hours. Then, making sections of each in the usual way, I have satisfied myself that there was no greater loss of epithelium in saliva than in water, and the same result has been given when the experiment was conducted at a temperature of 100° F. as at the ordinary temperature of a room. Whatever effect, therefore, is to be attributed to want of saliva, it is not by loss of any solvent action.

Other causes have been shown to conspire to make the tongue coated, but it would seem that want of saliva by itself will do this. A boy was brought under the care of my colleague, Mr. Rouse, with, as was believed, a fracture of the base of the skull. He had left facial paralysis, and an injury apparently of the chorda tympani on this side. The tongue was normally protruded, but the left half, sharply defined by the median line, was dry and presented a milky appearance. The suppression of saliva was probably the cause of the coat, though other effects of nerve injury could not in this case be absolutely excluded.³ I will take a simpler case reported by Mr. St. Clair Buxton. A lady had mumps, after which her mouth became quite dry. The tongue, gums, cheeks, palate, and pharynx presented a "fearfully dried up state." The tongue was thickly coated with a tough, brown fur, which was horn-like and so hard that it sounded under a blow like the cover of a book. After ineffectual treatment by other means, the salivary ducts were probed, the glands galvanised, and the secretion restored. In the course of the following day, Mr. Buxton tells me, in a letter for which I have to thank him, the fur became soft and spongy, though it had previously been as hard and dry as wood; in a week all had cleared off, and in a fortnight or three weeks the tongue was perfectly normal. The fur stripped off in patches, leaving a rather raw surface underneath, which gradually assumed a natural appearance. It has been shown how closely the conditions of furring and encrustation are associated with deficiency of saliva, and inferred that these are largely the physical results of the ensuing dryness; the normally wet surface is soft and liable to wear; deprive it of moisture, and it becomes horny and resistant of it; besides which, with no saliva solid food is unacceptable. So that while induration is created attrition is reduced; and in general terms, and up to a certain point, it holds good that the less saliva the more coat.

But there is another relation between the secretion and the covering, and that of an opposite kind. An interesting case of lasting suppression of saliva was published by Mr. Rowlands, of Great Crosby,⁴ and I have to thank him for further particulars by letter. Ten years before the date of the report, a lady, aged 60, underwent sudden and complete suppression of the saliva, after a nervous shock. Since this the mouth and tongue have been perfectly dry. The tongue now presents the appearance of a piece of dry raw beef; it is perfectly clean, and intercepted with superficial fissures; no papillæ are to be seen with the naked eye, though to be made out with a lens. Here is a typical red, dry, smooth tongue, sequent, and probably consequent, upon simple deficiency of saliva. It is scarcely necessary to revert to the red smooth tongue of disease, of which deficiency of saliva has been shown to be a constant, if not a necessary, attendant. These experiences, showing coating and denudation from the same cause, are not so contrary as at first sight appears, for many smooth tongues were formerly rough. The difference is largely one of time: furring and encrustation are early results of want of saliva, denudation a late result. It has been shown that with the bare tongue of constitutional disease two agents are commonly present; want of saliva, and failure of general nutrition; but that want of saliva by itself is able to cause bareness is shown by such cases as that reported by Mr. Rowlands. Of the *modus operandi* I was long in doubt. The epithelium is fed by the blood, not by the saliva. Why does it waste in the absence of the non-nutritive fluid? Conversation with my colleague Mr. Bennett has, I think, given the clue. The epithelium, though not nourished by the saliva, needs to be kept moist by it, otherwise it cannot assimilate what is provided by the blood. Be this as it may, a general law may be formulated; the tongue tends to become smooth whenever for a long time it is kept dry from deficiency of saliva, or possibly from other causes.

³ For this observation I have to thank Mr. Peel Davies, then house-surgeon.

⁴ The *Lancet*, vol. i, 1888.

MRS. FLORA SCHLAMM, of New York, aged 102, is said to have about 130 descendants. Her great-grandfather lived to be 120.

