first time, or has already had children."* Antecedent to the fifth month, the cervix undergoes but little change; about this time the development of its structures commences—but this may be occasioned by an extraneous tumour, in degree almost as great as by the growth of the ovum. The vaginal portion of the cervix uteri varies also very greatly in length, and not only relatively in different individuals, but also in the same persons absolutely. According to Boyer, this structure does not exceed four or five lines in length; according to Quain, from six to eight, whilst Cloquet makes it consist of twelve or fourteen lines. But besides this great variation in the natural state of parts, we occasionally also find the cervix normally defective, the os uteri being very nearly on a level with that portion of the vagina to which the uterus is attached. Two or three years ago I was requested by a physician of this town to examine a woman, the inmate of a charitable institution, who was supposed to be pregnant. The abdomen was evenly distended by an apparently solid body, and it was suspected on very strong grounds that she had been attempting abortion by poison. I stated, as the result of my investigation, that with the exception of the want of the cervix uteri, there was an absence of every symptom of pregnancy. She died the next day, and on *post-mortem* examination, a congenital malformation was detected in the uterus, the body of the organ terminating in the os tincæ. The abdominal distension was occasioned by an inordinately large accumulation of liquid fæces, the consequence of intestinal ulceration.

* Med. and Surg. Journal, No. CLI. Vol. IV. p. 648.

State of the Hypogastrium, and Examination per vaginam.—Inaccuracy in diagnosis is generally the result of our examination being made in a desultory manner, and in unfavorable positions of the body. For the purpose of examining the uterus above the pubes, (the bladder and rectum being previously evacuated,) the body should be supine, the head and shoulders being rather elevated, and the abdominal muscles relaxed. The hypogastric and iliac regions must be carefully explored, and if a hard body be felt, the fingers should be applied so as to ascertain if possible, its volume, form, consistency, mobility, and connection with other organs.* Examination *per vaginam* may be conducted in the same position of the body, or on the side; but it is sometimes advantageous to make this examination in the half-sitting, half-lying, or the erect posture, by which the size and weight of the uterus will be more correctly determined. In conducting the super-pubic examination, requisite allowance must be made for the comparatively relaxed state of the abdominal parietes in women having previously borne children. Percussion of the abdomen, when properly performed, is strikingly advantageous in determining the nature of abdominal enlargements, whether occasioned by a solid body, the evolution of gas, an excess of liquor amnii, or other fluid depositions. Where there is an excess of fluid in the uterus, percussion of the abdomen and the vaginal examination must be made simultaneously, two fingers being placed upon the uterine portion of the cervix whilst the hand is upon the abdomen, to facilitate the rebounding of the fluid. In pregnancy the fundus uteri will not be felt above the pubes until near the end of the third month, and there is no *visible* increase of the abdomen before

* Boivin and Dúges, translated by Heming, p. 31.

this period, but afterwards the enlargement will be progressive, and about the end of the fifth month quite obvious. When the centre of the hypogastrium is rendered prominent and even, (varying a little in these respects with the varying positions of the fœtus,) moderately firm, or slightly elastic, of an oval or globular shape—the intestines, distinguished by their puffiness being on either side of the tumour, and immediately above it—such condition presents the strongest evidence of pregnancy. The contrast between the state of the hypogastric and epigastric region, from the fifth to the seventh month, especially when the patient stands erect, is very marked. There can be no difficulty in ascertaining whether the uterus *is* or is *not* enlarged, but whether the enlargement is occasioned by conception, may be less easily determined. If antecedent to the approach of labour, the uterine tumour be exceedingly firm, without a correspondent tightness of the abdominal coverings, the enlargement can scarcely be a case of unmixed pregnancy.

By applying two fingers between the neck of the uterus and the pubes, according to Gooch's directions, and making a slight effort, we cause the head (if it presents) to ascend "like a light ball;" and by means of the other hand, resting over the hypogastrium, we obtain on the descent of the head—the impulse termed *ballottement*, or repercussion. This method may be practised very satisfactorily from the fifth (and sometimes the fourth) to the seventh month, or nearly so. But although we thus obtain an assurance that the cavity of the uterus contains a child, we may remain in ignorance whether or not the child possesses vitality.

Great stress has been laid upon the prominency of the umbilicus, as a test of pregnancy; but this, at an early period, may be actually more retracted than natural,

on account of the uterus being somewhat prolapsed. The umbilicus does not become sufficiently elevated before the seventh month to afford an evidence of pregnancy, and its amount of elevation bears a ratio rather to the development of the uterus in its antero-posterior diameter, than to the degree of uterine ascent. In advanced pregnancy the umbilicus will either be on a level with the surrounding parts, or project beyond them. Nevertheless, the appearance of the abdomen, notwithstanding the elevation of the umbilicus, may greatly deceive us. It would seem improbable that a distended state of the abdomen from visceral enlargement, should be confounded with gravid uterus; but it must be recollected, that the shape of the abdomen may in no respect differ from a state of advanced pregnancy, and the patient may also experience the constitutional evidences of that state of the system.*

The firmness of the fibrous tubercle of the uterus, whilst free from active inflammation, imparts one uniform feeling to the hand under all circumstances; whereas in advanced pregnancy the uterus when moderately grasped or rubbed, slightly hardens, independently of actual labour, and almost instantly regains its yielding condition.

Case I.—Some years ago I opened the body of an unmarried and middle aged woman, who had been pro-

* In a fatal case which *resembled pregnancy*, detailed by Ramsbotham, "the uterine cavity merely contained a fibrous mass about the size of an egg, loosely attached to the posterior surface, and entangling within its substance a number of small coagula." But the weight of the diseased uterus has been known to exceed twenty pounds. One of these tumours which grew from the posterior part of the organ, and passed between the sacrum and rectum, weighed together with the uterus 14 lb. 8½ oz. The patient died from peritonitis.—Johnson's Med. C. Jour. for 1st January, 1829, p. 229.

nounced to be in a state of pregnancy, but the enlargement was found to depend upon a diseased spleen, which weighed nine pounds.

Case II.—A surgeon of the highest respectability examined the body of a woman who died under a suspicion of pregnancy. The liver weighed nearly sixteen pounds, and had descended below the umbilicus. The bulk of the liver, in conjunction with an effusion of serum which occupied the pelvic cavity, gave the abdomen the appearance of pregnancy; the liver could only be detected in particular positions of the body.

Case III.—A woman was said to be pregnant under circumstances which strongly supported the opinion: she died from an attack of severe hæmorrhage, and on examination, the uterus was found distended with a large polypus, the size of a fœtal cranium. A similar instance, which also terminated fatally, was lately published in a French periodical.

Case IV.—I met two practitioners in consultation upon a case of a middle-aged unmarried woman, whose abdomen had become very evenly and progressively distended and resembled the gravid uterus about the seventh month of gestation. The body of the uterus was distinctly enlarged, and, from the *tout ensemble* of the case, the woman had very strong grounds for considering herself pregnant. Amenorrhœa followed sexual intercourse, and her health gradually declined, but whether the symptoms were sympathetic of pregnancy, or referrible to organic disease, was somewhat doubtful; medical testimony was rather in favor of the latter opinion. She died, and, on examination, the enlargement was found to consist in a tuberculated condition of the peritoneum generally, and the uterine peritoneum in particular. Notwithstanding the evenness of the abdomen, the whole serous membrane was studded

with tubercles, varying in size from mere granules, to a bulk equal to that of a large walnut.

Were it not superfluous, I could detail several instances of abdominal enlargement in middle-aged females, solely from fatty depositions, in one of which even milk was secreted. But in every case the abdomen was soft and yielding, and the umbilicus being surrounded by large and prominent masses of fat, was unusually depressed, thus constituting a most satisfactory diagnosis.

Pregnancy has also been simulated by large collections of air in utero, either secreted by the lining membrane, or generated by the decomposition of a clot of blood, and confined within the uterine cavity by mucus closing the neck of the organ. An interesting case of such a collection occurring in the virgin state, has recently been placed on record.*

Pregnancy and the dropsical ovarium are not unfrequently combined. In its progressive stages of elevation, the diseased growth will probably be in advance of the gravid uterus (it was so at least in a very striking example); a circumstance by no means inconsistent with its partial descent in the latter weeks of gestation below the presenting part of the child, for this has really happened, and proved an obstacle to the progress of labour.

A tumour or tumours of a fibrous character, developed between the proper tissue of the uterus and its peritoneal investment, may or may not, when emerging together with the products of conception above the brim, take precedence of the ovum; this will be regulated not only by the size of the tumour, but by its mobility, points of attachment, and if it possesses a stem, by its length.

* See Lancet for 31st May, 1834, p. 355.

