uterus: for the animal membrane he used the swimming-bladders of fishes fastened to the catheter by thread tied round its mouth. When in position he introduced the glycerine through the catheter. Saft succeeded in inducing labour by this method without any ill effects to the patients. Diffusion takes place through the swimming-bladder, the glycerine withdrawing water from the uterus and fœtal membranes, thereby stimulating the uterine nerves and ganglia so that labour ensues. At the same time some glycerine diffuses outwards through the membrane, but the quantity is too small to be productive of injury. The swimming-bladders are prepared by being freed from fat by treatment with ether and are afterwards sterilised with an alcoholic solution of corrosive sublimate. The quantity of glycerine injected is about 3½ oz. The bladder must not be pushed high up into the uterus, but must lie directly over the internal os, and, finally, the vagina is packed with iodoform gauze, which prevents the catheter from being pushed out. No ill effects to either mother or child were observed.

Of seven patients treated in this way four had injections of from 1½ to 2 oz. of glycerine, and the average duration of labour was about 108 hours; the other three had injections of 3½ oz., with an average duration of labour of fifty-two hours. Saft considers that glycerine exerts a specific influence in consequence of its affinity for water.

The Edinburgh Medical Journal for January, 1898, contains an account of a case in which 3 oz. of pure glycerine were injected into the uterus in the fifth month of pregnancy. The patient very soon had an intense rigor lasting more than forty minutes; her face was cyanosed and wore a frightened expression; her pulse was 45. These symptoms passed off, labour pains set in, the ovum was expelled entire, and the patient made an uninterrupted recovery.

V.—THE PUERPERAL STATE.

1. Serum-therapy in puerperal septicæmia.

Wallich (*Annales de Gynécologie et d'Obstétrique*, Nov., 1897) concludes an important report as follows: (1) From an experimental point of view, employing Marmorek's serum on animals inoculated (in their blood) with streptococci derived from puerperal infection, Wallich has not obtained regularly either preventive or curative results, especially with the serum used on women in 1896. (2) From a clinical aspect, Wallich fails to find sufficient modifications in regard to septicæmia, morbidity and mortality in the Baudelocque Clinic in 1896 to justify any definite opinion.

Marmorek's serum was there employed most methodically. A much longer experience is required. The value of preventive serum-therapy is absolutely unknown. Therefore, intra-uterine treatment, which has been well tried, must not be cast aside in favour of curative serum-therapy by anti-streptococcic serum. The bacteriological diagnosis of puerperal infection is as yet hard to make in any clinical fashion.

At the Obstetrical Society of London on October 5th, 1898, the question of anti-streptococcic serum in puerperal septicæmia was discussed. **J. Walters** related a case in which he attributed recovery to the use of serum.

Amand Routh said that of five or six cases treated by himself, one had recovered by the use of anti-streptococcic serum alone. He advised ascertaining the presence of streptococci before administering the serum, on which point **Eden** agreed. **Cullingworth** thought the serum should be administered without waiting for bacteriological examination. **John Phillips**, out of several cases, attributed recovery to one, in which, however, bacteriological investigation gave a negative result.

2. Premonitory symptoms of puerperal infection.

Ferré (*L'Obstétrique*, September 15, 1897) lays stress on the success of intra-uterine treatment for puerperal fever. This success stands in direct ratio to the earliness of intervention. Hence very careful clinical researches have been made in lying-in hospitals in order to detect true prodromata. The true rigor, local pains, and conspicuous pulse and temperature are known to all and, when combined, indicate more or less advanced infection. Ferré denies that these symptoms ever come on suddenly, though certain milder types of infection now observed may represent sepsis modified by antiseptic agents. These milder types, however, will assuredly develop into deadly septic infection if neglected. Ferré finds, after long clinical research, that even the severest form is preceded for a day or two by distinct elevation of temperature and pulse and by insomnia. An evening temperature of 100° in the axilla, with a fall of about a degree in the morning, without a corresponding drop in a somewhat rapid pulse, is a distinctly suspicious symptom. The rise in the pulse-rate often precedes the rise in temperature; the observer must therefore make sure that acceleration of the heart's action is accounted for even in a patient who seems otherwise convalescent. Reaction after the fatigue of labour, hæmorrhage, and emotions all send up the pulse. Insomnia, Ferré has noted, is often observed in the earlier stages of infection; distinct want of sleep without restlessness is usual for a day or two before bad septic

symptoms. The lochia may remain free from odour in the premonitory stage of puerperal septicæmia, nor are the discharges always fœtid when the disease is established.