THE PATHOLOGY OF ABORTION IN RELATION TO TREATMENT.¹

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It is not my intention to enter fully into the wide and complicated field of study as found in pathology relative to abortion, but simply to bring before your notice three specimens, which may interest as well as show the importance of a careful examination of the discharged clots in every case of abortion. I am afraid it is too much the custom to take the patient's description of the nature of the discharge, which is generally summed up as "a bleeding," or a "something that has come away."

Now, looking at the first two specimens, we see at a glance that there is a great difference in their appearance, and it is in being able to appreciate the reason for this that the accoucheur can carry out the proper treatment, and be alive to the dangers which may attend the one case rather than the other. Of course, in the early stage of abortion, say at the first month, there is the absence of the usual signs of pregnancy to guide us, and women them-

Fig. 2.—Embryo, sixth week. A. villi of chorion; B. umbilical vesicle with portion of amnion to the left.

selves frequently look upon the discharge simply as a period. If the ovum be discovered, it is found to be very small. In the second month, however, the absence of the last period, as well as the character of the pains, generally makes the patient suspect pregnancy.

If the discharged clots are carefully examined, the embryo will usually be found surrounded by its membranes, the amnion and chorion with its villi, some of which are found penetrating the decidua reflexa. This is well seen in Specimen I, in which a separation has been effected at the circular zone, marking the junction of the membranes of the ovum with those of the uterus, which, instead of following the ovum in its passage, remain attached to the uterus. You see the appearance of the discharged ovum is that of an ovoid mass, the surface smooth and rose-coloured, unless where the villi are exposed. These in the specimen are seen floating in the fluid. An incision in the wall has

¹ Read in the Section of Obstetrics at the Annual Meeting of the British Medical Association held at Dublin in August, 1887.

cut successively the decidua, the chorion with its villi, and the amnion, thus allowing a full view of the cavity with the suspended embryo. At times the decidua gets divided, and so allows the enucleated ovum to escape, when it is seen entirely surrounded by the villi, which give it a shaggy appearance. This is very well seen in Specimen II. In such cases patients require more attention than in the preceding one, as the danger from hæmorrhage or septicæmia has to be guarded against if the membranes do not come away.

In this specimen the chorion was carefully divided, and the umbilical vesicle discovered. It is marked B on the card. A portion of the chorion and amnion was removed to obtain a clear view of the embryo, which is about the sixth week.

There is a popular idea that prostitutes are less subject to pregnancy than other women, but M. Serres has remarked that when they were cared for in a division of La Pitié, the excessive losses were as rare as in others, but the periods were sometimes delayed, and ended by the expulsion of what they called "*un bouchon*." He gave no heed at first to the expression, but having directed his attention to embryology, it was easy for him to detect in this discharge a portion having all the characters of the human embryo, and he was able to collect a large number in a short time, which had been expelled at the fourth or fifth week from girls 18 to 20 years of age.

In the third specimen which I show you, the ovum was expelled covered by the decidua vera and reflexa, which are still separate from each other. Several changes may be produced by any effusion of blood, and the appearance of the ovum is often very much modified, but this depends on the stage of development. Almost till the end of the second month the blood which escapes tends to surround the chorion. If a vessel in these circumstances ruptures, the blood will insinuate itself between the villi, and gradually invade the whole surface of the chorion. The ovum takes then a fleshy appearance. If the outside membrane is removed the chorion is found covered with coagulated blood, which is firmly retained by the ramifications of the villi which are imprisoned in its thickness. In this third specimen bleeding has occurred; but, as you will notice, it has been limited to one particular spot in the decidua reflexa, and forms a solid swelling, about the size of a nut, which has been incised at the point A to reveal the clot. It is difficult to explain in these cases the reason why the decidua vera is at times thrown off, as in this case, whilst in normal pregnancy it remains adherent to the uterine wall nearly till term.

Concerning the complications which might arise in such cases, those from hæmorrhage and septicæmia, or both combined, are the most common. The bleeding may be moderate in a large number of cases, yet at times it may be very alarming. This bleeding may be met with either at the outset, when the embryo is separating, or after it has been expelled, and the membranes yet remain within the cavity of the uterus, or even after complete delivery. The bleeding may be continuous or intermittent, even with days between the attacks. Sometimes the discharge arrested in the passage becomes clotted, and is expelled in a mass, which the physician is apt to mistake for the contents of the womb, unless he takes care to examine for the embryo and membranes.

