of a vaginal douche given by the nurse night and morning, and try as a last resource the antistreptococcus serum. Accordingly 10 c.cm. were injected that same evening, and at other times as seen marked on the chart. The morning following the first dose the patient felt much better, took her food well, had a cleaner tongue, and the temperature had fallen to 101.5° F.

In nine days eight injections of 10 c.cm. were given, the patient always feeling brighter after the injections, so much so that when she was feverish, on the twenty-fourth day of her illness, from what I now believe to be the after-effects of the treatment, she demanded another injection, when it caused just as much harm as it before had done good. Before, but still more after, this last injection she was very ill; her whole body and extremities were stiff and painful; there was a slight urticarial rash over the abdomen; the mouth and throat were excoriated; diarrhoea was very violent, with considerable loss of red blood from the rectum. During this period I administered a mixture containing sodium salicylate and potassium iodide, a gargle of potassium chlorate for mouth and throat, and opium suppositories. This after-effect reaction came on after the temperature had been normal for five days.

My impression is that it would have been better not to have omitted the injection of antitoxin on the eleventh day, but have kept to the rule of administration till the temperature became normal; the ninth or last injection ought not to have been given. After the patient was convalescent and going about she lost about 6 ounces of blood from the rectum. On examination I found that the lower 2 inches of the bowel were ulcerated.

An important point in the case only came to light when the patient was getting about—namely, that the nurse had a sore on her right forefinger and thumb while attending the patient.

ON SOME UNUSUAL CASES OF BLOOD POISONING.

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RECENTLY I have met with some cases of blood poisoning which appear to be worthy of record. The first case did not come under my own personal observation, and for the notes of it and for those of the second case I am indebted to the medical attendant, Dr. T. A. Goodfellow. The notes of the third case have been kindly furnished by Drs. Dearden and W. E. Fothergill, who were in frequent attendance. I regret that from a scientific point of view the cases are incomplete, as no *post-mortem* examination could be obtained in any of them, and in one alone was any bacteriological examination of the blood made.

As septic poisoning during the puerperium usually arises from absorption from the uterus, it is right that we should closely criticise any case where the absorption of septic matter is believed not to have arisen from its most common source. Cases I and III recorded below were instances of septic poisoning in women recently confined, but where the clinical history and facts of the case showed that the uterus had not been the point from whence the septic matter had been absorbed, but that in both it had probably arisen from the intestinal tract. As my colleague Dr. Donald was consulted in reference to Case I, I asked him to give me his reasons for regarding the case not as directly due to the confinement, and consequently not as an ordinary case of so-called puerperal fever, and he has kindly forwarded me the following statement:—"The sudden onset of the diarrhoea and vomiting without any previous symptom of ill-health was quite unlike the usual course of events in puerperal septicæmia, in which the diarrhoea (when it occurs) is generally not observed until the disease has been established for some days. On the other hand, the lochia and secretion of milk did not alter for a day or two after the onset of the acute symptoms. There was, when I saw her (November 4th), marked absence of the abdominal distension characteristic of acute puerperal septicæmia. The involution of the uterus was normal. There was no abnormal fulness or swelling to be

made out in the pelvis on careful bimanual examination. There was no tenderness on pressure in the vaginal fornices. The surface of the small perineal tear was quite clean and healthy."

Case III was also an instance of septic poisoning in a person recently confined, but in whom we believe the uterus had not been the source whence the absorption had taken place. Dr. Fothergill, who was consulted in reference to the condition of the pelvic organs, has so clearly expressed, in his notes of the case, his reasons for not regarding it as an ordinary puerperal case, that it is unnecessary to refer more in detail to it at this point.

Case II is of special interest, because it is that of a lady who had passed the climacteric period, who had no affection of the pelvic organs, but who had been in very close attendance on Case I; and we could find no point which we could definitely fix as that of the entrance of the poison. We could not find any evidence that there had been a source of infection common to the two cases (Cases I and II). We were compelled to regard the case as one of infection from Case I, the poison having probably been absorbed through the respiratory tract. The case was an especially sad one, as the mother apparently lost her life from her devotion to her daughter.

These cases suggest certain possibilities which appear of importance in connection with the puerperal state and septic poisoning. The first is that the puerperal woman may be more susceptible to septic absorption from the intestinal tract than a non-puerperal person; and, although one must be careful not to minimise the danger of direct and indirect contagion in the spread of puerperal fever, it is possible that some cases, which are classed as true puerperal fever of uterine origin, are really due to absorption of toxic substances from the bowels. Secondly, it seems probable that those practitioners who have laid great stress upon the importance of overcoming constipation during the period of pregnancy, and especially during the puerperium, have not done so without adequate grounds. Thirdly, Case II suggests that sometimes septicæmia arising in the puerperal state is not without its dangers to those nursing the sick.

