amination; and, according to what he finds, he will order injections with acetate of lead, with alum and zinc, or with one of the infusions of vegetable astringents that Dr. Wiltshire has recommended in the third number of the *Journal of Obstetric Medicine*. If, at the end of the puerperal time, a woman remain weak, notwithstanding a fair amount of food, of stimulus, and of tonic medicine, if she cannot stand or walk a little without bearing-down sensations and back-pain, if she have still a red or a muco-purulent vaginal discharge, it would be folly on the part of an obstetrician to permit connexion, and to merely recommend change of air, without ascertaining what is really the matter with his patient. It is a great point to get a few months of rest from menstrual orgasm for a womb that has recently suffered from inflammation, or shows a leaning thereto; so I encourage nursing, provided the child do not suffer from lack of maternal milk or from its poverty.

3. It is the absence of some definite understanding between the profession and the public respecting the rules to be adopted after abortion, that renders it a fertile source of metritis. It is well understood by all women placed above the obligation of manual labour, that the month following parturition should be a period of convalescence, during which the wife should sleep apart from her husband. There is no similar understanding with regard to abortion; women think it right to get about so soon as they can possibly do so, and thus encounter influences that often check the process of involution. I am convinced that uterine inflammation would be frequently prevented by our persuading the public that a month's convalescence is not too much for even a moderately bad miscarriage, during which time matrimonial sequestration should be enforced. Even when there be no *post partum* flooding or signs of severe pelvic inflammation, and in ordinary cases of miscarriage at from three to five months, I should advise a practitioner to act very much as he would after a confinement. His object should be to keep his patient in bed or on the sofa for a few weeks. He can do so by talking seriously of miscarriages being worse than confinements, and of the great danger of one abortion being followed by others. There is often a considerable amount of cervical inflammation and of vaginitis about an ordinary miscarriage; so, as a rule, a miscarriage should be treated as a case of inflammation. Rest in bed is the most important means of cure. Warm linseed-meal poultices to the abdomen are most useful when they do not too much increase the blood-flow. Linseed-tea or poppy-head vaginal injections are very useful during the first week, and then injections made by adding one drachm of laudanum and of acetate of lead to the pint of tepid water. Supposing this to have been done, and the patient to have gradually resumed her usual mode of life, if there be then back-pain or pelvic pain on slight exertion, a discharge staining the linen yellow, and debility in spite of tonic treatment, then it behoves the medical man to warn the patient and her friends that he suspects that his best efforts to ward off metritis have only been partially successful, and that he ought to carefully examine the patient, to ascertain what is the real state of the case.

You all know how to treat internal metritis, and inflammation and ulceration of the cervix; the treatment of defective involution is far less satisfactory, so it must not be passed over; and, in the first place, unless it be detected and cured, in the three months that follow parturition, you will greatly increase the difficulty of doing so. It may be cured by a subsequent pregnancy, but not always; and it should be cured at once, if possible, for there is no telling what may occur to a woman with the body of the womb large enough for the sound to enter to a depth of from four to five inches. If there be the slightest doubt of active congestion in the womb, I apply leeches to the cervix, I give ergot, I order the lower part of the abdomen to be painted once a day with Mr. Marshall's oleate of mercury, and I always recommend acetate of lead injections, twice a day, if the mucous membrane be congested or excoriated, once a day if it presents nothing amiss. I do so because I know health to be just as contagious as disease, and that healthy action passes from a superficial to the underlying tissues; and my belief in the great value of well-made, long-continued vaginal injections is not in the least diminished by the little value allowed to them by other authorities. When defective involution has a longer date, in addition to measures previously mentioned, I try a cold water abdominal bandage, rather tightly applied; iodide of potassium internally, and tincture of iodine to the cervix: moreover, I do not discountenance connection, but it is obviously better to prevent the call for these tardy remedies, by following the rules I have laid down.

It is by this judicious management of lying-in women, and of those who are recovering from abortion, that you will persuade the womb to resume its proper size; that you will allay uterine irritation, reduce congestion, heal cervical lacerations, cure placental ulceration, check the recurrence of abortion, and thus stamp out uterine inflammation in its origin, or greatly diminish its acuity and duration.

