reformatory for men, but the London County Council is about to build an institution for the accommodation of 40 male inebriates at Charlwood, near Horley.

A medical attendant has to be appointed to attend to the patients at the certified inebriate reformatory, and for his guidance certain rules have been laid down. The most important of these are:

1. He is responsible for the general care of the health of the inmates, and has to report to the managers and make known to the superintendent any circumstance connected with the reformatory or the treatment of the inmates which appears to him to require consideration on medical grounds.

2. He must visit the reformatory once every day, and see every inmate at least twice a week, except in the case of inmates complaining of illness or who are under punishment or special discipline, and these must be visited every day.

3. Every inmate must be examined on reception, and the state of his health and such facts as are connected therewith recorded.

4. He must frequently examine the washing places, baths, etc., and inspect the food, provisions, clothing, and bedding, reporting to the superintendent any deficiency or defect which he may find, not only with respect to the above-stated clothes, food, etc., but any other cause which may affect the health of the inmates.

5. He has to keep forms which he must fill up, giving an account of the state of health or disease of each sick inmate, and the treatment which he orders, as well as statistical records relative to the health and treatment of the inmates and the sanitary condition of the buildings.

6. He must give notice to the superintendent when the illness of the inmate becomes dangerous in character, and in case of death inform the superintendent.

7. He has to report in writing to the superintendent the case of any inmate to which he thinks it necessary to call attention, and give directions in writing for separating from the other inmates those who are suffering from infectious, contagious, or mental diseases, and take steps to prevent the spread of any contagious or infectious disease.

8. He must examine any inmate before he is placed in close confinement or subjected to dietary punishment to certify whether or not he is fit for punishment.

In the case of voluntary retreats no rules are laid down except that in case of death the medical man must himself draw up and sign a statement of the cause of death of a patient with the name of the person present at death, and give it to the licensee, who must transmit it to the coroner, the registrar of deaths, the clerk to the local authority, and the person by whom the last payment was made for the deceased.

There is no compulsory law with regard to rich inebriates, but as a result of a paper read in the Section of Psychology of the annual meeting of the British Medical Association at Portsmouth by Dr. J. F. Sutherland on the Urgency of Legislation for the well-to-do inebriate, the following resolution was carried:

The Psychology Section respectfully suggests that the Council of the Association be asked to consider the advisability of procuring early legislation for the well-to-do inebriate, and to refer the question to the various Branches of the Association for their opinions.

This resolution was duly brought before the Council on October 11th, 1899, and was referred to the Inebriates Legislation Committee, to report at the next meeting of the Council.

The Vaccination Act.

To this Act, which came into operation January 1st, 1899, I may briefly refer. The chief alterations made by it are that the child has to be vaccinated within six months of his birth, and he is not required to be taken to the public vaccinator for vaccination. Instead of this the child is vaccinated at home at the request of the parents, and the use of glycerinated calf lymph is for the first time made compulsory. Repeated penalties on parents for not having their children vaccinated are prevented by a clause, and this, I think, is a right procedure, for however misguided parents may be, no good, I am convinced, can come from persecuting them because they have conscientious objections to vaccination. Parents are also exempt from penalties if they satisfy two justices or a stipendiary magistrate that they conscientiously believe that vaccination will be prejudicial to the health of their child. The great fault of the Act is that no reference is made to re-vaccination, but as it only remains in force until the first day of January, 1904, we must endeavour to get it introduced into the next one.

The Midwives Bill.

