Miss —, an opera singer, consulted me on December 28th, 1886, for a general feeling of weakness and *malaise*, which was a condition quite unusual to her. She told me that she had recently been in the Portsmouth Sanatorium, suffering from small-pox. She had been discharged on the 23rd, and had come to Brighton to recruit her health. On January 3rd following I found her hot and feverish; on the morning of the 4th she was worse, and complained of pain all over her, could not fix any place in particular; temperature 102.6°, pulse 108; skin hot and dry; in the morning temperature 104.4°, pulse 120. Some spots could now be seen on her face. On the 5th, spots on her face, back, legs, and arms, feverish symptoms had subsided, and she felt much more comfortable; spots felt hard and papular, and numbered about forty. Next day they became vesicular, and although I have never heard of a patient having a second attack of small-pox so soon after the first, I was convinced that my patient was suffering from that disease, and that if she had had it previously this must be a second attack. As I had some doubt about the first attack, I wrote to Dr. Mumby, the Medical Officer of the Portsmouth Sanatorium, and reported the case to him, and asked him if he would kindly give me particulars of the patient's illness in the sanatorium. He replied as follows:

Dr. J. H. Ross.

January 21st, 1887.

DEAR SIR,—I was called to see Miss — in consultation on November 19th, when I found her suffering from undoubted variola. The eruption had then been out some days (four or five), and was becoming pustular. There was not then much fever, and there was not at any time much secondary fever, but I found a large amount of inflammatory swelling around the pustules, with enlargements of the lymphatic glands. She passed through the various stages of the disease from that time very favourably, and left on December 23rd for Brighton.

Hers is a most singular experience, the like of which I have never heard before—to have two attacks of small-pox within two months seems almost incredible, but I can answer that her first attack was genuine, as well as you, no doubt, can answer for the second.—I am, yours very faithfully,
B. H. MUMBY.

As I have had considerable experience in the treatment of small-pox, having had charge of a special hospital in this town during a severe epidemic in 1870, which was reported in the *Lancet* in 1871, and having also had to deal with two or three milder outbreaks, I can guarantee that the second attack of Miss — was a typical case of variola discreta. She had little secondary fever, made a good recovery, and left to resume her duties in February, looking little or none the worse for her misfortunes. There were several children in the house as well as adults. The former had been well vaccinated, and I revaccinated the latter, isolated the patient, and took all necessary precautions for disinfection. I am pleased to say no further mischief resulted from the lady's visit to Brighton. She had two very imperfect vaccination marks. She told me that she was in a ward by herself in the sanatorium, but that a few days before she left the nurse told her that some sailors had been admitted into the hospital suffering from small-pox, and the nurse who attended them sometimes came into her ward and talked to her. Did she infect herself or did she take the infection from the nurse? As the period of incubation is from twelve to fourteen days, she must have contracted the second attack previously to leaving the sanatorium.

The above case has reminded me of two others that have occurred in my practice.

In 1870 I attended a young lady, aged 9 years, who had a severe attack of scarlet fever. Just as desquamation was finished, and she was looking forward to going out, she failed a second time, and had a very severe attack, complicated with pericarditis and endocarditis. Desquamation took place a second time. No other person about her had scarlet fever either before or after. I saw her two months ago; her heart then appeared to be quite sound.

The third case was that of a mechanic who worked for the railway company, and whom I attended for typhoid fever in November and December, 1875. I concluded he had contracted the disease at Croydon, as he had been doing work there, and typhoid was then very prevalent at Croydon. He made a good recovery. No one else about him had fever, but in a month's time I was again sent for, when he had a second attack, for which I attended him up to the end of March. I could find no source from which he could have absorbed the poison except from himself.

These cases do not appear to me to be of the nature of a

relapse, but rather to bear out the theory of auto-infection; for, with the exception of the chance of infection from the nurse in the small-pox case, the patients were subject to no other infected source but what was generated by themselves.