ON THE ANTICIPATION OF *POST PARTUM* HÆMORRHAGE.

By LOMBE ATTHILL, M.D.,

Fellow and Examiner in Midwifery, King and Queen's College of Physicians; Obstetric Physician to the Adelaide Hospital, Dublin; Vice-President of the Dublin Obstetrical Society.

THE BRITISH MEDICAL JOURNAL for September 27th contains Dr. Whittle's paper on The Anticipation of *Post Partum* Hæmorrhage, which, though read just before the hour at which the Section adjourned, was listened to with great interest, and at the conclusion of which a short but animated discussion followed—a discussion in which the lateness of the hour when it occurred prevented several members from taking a part, and which unfortunately has not been published. The reason why this paper was listened to with such attention is obvious: every practitioner present, from personal experience, dreaded *post partum* hæmorrhage; and, while admitting the value of transfusion in extreme cases, rejoiced at the prospect of not being obliged even to think of such a troublesome, often difficult, means of saving life. Indeed, more than one member, during the debate which had previously taken place on transfusion, asked, "Could no means be suggested for rendering this operation unnecessary, by preventing *post partum* hæmorrhage from occurring?" Dr. Whittle's paper professedly is a reply to these queries; but, while admitting the value of his observations, it is, I think, important that the subject should be discussed more fully; otherwise I fear that many may be led into what will prove, in some cases at least, but a false security, by relying on one mode of treatment which, while often most valuable, is as often inefficacious.

In the first instance, I may remark that the value of the administration of ergot as a preventive in cases of anticipated *post partum* hæmorrhage has been long taught in the Dublin School of Midwifery. Not a session passes in which the practice is not impressed on the classes attending our lying-in hospitals. And the question as to the means to be adopted in cases in which *post partum* hæmorrhage may be expected, will be found over and over again in the printed papers issued by myself and other examiners to candidates seeking the licenses of the College of Physicians.

The questions I would raise in the present instance are these:—

I. What are the causes most commonly favouring the occurrence of *post partum* hæmorrhage?

II. Having ascertained these, can we prevent their occurrence?

III. Admitting that the symptoms enumerated by Dr. Whittle are frequently indicative of the occurrence of *post partum* hæmorrhage, is the administration of ergot always sufficient to obviate the danger; it being borne in mind that I speak only of hæmorrhage occurring after the birth of the child.

Leaving out of consideration for the present those cases in which the placenta is morbidly adherent, the causes most commonly producing *post partum* hæmorrhage are, I think, these.

1. Exhaustion of the uterus.

2. Exhaustion of the nervous system of the mother.

3. The too rapid emptying of the uterus, whether as regards the fœtus or placenta.

4. The failing to give due support to, and the injudicious manipulation of, the uterus after the expulsion of the placenta.

These, in my opinion, are the most common causes favouring the occurrence of *post partum* hæmorrhage; to these other exceptional ones may be added, such as laceration of the cervix, a cause, I am satisfied, often overlooked; the existence of fibrous tumours embedded in the uterus, and a varicose condition of the cervix uteri. These, however, it is not my intention to discuss; they are foreign to the subject in the limited view which Dr. Whittle's paper embraces.

Foremost in the list, the most important, because the most common cause of hæmorrhage occurring after the birth of the child, is exhaustion of the uterus. The uterus is an involuntary muscle, called into action only for a special purpose, and capable of continuing its action but for a limited period. If it fail within a moderate time to expel its contents, it becomes exhausted; the pains, to use Dr. Whittle's words, "become short, quick, and cease suddenly", because the muscle, being exhausted, is unable any longer to culminate into that powerful tonic contraction, which is so distinctive a feature of a perfectly normal labour pain; the intervals too, as pointed out by Dr. Whittle, are prolonged, because the exhausted muscle is unable soon to contract again. Dr. Whittle's explanation of the cause of hæmorrhage in such cases is perfectly correct; "after the child is born, a relaxation follows;" after the placenta is expelled, "the uterus again relaxes, continuing the same tendency which existed before the delivery of the child."