The only remaining Bill with reference to which I shall say a few words is the Midwives Bill, which was brought before Parliament in the last session but one of this year. The chief object of this Bill was to carry into effect the recommendations of the Select Committee of the House of Commons relating to the training and practice of midwives by promoting the training of women as midwives, and by providing for the

regulation of their practice. Under this Bill no woman could call herself or practise for gain as a midwife unless she had obtained a licence. The Bill provided for the constitution of a central midwives Board whose duties were "to organise examinations, regulate, supervise, and restrict within due limits the practice of midwives, and to investigate charges of malpractice, negligence, or ignorance against midwives." A Bill on similar lines was introduced into Parliament last year without success. The result of a conference between a committee of the General Medical Council and delegates from the Midwives Bill Committee has been that some alterations have been made in this Bill, namely, the substitution of licensing for registration, the liability of women not licensed and who habitually practise midwifery for gain to a fine not exceeding £5, and the limitation of the area within which a midwife may practise to that of the supervising authority from which she obtained a licence to practise. This, being a contested Bill, did not pass. There is no doubt that medical men believed that the Bill would create an inferior order of practitioners who would not limit themselves to midwifery alone, but would endeavour to treat diseases which should be attended to only by properly-qualified medical men.

NOTE.

¹ For much of the information as to this Act I am indebted to a book on *The Inebriates Acts, 1879-1888*, by George Blackwell, LL.B., Barrister-at-Law.

AN ANALYTICAL ACCOUNT OF FIFTY-SEVEN CASES OF PUERPERAL INFECTION.

By W. EDGAR MACHARG, M.D.,

Late Senior Assistant Physician, Belvidere Fever Hospital, Glasgow.

THE subject of the fever of childbed has at the present moment attained to considerable prominence, and much discussion is taking place concerning its exact pathology and its treatment. Serumtherapy is on its trial, and the question of surgical interference is becoming more and more a matter for serious consideration. Occasions for observing this class of cases will for any individual always be but few outside of hospital work, and much difficulty must necessarily be encountered in following out any which may occur, more especially in respect to *post-mortem* examinations. Only, however, by a thorough knowledge of its clinical features and *post-mortem* appearances can any advance be made in the treatment of a disease whose terrible mortality so urgently calls for such. The writer has accordingly ventured to give an account of these cases, which came under his personal observation while senior assistant physician in Belvidere Fever Hospital, Glasgow, during the eighteen months between October 30th, 1897, and June 4th, 1899. Of the 57 cases of puerperal infection 31 proved fatal, and in 21 a *post-mortem* examination was obtained.

Classification to any extent has not been found to be feasible, and the cases have been arranged simply as to result—fatal or non-fatal.

The object of the present article is to bring into relation and prominence the chief points of interest in the total number of cases. At the same time, as being more worthy of note, particular attention is given to such as came to *post-mortem* examination; and appended is a table (p. 374) showing as concisely as possible the more salient features of these.

The writer is fully conscious that from time to time many similar cases have already been published; yet he trusts that the results below, being founded on a consecutive series in the practice of one observer, will be found to be not without value.

It will be noted that, of the 57 cases, 31 ended fatally, while 26 recovered. In proceeding with an analysis it is proposed to deal first and most fully with the fatal cases. Concerning these, the following points are taken up in order—incidence, nature of labour, injuries during labour, *post-mortem* appearances, complications, bacteriological examination.

Incidence.—Primiparæ were affected fourteen times. The illness in 4 cases followed premature labour, and on two occasions occurred *post-abortum*.

Nature of Labour.—Some departure from the normal was noted on 13 occasions. Instrumental interference had taken place in 8 cases, 6 being primiparæ. Labour thrice was complicated by hæmorrhage. Twice the children were stillborn, without other complication.

