After the patient has had a good rest and been radiographed, Besley's or other callipers with weight and pulley extension in the line of the thigh are, as a routine procedure, applied to the femur just above the knee, and the points are inserted down to the bone, but not penetrating into it; any tendency to subsequent penetration is limited by placing a light check-bar between the handle-ends of the callipers; a subsidiary hinged splint, exactly similar to the

FIG. 2.—Femur bed with patient on it; Thomas's splint with large ring as sent down from the casualty clearing station, with knee-flexion piece added. Lower end of bed suspended by chains.

one used by Major Sinclair for elbow flexion, is attached to the Thomas by a thumb-screw at the level of the knee-joint, and the weight of the leg below the knee is transferred to this. The strapping or glue extension is then removed altogether. The femur thus has very direct and efficient extension through the callipers in its own long axis, while the leg below the knee has, and needs, no extension at all, and can be flexed as much as desired, the amount being regulated by a light chain and hooks between the foot of the Thomas and the subsidiary splint. The patient's foot is suspended from a foot-piece, as shown. The leg is bare below the knee and is massaged and moved daily.

In upper-fourth fractures, where wide abduction of the limb is necessary, two of the vertical suspension posts shown in the figure are attached to the foot of the bed and a third one bolted across the top of the other two, projecting as far as is necessary beyond the side of the bed.

FIG. 3.—Thomas's splint with knee-flexion piece added.

The patient with the whole apparatus—bed, splint, extension post, weights, etc.—being compact and self-contained, can be carried as a whole without any difficulty in case of a fire alarm, or out into the garden if wished.

Measurements of both thighs are taken once a week by means of a sliding scale, such as shoemakers use, and any shortening is charted as regularly as the temperature. Very few have a centimetre of shortening. All have moveable knee-joints. Secondary haemorrhages are extremely rare.

With these beds one nurse can dress a case easily without assistance; the actual dressings of a ward of femur cases are much lighter than those of an average general surgical ward, though, of course, there still remains more fetching and carrying and washing.

I submit these particulars for publication in the hope that some of them may be useful or suggestive to others working in special femur hospitals. They have very greatly lightened the work and increased the efficiency of our wards.

I am greatly indebted to Captain Renwick, of the Army Ordnance Department, for valuable advice and assistance in making these appliances, all of which are now available through ordinary army sources or from the British Red Cross Society.

A CASE OF SEPTICAEMIC MENINGITIS, WITH RECOVERY.

By JOHN DUNBAR, M.B. GLASG.,
LIEUTENANT R.A.M.C.

SINCE it is well known that cases of septicaemic meningitis are almost invariably fatal, and that cases of recovery are extremely doubtful, it is well to place on record a case in which recovery is not doubtful, and which shows an absence of certain signs and symptoms generally found in this condition.

S. S. was admitted to hospital on July 14th, 1917, suffering from a shrapnel wound of the right scapular region received seven days previously. The wound was superficial, very septic, and the spine of the scapula was exposed for three inches of its length. Except for a slight cough he was very comfortable.

Two days later, and for the following three days, he had a feeling of malaise. Rise of temperature was slight, and not of a septic character.

On the evening of July 19th he had an attack of syncope, following which he complained of severe pain in the eyes. Next morning he had a slight rigor—temperature 102.2° F., pulse 104, respirations 36—followed by pains in the calves and stiffness of the lower jaw. The jaw could be opened fairly widely; the tongue was coated with a brownish fur. As some of the signs and symptoms resembled those of tetanus, it was considered safer to treat the complication as that disease. The wound was in good condition.

He was very restless on the following day, and bilious vomiting preceded by nausea occurred. The pains in the legs were now severe, and the stiffness of the jaw was increased. In addition there was slight stiffness and tenderness of the neck, and slight headache. The temperature was 101.6° F., pulse 104. He continued in this condition until July 22nd, when lumbar puncture was performed, 20 c.cm. cerebro-spinal fluid withdrawn, and as it was still doubtful whether tetanus was the cause of the condition, 17 c.cm. antitetanic serum were injected. Although the cerebro-spinal fluid was clear, it was under slightly increased pressure.

The following organisms were found: Cocci, some of which were Gram-positive, others Gram-negative, but shaped like pneumococci. Small Gram-negative bacilli were also present. Culture gave a very abundant growth of the latter. No meningococci were found. Practically no polymorphonuclear leucocytes were present. The fluid contained no evidence of inflammatory reaction. The same organisms had been found in the pus from the wound.

