prominent. The child was found to be cutting a permanent molar, and was able to say "Dada," "Mamma," and "butter," the words appearing to indicate definite ideas, and not being repeated in parrot-like fashion.

On January 23rd, 1895, a remarkable change was visible in its general condition, as shown in the third photograph (Fig. 3). The height had increased to 2 feet 11 inches. There was entire absence of the vacuous expression originally noticed. Speech was very distinct, and the vocabulary was increasing daily. The hernia had practically disappeared, and the abdomen was nearly of a natural size, whilst the extremities were firm and plumply rounded. By June another half an inch had been gained in stature, and the child was able to talk fairly well.

Even had no mental progress been made, the successful result of the treatment physically alone is worthy of record. Indeed, it is difficult to realise that the first photograph can be that of the same individual as the attractive, intelligent-looking child shown in the third.

It is to be regretted that a fatal attack of diphtheria prevented the further observation of the case.

A CASE OF ACUTE SEPTICÆMIA TREATED BY ANTISTREPTOCOCCUS SERUM: RECOVERY.

BY

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DR. —, middle-aged, attended a fatal case of puerperal septicæmia on June 28th. From this time he began to show symptoms of poisoning, suffering from dyspepsia, with vomiting; his skin assumed an icteric tint, and styes appeared on his eyelids. He frequently complained that "he could not get rid of the awful smell."

I was first called in to see him on the afternoon of July 13th. The temperature was 104°, skin pungently hot and jaundiced. Hiccough violent and incessant. A few consonating crepitations could be detected at the base of the right lung. He vomited occasionally some blackish-coloured fluid, complained of cramp in his stomach, and "feeling shivery." He was delirious at times, drowsy at others. Through the night he was extremely restless, and hiccough scarcely ceased; he only dosed for a few minutes at a time.

On the next day, July 14th, he was wildly delirious, and bathed in perspiration. Temperature 104.6°, pulse 110, respirations 50. The tongue was dry and coated. Signs of pneumonia were well marked in the right lung, and a few clicks could be heard over the lower part of the left lung anteriorly. Vomiting occurred several times during the day, and delirium increased. Drs. Laver (Colchester) and Foster (Thorpe) kindly saw the case, and confirmed the diagnosis of septicæmia.

On July 15th the symptoms continued, and in an aggravated form. The respirations increased to 56, and the pulse became more rapid (120) and feeble; he had had no sleep; there was retention of urine—relieved by the catheter—and the consolidation of the lung was increasing.

On July 16th hiccough was constant; there was obstinate constipation, and the patient was becoming very livid. At 11 P.M. his condition was briefly as follows: Pulse running, feeble, intermittent (116); temperature 103.6°; great lividity; patient quite unconscious; bathed in perspiration; hiccough constant, feeble, and half strangled. At the suggestion of Mr. Wakeling (who now saw the patient for the first time) 20 c.cm. of antistreptococcus serum (promptly supplied by Messrs. Burroughs and Wellcome) were injected. The pulse almost immediately became much fuller and slower. At 1.15 A.M. a second injection of 10 c.cm. was given. The temperature continued to go up till 4 o'clock, but at 3 o'clock he became quite conscious for the first time for three days, and talked rationally. The injection of 10 c.cm. was now repeated every four hours.

At 8 A.M. on July 17th, temperature had fallen to 100.2°; hiccough was much less troublesome. There was profuse perspiration. The tongue was much cleaner at tip. In the

evening the temperature again reached 103.6°. Injections were reduced to 5 c.cm., and only given every seven hours, as the supply of serum was running short, and no more could be supplied for three days. The temperature an hour after injection went up to 104°; pulse 122; respirations 54.

At 4 A.M. on July 19th the patient was much worse; pulse 130; respirations 64. He was lying on his back bathed in perspiration, was more delirious, the pupils were widely dilated, the bowels acting constantly, and the motions mixed with blood (hæmorrhoids were present). At 6.30 A.M. an injection of 5 c.cm. serum was given, and at 9.15 A.M. the patient seemed better, and was quite conscious.

On July 20th he was still delirious on and off; hiccough was troublesome; the catheter had to be used.

On July 21st he was much weaker, and had difficulty in swallowing for the first time. At 4 P.M. the temperature was 103°; 10 c.cm. serum were injected at 6.30 P.M. He perspired freely shortly after (temperature went on falling gradually till at noon on July 22nd it had reached the normal). The patient was not conscious all day. The catheter had to be used, but hiccough had ceased. There was twitching of the face and hands. He was able to lie on the left side. The serum injection was discontinued owing to difference of opinion.