Usually the bleeding ceases with the discharge of the embryo and membranes or placenta.

Should it continue it is likely that there is a portion retained within the cavity. If a small portion of the placenta remains adherent, the bleeding may continue for weeks.

If the odour of the lochia becomes fetid, we should be on our guard against septicæmia. The odour is very persistent, and the finger with which the patient has been examined retains the taint, in spite of repeated washings and scrubbing with a nailbrush.

The treatment adopted will determine the result for better or worse.

I do not wish to speak of the preventive treatment of abortion, but would like to say a few words on the treatment of these complications. To avoid the manufacture of complications, if I may so speak, I would recommend that the membranes should be left intact, and encouragement given to complete expulsion. If the membranes are ruptured, one should not be in a hurry during the earlier periods of pregnancy, but should pay special attention to the cleanliness and antiseptic condition of the passages, by making use of repeated injections.

Should the placenta be retained, I have seldom had much difficulty in extracting it with the fingers, and must say I have very little faith in the use of instruments for its extraction, unless when it is found protruding through the os. Some have recommended the use of a blunt curette, whilst others prefer a sharp one, with which they profess to remove the *débris* of the membranes. In addition to this, they either dilate the os to allow of such an operation, or they drag the uterus down by means of forceps. Now is such treatment reasonable in all cases? Is retention of the placenta so common and so frequently dangerous as to justify a procedure which is itself not without danger to the patient? I emphatically say No, and, after a very large experience, have no hesitation in condemning such practice. Why, in one case, after the uterus had been scraped, cauterised, and injected, to the surprise and chagrin of the operator there was expelled the next day an embryo, minus the legs. Besides, with the curette you are working in the dark, and cannot fail to wound the healthy membrane, and so assist septicæmia instead of preventing it.

If membranes alone have

been retained, with proper antiseptic precautions there is little chance of evil resulting. Besides, when one considers the amount of injury that an inexperienced person can inflict with a uterine sound, we should surely pause before placing in the hands of every practitioner a curette, be it sharp or blunt, with the assurance "This is the real cure, use it."

In treating the hæmorrhage I generally make use of an antiseptic tampon, with the application of a well-fitting firm bandage, and usually find such means sufficient. I cannot say that I have got good results from ergot. Where spasm or rigidity of the os uteri is the opposing cause of the escape of the placenta, I have frequently had good results from the administration of opium in the form of a two-grain pill.

Whenever a finger can be passed within the uterus, by fixing the fundus with the free hand little difficulty is experienced in extracting the portions retained. If there should exist any symptom of septic poisoning when the patient is seen for the first

Fig. 1.—Embryo, eight weeks. Portion of membranes removed. A. Amniotic cavity; B. decidua; C. villi of chorion; D. embryo.

time, I always make use of frequent antiseptic injections, say, every two hours.

Concerning medicinal treatment, I may say that quinine is freely given, and sometimes along with it salicylate of soda. Where everything has been discharged, and bleeding continues, very satisfactory results have been obtained by the administration of tincture of steel and ergot.

In conclusion, patience, I consider in such cases, will do less harm than meddlesome interference.

Dr. LOMBE ATTHILL confined his remarks to the treatment of cases in which abortion could not be averted. In such, if the hæmorrhage were alarming, plugging was the most certain mode of controlling it, but if used it was essential that the plugs should be removed after the lapse of, at most, six hours, when the uterus should be washed out with an antiseptic solution. But it was very seldom necessary to plug. He advocated treating such cases

by washing out the uterus with a stream of hot water, a method which, if carefully carried out, was perfectly safe and nearly always efficient, the contents of the uterus being in the majority of cases soon expelled. He also expressed his disapprobation of the forcible removal of placenta in the earlier months of pregnancy till time was given to show whether it would not be cast off and expelled.—Dr. J. A. BYRNE said he was of opinion that, as a rule, the hæmorrhage accompanying, or preceding, or following abortion was not dangerous and did not terminate fatally; but still cases had been mentioned where death from that cause had occurred, so that we should be always ready to stop it if events called for interference. He agreed with Dr. Atthill that the washing out of the uterus with hot water was a most useful adjunct in this form of hæmorrhage. We must also attach great importance to the use of the *laminaria digitata*, and Dr. Robert Barnes's dilators and rapid dilatation if necessary, and if possible the removal of the ovum. He might mention that he was one of the first to draw attention to the difficulty in some cases of removing the placenta at an early period of gestation. Before the transformation of the chorionic structures and the formation of the placenta