Cases.	Labour.		Illness.		Post-mortem Appearances.	Bacteriological Examination.	Remarks.
	Nature of.	Injuries during.	Onset.	Duration.			
1	Normal	Rupture of perineum; laceration of cervix uteri	4th day	18 days	Endometritis. Septic thrombosis of uterine sinuses and left ovarian vein, with infarcts in lung and metastases in spleen and kidneys. Thrombosis of femoral and external iliac veins	Uterine discharge and pus from ovarian vein yielded streptococcus pyogenes, bacillus coli	Antistreptococcus serum administered with no appreciable result. (Four doses of 20 c.cm. at intervals of twelve hours).
2	Normal	Slight rupture of perineum	3rd day	12 days	Endometritis. Septic thrombosis of uterine sinuses and right ovarian vein, with infarcts in lung	—	—
3	Instrumental	Slight rupture of perineum; bilateral laceration of cervix uteri	4th day	26 days	Endometritis. Septic thrombosis of left ovarian vein, with metastases in spleen and kidneys. Meningitis. Old-standing endocarditis. Fibrous adhesions at apex of left lung	—	Thrombosed vein was readily detected by examination under chloroform. Much delirium noted during illness.
4	Miscar. in 4th month; hæmorrhage	—	14th day	21 days	Parametritis. Septic thrombosis of left uterine and iliac veins. Thrombosis of femoral vein. Enteritis (slight)	Bacillus coli (pus from iliac vein)	—
5	Child still-born at term	—	3 days ante-partum	11 days	Endometritis. Salpingitis. Peritonitis. Oophoritis. Septic thrombosis of uterine sinuses and left ovarian vein. Enteritis, acutely affecting the ascending colon. Healed tubercle in lungs	Bacillus coli, staphylococcus pyogenes albus (uterine discharge)	A rigor occurred three days previous to confinement, followed by persistent malaise and prostration. Lochia fetid from the beginning.*
6	Natural	Slight rupture of perineum	9th day	73 days	Small encapsuled abscess in left broad ligament. Thrombosis of left ovarian and femoral veins. Spleen coated with organised lymph. Large white kidney. Enteritis (general, but most marked in lower part of ileum)	—	Marked hæmaturia and albuminuria during latter part of illness. Death due to asthenia.
7	Natural	—	4th day	14 days	Endometritis. Septic thrombosis of uterine sinuses and left uterine veins, with metastases in kidneys. Pelvic peritonitis. Parametritis. Acute general enteritis, associated in the large intestine with extensive ulceration. Healed tubercle in lung	Bacillus coli, streptococcus pyogenes, staphylococcus pyogenes albus (uterine discharge)	Peritoneal infection due to extension from small abscess in uterine wall.
8	Instrumental, complicated by hæmorrhage	Bilateral laceration of cervix uteri	2nd day	8 days	Endometritis. Salpingitis. Pelvic peritonitis. Septic thromboses of uterine sinuses and left ovarian vein, with metastases in spleen and kidneys. Parametritis. Enteritis (well marked in ascending colon)	Bacillus coli (pus from ovarian vein)	—
9	Natural	Rupture of perineum; extensive bilateral laceration of cervix uteri	2nd day	22 days	Endometritis. Septic thrombosis of uterine sinuses. Rupture of three small abscesses in uterine wall into peritoneal cavity. Pelvic peritonitis	Streptococcus pyogenes (uterine discharge)	Antistreptococcus serum administered with no result.
10	Natural	—	7th day	40 days	Endometritis. Salpingitis. Pelvic peritonitis with abscess in Douglas's pouch. Parametritis. Large white kidney with cardiac hypertrophy	—	Patient suffering from chronic nephritis, with secondary cardiac changes.
11	Natural	Bilateral laceration of cervix uteri	2nd day	28 days	Endometritis. Salpingitis. Ovarian abscess. Pelvic and general peritonitis	—	Ovarian condition diagnosed and removal attempted <i>per vaginam</i> .
12	Instrumental	Rupture of perineum into rectum; extensive laceration of vagina and cervix uteri	1st day	6 days	Endometritis. Salpingitis. General and pelvic peritonitis. Septic thrombosis of uterine sinuses, with metastases in lungs, liver and kidneys. Enteritis	Streptococcus pyogenes, bacillus coli (uterine discharge); streptococcus pyogenes (pus from abdomen)	—
13	Instrumental, adherent placenta	Rupture of perineum into rectum; extensive laceration of vagina and cervix uteri	2nd day	6 days	Endometritis. Salpingitis. General and pelvic peritonitis. Parametritis	—	—
14	Natural	—	3rd day	37 days	Large intra-abdominal abscess. Pelvic organs not examined	—	Abscess pointed through the umbilicus. It was opened and drained; but patient died shortly after the operation.
15	Prolonged instrumental, retained placenta	Rupture of perineum. Extensive laceration of vagina and cervix uteri	1st day	25 days	Endometritis. Septic thrombosis of uterine sinuses, with infarcts in lung, and metastases in spleen and kidneys. Enteritis (general, best seen just above cæcum)	Streptococcus pyogenes (uterine discharge)	Antistreptococcus serum in three doses of 20 c.cm. Slight fall of temperature after injections, but no improvement in general condition.
16	Natural	Slight laceration of perineum	9th day	14 days	Endometritis. Salpingitis. Septic thrombosis of uterine sinuses. Enteritis (confined to ascending colon)	—	—
17	Natural	—	4th day	7 days	Endometritis. Salpingitis. Thrombosis of uterine sinuses, with metastases in kidneys and liver. Patches of enteritis throughout whole length of gut, slight in duodenum, more in ileum, very marked in large intestine, and extreme in sigmoid, where it was associated with hæmorrhage into the submucous layers, with here and there slight erosion. Sigmoid greatly distended, filling up the whole lower part of the abdominal cavity. Meningitis.	Bacillus coli, staphylococcus pyogenes aureus (uterine discharge)	Much pain complained of in lower abdomen. Considerable distension present. Diagnosis of peritonitis. Marked delirium throughout whole course of illness.
18	Miscarriage in 6th month	—	6th day	8 days	Endometritis. Double salpingitis. Infarcts in lung. Enteritis (general; ascending colon most affected)	—	—
19	Natural	—	6th day	13 days	Endometritis. Metastases in kidneys. Enteritis (slight, general)	Bacillus coli (uterine discharge)	—
20	Natural	—	2nd day	12 days	Endometritis. Enteritis (general; most marked in large intestine). Old tubercle in left lung	—	—
21	Instrumental.	Large rupture of perineum. Bilateral laceration of cervix	1st day	8 days	Endometritis. Septic thrombosis of uterine sinuses. Parametritis. Meningitis.	—	Violent delirium occurred during life.