When moderate in size, the tumour may remain for a long period in a state of inactivity, and it is only when enlarged and excited by the extraordinary influx of blood, and the energies which accompany gestation, that its presence is suspected. The uterus may be either generally or partially enlarged by fibrous growths; when *general*, the figure of the organ may resemble the uterus in its gravid state, and whilst any part of the tumour remains within the true pelvis, the patient will be exposed to all the inconveniences of a heavy body, and occasional attacks of pain, both from its pressure on the nerves, and a sub-acute inflammation of its tissues—but a *general* enlargement of this nature, seems incompatible with the natural term of pregnancy; abortion would almost certainly ensue. When the uterus, impregnated, and complicated with a fibrous tumour, passes into the abdomen, the inconvenience will in a great measure cease, but perhaps only for a time, for the tumour will be acquiring a progressive increase, and should the labour prove severe or be protracted, inflammation will attack its structures, and in all probability extend to the general peritoneum. Much will depend upon the relative situation of the tumour; when attached to the cervix uteri, the danger will be considerable, although a very large sized tumour may be imbedded within the structures of the *fundus*, and yet offer no kind of resistance to the progress either of gestation or labour. But there is still ground for apprehension: the violent and long continued pressure of the abdominal muscles in the expulsion of the child and secundines, the subsequent contractions of the uterus itself, and the changes in the puerperal state, may provoke an inflammation which the most energetic treatment shall not overcome.

A case in point, and one of the most perplexing which

has at present come before me, occurred in a lady with symptoms of pregnancy, in whom a large, irregular, and very prominent tumour lay on the right side, near the ilium. This tumour was intimately connected with a second, which rested in the recto-vaginal septum, and filled the vagina almost to the outlet, like a child's head. I raised this second tumour above the brim—the hypogastrium was then greatly distended, two-thirds of it being occupied by a tumour of a very dense structure, in connection with a softer structure, situated just below it, and over the symphisis pubis. On examination *per vaginam*, this substance intimately resembled a child's head. The tumours were continuous with each other, and, excepting a marked difference in their form and consistence, there was no line of demarcation. With the advance of gestation, the hard tumour was forced underneath the left hypochondrium, the abdomen elsewhere being distended by the gravid uterus. Delivery took place at the ninth month, and the patient fell a sacrifice to peritoneal inflammation on the sixth day. On examination, *post mortem*, the hard tumour was found to be composed of the fundus uteri, which had degenerated into a very large fibro-cartilaginous substance. The child had been contained in the body and neck of the womb, which were nearly healthy,* and must have undergone a most unusual degree of dilatation, but without any apparent attenuation of their tissues. In a case somewhat resembling this, it appeared that three large cartilaginous tumours "prevented the dilation of the fundus uteri in the last months of pregnancy, and the fœtus was retained only by the excessive enlargement and thinning of the cervix of the viscus."†

* Vide Section II. p. 78.

† Heming's Translation of M. Boivin and M. Duges' Treatise, p. 184.

The uterus may be greatly enlarged by a polypus, and the enormous size which these bodies attain is very remarkable. One of the specimens in my possession cannot weigh less than four pounds. The other, together with the uterus, weighs three pounds and a quarter—the uterus measuring seven inches and three quarters in length, and the polypus twenty-two inches. A lady at present under my care, is affected with a large polypus, which distends the abdomen like the gravid uterus at the sixth month, in common with the vaginal portion of the organ, resembling its state just before delivery—the os tincæ also being thin, dilated the size of a sixpence, and on a level with the general development. The polypus is confined within the uterus by adhesions which subsist between their respective surfaces. Respecting this process, Mad. Boivin remarks, "one of its effects, (inflammation,) which are of less ordinary occurrence, though it has been observed by Levret and ourselves, is, the adherence of the tumour to the uterus by one or more points, or even by the whole of its surface.* Assuming that a very large polypus is confined within uterus, the solidity of the enlargement in connection with the progress and symptoms of the case will sufficiently distinguish it from pregnancy. It is uncommon for the polypus, when quitting the uterus, to excite expulsive pains, although this circumstance characterised the cases published by Drs. Brown† and Hamilton,‡ and occurred also in a remarkable degree to a patient of Dr. Montgomery's—being, as Mad. Boivin observes, "in reality a laborious process." The presence of a polypus in

* Heming's Translation, p. 207.

† See Dub. Jour. of Med. and Chem. Science for September, 1834.

‡ Pract. Obs. p. 59.

utero may neither prevent conception, nor interfere with the course of pregnancy. It would seem improbable that the uterus could contain a polypus calculated to obstruct labour without previous evidence of its existence, had the fact not been proved beyond all question. The polypus and the ovum will undergo a simultaneous increase, and it is not improbable that the changes coincident upon conception, will terminate for a time the hæmorrhages so common in cases of polypi. Circumstances connected with the structure and site of the polypus may occur to dissever its connection with the uterus at the time of parturition. In a case attended by Mr. Hazelhurst, a very respectable surgeon in Shropshire, the polypus was forced through the os externum, followed by the child. Inversion of the uterus would appear to have been prevented in consequence of the body of the child remaining within its cavity, and the regularity of the contractions actually going on at the moment. The presence of a polypus will certainly increase the risks incident to the puerperal state. Mad. Boivin has related three instances of this complication—the first patient fell a sacrifice to convulsions fifteen hours after delivery.*

Obliquity of the Uterus.—The uterus may lose its perpendicular direction either on quitting the pelvis, or at any period after it has passed the brim. Uterine obliquity seems referrible to four causes:

I. To deformity of the pelvis and spinal column.

II. To distended states of the colon.

III. To relaxation of the abdominal coverings.

IV. To retention of urine.

1.—In a most deplorable case of Cæsarean operation to which I was called, the long axis of the gravid uterus (in-

* Jour. Hebd. p. 44.

clining to the left side) was from before backward—the form of the tumour being nearly perpendicular; the child was with difficulty resuscitated; but the mother died in a few days. On examination, *post-mortem*, it was found that the uterus had been confined to a space between the sacrum and the superior lumbar vertebræ,—the great laxity of the abdominal coverings permitting the free development of the uterus in the direction just mentioned.

2.—*Distended states of the colon* are the most common cause of the ordinary form of obliquity. It is well known that obliquity of the uterus, as well as other interruptions both to the progress of labour and the salutary changes in the puerperal state, depend upon constipation, hence the importance of paying more attention to this point than women, especially during a first pregnancy, are accustomed to do.*

3.—*Obliquity of the uterus from relaxation of the abdominal coverings* is almost peculiar to persons having previously borne children. It rarely takes place before the seventh or eighth month, and its nature cannot *then* be misunderstood; but when it occurs about the fourth month unconnected with marked symptoms of pregnancy, its true character may be greatly obscured, as in the annexed example.

Mrs. H., a stout woman, but of leucophlegmatic temperament, pale, and of lax fibre, the mother of several children, was seized with hæmorrhage about the end of

* I have sometimes been quite astonished at the great accumulation which takes place in the latter weeks. It is recorded that a case of constipation during pregnancy terminated in the patient's death after delivery, and that the bowels contained 13½ lbs. (French) of solid fæces.—See Med. Chir. Review for June, 1824, p. 233.

November, or the beginning of December. Three weeks previous to this, (being a week before the expected menstrual period,) she experienced a scanty return of menstruation, which soon disappeared. Assuming conception to have then happened, she could not have passed the seventh week of gestation. On account of the hæmorrhage and the drainings continuing, I was requested to see her early in January. In order to restrain the discharge, or produce an efficient contraction, the usual means, including the ergot, and on one occasion, the plug, were employed as circumstances appeared to demand. There were no satisfactory signs of pregnancy: indeed, the breasts remained unchanged during the whole period. About a fortnight prior to delivery, she directed my attention to a hard round tumour situated on the left side, close to the ilium, where it constantly remained. It was slightly moveable, and not unlike a moderate sized fœtal head. The tumour was rather tender to the touch, and declared by the patient to possess an indistinct pulsation, but this could not be detected either by means of the stethoscope or the hand, though often employed for the purpose. The pulse was rapid and sharp, the feet and face were œdematous, the abdomen was unceasingly painful, and the countenance denoted much distress. Examination *per vaginam* was frequently made, but the os uteri had not undergone any appreciable change, possessing the form and figure common to women having had many children, and obstinately resisting the introduction of the end of the finger. On the 20th January, a gentleman, whose surgical judgment is deservedly high, made a very patient examination of the case, and was disposed to think there was no pregnancy, and that the tumour possessed a fungoid character, having a connection with the uterus.

Early in the morning of the 30th January, regular con-

tractions like labour-pains ensued, which brought the tumour into the centre of the hypogastrium, and began to dilate the os uteri. After some hours of pain I was enabled to feel the membranes and the child's head, and also a portion of placenta. A return of the hæmorrhage induced me instantly to rupture the membranes; but the pulse, which had been excessively feeble throughout the night, now became imperceptible, notwithstanding that the pains continued very powerful, with very short intervals of ease. After many strong and bearing pains, the head slipped out of the uterus, and was immediately expelled. The hæmorrhage rendered it necessary to remove the placenta, which I accomplished by reaching a detached portion of it that had somewhat descended; this portion of the mass was very yellow, and must have been long separated. The continuance of hæmorrhage led me instantly to plug the vagina, pressure being at the same time made over the uterus—now very firmly contracted. These, with the application of heat to the cardia, a low position of the head, and a dose of opium with brandy and ammonia, were promptly enforced, but notwithstanding all the means that were devised, (and in these I was kindly assisted by my friend Mr. Wickenden, and subsequently Mr. Chester,) the pulse at the wrist did not return, the respiration became hurried, and before I could obtain the transfusion apparatus, insensibility and slight convulsions had taken place, which shortly ended in death. The child appeared to have nearly reached the fifth month, but from the earliest time of reckoning, the patient could not have passed the sixteenth week.