CASE I (from notes by Dr. T. A. Goodfellow).—Mrs. X., aged 29, was confined of her second child on October 31st, 1897. The previous confinement two years and four months before, and was normal. Very troublesome constipation was present during the second pregnancy. Three months before delivery, after three days' constipation, she had colicky pains of great severity and profuse diarrhoea. A similar attack occurred three weeks before her confinement, and for some time previously the evacuations had been extremely foul. Ten days before her confinement she was busy clearing out the drain traps in the garden. The night previous to her confinement she had lobster for supper, which her husband (who also partook of it, but without bad result) declares to have been bad. The patient was confined early in the morning of October 31st. No doctor was present. I was there twenty minutes after the baby was born, and at the end of an hour from the birth expressed the placenta, which was a normal one. A small perineal tear (three-quarters of an inch) had been made, and was sutured with carbolic catgut. The patient progressed normally till the morning of November 2nd (two days after the confinement), when she had sudden vomiting and profuse diarrhoea, with a temperature of 102.5° F. There was no rigor. The uterus was fairly contracted, and the discharge was normal. During the day a scarlatiniform eruption developed over the trunk, thighs, and arms. Calomel and bismuth salicylate were prescribed. The temperature at night was 102°. The rash was more profuse. The breasts were becoming tense, but were not specially tender. The baby was put to the breast that evening.

On November 3rd the temperature was 100°. The bowels were moved during the night freely. The motions were foul. There was no vomiting. The lochial discharge was scanty but not foul. Milk secretion was established. The rash was still profuse. The pulse was 100 per minute. The patient took milk food and Benger's food very well. The tongue was clean and there was free perspiration.

On November 4th the temperature was 99° in the morning. The patient had a fairly good night. The lochial discharge was practically absent. I gave, however, a hot intrauterine douche of perchloride of mercury (1 in 3,000), and passed an iodoform bougie. No shreds came away with the douching. Dr. Donald saw the patient in the afternoon of this day, and reported that the uterus had normally contracted, with the usual amount of deflection to the right. The raw surface of the perineal tear (the suture having broken down during intrauterine douching) was quite clean and healthy. The rash was very profuse, there being exudation into the cuts of the parts affected, including the face. There was no tenderness on pressure anywhere. The case was regarded as one of septicæmia probably from absorption from the bowel, and certainly not of a typical puerperal form.

On November 5th the temperature was 102°. The bowels acted very freely during the night, the evacuations being extremely foul. There was considerable rapidity of breathing, with constant dry short cough, but there was no dulness or abnormal breath sounds over the chest. The patient was extremely anxious about herself. The temperature at night was 103.5° F.

On November 5th, the patient was much the same. The rash if any

thing was more profuse. The bowels had not acted again; patient was taking nourishment well. There was no vomiting, and she had fair nights after the administration of bromidia.

On November 7th, she was worse. The pulse was 110, and respirations 30. There was nothing to be heard on auscultation over the chest. The bowels acted normally, the evacuations being very foul. The temperature was 103° F.

On November 8th, she was rather better. The temperature was 100° but at 2 P.M. she had a sudden attack of diarrhoea, and profound collapse ensued. Dr. Leech saw her at 5 P.M., and though the respiration was very rapid (40) found no evidence of pneumonia.

The patient steadily grew worse towards night, passing motions unconsciously and being semi-comatose after 7 P.M. The temperature gradually rose until she died at 2 A.M. on the 9th with a temperature of 109°. From November 5th there was noticed in the room a powerful musty, sickly smell, which emanated apparently from patient's perspiration, which was very profuse. The diagnosis made was chronic constipation and septicæmia from fecal absorption. Permission could not be obtained for a *post-mortem* examination. Recently the smoke test had been applied to the drains of the house in which the patient lived, but no defects were found.

CASE II (from notes by Dr. T. A. Goodfellow).—Mrs. Y., aged 54, was the mother of the preceding patient.

Onset of Present Illness.—The patient began to be ill on November 11th, 1897, with diarrhoea and fever, the temperature at noon being 104.5°. She had taken on the previous evening a dose of liquorice powder, as she had felt unwell after having been in close attendance on her daughter (see Case I, Mrs. X.) who had died on November 9th (two days previously).