* This patient suffered from a chronic tubal condition; tube thickened and convoluted.

Injuries during Labour.—These occurred in all degrees, ranging from slight wounds to the most extensive lacerations of the soft parts. Well-marked traumatism was present in all in 17, and was severe in 9 cases. Large ruptures of the perineum were encountered five times, the rectum being thrice involved. The vagina four times, and the cervix uteri six times, has sustained serious damage. In connection with vaginal lacerations much undermining and paracolpitis were observed on several occasions. As might be expected the more severe injuries were found in primiparae, or accompanied the use of instruments.

Onset of Illness.—The largest number of cases for any one day (8) arose on the second day *post partum*. Twenty-one times (67 per cent.) the illness began from the first to the fourth day inclusive. In 5 cases the onset was delayed past the seventh day; and in one case, which finally proved fatal, symptoms did not appear until the nineteenth day. The history of one case (Case v) pointed definitely to an infection three days previous to delivery.

Duration of Illness.—Nearly one-half of the fatal cases lived for two weeks after the first appearance of symptoms; and a large proportion survived for three weeks or over. The sixth day was the earliest period at which death occurred. On two occasions a fatal termination did not take place until the fortieth and seventy-third day respectively. In both of these cases, however, the illness was accompanied by chronic nephritis; and a question may be raised as to the possibility of their recovery, apart from this complication.

The following is a short numerical statement:

Died during 1st week	...	...	...	4 cases
Died during 2nd week	...	...	...	12 cases
Died during 3rd week	...	...	...	5 cases
Survived 3 weeks or over...	...	...	...	9 cases

POST-MORTEM APPEARANCES.

We come now to describe in detail the pelvic lesions discovered in the 21 cases in which a *post-mortem* examination was made. These chiefly comprise endometritis and salpingitis, peritonitis, oöphoritis, septic thrombosis of the uterine sinuses and large veins, and parametritis.