Reflections on this Case.—Death occurring at these early periods, is so very unusual, as scarcely to have been contemplated. In the author's "Treatise on Uterine Hæmorrhage," the authority of Baudelocque is adduced in justification

of the rupture of the membranes in hæmorrhage occurring after the third month, and threatening the destruction of life. But it is there presupposed that the evidences of pregnancy shall be clearly marked. How then are we to act under circumstances of unusual obscurity, as in the present case? Considering the situation of the tumour, and the absence of all the ordinary signs of pregnancy, this question arises: Is it justifiable, merely on account of hæmorrhage, to dilate the uterus with the finger to determine its state—puncture the membranes, and obtain contraction adequate to the evacuation of its contents? I am now firmly persuaded that we should be justified in pursuing this course. It is not an indispensable condition that we feel certain of the existence of pregnancy, for the signs are often most obscure. We must also recollect that in its ascent the uterus may assume an oblique course—in this particular instance the obliquity of the tumour occasioned a fatal deception as to its real nature. Whether, then, the signs of pregnancy be conclusive, or only strongly presumptive, the propriety of passing the hand into the vagina, and dilating the uterus, with the view of ascertaining its contents, (provided hæmorrhage is protracted, and dangerous to life,) must, I think, be admitted as a rule of practice. The previous application of belladonna might possibly be useful. With respect to the introduction of the hand *in uterum*, although we must not be guided solely by the period of gestation, (since the amount of uterine development, and the state of the vagina will vary very materially in different persons,) still, as a general rule, the operation, antecedent to the sixth month, if at all practicable, is fraught with great danger.* The case just described, (as

* The question of manual interference at early periods of pregnancy, is ably treated by Mr. Wainwright, in a communication

well as other equally lamentable issues,) teach us that very violent contractions may produce exhaustion in a previously impaired habit, without loss of blood; during the first few hours of labour there was no hæmorrhage whatever, and yet the exhaustion kept increasing with the increase of pain. We learn, also, that exhaustion, and a full contraction of the uterus, are so perfectly compatible, that the latter may take place almost as an expiring effort of nature, denoting the independence of the involuntary powers upon those which obey the will.

4.—In reference to the last mentioned cause of obliquity, *retention of urine*, it appears to me that when the pelvis is small, unless the uterus should ascend unusually early—a probable circumstance—it will make pressure on the bladder, and perhaps obstruct its due evacuation. The distended bladder resists the elevation of the uterus through the centre of the brim, and the organ is forced to pass obliquely. On this point the annexed example seems tolerably conclusive.

published in the third number of the Liverpool Med. Journal. The paper deserves a dispassionate examination: the main object of it is, to recommend, in obstinate cases of abortion, manual assistance almost as a rule of practice, rather than as an exception to the rule. It is proposed to gently dilate the os uteri, (when requisite,) and by means of one or more fingers passed within the uterus, to move the ovum from side to side, and draw it forwards in order to obtain its removal. I have several times adopted this plan, but have more frequently failed than succeeded. One great objection applies to it —the risk we incur of bringing away only a part of the ovum, and by the firm closure of the os uteri upon the remainder, retarding its ultimate expulsion. I cordially agree with the author in advocating the removal of the placenta, when it is retained about the fourth month: I have succeeded admirably by means of two fingers and counter pressure.

Mrs. —— menstruated the last time a few days previous to her marriage, which happened on the 2nd day of September. The middle of December (the third month of pregnancy) she was seized with violent pain over the pubes, a distinct tumefaction with tenderness on pressure, pain and difficulty in micturition, and frequent expulsive efforts, each effort terminating in the discharge of a gush of urine. The catheter was twice introduced, and a quantity of urine drawn away each time, with the effect of producing great relief, and sensibly reducing the super-pubic tumour, which was perfectly distinct from another tumour corresponding to the uterus. The bearing-down pain continued more or less harrassing, and doubts being entertained respecting her situation, I was desired to see her the 16th of January. The local symptoms of pregnancy were for the most part very decided. On placing my hand over the hypogastrium and exposing it to view, (the patient resting on her back,) a tumour was observed on the left side, nearly reaching the umbilicus, and possessing the feel of the gravid uterus. On examination *per vaginam*, the uterine tumour was found to rest on the left side of the brim, but the right side was unoccupied. Repercussion could not be produced. On resuming the supine position, (immediately after a second vaginal examination had been made in the half-sitting, half-lying posture,) the patient was instantly aware of a change in the situation of the uterus, and from that moment the pains suddenly ceased. The next day we found the uterus occupying the centre of the hypogastrium, and on again examining the tumour, the limbs and head of the fœtus were not only easily distinguished, but its movements were very visible. This occurred nineteen weeks and a few days after conception—dating conception from the earliest period after marriage. She was

delivered of a living child on the 15th May, exactly seventeen weeks afterwards, being thirty-six weeks and three days after conception.

In an advanced state of pregnancy the uterine tumour has commonly a trifling inclination to either side, but in degree too inconsiderable to constitute obliquity.

The size of the Abdomen stationary, or otherwise disproportionately small, to the period of gestation.—The abdomen may attain a degree of enlargement which shall correspond with a given period of pregnancy, and from this period undergo no perceptible increase, notwithstanding the fœtus is living.

This position is distinctly shewn in the following case. A woman, four months pregnant, who had quickened about a week, was suddenly seized during the night, with a copious discharge of fluid resembling the liquor amnii, which recurred frequently in drainings and occasional gushings, attended with pain, and followed, at times, by hæmorrhage. These discharges continued without intermission till within a few days of her delivery, which occurred shortly after the seventh month. During the three intervening months, the abdomen did not visibly enlarge, and although the movements of the fœtus were not felt after the first appearance of discharge, it was born living, but very feeble. From the sudden arrest of size, the friends of the woman were incredulous as to the existence of pregnancy.

Dropsy.—The evidences of gestation have often been rendered obscure by effusions both of the serous and aqueous kind. These effusions occupy the ovary, the peritoneal sac, and the uterus itself. Pregnancy, and the disease termed ovarian dropsy, frequently occur in combination, a circumstance by no means surprising, since the general health is seldom affected so long as the ovarian disease is unconnected with active inflammation. It

rarely happens that both ovaries are equally diseased, and whilst either of them can furnish a healthy vesicle, impregnation may take place. When the diseased structure has attained a considerable bulk, and is combined with pregnancy, the uterus will be less centrally situated than usual, and the excitement of pregnancy may give the disease a malignity of character which it did not previously possess.* In simple ovarian dropsy, the fluctuation, though obscure, will still be perceptible; but when a scirrhous and dropsical state of the ovarium occur in combination, and the fluid is contained in many compartments, the diagnosis will be difficult. An innocent woman was very strongly suspected of being pregnant on account of this very peculiarity: the form of the abdomen strikingly resembled the gravid uterus. It is true that in proportion as dropsy progresses, the fluid will ultimately be contained in one or two cavities, and the difficulty no longer exist. All hydropic effusions, whether primarily dependant upon pregnancy or not, are greatly promoted by gestation, and usually relieved, if not removed, by delivery. A combination of pregnancy and dropsy may occasion very distressing symptoms, and demand the operation of paracentesis, but, if possible, this should be avoided during pregnancy, both on account of the rapid re-production of the fluid, and the liability of the secreting surface (in encysted dropsy) to take on acute inflammation. A woman who lately died in this town, and was the subject of hydrops ovarii in union with pregnancy, was tapped by my friend, Mr. F. Jukes, both during gestation and

* In a case published in Part XV. page 231, of the Cyclopædia of Practical Medicine, severe symptoms of malignant ovarian disease commenced in the fourth month of gestation, and proved fatal a few days after delivery.

subsequently. She appeared to be perfectly cured. With the recurrence of pregnancy, the dropsy returned with such increased activity, that it became indispensably necessary to tap several times during the course of gestation, but such was the progress of the disease, that she did not long survive delivery. It need scarcely be observed, that the utmost care must be exercised when using the trochar in all cases in which this combination is known to exist. When the vagina is occupied by the ovarian cyst, tapping may be necessary to prevent the cyst bursting during labour, an event which has several times happened. On one occasion I punctured the ovarium *per vaginam*, and drew off four gallons of gelatinous secretion.

The union of pregnancy with ascites is by no means frequent, the general health being too much impaired by organic lesion, (when dropsy pre-exists,) to admit of conception taking place. But the hydropic affection may depend altogether upon the excitement which attends the early and middle months of pregnancy, the system returning to its healthy state directly after delivery, though in some instances the patient has sunk within a very short time.* Professor Davis mentions the case of a woman "who had several of these accumulations discharged (after delivery) by the way of the genital passage,"† and entirely recovered. It may be wholly impracticable to detect pregnancy in an early state, when associated with a pre-existing dropsy of the abdomen. A woman affected with ascites, who declared herself in a state of pregnancy, was tapped by a most intelligent surgeon of this place during gestation, viz.

* In one of Ramsbotham's cases, the dropsy followed pregnancy, but increased after delivery, and the patient died.

