and the face dusky. No dulness could be detected over the chest, but there was general loud rhonchus with harsh breathing. The abdomen was retracted. There was no marked tenderness, but severe constipation. He had not been feeling quite well for a few days, but the onset of the illness was sudden. He attributed his condition to a severe wetting a few days before. Next morning, although the pains and cough were a little easier, the pyrexia continued. Examination of the chest showed no further development of physical signs, the constipation and anorexia were unaltered.

During the following week the temperature ranged between 102° and 104.5°; the pulse, however, remained fairly steady, the pains were easier, but anorexia and constipation continued, and tenacious muco-purulent expectoration, swarming with micro-organisms, chiefly cocci, was coughed up with great difficulty. The patient became markedly prostrate, rather sleepless and delirious. Careful daily examination of the lungs failed to show any patches of consolidation. The spleen was found to be enlarged, and the continued temperature and great prostration, in spite of absence of other typical symptoms, raised the suspicion of typhoid. On December 24th three fairly typical spots were discovered on the abdomen, and for the first time tenderness and slight tympanites were noticed in the right iliac fossa. The case was as soon as possible removed to the local fever hospital. On the evening of December 26th blood was first detected in the stools, which were extremely offensive and dark. The mæna continued nearly three days, the pulse being hardly at all affected. On December 31st the morning temperature was 99°, and the patient "felt splendid." He was fed chiefly on whey of milk and white of egg, and Benger's food. There was no tympanites, but the bowels were again confined.

A visit from his mother (whom he had not seen for some time, and with whom a slight difference existed), caused him some excitement, and the temperature again suddenly rose to 102°. During the next week almost a typical ascent was noticed on the temperature chart, and by January 8th the temperature was 104°. The patient was packed for half an hour, and perspired freely, but the temperature soon rose again to 103°. Again, the chief symptoms were bronchial rather than intestinal, severe coughing, rapid breathing, thick yellowish expectoration, rhonchi all over the chest, and *râles* in the throat; some loud, harsh, almost cavernous, breathing was heard under the right clavicle. On January 11th hæmoptysis was first noticed, and about the same time hiccough developed. The hæmoptysis continued nearly a week, the blood being intimately mixed with the gelatinous sputum. The hiccough proved extremely refractory, and soon attended every act of respiration. The patient's general condition became extremely grave; the tongue dry and shrivelled, the face pinched and dusky (purplish). He was mostly in a state of low muttering delirium, picked at the bedclothes, and passed urine and fæces unconsciously. The temperature kept above 103°, except when temporarily brought down by packing or phenacetin; the pulse was feeble, and markedly dicrotic. He was only capable of being momentarily roused to consciousness; he continued, however, to take plenty of nourishment and stimulant.

On January 13th his condition seemed so hopeless that it was decided, as a last resort, to try some antitoxin. Accordingly, at 6 P.M., 5 c.cm. of serum, procured from Messrs. Burroughs, Wellcome, and Co., were injected into the iliac region. Within a few hours the temperature began to fall, the patient perspiring freely. Next morning the temperature was 99.8°, and the pulse felt stronger; the patient had slept without hiccough. Unfortunately, however, the latter symptom immediately returned as the patient partly roused. By midday, January 14th, the temperature was again up to 103.4°, and the patient was much as before; so a second injection of 5 c.cm. of serum was given. This was quickly followed by a fall of temperature, with marked perspiration, and at 8 P.M. the thermometer registered 98.8°. The patient seemed certainly rather better, but the hiccough continued without intermission. About this time there was some very severe weather, with fogs and east winds, and although every care was taken to protect the patient from the effects of these, towards evening his chest symptoms became markedly aggravated. His breathing became rapid and laboured, the expectoration was very thick and tena-