The pain and stiffness in the back of the neck still continued on July 23rd, but the headache was now localized to the occipital region, and was severe. Kernig's sign was well marked, although previously it had been absent. Slight generalized twitchings were observed. He was given morphine $\frac{1}{4}$ gr. that night, as he was very restless and his headache was very severe. There was no improvement in his condition on July 24th.

On July 25th 20 c.cm. cerebro-spinal fluid were withdrawn. It was still under slightly increased pressure, and on this occasion it was faintly opalescent. The same organisms were found as before, except that the bacilli were now very scanty. There was distinct evidence of meningitis, abundant polymorphonuclear leucocytes being present. Immediately after the lumbar puncture he became much brighter and the pains in head and neck were less severe. Slight congestion of the right side of the throat was present. No meningococci were found on bacteriological examination of the throat swab. He developed phlebitis of the left long saphenous vein.

Apart from a syncopal attack during the night of July 26th nothing of any importance was noted, except that his general condition was improving, until July 29th. On that day the pain and stiffness of the neck were absent, as was also Kernig's sign, and pain in the head was less severe. The phlebitis was still present. He continued in this condition until August 2nd, on which day his temperature was 101° F. Lumbar puncture was performed, 20 c.cm. cerebro-spinal fluid being withdrawn. The cocci and bacilli were still present, but were much scantier than on the previous occasion. Extremely few polymorphonuclear leucocytes were found. The fluid was practically clear.

As the headache was now much less severe, lumbar puncture was not performed until August 13th, when 10 c.cm. were withdrawn. Although practically under normal pressure the fluid contained a few organisms. Polymorphonuclear leucocytes were very scanty.

After August 13th the headaches were not constant. Lumbar puncture was again performed on August 28th. The fluid was under slightly increased pressure—greater than on previous occasions—but on bacteriological examination it was found to be sterile. The swelling and pain of the leg had disappeared, but the glands were still enlarged, although not painful. The patient was allowed up on August 31st. Oedema appeared in the leg on September 4th, and he was confined to bed until the swelling had disappeared.

On September 25th the following was noted as his condition: Weight increasing rapidly. Mentally bright. Slight frontal headaches of a very transient nature present. The eyes were examined by Major Fergus, R.A.M.C.(T.), who could find no

abnormality of the nerve structures. Heart and lungs normal. Apart from slightly increased knee-jerks, the nervous system presents nothing abnormal. Bowels normal. Wounds healing. Slight oedema of the left leg, and the long saphenous vein can be felt in Scarpa's triangle as a cord.

The features of interest in this case are that the patient has recovered; that the condition was discovered at a very early stage; that, in comparison with the number of organisms present in the cerebro-spinal fluid, marked signs and symptoms were absent; that headache was never severe except when localized to the occipital region; that emaciation and constipation were very marked; that the patient only vomited once, and that the emesis was not cerebral in type, but was preceded by a feeling of nausea; that convulsions and epileptiform attacks were absent throughout, except for the slight generalized twitchings on July 23rd; that Brudzinksi's sign was absent throughout; that there was hyperaesthesia of skin and muscles of the neck and calves during the inflammatory period, and that the temperature was never very high, the highest being 102.2° F. The pulse-rate in septicaemic meningitis is stated to be abnormally high compared with the temperature at the commencement of the disease. In this case the relationship between the pulse and the temperature was practically normal during the period of fever—that is, till about August 8th. The temperature then became normal, and the pulse-rate between that date and September 1st varied between 88 and 104 per minute. Since the latter date the rate has gradually diminished, and on September 16th it was normal, and has continued normal.

The cerebro-spinal fluid was under very slightly increased pressure. It contained both cocci and bacilli, and there was practically no evidence of inflammatory reaction except at the second examination. It will be noted that three days previous to the withdrawal of this cerebro-spinal fluid the patient had received an intrathecal injection of antitetanic serum. This of itself produces leucocytosis in the cerebro-spinal fluid, but the number of leucocytes present was much larger than could be attributed to the antitetanic serum.

Differential Diagnosis from Tetanus.

In the early stages the condition resembled slight generalized tetanus. A slight rigor preceded the complaint of pain and stiffness in any of the muscles. He had received subcutaneously 1,500 units antitetanic serum on July 7th and 500 units on July 15th. With this amount of antitetanic serum and the long incubation period (ten days) one would have expected a more localized tetanus at the commencement. The condition gradually got worse till July 22nd, although treated as a case of tetanus.

Treatment.