The term endometritis in the present article is meant to express the condition which old writers designated, not unfitly, diphtheritic inflammation of the uterus. In these cases, the endometrium and superficial layers of the muscular coat are found to be in a softened infiltrated state; and in the severer types, extensive superficial sloughing may frequently be observed. Ulceration also sometimes occurs, with occasional deposit of that fibrinous pseudo-membranous material which at one time suggested the relation of the process to diphtheria. These conditions where the disease is less advanced may be practically confined to the placental site, where indeed they are invariably most apparent in all, and where, in cases further advanced, the uterine tissue, along with the thrombi pouting from the sinuses, is often absolutely necrotic and purulent.

Such appearances as those above described were apparent to a greater or lesser degree in all the cases which came to *post-mortem* examination, with the exception of 3. Of these, in 1 the uterus was not examined, and in another the illness had lasted for 73 days.

In 8 cases (40 per cent.), one or both Fallopian tubes contained pus, and in 6 of these peritonitis had ensued. One case (Case v) showed evidence of a chronic tubal condition, anteceding and very probably exciting the acute puerperal mischief. Here alone was the tube found thickened to any appreciable degree.

An ovary was affected in two of the cases. In both the ovarian lesion was concurrent with purulent salpingitis and peritonitis. The organ in one (Case v) was simply enlarged and injected, but the lesion had in the other (Case xi) progressed to suppuration and extensive necrosis.

Peritonitis was proved to exist in nine cases. As mentioned above, it was associated on six occasions with purulent salpingitis, and twice it was clearly due to extension from abscess in the uterine wall, arising in connection with septic thrombosis of the sinuses. The course of infection was not traced in the remaining case.

The process was naturally always most acute in the lower regions. In four cases, indeed, it was entirely limited to the pelvis, although here being of a very widespread nature. In

five cases it was purulent, pus occurring in three of these as numerous small foci between the adherent peritoneal surfaces, and in two collecting in considerable amount in Douglas's pouch. Though sometimes present in the peritoneal cavity, fluid was never in large quantity. Extensive fibrinous adhesions were usually in evidence.

Septic thrombosis of the uterine sinuses appeared as softening thrombi in these vessels, or more frequently as small collections of pus running through the muscular wall of the uterus, in the vicinity of the placental site. In the large veins, also, although actual thrombus was occasionally seen, yet more frequently the vessel was filled with fluid purulent material. This was sometimes very widely distributed, as where we find it (Case viii) throughout the whole length of an ovarian vein, or occupying (Case iv) the uterine and internal and external iliac veins and the lower part of the inferior vena cava.

Thrombosis of the uterine sinuses *per se* is noted in six of our cases, and had thrice given rise to metastases. The lungs and kidneys were thus affected in all three, and the liver and spleen in two respectively. Of the 7 cases which occurred of venous thrombosis, 5 affected the ovarian and 2 the uterine veins. Metastases had resulted in 5, involving the kidneys in 4, the spleen in 3, and the lungs in 2. Thus septic thrombosis was found in all 13 times, and was 8 times connected with metastases in the organs.

During the course of the *post-mortem* examinations parametritis was discovered on 7 occasions. The inflammatory mass in more than half of these contained numerous small abscesses. Traumatic injuries of the genitalia 4 times only coincided with the pelvic cellulitis. In 1 case a small encapsulated parametritic abscess was present, possibly antecedent in origin to the puerperal condition.

From even a superficial examination of the *post-mortem* notes, it will appear that almost always the pelvic mischief had extended, not in one only but in several directions, so much so that occasionally we find in 1 single case most of the above lesions. The summary below shows their actual concurrence:

Endometritis	...	...	...	2 cases
Endometritis, peritonitis	...	...	...	2 "
Endometritis, peritonitis, oöphoritis	...	...	...	1 "
Endometritis, peritonitis, parametritis	...	...	...	2 "
Endometritis, peritonitis, oöphoritis, thrombosis	...	...	...	1 "
Endometritis, peritonitis, thrombosis	...	...	...	2 "
Endometritis, peritonitis, thrombosis, parametritis	...	...	...	2 "
Endometritis, thrombosis	...	...	...	7 "
Endometritis, thrombosis, parametritis	...	...	...	1 "
Intra-abdominal abscess...	...	...	...	1 "

Complications.