3. Puerperal tetanus.

Kuhnau, of Klast's Clinic (*Berl. klin. Woch.*, July 11th and 18th, 1898) first gave an account of the literature of this rare affection. Of 24 cases examined since the recognition of the tetanus bacillus, this microbe has only been found in 3. Chantemesse and Widal proved its presence in pieces obtained by the curette from the uterus after death. Heyse found it in the lochia, both morphologically and by experimental investigation. Sterne produced tetanus by inoculating pieces from the endometrium into animals. The author then records a case in a woman, aged 42, very carefully investigated. The labour appeared to be quite normal. The patient had a vaginal douche on the sixth day and then got up. Two days later there was an offensive vaginal discharge, and ten days after delivery headache and difficulty in swallowing supervened. Attacks of spasm came on when attempts at swallowing were made. On admission the next day there was much cyanosis, retraction of the head, trismus, and the risus sardonicus. Attempts to swallow brought on attacks of spasm, when the breathing stopped and the face became blue. The attacks lasted about three minutes and consciousness was not lost. Behring's antitoxin was injected direct into the veins. Death followed in this desperately severe case shortly afterwards. At the necropsy the spleen was found enlarged, and the uterine cavity contained discoloured tenacious secretion. The endometrium presented a greyish-green appearance. Several microorganisms, including the streptococcus, etc., were found by cultivation in the lochial discharge during life, but not the tetanus bacillus. Bacilli resembling tetanus bacilli were found in the endometrium, and a number of microbes, including the tetanus bacillus, were also obtained by cultivation from it. Four out of twelve animals inoculated developed tetanus. Inoculation of animals with the earth obtained from the cracks in the floor, also with straw taken from the mattress, as well as with splinters from the patient's abode, gave positive results. Injection of the urine produced no result. Injection of blood serum from the patient also induced tetanus. The nervous system was comparatively healthy. The spasm of the glottis, which ultimately produced death, reminded one of hydrophobia, and was a striking feature of the case. The case was characterised by a mixed infection with bacteria of putrid decomposition, septic microbes, and the tetanus bacillus. The finding of the tetanus bacillus in the neighbourhood of the patient explained the origin of the disease. The author thinks that the patient was infected by means of the vaginal douche.

4. Puerperal tetanus.

Rubeska (*Archiv. f. Gynäk.*, vol. liv., pt. i., 1897) describes at length six unpublished cases of tetanus in childbed. All ended fatally, and definite organic lesions were found in all. He also notes three other cases recently published by Pipek in a paper written in the Bohemian language; these were also all fatal. Rubeska issued in 1890 an earlier report of eleven cases, none of which recovered. He notes, however, Irving's case (*New York Medical Journal*, Sept. 17, 1892), when tetanus set in on the eleventh day after delivery, remained acute for a fortnight, and then passed slowly off, the patient ultimately recovering. The earliest date for the onset of tetanus is the sixth, the latest the eleventh day. It begins in puerperal cases by trismus and dysphagia, and not by tetanic contractions of muscles near the pelvis. Narcotics, antispasmodics, and serum treatment, as well as, in one case, immediate extirpation of the uterus, proved unavailing in the 20 fatal cases collected by Rubeska. He discusses the bacteriology of this form of tetanus. Heyse has shown that streptococcus infection does not predispose to secondary infection of the genital tract by the tetanus bacillus.