On July 22nd the temperature was normal or subnormal all day. Twitching of the muscles of the hands continued. The face had lost its drawn look and lividity, and appeared fuller. The patient asked for a cup of tea; was quite rational when spoken to, but at other times muttered to himself a good deal.

On July 23rd the highest temperature was 98.8°. The catheter was no longer necessary.

On July 24th he was quite conscious all day. The temperature was 101.4° at 4 A.M., normal at midday, but rose again in the afternoon. The patient, who complained of great pain in the bladder, passed a catheter himself.

On July 25th he appeared better, in spite of the temperature remaining high all day.

On July 26th the temperature reached 101.2° at 4 P.M., and 10 c.cm. of serum were injected. The serum was again discontinued. The patient was comfortable and conscious.

On July 27th the temperature fell to 99.2°, rising to 101° at 12 P.M. On July 28th the temperature varied from 98° to 100.4°. On July 29th the patient vomited. The temperature varied from 99° to 101.2°. On July 30th the temperature ranged from 99.2° to 102.8°. On July 31st the patient was worse, perspired profusely, was delirious at times, muttering when asleep. Temperature 99.2° to 100.8°. It was decided to give two injections of 10 c.cm. of serum in every twenty-four hours until the temperature should continue normal. From this time he continued to make a good recovery, the serum being permanently discontinued on August 4th.

REMARKS.—Having read with much interest in the BRITISH MEDICAL JOURNAL of July 4th an account of a case of hæmorrhagic septicæmia successfully treated by antistreptococcus serum we wish to add further testimony to the value of the treatment by the citation of the above case. The diagnosis was confirmed bacteriologically. Cultivations were obtained from the blood two days after the serum treatment had been commenced.

It will be noticed that the serum was not used till three days after the onset of acute symptoms. A peculiar feature of this case is that no local manifestations of the place of entry of the poison were apparent. The patient says he had an abrasion of the right forefinger.

We can fully bear out the remarks made by Messrs. Ballance and Abbott as to the immediate improvement which took place in the pulse, which became slower, fuller and more regular. In four hours the patient became conscious for the first time for two days. The tongue became cleaner and more moist. The temperature after an initial rise began to fall. The mind became clearer.

In the interval when the serum was discontinued (July 21st to July 26th) the patient gradually relapsed. A slight improvement followed the single injection on July 26th, when it was again discontinued until July 31st. The condition of the patient again became much worse. Injections of serum

(10 c. cm.) were then given twice a day. An immediate improvement followed, which continued till August 4th, when the injections were finally stopped. The patient has since stated that he "felt a new man" after each of the latter injections of which he was conscious. The lungs cleared up with but little expectoration.

It will be seen that the serum was mostly given in large doses, and that the larger doses produced more beneficial results than the small. The injections were made in the abdomen and loin. We noticed that the last half of the 20-c.cm. bottles which were opened in the morning produced a local erythema when injected in the evening, although the serum was kept in the interval in ice, and every precaution was taken to sterilise the site of injection and the syringe. The intensely hot weather may have had something to do with this.

In another case we should use a freshly-opened bottle for each injection, and would recommend that the serum be bottled in 10-c.cm. bottles with india-rubber corks. Two days after the injections were discontinued some urticaria gave a little trouble, but did not retard recovery, and, as the patient is now (August 19th) able to walk about his room and take drives, we feel we ought not to delay in placing these notes before the profession.

CASE OF TETANUS TREATED WITH ANTITOXIN.

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On September 24th, 1895, H. H., aged 16, had his right hand caught between cogwheels, which tore off the skin between the fingers and thumb, and contused the muscles; the bones were not injured. The wound was dressed with carbolic oil.

All went well for thirteen days, but on October 7th he began to complain of slight stiffness of the jaws and pain in the centre of the back. He was ordered chloral, gr. x three times a day.

On October 9th he was sleeping well, and had taken food, but could not masticate on account of spasm.

On October 10th the tongue was very sore on the left side (probably bitten), but he could not open his teeth more than half an inch. Pain in back varied, but he was able to walk. The bowels were very costive.

On October 13th he complained of pain in the abdomen, and had some spasmodic starts. The other symptoms were the same, but he was confined to bed.

On October 15th, at 5.30 A.M., the symptoms were aggravated, he was restless with spasms, retraction of the head, opisthotonos and risus sardonicus. The abdomen was tense. One gramme of tetanus antitoxin, supplied by the British Institute of Preventive Medicine through Messrs. Allen and Hanburys, was injected, and the chloral stopped. He was a little quieter from 8 A.M. to 12, but many spasms occurred afterwards: he took liquid food well. The temperature was 100.2°. The injection was repeated at 5 P.M.; at 11 P.M. he was much the same. He had had many spasms. A third injection was given.