† See Obstet. Med. p. 878.

at the fourth month, and again at the seventh, and although eight gallons of fluid was withdrawn on the first operation, this gentleman could not fully satisfy himself, at the moment, as to the size of the uterus, but he clearly ascertained its actual condition on the occasion of the second tapping.* The patient went her full time, and it is an interesting fact, that the reproduction of the dropsical effusion was nearly as rapid during lactation as during pregnancy.

During the present year I was consulted on a case of this description, and the lady had nearly reached the full term before the existence of pregnancy could be ascertained. She perfectly recovered after delivery.

Morbid fluids, whether of a serous or mucous kind, proceeding from the uterus, both in its impregnated and unimpregnated state, depend upon several causes. A striking case of this nature, connected with the unimpregnated uterus, will be found in another page (276). Watery discharges, complicated with pregnancy, may proceed from the lining membrane in connection with a blighted ovum. "That there should be a daily distillation of a non-viscid fluid from an uterus presumed not to contain molæ, nor to have any communication with the peritoneal cavity, (says Dr. Davis,) is a position in pathology, of the truth of which the author acknowledges he feels great doubt."† Unquestionably, the distillation here alluded to may be traced not only to the peritoneal cavity, but also to the diseased ovarium, as in the following instance—one of the most marked which I have yet seen:—A woman called upon me, by the

* The recovery of a patient after tapping is recorded in the Med. Chir. Review for April, 1835, page 506.

† Obs. Med. p. 695.

request of her medical attendant, on account of a circumscribed enlargement of the abdomen, (not unlike the uterus at the fifth month of pregnancy,) and frequent watery discharges from the vagina. On changing her position to enable me to make an examination, a large gush of a nearly transparent serous fluid passed suddenly on the floor. The disease was found to consist of the ovarium, enlarged partly by scirrhus, and partly by a cyst distended by fluid. A portion of this cyst passed into the recto-vaginal septum, and, by means of a communication with the vagina, permitted the thinner parts of the fluid to escape. Presently the discharges ceased—the sac passed much lower, and distended the vagina, where I tapped it on several occasions, but the fluid drawn off was of a gelatinous consistence. The scirrhus part of the mass inflamed, and the patient gradually sunk. Whether the discharge arises from pregnancy, hydatids, the diseased ovary, or the peritoneal sac, I am confident it sometimes proceeds from the lining membrane of the uterus. The following is an instance of this:—A lady, four months pregnant, experienced a discharge of a thin colourless fluid from the vagina. It was most abundant in the morning on rising out of bed—on which occasions from a quarter to half a pint commonly escaped, and more or less passed off throughout the day. After the discharge had continued a month, a fœtus and placenta were expelled, and yet in a few days the watery discharges were renewed just as before. I examined the uterus, but found nothing unnatural. The discharges invariably consisting of a limpid fluid, and, after many weeks continuance, very gradually ceased.

A common disease of pregnancy consists in an increase of the waters of the ovum—usually the product of inflam-

mation.* When the amount of fluid is great, and the uterine walls are attenuated, the fluctuation will be very perceptible, and as early as the fifth or sixth month, the abdomen will have acquired the bulk of advanced pregnancy. Usually it is exceedingly tight, flatulent, and even painful; the respiration is impeded, and the sensations in general are far more uneasy than is common at the full term. The diagnosis will be embarrassing in proportion to the excess of fluid—and auscultation will seldom afford us conclusive information. A connection has been remarked between general dropsy and dropsy of the ovum, but I think the coincidence merely accidental; indeed, the latter effusion is usually occasioned by a diseased state of the ovum, and is purely local,—whilst the former effusion does not necessarily implicate the product of conception. In proof of this, I have elsewhere alluded to the delivery of a woman with twins at a time when she was severely affected with ascites and general dropsy, and yet the amount of liquor amnii was small. Had it been otherwise, premature labour would probably have ensued. We are indebted to Scarpa for an account of the most striking instance of this complication yet on record. The distress of the patient from over-distension being extreme, the professor performed paracentesis, and drew away near thirty pints of serous fluid. On the third day labour-pains supervened, terminating in the discharge of fifteen pounds of fluid from the uterus, and the delivery of twins. Recovery was rapid.† In these several complications, our opinion will partly be formed by the history of each case, but in the

* See Mercier's Essay on this subject—an Essay by Dr. Geil, and also Dr. Ryan's Comprehensive Manual, pp. 452-6.

† Jour. Complément du Dict. des Sc. Médicales, Tom. I. p. 91.

latter months, principally by the state of the body and neck of the womb. The admitted fact of the amnios distended with fluid having been confounded with ascites, and actually punctured through the abdominal parietes, shows the importance of a correct diagnosis. The subject of dropsy of the amnios will again be noticed.

Watery discharges appearing *soon* after delivery, have been particularly described by Ashwell. Several such instances have occurred within my observation. In one of these the patient had been delivered with the forceps, and in place of the lochia the napkins were saturated with a colourless fluid which was secreted very abundantly. The discharge was certainly not urine, for it became necessary to employ the catheter, and the colour of the respective fluids presented a marked contrast. This woman died in a few days from fever.

Diminution in the size of the abdomen.—This change is peculiarly striking when fœtal life is extinct, yet the ovum may be retained in the uterus until the full term is expired, or even longer.

A woman expressed her conviction that she was in the third month of pregnancy. Soon afterwards she lost every symptom of pregnancy, (amenorrhœa excepted,) but persisted in asserting its existence. At the ninth month labour came on, which terminated in the expulsion of an apparently three months' fœtus (not decomposed) and a diseased placenta. Not only, however, does the abdomen diminish in bulk when the fœtus is deprived of life and the blood is in a great measure diverted from the uterus, but also when the vitality of the ovum is unimpaired, and the vessels of the uterus are undergoing a progressive increase. For instance, a collection of flatus in the intestines is an early effect of conception. It disappears after a short time—the abdomen being flatter than it was

two or three weeks previously—being in reality an evidence of pregnancy. The abdomen may, however, continue decreasing a very unusual length of time, thus furnishing grounds for doubting the existence of pregnancy—but although the abdomen may have become absolutely smaller, the uterus is relatively larger. About a year ago I was consulted by a woman of rather corpulent habit, then in her fifth month of pregnancy, and suffering severely from constant vomiting. From the circumstance of the abdomen being smaller than it was the preceding month, she could not be convinced of the fact of her pregnancy. She never felt the movements of the child with any distinctness, and remained sceptical almost up to the hour of labour. The child was born living. The diminution might partly have been promoted by the active absorption of the adipose matter of the abdomen, in common with other parts of the body. In early pregnancy, the amount of liquor amnii, viewed in reference to the size of the fœtus, is disproportionately large, although in strict accordance with nature. In some instances, however, its excess is most unnatural. It may be contained altogether within the amnion, or a fluid resembling the amniotic may collect within an adventitious membrane,—supposed to be the source of some of those aqueous discharges which occasionally take place during pregnancy, but without interrupting its course. In the words of Mad. Boivin: "About the fifth month a large quantity of water may be discharged without being followed by miscarriage."* An effusion has been described in which the fluid is said to collect in the early weeks in a cavity between the amnion and the chorion, corresponding to the allantois, and another between the uterus and the chorion,

* Boivin, by Heming, p. 137.

(the most probable source of these effusions,) but the rationale of these discharges is imperfectly understood. In these hydropic accumulations, the spontaneous discharge of the fluid may be repeatedly followed by a fresh accumulation, each collection producing the same amount of distension. Puzos is said to have "witnessed the recurrence of this discharge even four times in one pregnancy."* In an example which came before me, a copious discharge of fluid was followed by a remarkable diminution of the abdomen, but in three days the distension had returned in degree as great as before: delivery shortly took place. Two years ago a medical friend conferred with me respecting his wife, then about eight weeks pregnant, who had experienced a sudden gush, of about three ounces of fluid *per vaginam*, resembling liquor amnii. He had been in hourly expectation of abortion, but gestation went on to the full term. It is singular that this lady, in the fourth month of the succeeding pregnancy, had a similar seizure: she was awoke during the night by the sudden discharge of at least eight ounces of limpid fluid, followed by a slight discharge of blood, which continued more or less during several days. Instead, however, of the abdomen being rendered smaller, it immediately became very sensibly larger, a circumstance owing to the uterus having about this time quitted the pelvis. She reached the full term of gestation. A case is narrated in the Archives Générales de Médicine, in which a pouch and ten pounds of water were expelled, and yet pregnancy went on to its full term. Some of these discharges occur when pregnancy is far advanced. In one instance a quart of water escaped every fortnight for about two months before delivery. I have elsewhere recorded the particulars

* Boivin, by Heming, p. 137.

of the case of a lady in which a quantity of liquor amnii was discharged at the sixth month, and renewed every second or third day to the ninth month, the quantity averaging from a pint to a quart at each evacuation. The lady arrived at the full term of gestation, and after delivery, I discovered that the fluid had escaped through a circular aperture at the edge of the membranes, which had no connection with the aperture made by the child.* The case is quoted in the Archives Générales,† and in imitation of this spontaneous laceration in the membranes, and the free issue repeatedly given to the liquor amnii, it is there suggested, in cases where the distension is extreme, that a sound should be passed some distance above the os uteri, and the amnion punctured, to allow a certain quantity of water to escape, and thus by lessening distension, to prevent the premature contraction of the womb, but it is improbable that success would attend such a measure. A practical deduction of more importance seems to be this, viz. postpone the artificial puncture of the membranes in similar states as long a time as possible, and unless interference becomes essentially needful, to defer the case to nature, since premature labour will almost certainly ensue within a few hours when the membranes are punctured by art, but not so certainly when they rupture spontaneously. According to Puzos and Baudelocque, the compression exerted on the child is always fatal when nature relieves herself of a large quantity of liquor amnii. In extreme states of distension, the urgency of the symptoms may fully justify the artificial rupture of the mem-

* Treatise on Uterine Hæmorrhage, p. 29.