EXTRACT FROM DR. EDUARDES'S WORK ON SMALL-POX AND VACCINATION.²

The Protection Conferred by Small-pox Itself.—But before examining into the protection conferred by vaccination, we must first examine that conferred by an attack of small-pox itself. The first conclusion of the German Commission runs thus: "With rare exceptions one survived attack of small-pox confers immunity against any subsequent attack." Thus small-pox does not absolutely and universally protect against itself. Even third attacks in the same individual have been recorded. Dr. Koch told the Commission that he himself had seen a patient in a third attack of small-pox, which proved fatal. Professor Hebra, of Vienna, had attended this man in the two previous attacks. Professor Wunderlich, whose writings on clinical thermometry are known to the whole civilised world, and who is called by Koch "a reliable and exact observer," asserts that he saw one patient have two attacks in the same epidemic. This is the only instance, on good authority, of an early second attack, and it remains a curiosity in medical literature. "No doubt most alleged cases of second attack rest on mere hearsay, or on diagnostic error."—Koch. Amongst 22,641 small-pox cases in German military hospitals in 1871-2 only one second attack is recorded—a man had a slight form of small-pox three months after a severer form. Dr. Krieger saw one certain second attack in 500 observed cases; two more were doubtful. Dr. Reissner found no second attack in 12,000 cases. Bousquet collected 34 second attacks amongst 16,051 cases of small-pox during thirty epidemics. Dr. Siegel reported 26 such in 3,188 cases in Leipzig in 1871. Wunderlich found 22 second attacks in 1,727 cases in Leipzig, in 1871, and 6 of these were fatal. (The early second attack has been already mentioned.) In former times all cases of second attack were reported as having occurred in children, or persons a little older—never in adults. This clearly points to error in diagnosis (Reissner). So much for the protection afforded by small-pox itself—not an absolute one, after all.

ANTISTREPTOCOCCUS SERUM IN PUERPERAL FEVER.

By R. G. MCKERRON, M.A., M.B.,

Obstetric Physician, General Dispensary; Assistant to the Professor of Midwifery, University, Aberdeen

WITH the treatment of septic infection by antistreptococcus serum still on its trial, it is important that in all cases in which the serum has been tried, whether successfully or not, the results should be put on record, in order that its true position and value as a therapeutic agent may be early established. On that ground the three following cases are communicated:—

CASE 1.—Mrs. F., aged 22, 11-para; delivered on July 14th at 9 P.M. Labour of normal duration and progress till head reached inferior pelvic strait, when, as delay occurred, forceps applied and delivery easily completed. As the perineum was inelastic and non-distensible from a severe laceration at previous confinement, a right lateral incision was made to prevent rupture into the rectum. Edges of incision brought together by a single catgut suture. The strictest antiseptic measures were enjoined on the students who attended the case with me. Great care was exercised in the after-treatment. Convalescence was very satisfactory till the beginning of the second week. The accompanying chart shows no rise of temperature till the evening of the 23rd, when there was a slight elevation—attributed to excitement. Next morning thermometer recorded 100°. On examination perineal wound looked quite healthy; discharge free, but not offensive; uterus felt 2 inches above the pelvic brim; compression of the fundus caused discharge from the vulva of lochia and gas. Vaginal examination showed uterus soft and larger than normal with patulous os. Uterine douches of sublimate 1 in 4,000 ordered twice daily, and patient put on quinine and brandy.