A large proportion of the cases which came to *post-mortem* examination showed evidence of inflammatory changes in the intestine, in the presence of areas of congestion in the mucous membrane. These varied both in size and number. While sometimes but slight and insignificant, at others the injection was of a most intense character, and might involve for several inches at one place the whole lumen of the gut. These lesions, although not infrequently present throughout the extent of the intestine, were generally most apparent in the lower parts, and especially affected the caput cæcum and ascending colon. In less advanced cases congestion only was visible, but in those more severe small hæmorrhages occurred in the submucous layers, and rarely some slight erosion was detected. Once however (Case vii), the process was associated with great ulceration of the large intestine throughout its length. Enlargement of the Peyer's patches or solitary follicles was never demonstrable.

Enteritis was altogether noted in 12 of the 21 *post-mortem* examinations. It concurred 8 times with septic thrombosis. During life abdominal distension and tenderness were more or less present; so much so, that in one case, where the sigmoid flexure was acutely affected, a diagnosis of peritonitis was made. Only the worst cases were associated with diarrhoea, but in every case where diarrhoea had been a prominent symptom, enteritis was discovered *post mortem*.

Injection and oedema of the membranes of the brain was proved to exist in 3 cases. In all these much delirium had occurred.

The other chief complications were as follows in nature and frequency:

Pneumonia	...	...	...	...	8 cases
Acute nephritis	...	...	...	...	5 "
Diarrhoea	...	...	...	...	6 "
Delirium	...	...	...	...	5 "
Acute mania	...	...	...	...	1 case
Phlegmasia	...	...	...	...	3 cases
Septic arthritis of knee-joint	...	...	...	...	1 case

Confirmatory examination was possible in 3 of the cases of pneumonia; and in these the complication was due to septic infarction. Superficial abscess in the affected limbs followed in two of the cases of phlegmasia.

BACTERIOLOGICAL EXAMINATION.

A bacteriological examination was not made in every case, and anaërobic methods were attempted in none. For these reasons it is not desired to lay much stress on this department. The fact, however, would again appear to be established that, while the streptococcus pyogenes is the most common exciting cause of puerperal infection, yet other organisms play an only slightly subordinate part.

A positive result was obtained 16 times; streptococcus, in pure or mixed culture, was found 10 times, and it is interesting to note that in like manner bacillus coli occurred 9 times, thrice where rupture of the perineum into the rectum was present. Staphylococcus pyogenes aureus and albus were also frequently cultivated.

OTHER FATAL CASES.

With regard to the 10 fatal cases in which a *post-mortem* examination was not permitted it may be here remarked: That in 4 the lochia were purulent, but bimanual examination showed nothing abnormal beyond an enlarged and softened uterus; that in 1 case, complicated by pneumonia, a rounded thickening was detected in the upper part of one of the broad ligaments, due in all probability to a thrombosed ovarian vein; that 1 case showed presumptive evidence of peritonitis; that parametritis was present in 3 of them.

CASES TERMINATING IN RECOVERY.

We pass now to analysis of the 26 cases which terminated in recovery, reviewing as before what appear to be the chief points of interest.

Incidence.—Primiparae were attacked 12 times. Regarding period of pregnancy, in 5 cases labour was premature, and thrice the illness followed abortion.

Nature of Labour.—Abnormality occurred in 10 cases. Labour four times was instrumental, two of these patients being primiparae. In 2 cases it was complicated by hæmorrhage, and in 4 the children were stillborn.

Injuries during Labour.—Traumatism was present in 8 cases, but in 5 of these was slight. Severe injuries had twice followed the use of instruments.

Onset of Illness.—In 18 (69 per cent.) the onset occurred from the first to the fourth day. The illness on two occasions did not begin till after the seventh day. As with the fatal cases the greatest number for any one day arose on the second day *post partum*.