† Archives Générales de Médicine, Mai, 1834. De l'Hydropisie de l'Uterus, par MM. Gabriel et Pelletan, suivie de réflections, par M. Guillemot.

branes. In an interesting case reported by Dr. Duclos, upwards of fourteen pounds of fluid followed the artificial rupture of the membranes—a measure which was very prudently deferred until the uterus had acquired a moderate degree of relaxation.* It is a fact familiar to practitioners in midwifery, that a gush of fluid, probably the liquor chorii, now and then escapes before or during labour, and yet the amniotic cyst may be found entire; but the amount of fluid derived from this source can scarcely produce a sensible diminution of the abdomen.

Irregularity in the form of the abdomen.—We occasionally meet with a singular deviation from that uniformity in the shape of the uterine tumour which characterises pregnancy: I allude to a partial and circumscribed elevation of a portion of the uterine tumour, neither affected by the position of the body, nor materially changed by pressure. It is not unlike a fibrous tumour in advance of the surrounding parts, and has not, I think, been distinctly described by authors. This appearance seems to have deceived the medical officers of a public institution in the case of a woman far advanced in pregnancy, in whom the uterus chiefly occupied one side, and resembled two large steatomatous tumours. Although I am not prepared to say that the appearance may not consist in an irregular development of the uterus, or portions of the fœtus in connection with a deficiency of liquor amnii, I incline to the opinion that it is produced by a faulty state of the abdominal parietes, resembling in this respect a partial vesico-vaginal hernia. It is, perhaps, occasioned by the separation of the recti muscles. In persons who have borne many children, the irregularity in the contraction of the muscles after de-

* Lond. Med. Repository, Vol. IX. p. 515.

livery, not unfrequently occasions a very pointed deformity of the abdominal coverings, and in one such instance, after the birth of an unusually large child, I could easily have passed my hand through an aperture between the muscles.

Fœtal movements.—The only incontestible evidence of the life of the fœtus is that which is afforded by its movements. The earliest time when these can be ascertained may depend upon several circumstances; for example, the period when the uterus ascends; the strength of the child; the thickness of the uterine walls, the susceptibility of the organ, and the amount of the liquor amnii. Movements within the abdomen, unconnected with pregnancy, have, at times, been confounded even by the most experienced men with the movements of a living child. When the hand is placed over the gravid uterus, the sensation imparted to it, by the movements of a living child, varies from mere knuckle-like substances, felt weakly, or passing slowly from one portion of the uterus to another, to that peculiar ictus, or strong and sudden jerk, which is so characteristic of advanced pregnancy. "Thus, for the first month after quickening, if the hand be applied over the region of the uterus, the movement of the infant feels like that of a ball suddenly rebounding from the part on which it is thrown; but after another month, when the infant moves, a bulky body can be perceived as if starting, and during the last two months, besides the starting, the infant can be felt to move occasionally its several limbs."*

Whilst Dr. Hunter placed little reliance on the evidence afforded by *examination* before the sixth or seventh month, Rœderer made his investigations as early as the third

* Hamilton's Pract. Obs. p. 148.

month—but earlier than the fifth the result cannot be altogether satisfactory. Our diagnosis will be greatly facilitated by examining the abdomen in different positions of the body. In consequence of the tight and distended state of the abdomen at the close of pregnancy, perhaps no sensation may be imparted to the hand when the body is erect, and yet in the supine posture, the movements may be felt most distinctly.

The movements may be distinguished, *per vaginam*, both by means of "*ballottement*," and by simply placing the fingers upon the cervix uteri. The former has been already described. By the latter mode I was once enabled to ascertain the existence of pregnancy at the fifth month, although the patient (the mother of several children) had not been conscious of any movement whatever. On one occasion, during a very protracted labour, a slight movement of the head, *in the intervals of pain*, convinced me that the child was living, although the pulsation of the heart was too feeble to be distinguished by the stethoscope, and the patient had ceased to feel the infant for many hours.

It is proved by daily experience, that the fœtal movements may be simulated by the action of the muscles, the presence of hydatids, a slight ovarian enlargement, and other extraneous growths and morbid depositions, both solid and fluid. It is universally allowed, that volumes of air moving in the intestines are frequently confounded with the movements of a fœtus.

An involuntary movement of the muscles of the abdomen may be occasioned by any large body within its cavity, irritating the muscular fibre. These movements vary from a mere twitching, to a strong retraction, especially about the umbilicus. I examined a woman having an enlargement of the abdomen, in whom these mus-

cular retractions were so marked, that several experienced females would not abandon their conviction of her pregnancy, although the supposed period of gestation had expired upwards of ten weeks. I take it for granted, that twitching of the recti muscles will generally be more or less painful. Dr. Hamilton says, that "the cause of this deception may be discovered by applying the palm of the hand instead of the point of the fingers to the surface of the belly."* An apparently creeping movement, simulating the motions of a feeble infant, and occasioned by large bodies of gas in the intestines, may usually be distinguished by the hand, notwithstanding the intervention of a considerable substance between the intestines and the abdominal integuments. On one occasion, however, I was at the moment greatly misled by these movements. I was desired to see a woman in whom a tumour had developed itself on the left of the umbilicus, and on a line with it. It was slightly moveable, at times painful, but not on pressure; projecting considerably forward, sloping from its summit, and being about the size of the gravid uterus at the fifth month of pregnancy. Its texture appeared to be firmer in some parts than others, but this was owing to partial adhesions having formed between the general and uterine peritoneum. It afforded no sense of fluctuation, but on placing the hand over the surface of the tumour, a distinct crawling movement was traced in every part of it, but unaccompanied by the sudden impulse before alluded to. On internal examination, although the os uteri and the vaginal portion of the cervix were scarcely changed, the superior part of the cervix had degenerated into a tumour, quite as large as a child's head, exceeding it in firmness, but without the resilient property of an immature fœtal skull. Reper-

* Pract. Obs. p. 119.

cussion could not be produced, and the stethoscope afforded no evidence whatever of pregnancy. The tumour continued enlarging—the sufferings of the patient progressively increased, and the result was fatal. On examination, *post-mortem*, it was found that the inferior part of the uterus had degenerated into a very thick and fibrous, or fibro-cartilaginous substance. The fundus and body of the organ were converted into a large sac, not thicker than an ox bladder, and contained three pints of dark, fœtid, muco-purulent fluid, the consistence of gruel. The mucous and fibrous structures of these parts of the uterus had nearly disappeared, and the peritoneal coat, though generally thickened, had become very thin in one spot, where it burst during the examination, and allowed a part of the fluid to pass into the abdomen. The fluid was prevented during life from escaping into the vagina by a quantity of tenacious mucous which lined the sides of the cervix uteri, as in ordinary pregnancy.* The crawling motion I have alluded to, was probably occasioned by strong peristaltic movements in the colon, felt through a fluid of moderate density; or otherwise, by the thick fluid contained in the uterine cavity changing its situation whenever the hand was placed over its attenuated surface.† It is worthy of

* The *post-mortem* examination was made by my friend Mr. J. M. Coley, of Bridgnorth, who kindly furnished me with a copy of his notes, and has since given the details of the case in a paper, "On Hydrometra."—See Trans. of Prov. Med. and Surg. Association, Vol. IV. p. 357.

† In Dr. A. T. Thomson's case, the cavity of the unimpregnated uterus (a mere sac) contained eight quarts of a dark brown fluid—it fluctuated indistinctly—the tumour was painful on pressure—and the size of the abdomen equalled a sixth months' pregnancy. The os uteri was completely obliterated. Dr. T., after citing a number of cases of this disease, (including a case by Vesalius, in which the uterus contained 180 pints of a watery fluid,) concludes by suggesting the fol-

notice, that some months before I saw the case, the patient had strong symptoms of pregnancy, including very sensible movements resembling those of a fœtus, when presently a large quantity of thin fluid was suddenly discharged *per vaginam*, and from this moment her own conviction of pregnancy disappeared. She had suffered from repeated discharges of blood, together with portions of membrane resembling the mucous structure of the vagina.

The movements of a fœtus have also been simulated by a combination of hydatids with ascites, and also ovarian disease with ascites—the ovarian sac being free from adhesion, floating in the ascitic fluid, and containing in its compartments a thick gelatinous deposition. The celebrated P. Frank describes a case of alleged pregnancy in which he felt, as he supposed, the movements of the child—the mother died, and the enlargement was found to consist of hydatids in connection with the fluid of ascites.