5. Secondary operations for rupture of the perineum.

Kholmogoroff (*Vratch*, No. 19, 1898) advises the performance of secondary operations for ruptured perineum during the puerperal period, that is, from the second to the twentieth day after labour. He performed the operation in 25 cases during that time, and in all cases obtained primary union. There is no danger of lochial infection of the raw surfaces if suitable precautions are taken. The operation is undertaken in those cases where immediate suturing after labour has not been done, or where, if done, it has not been successful. The patient's vagina is carefully washed out with corrosive sublimate solution, and a tampon of sublimate gauze inserted to take up the discharge. The tampon is removed first before the operation, the vagina washed out and a fresh tampon inserted which remains *in situ* for twenty-four hours. This prevents the lochia from coming in contact with the wound until some adhesion of the raw surfaces has taken place. After this the tampon is unnecessary, and careful vaginal douching is sufficient. The operation consists in first making out the extent of the raw surfaces, and then removing the granulative or cicatricial tissue with a sharp spoon

within that limit. The sutures are then inserted in the usual way, and the raw surfaces brought together. The sutures are removed on the seventh day. The temperature generally remains normal after the operation, but there may be a slight rise. In this way many a perineum can be repaired during the time the patient is under observation after labour, and this does away with the necessity of her applying for advice in six weeks afterwards, which many of them fail to do through either fear or neglect.

VI.—NEW DRUGS.

Schäller (*Centralblatt für Gynäk.*, April 13, 1898), taking advantage of Mering's investigations, showing that sugar is found in the urine after the administration of *phlorizin*, has devised a new method of demonstrating that the fœtus passes urine in utero. His idea is that, if phlorizin be given to the pregnant woman, some of it will enter the circulation of the fœtus, and will cause the presence of sugar in any fœtal urine which may be passed into the liquor amnii. The presence of sugar in the liquor amnii will then show that fœtal urine has been added to it. Schaller's results are as follows:—In the fourth to sixth month of pregnancy the results were negative; when phlorizin was given to the mother right up to the commencement of labour, sugar was found in liquor amnii in fourteen out of twenty cases. Sugar disappears from the maternal urine in about eight hours after the last dose. Sugar was found in the urine of the child in all cases, disappearing in about thirty-two hours.

Carnevin has stated that by giving phlorizin to cows the percentage of sugar in their milk can be doubled. But **Cremer** (*Münchener med. Woch.*, No. 5, 1898) gave the substance to a cow which was kept on a regular diet, and found that the percentage of milk was not nearly so much increased as in Carnevin's experiments, while the total quantity of milk was so much reduced that the total output of sugar was actually less than before. Sugar was found in the urine in considerable quantities. Cremer refers to experiments made on a goat by Pappenheim with similar results to his own.

Joiachim (*Centralblatt für innere Med.*, March 12, 1898) gives details of fifteen cases in which he gave *somatose* to mothers whose supply of milk was failing. He found that the result was good in those cases in which the somatose improved the appetite and general condition. On the other hand, in the smaller number of cases where the entire organism was not influenced by somatose,

and where the general health continued bad, the secretion of the mammary glands almost remained unimproved. He does not, however, agree with the opinion of Drews of Hamburg, who states that somatose has a specific influence on the secretion of the mammary glands.

Fürst of Berlin (*Fortschritte der Medicin*, No. 4, 1898) has utilised *Protargol* in cases of gonorrhœal ophthalmia neonatorum, and considers that it possesses many advantages over lunar caustic. For ophthalmological purposes he uses a 10 per cent. solution of protargol, made by mixing 10·0 of protargol with 10·0 of glycerine into a thick paste, and then by means of a water-bath effecting the complete solution with 90·0 of water. For gynæcological purposes, he finds aqua. dest. and glycerine in equal parts more satisfactory.

He summarises the result of his observation as follows:—(1) Protargol possesses in the prophylaxis and therapeutics of ophthalmia gonorrhoica neonatorum the following advantages over nitrate of silver, viz. non-decomposibility and non-irritability, and also of being easier of application.

(2) As a rule, the washing of the eye with protargol is prophylactically sufficient; nevertheless, when there is evidence, or a suspicion, of maternal gonorrhœa, a preparatory washing of the vagina, together with the application of the lotion and the instillation, is indicated.

(3) This washing with the solution of protargol deserves to be compulsorily introduced into the lay practice of midwives, at whose disposal the solution should be placed gratis as a necessary prophylactic precaution.