cious, and he had not the strength to cough it up; cyanosis and hypostasis were both marked, the pulse grew feeble, more rapid and irregular, *râles* accumulated in the throat, swallowing became almost impossible, and urine and fæces were passed involuntarily. He appeared to be moribund. However, by morning he had rallied a little, and was able to take some food and brandy. A fresh relay of serum had been promptly forwarded by Messrs. Burroughs, Wellcome, and Co., and a third injection of 8 c.cm. of serum was now given, the temperature being 102° at the time. The patient again perspired freely, and the temperature fell forthwith, reaching 98° at 8 A.M. on January 18th. From this time the patient's general condition steadily and surely improved. The hæmoptysis ceased. The hiccough, however, still harassed him, but was less severe, first stopping during sleep, then gradually becoming less frequent, finally disappearing on January 21st. The bowels still remained very stubborn, and could only be made to act by enemata. On January 22nd he was allowed a little solid food—poached eggs and soft bread and butter. He has had so far an uneventful convalescence except for some rather troublesome boils. He is now steadily gaining strength and flesh; his cough is rarely troublesome; he sleeps well, and his appetite is excellent.

REMARKS.

There could be no doubt as to the grave condition of the patient when the serum treatment was resorted to. Ordinary treatment seemed to exert little if any beneficial effect; indeed, it is probable that the chlorine mixture (so strongly advocated by Dr. Yeo) rather aggravated the bronchitis, and may have done actual harm. The occurrence of intestinal hæmorrhage, and later hæmoptysis, and the extreme prostration and low typhoid condition into which the patient had fallen were all the gravest of symptoms. According to Poore,¹ hiccough of any persistence in the course of typhoid is often an indication of perforation and the onset of general peritonitis, but there were certainly no evidences of perforation here. It hardly seems possible to resist the conclusion that the injections of serum enabled the patient to "round the corner," and although not wishing to lay too much stress upon this one case, yet, taken in conjunction with the cases recorded in the BRITISH MEDICAL JOURNAL of January 30th, they seem to justify a further trial of this new remedy, which may probably prove of service even in the most desperate cases. The chart shows the temperature in the week during which injections were given.

REFERENCE.

¹ Last edition of Quain's *Dictionary of Medicine*.

A CASE OF SEVERE PUERPERAL SEPTICÆMIA; INJECTION OF ANTISTREPTOCOCCIC SERUM; RECOVERY.

By ARTHUR J. SHARP, M.D. LOND., F.R.C.S. ENG.,
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A. E., 23, primipara, was confined on November 2nd, 1896. The house and its surroundings were not ideally perfect. The patient was a weakly anæmic girl, subject to fainting fits, and the labour a most difficult one. The child was very large, and presented by the breech. This was difficult to recognise, as it did not descend into the pelvis at all readily. The child's sacrum was directed towards the mother's right sacro-iliac joint. The chief difficulties arose from the liquor amnii not exceeding 3j or 3ij, and from the legs being extended so that it was quite impossible to reach a foot. The case was watched patiently for twenty hours, by which time the pulse had risen to 120, and as hardly any progress had occurred in the last twelve hours it was felt that there was nothing to be gained by further delay. Counterpressure on the fundus and every other available device failed. The breech was eventually extracted by hooking two fingers of the right hand over the right groin and iliac crest of the child, whilst two fingers of the left were passed up its rectum and hooked into the hollow of the sacrum. The mother's perineum was badly lacerated, and there was almost uncontrollable hæmorrhage *post partum*. The child was resuscitated with great difficulty, and lived thirty hours. Fortunately I had

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the assistance of Dr. A. C. Dutt. Antiseptic douching was employed from the first, and the perineum sutured. The temperature chart begins twelve hours after labour.

Quinine was given freely, also phenacetin, and douches of carbolic acid, chinosol, lysol, or sublimate twice daily. Iodoform or carbolic suppositories were placed in the vagina, and sublimated Gamgee pads used externally.

For the succeeding week the patient's condition was very precarious, the pulse ranging from 150 upwards. Happily she took nourishment well. On the second day after labour there was considerable tympanites.

Dr. Washbourn, of Guy's Hospital, consulted by letter on the fourth day after labour, very kindly recommended the use of serum, which was procured from the Institute of Preventive Medicine, and 10 c.cm. injected on the fifth, sixth, and seventh days. Most improvement seemed to follow the first one. Thirty c.cm. were given in one dose on the eighth day, and reduced the temperature about $2\frac{1}{2}^{\circ}$. The quinine was discontinued some time before the serum was commenced, so that the improvement seems wholly attributable to the serum. From this time the patient began to hold her own, and the temperature reached normal on the thirtieth day.