From the commencement the patient received hexamine 40 grains daily and magnesium sulphate 120 grains every morning. He was kept on fluid diet until the temperature became normal, then on light diet until the pulse-rate was normal, and thereafter was given ordinary diet.

Lumbar puncture was performed five times. It would have been performed much oftener if symptoms had demanded it. There is no doubt that it greatly relieved the patient's condition; after each occasion on which cerebro-spinal fluid was withdrawn he was much brighter, his general condition was improved, his headaches became less severe, and the pain and stiffness were less marked. For the following twenty-four hours the improvement was maintained, but the various symptoms, after that period had elapsed, gradually recurred. After each lumbar puncture the condition was more improved than after the preceding one. Except on the first occasion, the punctures were performed under local anaesthesia.

Conclusion.

The good result in this case was probably more due to the frequent withdrawal of cerebro-spinal fluid than to hexamine. Antitetanic serum injected intrathecally would also have a beneficial effect, since it produces leucocytosis. No case of septicaemic meningitis should be looked upon as necessarily fatal. This case recovered, and that it was a true case of septicaemic meningitis is shown by the fact that the organisms present in the cerebro-spinal fluid were the same as those in the pus from the wound. There is

also proof that the organisms were present in the blood (although no blood culture was set up), since he had phlebitis with no immediate external cause.

I wish to thank Captain A. N. McGregor, R.A.M.C.(T.), for his kind permission to place this case on record, and also Professor R. Muir, Lieut.-Colonel R.A.M.C.(T.), for the bacteriological examination of the cerebro-spinal fluid.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

"RABBIT GUT."

I DESIRE to draw attention to an intestinal condition which, though I expect it is familiar to many abdominal surgeons, has not, so far as I know, been described in print.

On inspection through an abdominal wound the small intestine is seen to be in a peculiar contracted state and of a characteristic grey-blue colour, very much resembling the normal appearance of rabbit's intestine.

It is found typically, but not necessarily, in emaciated anaemic patients the subject of chronic indigestion and intestinal pain. Through the thin and often retracted abdominal wall the peristalsis of the contracted coils is often visible.

My observations of these patients leads me to believe that the intestinal wall is definitely hypertrophied and that the pains they suffer are due to the spastic state of the bowel wall.

A very marked case of "rabbit gut" lately under my care determined me to write to you on the subject. It was that of a woman from whom I resected three years ago 5 feet of small intestine for acute volvulus. A year ago she began to suffer from attacks of abdominal pain which became so violent that a partial obstruction, due either to adhesions or contraction at the site of the anastomosis, was strongly suggested. I reopened the abdomen; there were neither adhesions nor constriction, indeed the site of the anastomosis was scarcely visible; but the small intestine was in a most typical state of "rabbit gut."

I hope that by calling attention to the condition other surgeons may be led to look out for it and study it.

London, W.

VICTOR BONNEY.

A CASE OF PYORRHOEA ALVEOLARIS TREATED BY EMETINE.

A LADY, aged 26, had a fairly severe attack of measles in December, 1917. On February 11th, 1918, she called on me and complained that all her teeth were loose and that pus was exuding from all the sockets. I told her to swab the gums twice a day with ipecacuanha wine. This was continued till February 16th, when I obtained some emetine. From that date till February 27th I gave her daily a hypodermic injection of gr. $\frac{1}{2}$ emetine hydrochloride (Allen and Hanburys) and continued the mouth-wash of ipecacuanha wine twice a day. The hypodermics were continued daily till March 6th, but the mouth-wash was changed on February 27th to emetine hydrochloride gr. $\frac{1}{4}$, sod. chloridi 3 j, aq. ad 3 viij; to be used with one and a half times the quantity of warm water three times a day. The emetine mouth-wash was continued, but as the condition was steadily improving the injections were given less frequently (March 10th, 13th, 17th, 24th, 30th, and April 11th and 26th). The patient was then apparently cured and all treatment was stopped.

On August 1st her mother reported that at times she complained that the front teeth were a little loose, but there had been no discharge.

This is only one case, but, as a dentist had told her mother that no treatment would be of any avail but to extract the teeth, I consider it worthy of record and should advise further trial of this method, but not to persist with it should any septic symptoms, such as arthritis, supervene.

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SOFT PARAFFIN AS A WOUND DRESSING.

THE statements in your review of Professor Rutherford Morison's book, *Bipp Treatment of War Wounds*, to the effect that "both bismuth and iodoform may prevent satisfactory x-ray pictures," and that "there may be more