(4) With regard to the ophthalmia prophylaxis in clinical medicine, the washing of the conjunctival membrane, and also the washing of the eyelids, is at least of equal value as the instillation of lunar caustic.

(5) In the therapeutics of opththalmia gonorrhoica protargol, either in the form of lotion or instillation, is more certain, somewhat quicker, and of a less irritating action.

VII.—MECHANISM OF DELIVERY.

1. Fronto-anterior positions of the fœtal head.

George Roper, at the Obstet. Soc. of London, July 16, 1898, read a note on this subject, in which he stated that in labour considerable difficulties arose with a child beyond the ordinary size, or with a small or contracted pelvis. He thought that these difficulties were due to the position of the child's trunk, and

recommended, after a moderate trial with forceps, podalic version in the treatment of these cases.

Herman said that the position of the trunk caused extension of the spine, which led to extension of the head.

Peter Horrocks agreed that the tendency in these cases was at first towards extension, but after further descent into the pelvis the head tended to be flexed by the uterine forces. The treatment depended upon the mobility of the fœtus; when there was little or no mobility the proper treatment was not rotation, nor version, but craniotomy.

2. Retraction of the uterus in labour.

Demelin (*L'Obstét.*, January 15, 1898), has published some instructive observations on this serious phenomenon. Putting aside cases where ergot is abused, retraction is observed (1) just before expulsion of the placenta, whether Bandl's ring or the whole uterus retracts and incarcerates the placenta; (2) when the fœtus is still in the uterine cavity, entirely or partially above Bandl's ring; (3) before rupture of the membranes. Of the third and rarest condition Demelin gives two cases. The first patient was a phthisical primipara with great pelvic deformity. Labour set in spontaneously during the seventh month. Demelin detected two tumours, one above the other. The superior tumour extended to above the umbilicus; it felt like contracted uterus, and no fœtal outlines could be distinguished. The lower one fluctuated, and was taken for a distended bladder till the use of the catheter made no difference to its bulk. The membranes were found filling the vagina and presenting at the vulva. The os was completely dilated. The hand was passed with ease into the lower flaccid segment of the uterus. The membranes were then ruptured, and a great quantity of liquor amnii, stained with meconium, came away. A small fœtal head was found, feeling like the clapper of a bell, at the top of the lower segment, Bandl's ring constricting its neck and the prolapsed funis. The head was seized with a basiotribe, and the dead fœtus delivered after strong traction. The placenta came away naturally.

The second case was a very similar one.

3. Peritoneal symptoms in breech presentations.

Crouzat and **Lop** (*Annales de Gynéc. et d'Obstét.*, June, 1897) were called to see a multipara suffering from severe symptoms. For a fortnight she had been troubled with incessant vomiting, great abdominal tenderness, dry tongue, profound debility, and the facies of peritonitis. The temperature was subnormal, the pulse 140. Lop succeeded in effecting version by external manœuvres, and at once all the bad symptoms disappeared, and the patient

was delivered normally at term. **Grynfelt**, in discussing this case, remarked that undoubtedly such grave complications were not the rule in breech presentation, but admitted that the treatment proposed by Lop and Crouzat had not been thought of before. **Budin** knew of a case of breech presentation where hypochondriac pain caused by the fœtal head was overlooked, an imaginary pleurisy being treated with promptness and vigour.

4. Apnœa of premature infants.

Audebert (*Journ. de Méd.*, September 12, 1897) describes a new method of treatment for this condition. The method is a simple one, and can be continued for a long time without fatigue. The operator sits in a low chair with his knees crossed, and the child is laid on its back across the upper knee, so that the head and shoulder project to the right and the pelvis to the left. The head and neck are supported by one hand, whilst the lower limbs are passed into the other. The head and neck are both drawn downwards, so as to put the child's body in a position of opisthotonos. The thorax is thus made to project, and the diaphragm descends. The head is then raised up so that the chin comes in contact with the sternum, and at the same time the legs are also raised and the flexed thighs pressed into the abdomen. These two movements, which represent inspiration and expiration, should be executed gently and regularly eight or ten times a minute. In the apnœa of premature children Audebert combines this treatment with the subcutaneous injection of ether.