An improvement followed in the condition of the uterus, which became smaller and firmer with os less patent; temperature, however, continued to rise, varying from 101° to 102° , pulse 110. About midnight on 26th patient had a rigor, temperature at once rising to 105° , pulse 140. Temperature gradually fell, till on evening of 28th it was 100.8° . At 10 P.M. on 29th temperature, which at 6 P.M. was 101° , was found to be 103° . At 2 A.M. a rigor without further elevation. At 10 A.M. next morning temperature 103° , pulse 112. 10 c.cm. of serum were injected into the arm with ordinary antiseptic precautions. At 2 P.M. temperature 102° , at 6 P.M. 101° ; patient complained of hot burning feeling all over body, and of considerable local irritation at seat of injection. At 9.30 P.M. temperature 103° , when another injection of 10 c.cm. was given. A slight fall followed injection, but at 6 A.M. temperature 103° . Patient slept well during the night—the first sleep for several nights—and in morning expressed herself as much better, but still complained of hot burning feeling. The temperature was still 103° at 10 A.M. (on 30th), when a third injection of 10 c.cm. was given. A considerable improvement in temperature and pulse followed. At 2 P.M. temperature 102° , pulse 104. At 6 P.M. 100.8° and 88, while at 10 P.M. 100° and 86. No further injections were given. At 2 A.M. another rigor with rise of temperature to 103° ; under quinine and douching, which had all along been continued, temperature fell to 100° at 10 A.M., and to normal at 2 and 6 P.M. On the following morning (August 1st) temperature was 100° . On that and next evening 99° . The chart shows the subsequent behaviour of the temperature till the 6th, when she was removed from my charge to the Royal Infirmary. Through the kindness of the physician in charge, I am able to state the subsequent history of this case. The temperature continued for five weeks above normal, with occasional exacerbations, sometimes preceded by a rigor. The woman lost flesh. No localised inflammation could at any time be detected. The serum was not again used.

CASE II.—Mrs. McK., aged 43, xii-para, confined on August 6th. Labour, which was conducted by a midwife and students, was normal and of under four hours' duration. Two or three cases of scarlet fever had recently occurred in the house, but had been removed. On the second day after delivery she had a rigor, having previously complained of headache. In my absence she was seen on the 10th by Dr. Glennie, who found her temperature 102.5° , while her pulse was 130; the skin of the face was desquamating, but as no sore throat was complained of then, or at any time, the possibility of scarlatinal infection was excluded. Vaginal douching with 1 in 2,000 perchloride of mercury was ordered, and salicylate of soda with stimulants prescribed. The temperature, though improved, continued high, as will be seen from

DATE OF DELIVERY AUG 6TH

the chart. On the 12th a bright rash—resembling a measles eruption, appeared, limited to the chest: during the night there had been a good deal of abdominal pain and diarrhoea. Quinine was ordered, and an intrauterine douche, twice

daily. 14th, temperature at 11.20 A.M. was 102.5° , pulse 126; 10 c.cm. of serum were injected. At noon temperature 104° , pulse 118; patient feeling very sick and complaining of thirst. At 3 P.M. temperature 103.4° , pulse 118, having had a short sleep. At 6 P.M. temperature 105.2° , and at 7 P.M. 105.4° , pulse 108. At 8.30 P.M. I saw her with Dr. Glennie; temperature was then 104° , pulse 110, feeble and running; considerable abdominal distension, but no pain and little tenderness; lochia scanty, but not offensive. Another injection of 10 c.cm. was given. Next morning at 9.45 temperature 101.8° , pulse 108; patient expressed herself as easy and comfortable. A further injection of 10 c.cm. was given. At 3 P.M. temperature 102.8° , pulse 104, while at 6 P.M. temperature 104.2° , pulse 116. The chart shows on 16th a morning temperature of 102.6° and an evening of 104.2° . 17th, at 11.20 A.M. temperature had again risen to 105.4° . A fourth injection of 10 c.cm. was given; at noon temperature 104° , pulse 118. The temperature continued to rise and at 3.15 P.M. was 106.5° . At 6.45, 106° , while the pulse was 132. The patient gradually sank, expiring at 7.45 A.M. on the 18th. All through the patient took sufficient nourishment, and about 6 to 8 ounces of whisky per diem.