I first saw her on November 13th. She was a stout, well-made woman, who looked older than her years; her face was flushed. Evening: Her temperature was 101°. She was perspiring slightly, and complained of soreness of the limbs, which were very tender to pressure. The tongue was dry and brown in the middle, with white fur on the posterior portion. On each side was a strip of about $\frac{1}{4}$ inch in breadth which was moist and clean. The fauces were congested. There was some flatulent distension of the abdomen, but no abdominal tenderness. There had been no action of the bowels since the onset of the illness. The pulse was 100 in rate, and regular but of low tension. The cardiac first sound was somewhat muffled at the apex. The respirations were between 25 and 30 per minute. The urine was small in quantity, high-coloured, deposited urates on cooling. It contained a trace of albumen (a small quantity of albumen in the urine is stated to have been present for some years).

The patient had been taking a simple effervescent mixture with doses of compound tincture of cinchona every four hours, with milk diet and beef-tea and champagne in small quantities.

On November 14th morning temperature was 100.4°. She complained of a feeling of weariness, and of pain in the wrists and ankles; both wrists were swollen, and the ankles doubtfully so. Perspiration was fairly free, but not acid in smell. The pulse was 100. The tongue was still dry, but clearing; thirst was extreme. The bowels moved naturally (small-formed brick-red motion).

On November 15th the patient had a better night. The temperature was 99.4° in the morning and 100.4° at night. The wrists were still swollen, but they and the limbs generally were less tender. The digital joints of the finger were also swollen. The knee-jerks were absent; there was plantar reflex obtained. The pulse was 100 in rate. The tongue was clearing, but there was still much dryness of the pharynx. The respirations were 35, and somewhat shallow, but there was no cough.

On November 16th the patient felt rather better. The swelling of the wrists was less, but the fingers were more swollen. The temperature was 100° in the morning. The knee-jerks and plantar reflexes were absent. There was numbness of both hands; the limbs were less tender to pressure. The pulse was very irregular at 10 A.M.; it was regular, however, at noon. Varicose veins present in both legs in knots, somewhat tender to pressure. The evening temperature was 100.4°, and the pulse 100 per minute.

On November 17th the temperature was 99.4° in the morning. There was some loss of control over the sphincter vesicæ, but the water was not decomposed. The temperature was 100.4° at night, and the pulse 100.

On November 18th the temperature was normal in the morning. A small spot of herpes had appeared in the middle line of the upper lip. The pulse was 88. The temperature at noon was 100°; the morning temperature was 101°.

On November 19th the patient felt sickly. The tongue was again dry in the middle. She was perspiring freely. Her pulse was 108.

On November 20th the patient still complained of nausea. She vomited at 7 A.M. after a dose of liquorice powder. The temperature was 101°, and the pulse 110 and of small volume. The respirations were 28 to 30. There was no abnormality in the breath sounds. The swelling of the right leg had increased. The area of thickening on the inner side and right thigh was red and tender, the knots of varix were more reddened and more tender than was the case yesterday. The perspiration had a sour, musty, and sickly odour. The dry area on the tongue was increasing, but it was still moist at the edges. There were sordes on the teeth. The mouth and throat were very dry. There was no enlargement of the liver or spleen, but there was much tympanites, and some diarrhoea. She was very flushed.

On November 21st both calves were more swollen, the right especially. The temperature in the morning was 102.8°, the pulse 110 and regular, and the respirations 40. She complained of epigastric pain, and was sick. There was much flatulent distension. There was no pericardial friction or signs of pneumonia discovered, but the bases of the lungs could not be examined. The motions were passed involuntarily, and were loose and fetid. The patient rambled whilst dozing, but her mind was clear when she was awake. There was considerable dyspnoea and much tympanites. Oxygen was administered, but the patient died at 7.5 P.M. from cardiac failure.

CASE III (from notes supplied by Dr. Dearden and Dr. W. E. Fothergill).—Mrs. Z., aged 24, was a woman of robust appearance, but was much too stout for her age. In her family and personal history there is only one feature of interest. Some years ago she was slightly indisposed, and a medical man who saw her found that her temperature was 102° F. He

kept her in bed for two weeks, and exhibited various antipyretics, but the temperature remained 102°, although she soon regained her usual health. She accordingly was allowed to get up, and no further observations were taken. This is of interest in connection with the disproportion between the symptoms and the temperature in the illness now recorded. She became pregnant for the first time early in February, 1897, and suffered during the early months from morning sickness. This passed away, and the remainder of her pregnancy was uneventful. Labour began early in the morning of November 13th, 1897. Dr. Dearden saw her at 7 A.M., and found the head presenting, the os being then the size of a shilling. At noon dilatation was progressing, and it was complete before 3 P.M. Labour ended naturally at about 4 P.M., the placenta and membranes being expelled complete soon after the birth of the child. Thus the only interference during the whole labour consisted of two or three vaginal examinations, which were conducted with complete antiseptic precautions.