A specimen of blood taken from the finger on the eighth day was kindly examined for streptococci by the Institute of Preventive Medicine but with negative results. On the tenth day the lochia became purulent and abominably foul. Dr. Granger saw her with me, and we made out a mass of exudation in the left broad ligament and iliac region. By his advice antipyrin gr. iij was given every few hours.

On the fourteenth day the pus was ascertained to come from an abscess cavity the size, when distended, of a Tangerine orange, opening into the vagina by a valvular aperture. Upwards the track ran for nearly 2 ins. to the left of the uterus, and downwards and backwards a curved sinus wound round the left side of the rectum for $2\frac{1}{2}$ ins., measured with a sound. The cavity and sinuses were irrigated twice daily with sublimate lotion, and packed with carbolic gauze wrung out of a mixture of eucalyptus oil, thymol, and carbolic acid. Iodide of potassium and small doses of mercury were given internally.

The patient was able to lie on a sofa for the first time on Christmas Day (fifty-third day), and at the time of writing the sinuses are soundly healed, though some further operation on the perineum will have to be undertaken subsequently. I venture to draw the following conclusions from the case:

1. That if proper precautions be taken, the risks attending the use of serum may be neglected. The serum was on each occasion injected into the abdominal fat, and the following precautions taken:—Syringe and needle boiled, skin scrubbed with soft soap and then lysol 2 per cent., then dusted with boric acid, and a dressing applied afterwards. No inconvenience whatever resulted from any of the punctures, and the patient's appetite was markedly stimulated.

2. That in this case, although streptococci were not

detected, benefit attended its use sufficient to turn the tables in her favour.

3. That in a really serious septic case corrosive sublimate is the only reliable antiseptic, and should be used fearlessly in a strength of 1 in 2,000.

4. That in septicæmia after labour the focus of mischief may be other than uterine (Dr. Dutt).

CASE OF BLOOD POISONING IN WHICH ANTISTREPTOCOCCIC SERUM WAS USED.

By SAMUEL BOAKE, L.R.C.P., L.R.C.S.I.,
Ilminster.

F. H., aged 38 years, came to me on October 28th, 1896, suffering from a whitlow of the right thumb. He stated that he had received a prick from a thorn a few days previously. The abscess was incised, and a little pus evacuated. From this date until November 6th the infection extended up the flexor tendon into the hand. The hand and fingers became densely swollen and painful. Incisions were made wherever fluctuation was detected, and the palmar fascia freely opened. A hot boracic arm bath, linseed poultices, quinine and iron were ordered.

From November 7th to 10th, the suppuration extended up the fasciæ of the muscles of the forearm, which became tensely swollen and red; the swelling extended to the axilla along the inner border of the arm. Several free incisions were made, and drainage tubes inserted. The several openings communicated, so that the forearm and hand could be well washed out. Pus flowed continuously from all the openings. There was retention of urine from November 29th to December 6th. The temperature varied between 101° and 103° F. Perspirations were profuse.

On November 12th, at 11.45 A.M., 10 c.cm. of antistreptococcic serum were injected under the skin of the abdomen, with antiseptic precautions. The serum was obtained from the British Institute of Preventive Medicine. At the same time more free incisions were made in the forearm. At 11.45 P.M. it was noticed that the swelling had markedly decreased. The patient stated that the perspirations had considerably lessened. A further dose of 10 c.cm. of serum was injected.

On November 13th the swelling above the elbow had completely disappeared.

On November 14th urticaria appeared on the trunk and limbs. The swelling of the forearm had greatly decreased. Ten c.cm. of serum were injected, and next day the same quantity was injected. The rash reappeared.

On November 17th, 10 c.cm. of serum were injected. The first phalanx of the little finger was felt to be bare, the tissues of the hand and fingers were swollen and baggy. From November 18th to 25th the temperature ranged between 101° to 103° F. Pus continually drained away, particularly from the forearm. Profuse perspirations again appeared. The swelling of the forearm had gone completely, but, as most of the