CASE III.—Mrs. C., aged 26, iii-para, delivered on August 21st, at 6.30 P.M. Labour began at 10 P.M. on the 20th: presentation breech. A midwife—the same that attended Case II—and student were in charge. The midwife's clothes had been thoroughly disinfected at the City Hospital, while she was enjoined to be more than usually careful in disinfecting her hands, etc. Convalescence was satisfactory till the 24th, when severe headache was complained of, and the temperature was found to be 101° . On the following afternoon and in the evening—when I saw her for the first time—temperature was 103° . A vaginal douche of 1 in 1,000 perchloride of mercury was given, and ordered to be repeated twice daily. Next morning temperature was 99.5° , but rose again in the evening. Notwithstanding the douching it continued to rise, and on the following afternoon (27th) was 104° —in the evening 103.8° . Serum was not obtainable till the morning of the 28th, when at 11 A.M.—temperature 101.5° , pulse 95—10 c.cm. were injected into the arm (syringe being thoroughly disin-

DATE OF DELIVERY AUG 21ST

fected by boiling and by carbolic lotion and the arm cleansed with 1 in 1,000. The vaginal douche was followed by an intrauterine douche of 1 in 4,000. At 2 P.M. temperature 103.2° , pulse 95, while at 4.30 P.M. temperature 102.5° . At 7 P.M. a second injection of 10 c.cm. was given, the temperature being 101.6° . 28th.—At 10.15 A.M. temperature 100° , pulse 98: a third injection of 10 c.cm. was given. There was marked swelling, with pain and tenderness at the seat of previous injections, extending along the arm and forearm, which were covered by an extensive erythematous eruption. At 11.30 A.M. the temperature was 100.2° , while at 5 P.M., though it had risen to 101.2° , the pulse was 100. Douching, quinine, and stimulants were continued. 30th.—In morning temperature 98.4° , in evening 99.4° , pulse 78. For the four

following days the temperature was normal or subnormal. On the morning of the 4th pain was complained of in the right breast, which was tense and tender. The temperature in the morning was 100°; in the evening 101.4°. The threatened breast inflammation soon subsided, and the temperature in two days was normal.

REMARKS.—Little is necessary by way of comment on the above cases. Their evidence on the whole is favourable, though the exact effect of the injections is difficult to estimate, as always in the case of a new remedy in a disease of uncertain and variable course. Two beneficial effects uniformly followed their use—a steadying of the pulse and an improvement in the subjective condition of the patient. The results would, I am convinced, have been more satisfactory had an earlier resort to the serum been possible. Whether a larger dose and greater frequency would have influenced the results must be left to increased experience to determine. In a case of puerperal fever where the serum was used, recorded in the *BRITISH MEDICAL JOURNAL* of June 20th, a single injection was sufficient to reduce the temperature permanently to normal. The serum used in all three cases was from the Pasteur Institute.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

COMPLETE ABSENCE OF VAGINA AND UTERUS.

A WOMAN, aged 21, consulted me (after having been taking some domestic medicine for twelve months) particularly in reference to the absence of the menstrual flow. She was engaged to be married the following month, and was naturally anxious as to her condition. After going exhaustively into her history, I was satisfied that some malformation existed, and I was allowed to make an examination. On adopting the usual methods, I found the vagina impermeable and absolutely occluded, and there was no bulging as of retained menses (apart from her history, which made this condition apparent). Examination *per rectum* failed to suggest the existence of a vagina or of a uterus beyond.

I placed the patient under the influence of chloroform, and made a more exhaustive and careful examination, being prepared, if I could satisfy myself of an existent and only occluded vagina, to incise the normal position of the orifice. This, however, failed to elucidate the case further, and I was now quite satisfied that I had to deal with a case in which the uterine organs were absent.

The question now arose as to how far I was justified in proceeding by way of exploration, and therefore submitted the case to Mr. Williamson, surgeon to the Royal Infirmary, who reports:

"The girl looked quite healthy when she was admitted to the infirmary, and the breasts and external genitals were well developed. On abdominal exploration, it was found that the uterus was absent, but the ovaries and tubes were present. They were left untouched. Later on, incision was made between the urethra and rectum, and a sort of blind vagina resulted, which she kept open with a vulcanite pessary.

Newcastle-on-Tyne.

JOSEPH WILLIAM LEECH, M.D.

INTESTINAL OBSTRUCTION FROM EATING UNRIPE BLACKBERRIES.