The most singular movement of the abdomen which I have yet observed occurred in the case of a lady, some-

lowing corollaries:—"1. That pure hydrometra, or an accumulation of a serous fluid in the cavity of the uterus, enlarged, and acquiring the character of a membranous sac, is a disease which occasionally occurs. 2. That in no case of supposed ovarian dropsy, should a trocar be passed into the tumour, through the linea alba, without ascertaining by previous examination *per vaginam* the real nature of the tumour. For, as in this case, should the uterus be the seat of the disease, and the bladder of urine be attached to its anterior surface, and drawn up nearly to the umbilicus, the instrument would pass through that viscus, and might produce irreparable mischief. 3. That the number of instances in which the disease has been cured by a spontaneous discharge of the fluid *per vaginam*, authorise the attempt to evacuate it artificially, either by dilating the os uteri, when it is only obstructed, or puncturing the sac, in the situation of that orifice, when it is obliterated."—Med. Chir. Trans. Vol. XIII. p. 187.

what corpulent, upwards of forty years of age, and the mother of several children by a former marriage. She felt confident of her pregnancy, and considered that she had reached the forty-second week. At this period I visited her. Although it was obvious that the uterus was unimpregnated, the history of the case, together with the remarkable movements of the abdomen, led to a surmise that there might possibly be an extra-uterine fœtation. The abdomen at one time was perfectly flaccid—at another, after an interval of a few minutes, it became hard and resisting, like a very large bladder completely distended—sometimes the movement would be seen above the umbilicus, but chiefly below it. This state had continued with scarcely any interruption for many weeks. In what, then, did these movements consist? Did they depend upon the action of the abdominal muscles? In opposition to this, it should be remarked, that the respiration was perfectly gentle and natural. How then is it possible that the muscles could suddenly swell and greatly distend the integuments? The movement did not consist in twitching of the muscles—but in an absolute expansion of a circumscribed part of the abdomen, commencing gradually with a sensation of tremor, and returning by degrees to a state of flaccidity. The abdominal muscles are never so spasmodically affected as during a fit of eclampsia, but they then press on the abdomen, flatten it, and almost conceal the pregnancy. Could the movements depend upon volumes of air moving from one part to another, inflating the intestine, and acted upon by its muscular fibre? It has been supposed that a similarly deceptive sensation may be produced by an apposition of surface between the viscera and the abdominal parietes,—"so close is the apposition of the abdominal wall to the surfaces of the subjacent viscera, that in some cases of extreme emaciation, the

peristaltic movement of the intestinal canal is manifested by the *successive elevation and depression of the wall*, corresponding to the dilated and contracted portions of the intestine."* But this remark cannot apply to the case just related, as in that instance the abdominal coverings were loaded with adipose matter, and unusually thick. The birth of a child, an object of mental anxiety, would perhaps contribute somewhat in maintaining the unnatural action. It could not be satisfactorily ascertained whether the movements came on during sleep—but it is thought not. They ultimately ceased, or very nearly so.

The movements of a child may be concealed by a large tumour in connection with the gravid uterus.† In an example of this kind which I have already detailed, the sixth month of gestation had arrived before the existence of pregnancy could be ascertained; a very extensive disease of the fundus uteri necessarily confined the child to the lower parts of the womb, and restrained its movements. Aortal pulsations cannot be well confounded with the movements of a child. In a few very rare cases the movements of a living child have not been felt at any period either of pregnancy or labour—movements, sensibly imparted, perhaps, to the hand of the practitioner. This circumstance may depend upon an excess of liquor amnii, torpor of the uterus, excessive uterine action, and feebleness in the infant. Dr. Hamilton, in adverting to the deception sometimes practised by women who are anxious to conceal their real state, observes—" such is the dexterity of some individuals in these efforts, that they cannot be thrown off their guard, even by the unexpected application of the hand, previously

* Cyclopædia of Anatomy, Vol. I. p. 2.

† Dr. Montgomery's case is a striking illustration of this.—See Dub. Med. Jour. No. XVIII. Vol. VI. p. 418.

soaked in cold water. But after the completion of the seventh month, the infant, if alive, can, by pressure, or by the application of cold, be made to move, notwithstanding the efforts of the patient."* Pressure, together with the unexpected application of cold, (according to Gooch's directions,) usually produces a most decisive and satisfactory effect; and yet, practitioners, not deficient in sagacity, have sometimes been disappointed in their expectations of exciting the (perceptible) movements of a living infant, even when gestation has been considerably advanced. Circumstances are not always favorable for ascertaining the movements of the fœtus—the abdominal walls may be loaded with adipose matter, and the liquor amnii in excess. In case of doubt, far better to renew the examination at an early opportunity, than to continue it any length of time. A gentleman, whose opinion was officially required relative to a case of imputed pregnancy in an inmate of a charitable institution, persisted for so long a time in his examination, both *per vaginam*, and through the abdominal coverings, that the irritation had the effect of speedily inducing labour. In this instance, cause and effect were clearly combined, thus exemplifying Dr. Powers' doctrine in a very unexpected and unpleasant manner. In great torpidity of the uterus, the sensation imparted to the mother by the movements of a small fœtus will be distinguished but imperfectly—many instances of this might be adduced. Discharges of blood also render the mother less susceptible of the fœtal movements. I visited a lady at the close of pregnancy, and found her very desponding, under an impression that the child was dead, the movements having ceased (as she believed) seven days previ-

* Pract. Obs. p. 151.

ously, after a severe hæmorrhage—at this moment I detected its movements very distinctly, and rapidly delivered her of a living child.

It has been supposed that the fœtal movements in the last months of pregnancy bear some relation to the states of sleep and wakefulness—an opinion unsupported by evidence. Its movements are unquestionably influenced by impressions affecting the mother, even of a slight kind —the influence of medicine affords an example. In the case of a lady in whom the fœtal movements were very painful, the hyoscyamus had the effect of allaying them for nine or ten hours together, and this was noticed not once or twice only, but very frequently, including a period of several weeks. The movements of the fœtus may be almost paralysed by the full and almost unremitting action of the ergot of rye. With a view of inducing premature labour in a case of pelvic deformity, the ergot was administered at short intervals during several days, by which the uterus and membranes were rendered constantly tense, and the patient no longer feeling the child move, considered it dead, and became anxious for the discharge of the liquor amnii. Although I could not feel the child move, I distinctly heard its heart pulsate, and on the ergot being discontinued, the movements returned very sensibly, and the child was born living. I am very averse to administer this medicine, lest a dead child should be the consequence. Another source of deception consists in confounding inanimate with animate movements—an accidental change in the situation of a dead fœtus, for example: a woman who was most anxious for a living child, persisted that she felt the child move at the beginning of her labour, and yet the cuticle was entirely detached, and decomposition had far advanced.

The cessation of the perceptible movements of a fœtus,

whether sudden or gradual, certainly affords a strong presumption of its death. Some of the circumstances admit of explanation. In two instances which occurred in the same lady in successive pregnancies, the impulse of a fit of passion at the seventh month appeared to prove immediately fatal to the fœtus—the movements suddenly ceased, and in a few days the uterus expelled its contents. A very sudden cessation antecedent to labour, may be the result of a temporary cause affecting the fœtal circulation—the compression of a long chord, for instance, between parts of its own body—notwithstanding the protection which the liquor amnii is calculated to afford. When the movements cease gradually, the extinction of life may reasonably be inferred, although many of the symptoms of pregnancy may be yet present—the breasts possessing the characters of vital gestation, the abdomen not being sensibly diminished, and the patient unconscious of inconvenience. A short time ago I was called some distance to see a case of a female under circumstances exactly of this kind; the stethoscope was conclusive of the absence of all fœtal pulsation, and in ten days afterwards a seven months' child was expelled, still-born. The temporary cessation of the child's movements during labour, arise either from the premature discharge of the waters or the compression of the head within the bones of the pelvis—a matter of every day's experience. Of the signs which indicate the death of the fœtus, viewed negatively, a sense of dead weight falling to either side with the changing position of the body, though not peculiar to the dead fœtus, has been justly accounted one of the least equivocal. The movements of the fœtus having ceased, is in many instances the only direct indication of its death—a circumstance sometimes attributable to the placenta not having undergone decomposition. In other instances the

placenta decomposes rapidly, and occasions a very high degree of fever—the first evidence of the change. Vascular excitement of every kind is known to disturb the utero placental circulation—often producing premature delivery. In the state first mentioned, the fever is altogether symptomatic—the decomposed placenta, acted upon by the uterine absorbents, producing a specific effect. The change takes place in the following order:—The movements of the infant cease, the patient being at the moment perfectly well. Shortly, without any apparent cause, she is seized with severe feverish symptoms. In two or three days uterine contractions ensue—a putrid child and placenta are expelled, and from this moment the fever declines. We know but little of the circumstances which favor decomposition of the placenta—a very large portion of the mass may not only remain in utero after delivery without decomposing, but may be actually absorbed without the slightest evidence of such a change. If the mother has ceased to feel the child during a number of hours of hard labour, if no swelling of the scalp occurs—in primiparæ especially—and if the pulsation of the child's heart is not to be heard by the stethoscope, I think we may safely conclude that vitality has ceased.