During the first week of the puerperium the patient stated that she was quite well; she nursed the child, and was in good spirits. The nurse administered occasional antiseptic vaginal douches. Dr. Dearden noted that from the first the pulse was somewhat weak and rapid, and that there was a constant clammy condition of the skin. He found the temperature to be 102° F. on several occasions. On November 20th it rose to 103° F. He was sent for during the night, and found the temperature 105° F. This was maintained on November 21st.

Dr. Fothergill saw her with Dr. Dearden on November 22nd. She was then breathing rapidly, the pulse-rate was about 120 per minute, and the temperature was over 105° F. She looked much less ill than patients usually do with such a temperature, and complained of nothing beyond a buzzing in the head and deafness caused by the quinine which she had been taking. The breasts were not tender or hard, and showed no signs of inflammation. Their secretion, however, was arrested, and the child was fed artificially thereafter. The abdomen was not unduly tympanitic, and was nowhere tender on pressure. The fundus uteri was two fingers' breadths below the umbilicus, considerably higher than it should be ten days after labour. The vagina, bladder, and rectum were free from tenderness or inflammatory thickening; indeed, there was no single tender spot to be found on bimanual examination. The uterus was large and soft; the os easily admitted a finger. The discharge was quite free from smell, and was of the usual quantity. There was, therefore, no sign of inflammation in the pelvis, abdomen, or breasts, or, indeed, in any organ. The large size of the uterus was explicable by the general febrile condition. It was therefore concluded that there must be absorption of poisonous substances from the intestinal canal, though the bowels had been kept open in the usual manner. Calomel was accordingly administered in 1 gr. doses with a little opium. The first three doses were given one every three hours, and then three more doses one every six hours. This acted quickly and well.

On November 23rd Dr. Dearden gave an intrauterine douche with a solution of iodine. The os easily admitted a finger and the douche tube. The temperature was 102° F. and improvement was marked. On the 24th the os admitted only the tube, but the intrauterine douche was given easily. On the 25th there was some difficulty in passing the tube into the uterus, which was rapidly becoming involuted. The discharge remained quite sweet. The patient, however, was not so well, and the temperature was rising again. The right elbow and wrists were red and swollen; there was also pain in the left elbow. The same evening, at 11 P.M., the temperature was 106°, the breathing rapid and shallow, and the pulse very rapid. The patient was cheerful and perfectly sensible; the tongue was furred and yellow. There were no physical signs over the front of the chest but pneumonia was suspected to be present. The breasts, abdomen, and pelvis remained perfectly free from signs. Next morning, the 26th, the temperature was 105°, the pulse very rapid, and the breathing rapid and shallow. In the afternoon Dr. Fothergill, who had again seen the patient, suggested that as pelvic and abdominal signs were absent, the case should be seen by a physician with a view to ascertaining more fully the condition of the thoracic viscera. Dr. Harris accordingly saw the patient that evening, when she was, as previously, sensible and even facetious. He found that the pulse was 144 and the respirations 44 per minute; the temperature was 105.6°. There was evidence of pneumonia of the right lower lobe and of bronchitis over both sides. There was general oedema without redness but accompanied by some pain of the right arm. There was no affection of the joints of the left arm or of those of the legs. On the 27th, however, she was more or less unconscious, and marked oedema had developed round both eyes. The temperature was 105°. No further symptom developed, and she died during the afternoon of the 29th instant.

During the course of this case Dr. Dearden was in daily attendance on several puerperal patients, not one of which showed any sign of septic infection. This is an additional reason for regarding the case as quite distinct from ordinary "puerperal" fever.

A few hours before Mrs. Z. died a small quantity of blood was withdrawn under antiseptic precautions from the finger and placed in capillary tubes, which were hermetically sealed. The blood was kindly examined for me by Professor Delépine, who reported that only some staphylococci could be found in and cultivated from the blood. No streptococci were found, and the organisms present presented no distinctive features.

Permission for a *post-mortem* examination of the body could not be obtained.

The French Minister of the Interior has entrusted Dr. Vignes, of Paris, with a scientific mission to study the organisation and working of the ophthalmological departments of the British hospitals.