Results of Pelvic Examination.—Fully one-half of the patients who recovered were suffering from parametritis. This in 6 cases advanced to suppuration. In 5 of these spontaneous rupture of abscess occurred, once into bladder, once into bladder and vagina, and thrice into rectum. The abscess in the remaining case was evacuated by incision *per vaginam*. Once, in addition to parametritis, an ovary was found to be enlarged and very tender. The other cases showed no signs of pelvic mischief beyond a fetid or purulent uterine discharge, and a large soft and occasionally tender uterus.

Complications.—The following were noted:

Phlegmasia	...	...	...	...	3 cases
Phlegmasia and periphlebitis	...	...	...	...	1 case
Acute nephritis	...	...	...	...	1 "
Diarrhoea	...	...	...	...	1 "
Delirium	...	...	...	...	1 "
Gluteal abscess	...	...	...	...	2 cases
Osteitis of ilium	...	...	...	...	1 case
Acute synovitis of shoulder-joint	...	...	...	...	1 "
Septic arthritis of knee-joint	...	...	...	...	2 cases

¶ In neither of the cases of gluteal abscess was any connection made out with the pelvis. As to those of septic arthritis: in one, one joint, and in the other, both joints, were involved. The joints were opened and drained, and in each case the patient made a good recovery.

Bacteriological Examination.—Nine cases yielded results.

Streptococcus occurred five times in pure and once in mixed culture. Bacillus coli was detected only once, and that in mixed culture.

DIAGNOSIS AND TREATMENT.

Septic thrombosis was sometimes demonstrable directly, where an ovarian vein was thus affected; of much more importance is the fact that its existence could be confidently inferred by the persistence, and more especially by the advancement, of general symptoms, in the absence of any apparently adequate local condition. Simple endometritis, as evidenced by purulent discharge, and possibly uterine tenderness, gave rise to an illness of a comparatively slight and passing nature. Where in addition parametritis was present, pyrexia might be prolonged and considerable; but the constitutional disturbance seldom or never assumed that progressively grave character which indicated the involvement of the venous channels. The presence or absence of rigors came to be considered of but little diagnostic value. They occurred in all classes of cases, and in connection with pyæmia were at times trifling, or altogether wanting.

Even when the disease had become widespread, it was sometimes difficult to arrive at a definite diagnosis of peritonitis. Where this was limited to the pelvis, tenderness and distension of the abdomen were not greater than was frequently found with endometritis alone, and once all local signs were entirely absent. When peritonitis had become general, the classical symptoms were more or less in evidence, but in one case particularly were very slight.

It was not found possible to affirm clinically the presence of purulent salpingitis. Swelling of the tube, as has been shown above, did not occur, nor did any tenderness sufficiently diagnostic.

The routine treatment in each case consisted in the administration twice daily of antiseptic intrauterine douches, and in drainage of the uterine cavity by loosely packed iodoform gauze. Complications were dealt with as they arose. Quinine in large doses (20 grains every four hours) was essayed in a few cases; but, to say nothing of the gastric irritability frequently produced, the results were not encouraging. In some of the earlier cases curettage of the uterus was performed. This procedure, however, was so often followed by rigor and increased pyrexia that its use was entirely discontinued, excepting in those cases where there was retained tissue in the uterus. It is remarkable to find that only two such occurred, both of which recovered.

The treatment by antistreptococcus serum requires special notice. The serum employed was that supplied from the laboratory of the British Institute of Preventive Medicine. It was injected into the subcutaneous tissues of the abdominal wall in doses of 10 to 30 c.cm., repeated at intervals of 12 hours, as might be judged necessary. Observations of the temperature and rate of pulse and respiration were made every two hours in a patient under treatment; and in addition also at the time of injection, and then every half hour, until two hours had elapsed. Serum was only given where the bacteriological examination had shown streptococci to be a factor in the case. It is quite superfluous to point out the absolute futility of its use otherwise.

Nine patients in all received serum treatment. Seven of these were cases of pure streptococcus infection, and 2 of mixed infections of streptococcus and bacillus coli. In 6 there was no apparent result. Of the remaining 3 a slight fall of temperature followed the injections in one (which, however, finally proved fatal), the result in another was doubtful; in the third distinct improvement followed. Six of the cases died. A post-serum rash was once observed; but no other ill-effect was seen.