Auscultation.—The subject of auscultation has become of great and increasing practical importance. Not only is the practitioner enabled to detect the existence of pregnancy when the ordinary signs utterly fail to afford him satisfactory evidence respecting it, but he is also enabled to acquire the most conclusive evidence of the vitality of the infant during the progress of labour. If, in a few rare exceptions, (convulsions for instance,) the practitioner is compelled to perforate the head of an infant he knows to be living, he is now relieved from the necessity of applying the forceps under a vague hope that the child may possibly at that

moment be alive, to the risk of the future comfort, or perhaps the life of his patient. The evidence afforded by the stethoscope not only relieves his own mind from much painful anxiety, but is the means of establishing him in the good opinion of others.

It seems that in 1819, Mayor, of Geneva, ascertained the fact that the pulsation of the fœtal heart could be heard through the abdominal parietes. His statements have been subsequently confirmed by Kergaradec and others; especially Dr. E. Kennedy, whose excellent work ought to be in the hands of every one practising midwifery.

In stethoscopic investigation, we have carefully to distinguish between the rumbling sounds in the intestines, and the action of the great blood-vessels—the former, as Dr. Hohl remarks, becomes gradually more indistinct after the seventh month of pregnancy, and perceptible only at the sides of the abdomen. I have in repeated instances distinctly detected the placental *soufflet* (on one or both sides of the uterus) and the pulsation of the fœtal heart, by means of the stethoscope, as well as by the naked ear. But the soufflet is common to several diseases, and is, therefore, an uncertain evidence of pregnancy, although Drs. Fergusson and Kennedy think otherwise. The placental sound, which cannot be heard before the fourth month, is said to be limited to a circle of less than two inches in diameter, and more distinct between each labour pain. This sound will be rendered obscure when the centre of the placenta corresponds with the centre of the fundus uteri on its posterior surface, and (as Dr. Rigby observes) will be scarcely perceptible when the placenta is attached to the uterine orifice. The double pulsation of the fœtal heart is, of course, conclusive of the presence of a living child within the abdomen. This

sound is said to be heard from the seventeenth to the twentieth week, but is very indistinct before the fifth or sixth month—at least I have not been able to distinguish it at an earlier period. The sound of the fœtal heart, according to the experiments and observations of Majendie, does not reside in the heart itself, but is caused by vibrations being transmitted from the heart through the solid walls of the thorax to the uterine and abdominal parietes. Thus, the sound is never with certainty heard before the fifth or sixth month, the period at which the thorax of the child begins to acquire some solidity; "previous to that period the occurrence of a shock is impossible, from the want of development of the child's thorax."* Dr. Hamilton tells us, that Dr. Spittall, by the use of the stethoscope on one occasion, detected pregnancy "so early as between four and four and a half months."† The fœtal pulsation varies from 100 to 170, according to the age of the infant, and is quickened by its movements. The sound, observes Velpeau, resembles "the ticking of a watch heard through many folds of linen"—or through a pillow on which the head rests. It is heard just below the umbilicus, more or less towards either iliac region, but "it will be heard in different points of the abdomen, according to the position of the woman, at the most dependent part of the uterus in which the fœtus will be placed from its specific gravity."‡ The sound extends over a surface equivalent to four fingers in breadth, or about four inches square; but this will be regulated by the absence or presence of the liquor amnii. The pulsations diminish in frequency, but increase in strength on the

* Lancet, 14th Feb. 1835, p. 697.

† Pract. Obs. p. 313.

‡ Lond. Med. and Surg. Journal, No. CCXLI. p. 47.

evacuation of the waters, as well as under the action of the uterus *prior to the membranes giving way.* During the powerful pains which accompany difficult labour, the pulsations will diminish numerically in proportion to the compressed state of the brain—increasing again in proportion to the diminution of uterine action. It is possible that the pulsations of the fœtal heart may be sufficiently slow to synchronize or nearly so with the maternal pulse when much excited, and thus favor a supposition that the child is dead. The pulsation may also be too feeble to be communicated to the ear. In a case of Cæsarean operation (before mentioned) the fœtal heart could not be heard to pulsate, notwithstanding a most minute examination by several practitioners. The patient persisted, however, that she felt the child move, and it was extracted alive. The waters had been evacuated a long time, and the pressure which the uterus made upon the body of the child, I conclude, rendered the pulsations of the heart too feeble to be distinguished. The value of ausculcation is clearly seen in the annexed narrative:—"M. Bouillaud was called in to a female scarcely arrived at the seventh month of her pregnancy, and attacked with a severe inflammation of the lungs. Her infant was living. By means of auscultation the noises of the heart of the fœtus were heard, which was beating 170 times in the minute. But the signs of premature labour increased, and quickly M. Bouillaud withdrew a fœtus which gave no signs of life. 'The patient having ceased,' says this celebrated physician, 'to feel her infant move for many days, it might have been supposed that it was really dead before delivery, and thus neglected all proper means to call it to life. But having heard the pulsations of the heart some minutes only before delivery, I was anxious to rub it, plunge it in a bath slightly exciting, and inflate air into its mouth,

and after having prolonged for a sufficient length of time these manœuvres, I finally restored the infant to life; it struggled, cried, and lived to the end of the day.' "* Dr. Ryan most candidly says, "I have tried auscultation in several cases of pregnancy without detecting either the placental murmur or fœtal circulation;"† and Capuron and Velpeau admit the same.

State of the Funis.—If the funis has really ceased to pulsate, animation must be either suspended, or what is more probable, life absolutely extinct. The want of pulsation in the cord may be absolute or only apparent. It may have become feeble by the partial pressure of the child's head, or by the general contractions of the uterus. I recollect an instance of funis presentation in which no pulsation whatever could be felt in the morning, and artificial delivery was, in consequence, abandoned; and yet in the evening, the cord pulsated most distinctly, but the uterine action was then too great to allow version to be undertaken. It is very material that the funis should be examined both during pain, and also in the absence of pain. During a powerful pain the pulsation is usually slow and feeble—in the absence of pain, it is frequent and strong. When the cord is bulky, and deformed by gelatinous deposition, and the prolapsus is slight, a feeble pulsation is not readily distinguished. It is of the last importance that the examination be made with the utmost accuracy, since our practice will be materially regulated by the result.

Looseness of the Cranial Bones; Puffiness of the Scalp; Desquamation of the Cuticle; Changes in the Fœtal Presentation; and sundry Constitutional Symptoms.—

* Fitzherbert's translation of Raciborski on Auscultation, p. 145.

† Lond. Med. and Surg. Jour., No. CCXLI. p. 47.

As an indication of the death of the fœtus, great reliance is placed on a very loose state of the bones of the head, and certainly this constitutes one of the least equivocal of the signs enumerated by authors. But unless pregnancy be far advanced, the immature and imperfectly ossified cranium may communicate to the finger a deceptive sensation. Other signs, (mentioned by Dr. Rigby,) which indicate the death of the child, and arise during labour, are crepitus and emphysema of the scalp—want of tumefaction over the presenting surface—the absence of swelling and lividity in a case of arm protrusion—flaccidity, and the want of pulsation in the prolapsed chord—a motionless state of the tongue on passing the finger into the mouth; and complete flaccidity of the sphincter ani in presentation of the nates. The discharge of meconium in any presentation, except the nates, implies a degree of pressure which will probably destroy the fœtus, unless its expulsion is near at hand. Mere puffiness of the cranial coverings may be occasioned by the difficult transmission of the head through the pelvis, and emphysema must be distinguished from that peculiar tumefaction of the scalp—(corresponding to the pressure of the os uteri)—itself an indication that the child is living. Life, however, may have ceased *subsequent* to the tumefaction taking place, so common in cases of first labour. A *general* detachment of the cuticle is an unequivocal proof of vitality having ceased. The arm of a living child will be swollen and livid when it is protruded through the vulva, and the uterine action is at all powerful—but the length of time it may remain in this condition after life has ceased, ere decomposition begins, I am unable to determine. A motionless state of the tongue in a presentation of the face may be occasioned by congestion, or a temporary interruption to the circulation; but a flaccid state of the

sphincter ani is very strongly presumptive of the cessation of life. Amongst the constitutional evidences which, on the part of the mother, denote the extinction of fœtal life, and arise before labour—are frequent rigors, sallowness of the complexion, and several varieties of gastric and intestinal disorder, but these are entitled to little reliance, and will be influenced mainly by the amount of individual susceptibility.