there was not much difficulty in removal or expulsion, but about the fourth month the placenta was intimately soldered to the uterus. What first attracted his attention to this was a case in which a lady being almost moribund from hæmorrhage he proceeded to remove the placenta with his fingers; he did succeed after some time, but he was so much struck by the dense attachment of the placenta that he determined never again to attempt the removal, but to try to stop the hæmorrhage and allow separation and expulsion. He had lately seen a case in which fatal tetanus supervened upon an abortion.—Dr. AUST LAWRENCE stated that when the hæmorrhage was excessive he always plugged the cervix uteri with carbolised lint, and then, when the os was dilated, he cleared out the contents of the uterus with his fingers. If the contents could not be cleared out he passed into the uterus an iodoform bougie and plugged with iodoform wool, and then in twenty-four hours he could clear the uterus, and if he could not do so he repeated the

process.—Mr. LAWSON TAIT was of opinion that anyone who knowingly left a piece of placenta after a miscarriage might well lay himself open to a charge of gross carelessness. There was no need of any dilatation or of the use of any sharp curette. His (the speaker's) "alligator" ovum forceps would remove anything which had been left without any risk.—Dr. MURPHY (Sunderland) said that had he not heard the two distinguished members of the Dublin Obstetrical School who had preceded him advocate its use, he would have believed that speaking of the vaginal tampon as in use in the year 1887 was an anachronism; surely the place to plug was not the vagina, but the cervix, and the material not cotton wool—antiseptic or otherwise—but the caoutchouc hydrostatic bags of Robert Barnes if the cervix was large enough; if not, the instrument used by Professor Tarnier. On the question of treatment of the retained placenta was not Dr. Lombe Atthill, in advocating expectancy solely, relying on his experience as Master of the Rotunda Hospital, where he or an assistant Master was always

on the premises ready for any emergency that might arise? But how about his private patients, or those he saw in consultation at a considerable distance? Was it safe, however, in the one case or the other to leave a placenta *in situ*, and expose the patient to the risk of hæmorrhage and septicæmia? For his own part, he would not feel justified in doing so, and he invariably removed the placenta, the patient being chloroformed, and a hand introduced into the vagina and one or two fingers—the best instrument we possessed—into the uterus. There was no doubt, however, that for the operator it was a difficult, tedious, and even painful operation, and one to which no one could look forward with pleasure.

ASTON MANOR (Population, 63,637).—This district is fortunate in having a very low death-rate, considering the density and the social position of the bulk of its inhabitants. The average for the last seven years is 15.8 per 1,000. There were in 1887, 955 deaths registered, or a rate of 15 per 1,000, which was 2.8 lower than in 1886, but 1.4 per 1,000 above the rate for 1885. Mr. Henry May states that the deaths were increased to a large extent by the injurious effects upon health of the very long and severe winter, the cold weather being prolonged until the end of May, and the temperature in every one of the first five months of the year being considerably below the average. The mortality was also increased by the long, hot summer, which caused a large amount of fatal illness amongst infants. There had been an increase in the deaths from whooping-cough, but no exceptional mortality from any epidemic outbreak. Typhoid fever was less common than usual, only 17 cases coming under notice. Measles and scarlatina, though somewhat prevalent, assumed so mild a form that the mortality was slight. The deaths from diarrhoea were chiefly among infants. Mr. May confesses that the sanitary improvements of late years have failed to diminish the severity of this disease, and offers the explanation "that the infants are born with more inherited debility of constitution than formerly, and fall sooner victims to exhausting disease." He accounts in a similar manner for the increased infant mortality from bronchitis.

Fig. 3.—Hæmorrhage into decidua reflexa, ninth week. A. incision exposing clot; B. amniotic cavity; C. space between the decidua vera and reflexa; D. decidua vera.