In conclusion, it seems hopeless to expect any real advance in the treatment of puerperal infections, except in the direction of surgical interference.

This would appear to be more especially indicated where there was reason to believe that involvement of the venous sinuses had taken place. If this were so nothing whatever could be gained by an expectant policy; but, on the contrary, an early operation, before the large veins had become affected or pyæmia had resulted, would offer the best prospect of success. As to the nature of the proposed procedure, anything short of total extirpation of the uterus would clearly be

worse than useless. Where the septic process has invaded the ovarian vein—and this is evidently the most common course—there seems to be no reason why the affected section of the vessel should not be removed during the operation, if this were done by the abdominal method. In a case so far advanced, however, the danger would be much greater of septic deposit having already occurred in the organs.

Two facts may be pointed out. Owing to the comparatively protracted nature of many of the cases, time is not wanting for observation and decision as to action; and in the earlier stages the general condition of the patients is not such as to forbid operation.

The whole question is doubtless a very difficult one, and the outlook, perhaps at the best, not very hopeful. But in dealing with conditions, which if left to run their course must inevitably prove fatal, we are surely justified in seizing almost any chance of cure.

A CASE OF PUERPERAL SEPTICÆMIA,

IN WHICH A FAVOURABLE RESULT WAS OBTAINED FROM ONE INJECTION OF ANTISTREPTOCOCCUS SERUM.

By H. W. WEBBER, M.S.LOND.,

Assistant Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

Mrs. H., aged 30, was seen by me on December 11th, 1899. She had been attended by a midwife in her confinement on December 4th, and on December 6th the midwife left her, as everything was in her opinion quite satisfactory. I found her with a temperature of 105° F. and a pulse of 120; the secretion of milk was entirely arrested, and there was a profuse vaginal discharge of a rusty brown colour and peculiar foul pungent smell. The bowels had not been open for two days. The uterine cavity was well irrigated with a solution of carbolic acid (1 in 40), 4 grs. of quinine bisulphate ordered every four hours, and 10 grs. of colocynth and henbane pill at bedtime. A diet of milk and brandy (a drachm of the latter to each half pint of the former), and of beef-tea was ordered. In

the evening the temperature had fallen to 103° . The uterus was again irrigated.

On December 12th the temperature in the morning was 104.6° , and the amount and character of the vaginal discharge were unaltered. Irrigation was carried out as before, and a closer examination disclosed that the os uteri was badly lacerated on the left side, the edges of the tear being thickened, evidently from recent inflammation. An icebag was ordered to be constantly applied to the head. On December 13th the patient seemed a little better, the temperature was 103° , but the same brown foul discharge came from the vagina.

On December 14th at 6 A.M. I was hurriedly summoned, and found her in very bad condition; she was only partly conscious, and brownish frothy material was issuing from the mouth. Later in the day I procured 10 c.cm. of antistreptococcus serum (Burroughs, Wellcome and Co.) and injected it into the subcutaneous tissue of the anterior abdominal wall. At this time her temperature was 103° , and pulse 130. She was in a delirious condition, and resented interference; no medicine and very little nourishment was taken.

Next morning (December 15th) the temperature had fallen to 101° F, and the pulse to 100. The patient's aspect and general condition were much improved, but the most satisfactory change was found in the vaginal discharge, which had decreased in amount, had lost its foul pungent smell, was much cleaner, and, for the first time, purulent in character. Intrauterine irrigation was again carried out, and some shreddy material came away.

On December 16th the temperature at 11 A.M. was 98° F. and pulse 85; the condition of the vaginal discharge was satisfactory. The patient, however, was becoming troublesome and morose, and would take food with only the greatest difficulty. For the next two days the highest temperature was 99.6° , and one irrigation daily sufficed to keep the discharge sweet; the inflammatory condition of the os uteri had now subsided.

On December 19th the temperature rose to 102° ; but this was found to depend on constipation of three days' standing, and on being relieved by calomel it fell next day to 99° .

Dec 1899