2. But, in not a few women, exhaustion of the nervous system generally, is the first and most prominent feature. The patient complains of extreme weariness and languor, and, instead of resting in the intervals between the pains, is restless, tossing about from side to side, while the pains, at first normal, assume, subsequent to the occurrence of the symptoms just indicated, the short, indecisive character pointed out by Dr. Whittle.

3. But hæmorrhage, and that, too, of an alarming character, is met with in cases where the labour has been so rapid that no time has been afforded for the development of any premonitory symptom, the muscular tissue of the patient being so relaxed, that no opposition is offered either by the os uteri or by the perineum, to the expulsion of the child; one or two sharp, powerful pains suffice to terminate the labour; but relaxation of the uterus often subsequently occurs, and hæmorrhage follows. In like manner, I have repeatedly seen hæmorrhage follow rapid delivery effected by the forceps; the operator having failed to afford sufficient time to the uterus to contract. Again, hæmorrhage frequently follows the too rapid expulsion of the placenta. Indeed, I am satisfied that undue haste is in general shown by many practitioners in the removal of the placenta.

4. Lastly, hæmorrhage may occur from want of care in the management of the uterus subsequent to the complete emptying of its contents. Doubtless in some patients the uterus contracts so firmly and so perfectly that there is no need of fear; but in very many this is not the case. The abdominal walls distended by the size of the uterus, now that that organ has become so reduced in bulk, fail to afford it any support. The old-fashioned but eminently useful binding judiciously applied is most valuable; and its application should never be omitted; in some cases, a pad slipped under the binder after the third pin has been inserted is useful; but I have so often seen it injudiciously placed that I hesitated to recommend its use; the more so as by hiding the outline of the uterus, hæmorrhage into the interior of that organ may take place, and may for some time be undetected by the attendant.

II. Being aware of the causes most likely to produce *post partum* hæmorrhage, can we not guard against their occurrence? I believe we can. Thus we can, by the timely use of the forceps, prevent the uterus being exhausted. They should be used before the symptoms enumerated by Dr. Whittle occur, or, if they have occurred, be applied the moment such are recognised. Their use does not contraindicate the exhibition of ergot. I frequently give ergot and apply the forceps simultaneously; but I should be sorry to rely on ergot alone; often it acts most beneficially; as often it fails to produce any effect whatsoever; besides, it is essential to bear in mind what experience has abundantly proved, that once its specific action on the uterus has been established, the death of the fœtus speedily follows—a fact established so incontestably, that ergot has well nigh altogether ceased to be administered by Irish practitioners, with the view of hastening delivery. But use the forceps judiciously, and you will seldom have any hæmorrhage. Here I would, however, protest, as I did at the meeting of the Association, against the injudicious and indiscriminate use of the forceps. I believe, judging from published returns, that not a few practitioners apply the forceps simply to save time and to free themselves from an irksome delay. Lamentable consequences certainly must follow such a practice.

The occurrence of *post partum* hæmorrhage, the result of relaxation of the uterus depending on nervous exhaustion, is fortunately less frequently met with. It is much more difficult to anticipate, and, therefore, to treat, than the preceding form. The moment such symptoms as I have enumerated exhibit themselves, delivery should be effected with the least possible delay by means of the forceps. Ergot here is still more unreliable than in the previous class of cases. Strychnia promises much better effects. I generally combine it with ergot, giving ten drops of the liquor strychnice (B.P.) with the first dose, and five with a subsequent one, if necessary. I can confidently recommend this combination.

Abnormally rapid labour, when it occurs spontaneously, cannot be prevented. The condition of the uterus in such cases, however, requires subsequently careful watching, as a marked tendency to relaxation of that organ, and consequent danger of hæmorrhage, exists; but the too rapid extraction of the head, when the forceps are employed, indicates a want of judgment on the part of the practitioner, which is highly to be reprehended; he should imitate nature and give full time for the uterus to contract as its contents are being expelled. If this caution be not exercised, *post partum* hæmorrhage is nearly sure to occur; hence an additional argument against the unnecessary employment of the forceps. Again, the same undue anxiety to terminate the labour which induces the needless application of the forceps often influences the treatment of the third stage of labour. Doubtless, the contraction of the uterus, which expels the body and legs of the child in a perfectly normal labour, frequently detaches the placenta also, but it does not in

general expel it from the uterus; on the contrary, the placenta remains in it for a time, and, acting as a foreign body, stimulates the uterus to contract still more and expel it into the vagina; time should, therefore, be given for this purpose. A skilful practitioner can at any moment, by well directed pressure, expel the placenta (traction on the funis is always objectionable), but he should not exercise this power till time be given to allow the uterus to contract; unless, indeed, the occurrence of hæmorrhage, or of some other urgent symptom, renders the removal of the after birth essential.