On October 16, at 8 A.M., he said he had less pain, and the spasms were not quite so frequent. He was perspiring freely, but was otherwise the same; temperature 100°; a fourth injection was given. At 3 P.M. he was much the same; temperature 101.4°; and a fifth injection was given. At 10 P.M. the spasms were about as frequent, but not quite so strong. He said they were not nearly so painful. He took liquid food and swallowed well, but had not slept for some time. Temperature 100.6°. A sixth injection was given, and chloral gr. xxx.

On October 17th, at 8 A.M., it was found that he had slept a good deal in the night, with less spasm, but some had occurred during sleep; their severity varied. There had been some epistaxis. Temperature 101°. A seventh injection was given. At 3 P.M. he had been quieter. There was a good deal of erythematous inflammation, with some tumefaction, round the site of each injection. He took fluid food well, but could not open his mouth, and attempts caused spasm. Tem-

perature 101°. The eighth injection was given. At 10 P.M. he had had some sharp spasms, but on the whole was quieter. He said the spasms were less painful and that some did not hurt him at all. Bowels acted slightly as the result of ol. ricini and enema. Temperature 101°. The ninth injection was given, and chloral gr. xxx.

October 18th, 8 A.M. He had had epistaxis twice in the night. He could open his teeth half an inch. The arm was a good deal inflamed. Temperature 101.6°, pulse 136. The tenth injection was given, and chloral gr. xx at night.

October 19th, 8 A.M. He had had a good deal of sleep, but some sharp spasms between 5 and 6 A.M. He still started a good deal on any provocation, and the abdomen was hard. The wound was healing. Temperature 100°. The eleventh injection was given. 10 P.M. Has had a fair day; a good many slight spasms. Chloral gr. xx.

On October 20th, at 10 A.M., he remained the same; occasional spasms of varying intensity occurred, but none extreme. There was still much perspiration. Temperature 100.6°, pulse 120. The twelfth injection was given. 9 P.M. Temperature 100°, pulse 140. The inflammation of the arm was better. No chloral was given.

October 21st, 8 A.M. He was improving slowly. He could raise the arms and the head now, and draw up his knees, but had many starts and spasms. He slept a good deal without the chloral. Bowels acted better. Temperature 100, pulse 140. As the spasms were rather more severe in the evening, he had chloral gr. xx at 8 P.M. At 10 P.M. the temperature was 99.5°, and the thirteenth injection was given. He had a fair night, and on October 22nd, at 8 A.M., the temperature was 100°, pulse 128. At 9 A.M. he had a much quieter day till the evening, when there were several severe spasms. At 9 P.M. the temperature was 100°, and the pulse 132. Chloral gr. xx was ordered.

October 23rd. The spasms varied, but he was quieter on the whole. The mouth was still contracted, and there was much urticaria round punctures. Temperature 100°, pulse 120. To take at night chloral gr. xx, pot. brom. gr. xxx. He slept more quietly; spasms now and then, sometimes rather sharp.

On October 24th he could not open his mouth; the spasms were worse when lying on his right side. The urine was now clear. Temperature 99.1°, pulse 128. To take pot. brom. gr. x 4 t.

October 25th. He was still improving, but starts in his sleep. The mouth was still contracted. Temperature 98.4°, both morning and evening; pulse 124.

October 26th. Temperature had been normal since last report, pulse 120. He twitched in sleep, more when on his back. He could open the teeth one inch, and had slept better. The wound was healing quickly.

After this he made steady progress. The pulse came down very slowly.

With regard to the effect of the antitoxin, the first three or four injections did not seem to have any effect in stopping the spasms, but they did not get worse after they were commenced. After that there was decidedly an impression made. He had an injection three times a day (1 gramme) for three days, and after that only once a day, as the chloral, then resumed, seemed to give considerable relief by sleep. The injections were made in various parts of all four extremities, as the amount of inflammation set up was very considerable, but all subsided ultimately without abscess. The frequency of the pulse continued for a remarkable time after the other symptoms subsided.

TELEGONY.—A hybrid between a male Burchell's zebra (*Equus Burchelli*) and a mare (*Equus Cabattus*) has, we learn from *Nature*, been received at Professor Ewart's experimental stud at Penicuik, Midlothian. The mare is jet black, but the foal, except over the hind-quarters, has as many bands as its zebra parent. Should this mare now have a foal by an Arab stallion in the stud, much interest will be felt in the question whether this foal will present zebra stripes. It is well known that in a famous case this was asserted to have occurred, and the assertion was generally accepted until it was disputed in recent times by Professor Weissmann. Should the foal by an Arab stallion out of this mare be zebra-striped the occurrence will go far to justify the belief in telephony, or "the infection of the germ."