Still-born Children.—No subject in midwifery has been less investigated than the circumstances connected with still-born putrid children—the extinction of life preceding the accession of labour. Allusion has already been made to the circumstance of a woman giving birth to six or seven dead children in succession at the full term, both parents being *apparently* free from syphilitic taint; but in the generality of cases the circumstance may be traced to a taint of the system which can be removed only by mercury. In speaking of the frequency with which some women give birth prematurely to dead children, I wish to be understood as not referring the occurrence to deformity of the pelvis—difficult labour—or any of the *ordinary* causes, whether these can be traced to the mother or to a disease of the ovum; but to causes of a specific kind—the poison of syphilis, for instance. Collins' sentiments and experience on this subject are worthy of notice:—"It is difficult (he observes) to assign a reason why so *great* a proportion of still-born children are expelled in a *putrid* state. Where the labour is very protracted, the cause is obvious; but in the great majority of such instances this is not found to be the case; nor is the child born *putrid* in the greater number of tedious labours. We have no doubt, from the most attentive observation, the cause of death of the child in utero, is in numerous instances owing to a venereal taint in the mother's constitution, from the husband in all probability having been

imperfectly cured of this disease previous to marriage, yet the mother at the time may not have any marked symptom of syphilis. In the hospital we have had repeated opportunities of witnessing such cases, where no doubt could exist as to the mother being affected as above described. Of the 16,654 children born in the hospital during my residence, 1121 were still-born; *five hundred and twenty-seven* of these were *putrid; two hundred and ninety-three* of the 1121 were expelled prematurely. *Sixty-two* of the premature children were not putrid."* Infants born in a state of decomposition are usually retained in the womb a number of days after death. Lecieux, of the Hospice de la Maternité, states, that the ordinary period of the residence of the fœtus in utero, *after it has ceased to live*, varies from five to twenty days; but the length of time the fœtus may be retained *after* decomposition has commenced is not specified. As a general law, subject to great variation, decomposition will speedily succeed the destruction of the vital principle. The rapidity with which the process takes place during labour and subsequent to the discharge of the liquor amnii—judging from two of Collins' cases—is far greater than I could have supposed. In case 461, the patient "was forty-eight hours in labour of her first child; it was putrid when expelled, although alive at the commencement of labour, as indicated by the stethoscope." In case 1085, "the labour lasted fifty hours. Twelve hours previous to the birth of the child the heart had ceased to act; as there was no urgent symptom, it was left to the natural efforts; when expelled, there were evident appearances of commencing putrescency." Decomposition, arising from *ordinary* causes, is liable to be confounded

* Practical Treatise, p. 460.

with a diseased state of the fœtal textures from syphilis. According to Dr. Wallace,* "the appearance of these (syphilitic) infants is almost uniformly the same: their colour is very peculiar—it is a light brown, or a dirty fawn-colour. Their flesh is very soft—their cuticle peels off with the greatest ease. It is believed that infants born in the state which I have described have lain dead a long time *in utero* before expulsion, and that, in fact, they are putrid; whereas it is my conviction that this state is the result of disease, or of vital morbid action, and not of physical changes." Dr. Wallace does not say that the cuticle desquamates from the body of a living infant, however feeble or diseased it may be at its birth.

Collins makes no allusion to the state of the fœtal textures independently of putrefaction. There is a circumstance in connection with still-born syphilitic children which indirectly supports Dr. Wallace's views—viz. the total want of evidence of the infant's death until shortly before the accession of labour, the mother then becoming unconscious of the usual movements. In three instances, at least, I can positively declare this to be the case. A young woman, affected with syphilis soon after marriage, whom I attended in three successive deliveries of premature and still-born children, did not experience on any occasion a single symptom (excepting the one just stated) indicating that vitality in the fœtus had ceased. Two of the infants were quite putrid; but neither in these nor in similar cases have I examined the diseased textures so as to give an opinion with confidence respecting the pathology maintained by Dr. Wallace.

From the circumstances under which life is extinguished,

* Lancet for 7th May, 1836, p. 194.

it may be inferred that up to an early period the growth and nutrition of the fœtus is but little affected—and that when the child has acquired a size common to the sixth or seventh month, the changes wrought upon it through the placenta are unequal to maintain its vitality unimpaired. In proportion as the powers of elaboration increase, the fœtus seems to become daily more dependant upon circulation, and to absorb a virus from the maternal system innocuous to it in the first weeks, and yet occasioning its premature expulsion. At length, however, after a succession of dead children, a living but feeble offspring is expelled at the full term. Whatever views may be entertained respecting the treatment of syphilis in its primary form, it is a matter of certainty that the taint in question can only be removed by mercury. "We have known (observes Collins) several instances of females having given birth to four, five, or six *putrid premature* children, who, after the mercurial treatment had been adopted, gave birth to living children." It is elsewhere stated,* that "whether the leaven of syphilis remains in the system or not, this treatment should be postponed (unless under a pressing emergency) until after delivery, abortion having very frequently succeeded the specific action of mercury." On reconsidering this doctrine, and comparing it with more extensive experience, I now greatly doubt the propriety of postponing the mercurial treatment in any instance where the syphilitic taint can be proved to exist; judging from the history of the case, in connection with the birth of putrid children. It appears to me that the risk of producing abortion by the action of mercury is not to be compared with the poisonous disease (and its effects) which the infant is almost cer-

* Treatise on Uterine Hæmorrhage, p. 97.

tain to imbibe from a constitution contaminated with syphilis.*

Where the syphilitic taint is known to exist, I am persuaded that mercury, to be successful, must in many cases be given both to the husband and the wife—its influence being gradual and long continued. A short mercurial course has utterly failed to remove that particular vitiation of the habit upon which the death of the infant is attributable.

* This opinion seems to derive support from the well-known good effects of mild doses of mercury in cases of infants affected with syphilis. A number of these might be cited, but I will confine myself to a single history:—A woman, whose accouchment I attended, had her breasts drawn by a female much employed in this duty. The nipples became sore, and degenerated into deep ulcers—she nevertheless nursed the infant. Presently the infant grew very thin, ulcerations appeared at the verge of the anus and a large tumour in the abdomen, in the situation of the spleen. Ordinary treatment having failed, I placed the infant under a gentle course of mercury. After the lapse of about three months the ulcerations healed—the abdominal enlargement disappeared, and the health seemed restored. During this period the mother's nipples gradually healed, but presently the throat, nose, labia pudendi, and labia oris ulcerated—the iris inflamed, and large blotches appeared over the body. The husband now contracted the disease—his genitals ulcerated, and his body was covered with blotches. Were it necessary I could mention similar cases in other females, whose breasts had been drawn by the same person; and several practitioners of this place have witnessed equally striking instances of the disease derived from the same source. The number of cases is considerable—one of the infants died; and in several instances both the husband and the wife have been most severely affected. In these and other syphilitic cases the primary ulcers, wherever situated, may heal independently of the use of mercury, thus obscuring for a time their real nature; but the secondary symptoms cannot be mistaken. Whether the disease is genuine syphilis, or a morbid poison closely simulating syphilis, I am unable to say; but it gives way only to the treatment by mercury.

APPENDIX TO SECTION VI.

The above section was printed before I had perused the chapter on inversion of the uterus,* in the practical treatise of Mme. Boivin and Mons. Dugès. Three cases are there mentioned, in which the uterus, in a state of inversion, was, in each instance, restored at a late period after the occurrence. These cases are contained in the following quotation :—" How long after delivery may the replacement be attempted with the hope of success? Certainly, the sooner it is done the better; but the opportunity is not always in our power: sometimes the operation must be postponed; when, for instance, the uterus is inflamed, and covered with gangrenous spots, either in consequence of its contact with the air, of its strangulation by its cervix, or of external violence. Lauverjat and Hoin began, in such circumstances, with the use of antiphlogistics, baths, &c.; afterwards, they succeeded at reduction, one of them on the tenth or twelfth day after delivery, the other on the thirteenth. Chopart also reduced the uterus in a case in which it had been inverted for eight days, offering marks of gangrene, and appearing, as it is said, sphacelated. The recovery in these three cases was rapid."

Mr. Heming, the highly respectable translator of this treatise, alludes to the fact of Sir C. M. Clarke having found

* Pract. Treatise, Heming's translation, p. 125.

very little difficulty in replacing the inverted uterus *post-mortem*, in cases to which he had been called in consultation—"all resistance being removed by the weakened state of the patient previous to death." From these considerations, Mr. Heming suggests "the propriety of bleeding to actual syncope, as Dewees has done, in cases of inversion of the uterus unattended by great hæmorrhagy, and of attempting reduction under the influence of that state of the system."

It will be seen, on referring to page 229, that the successful result of my own case is ascribed to the little resistance which, from the previous hæmorrhage, the uterus made to the efforts employed in its restoration. In the absence of hæmorrhage, or a material degree of debility, bleeding might be practised, as in cases of hernia, though (considering the circumstances of every patient recently delivered) not to the same extent. The subject of inversion is treated in a more comprehensive manner in the work here alluded to, than in any other which I have yet had an opportunity of consulting.

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ERRATA.

Page 146, 12 lines from the top, *for* the uteri, *read* the os uteri.

—— 149, near the bottom, *for* dystocia, *read* dystocea.

—— 152, *for* London, (Blundell's Lectures,) *read* Lancet.

—— 161, 12 lines from the bottom, *for* 1836, *read* 1835.

—— 236, 13 lines from the top, *dele* the word "only."

—— 237, *for* unfrequent, *read* infrequent.

Substitute lochia in several places *for* lochiæ.

REFERENCES OMITTED.

Page 96. See a case of labour obstructed by the bladder.—Corvisart's Journal de Médecine, Vol. XXV. p. 398.

—— 106. See remarks on elongation of the urethra.—Davis' Oper. Midwifery, p. 131.

—— 241. See a case (by Mr. Fox) of parturition of a full grown child and a small blighted fœtus, five inches long. "My patient (observes Mr. F.) expected to be confined at least three months before the event occurred."—Lancet of 17th September, 1836, p. 857.

—— 266. See Mr. Langstaff's case of tapping during pregnancy in a case of ascites, Med. Chir. Trans. Vol. XII., to follow a note at the foot of the page.