Finally, the third stage being terminated, hæmorrhage may be kept up by a portion of the membranes being left behind. An accident most likely to occur if the after birth have been removed by traction, by neglecting to give due support to the uterus by the application of the binder, or by the constant "kneading" of the uterus, which, by continually expelling the coagula which form round the orifices of the sinuses, induces a constant exudation of blood from them.

III. That the symptoms enumerated by Dr. Whittle are indicative of a tendency to the occurrence of hæmorrhage, will, I think, be admitted; but, seeing that the actual causes producing the hæmorrhage are numerous, it is evident, even did not experience prove it, that hæmorrhage may supervene without their previous occurrence. But of more importance is the question, Is the administration of ergot always sufficient to obviate the occurrence of *post partum* hæmorrhage when administered in full doses some time previous to delivery? I unhesitatingly affirm that it is not; and I look on the unqualified assertion that it is, as calculated to bring into disrepute an agent of the greatest value. It may restore energy for a time, but it cannot give tone to an exhausted uterus. It cannot, and it does not, restore to energy the exhausted nervous system of the patient; it will not counterbalance the ill consequences likely to follow the too rapid emptying of the uterus, or the injudicious treatment of that organ subsequently. In fine, I would conclude by saying, give ergot in cases of labour in which you suspect that *post partum* hæmorrhage is likely to occur, but do not rely on it exclusively. When symptoms indicating that the power of the uterus is flagging show themselves, prevent that exhaustion becoming excessive by the use of the forceps; when you do apply them, use them as *aids* to the uterus, not as *substitutes* for its action. Give the uterus time to contract after the birth of the child, and to throw off the after-birth, keeping up in the interval firm pressure on the fundus with the left hand; then support the abdomen by the good old-fashioned binder, and the risk of *post partum* hæmorrhage will be small. I do not mean to say that by the adoption of this or any other treatment *post partum* hæmorrhage will be entirely averted; that is impossible; but the risk of its occurring will be reduced to a minimum.

ON INFLAMMATION.

By WILLIAM ADDISON, M.D., F.R.S., Brighton.

RETROGRESSION of vascular tissue to its primitive embryo state for purposes of repairation is a proposition based on microscopical researches. Permit me to point out some surgical facts of healing in accord with, and to indicate some suggestions.

But, first, a few words on embryo-growth and its chief hindrances. About twenty years ago an American gentleman, Mr. Cantelo, exhibited a hydro-incubator in London; he furnished me with eggs for examination, permitted me to work in his exhibition-room, and allowed me to question him with respect to his hatching experiences. He told me he hatched his eggs at 106 deg. Fahr., and was very careful to preserve this temperature throughout the process.

"The more accurately," he said, "you keep the heat at 105 or 106 deg., the more successful will be the incubation, and the stronger the produce. An egg begun at a wrong heat is always injured, and the longer it is kept at that wrong heat, the more likely is the chick to be spoiled. The germ will develop at any heat between 95 and 110 deg., but at either of these extremes the chicks, if they do not die within the shell, are delicate little things not worth rearing for the market."

"The germ of a chilled or half-frozen egg is not prevented from developing, and the young chicks are hatched at the usual period; but they are never strong, many pine away and die within a fortnight, and the survivors never make fine chicken."

To see the effect of air upon the embryo, I have opened the shell of eggs at various periods of incubation: thus, on one occasion, I carefully opened an egg of seventy hours' incubation. The parts around the embryo were covered with innumerable blood-vessels, and the embryo heart was seen beating vigorously. In this state, a small thin watch-glass was placed over the broken part of the shell, and the egg returned to the warmth from which it had been taken. The following