ON September 1st I performed a *post-mortem* examination on a child, which died from intestinal obstruction under such peculiar circumstances as to make me think it worth while publishing the details. Unfortunately I did not see the child before death, and my father, who was acting as my deputy during a temporary absence from home, was only sent for when it was *in articulo*. Inquiries, however, have elicited the following history:

H. B., aged 5, a healthy and well-nourished child was absent from home nearly all day on August 28th. He went with other children into the neighbouring fields, and stayed there till towards evening, and during this time his sister says that he ate many blackberries. On his return home he

complained of pain in the abdomen, but went to bed and had a good night. The following day (August 19th) he still had the pain, and was kept in bed and given a dose of castor oil, but the symptoms do not seem to have been sufficiently severe to make the parents summon medical aid. The child continued to be in pain all day, and in the evening, about 10 P.M., began to vomit, and there was a slight action of the bowels, and also much thirst. The vomiting continued till about 3 A.M. on the following morning (August 30th). Whether it was ever stercoraceous I have been unable to ascertain. Medical aid was summoned some hours afterwards, but the child became rapidly worse, and died at 10.30 A.M. the same day.

The necropsy revealed nothing beyond the fact that while the intestines were generally empty, and there was some reddening of the gut at various points, though no exudation of lymph or loss of lustre of the peritoneal covering, the intestine was completely obstructed by the impaction just above the ileo-cæcal valve of a teacupfull of green unripe blackberries, which had apparently been swallowed without mastication. There were also in this mass wheat grains and other bodies of uncertain nature.

Remarks.—The short duration of the whole illness, and especially of the vomiting, and the slight changes in the intestinal wall found after death, make it seem to me likely that shock, consequent on the severe pain experienced, played an important part in causing death. Possibly the administration of the dose of castor oil had a good deal to do with the impaction by hurrying the indigestible contents of the intestine downwards towards the ileo-cæcal valve.

Warrington.

J. GUEST GORNALL, M.A.. M.B.Cantab.

THE IPECACUANHA STEAM SPRAY AFTER TRACHEOTOMY.

ALTHOUGH in the discussion of Dr. Hector Cameron's paper on the Elements of Success and Failure in Tracheotomy¹ the cruel steam tent was generally condemned, one speaker referred to the benefit to be derived from the warm spray. I am prompted to advocate the frequent use of an ipecacuanha steam spray as a slight element of success in the after-treatment of these cases. The reservoir of any ordinary steam (Siegel) spray is filled with ipecacuanha wine, and the mingled spray of ipecacuanha and steam played near the orifice of the tube for a few seconds at any time that the trachea seems difficult for the child to clear, or the cough more than ordinarily difficult. I have seen it give such marked relief that a baby of 18 months would eagerly lift her neck to be sprayed in moments of distress. No doubt it is often employed, but I have nowhere seen it noted.

Felixstowe.

C. G. HAVELL, L.R.C.P.

ILLUSTRATIONS OF AURAL REFLEXES.

In general practice cases exhibiting troublesome symptoms caused by peripheral irritation crop up frequently, and the record of cases in which removal of the irritant has resulted in complete relief will not be considered out of place.

CASE I.—Miss S., aged 23, consulted me for nausea, epigastric pain, and a persistent and distressing feeling of distension of the abdomen, troublesome hacking cough, which appeared to be due to some laryngeal irritation, giddiness on standing up, and impairment of hearing. These last two signs led me to believe that there was cerumen in the ears, and on examination with the aural speculum and reflected light I found that the left external auditory meatus was full of hard dry wax. I syringed the ear with a solution of warm water and bicarbonate of soda, and removed a very large accumulation of cerumen. The next day the cough had subsided, the giddiness, and dysacusia had disappeared, and within three days the gastric reflexes had also ceased. Whilst syringing the ear the patient complained of feeling very faint, and this was no doubt due to a cardiac reflex, brought on by stimulation of the cardio-inhibitory centres.

In this case the sensations, evidently starting from the external auditory meatus, travelled along the auricular branch of the pneumogastric to that nerve and thence to the parts supplied by the vagus and so produced the phenomena. This patient had been under medical treatment for over

¹ BRITISH MEDICAL JOURNAL, September 12th.