whole effort of after-treatment must concern itself with the re-expansion of the collapsed lung. Three factors will help in this direction:—

1. Complete healing as soon as possible of the cavity and sinus. Avoidance of secondary infection as far as possible is very important in this connexion. The drainage-tube should be progressively shortened and narrower tubes used, provided the drainage remains satisfactory.

2. A Bier's suction cup may be applied over the hole at each dressing. This not only draws out the discharge, but encourages the lung to re-expand.

3. A simple breathing exercise may be started when the temperature has remained normal for several days. It should be stopped if followed by a rise of temperature. The patient lies flat, his body arched towards the healthy side by touching his leg below the knee with his hand; the other arm, that on the affected side, is raised above his head. In this position he draws deep inspirations and blows up his air-ring pillow, at first once, and later an increasing number of times.

I believe that re-expansion of the lung in the early stages can be materially assisted by the use of a valve-tube for drainage. The rubber valve of a soldier's gas helmet fixed with rubber solution to a wide piece of drainage tubing makes a convenient valve-tube. This is fixed in position by suturing round it in turn the pleura, muscle and subcutaneous tissues, and skin, to make an airtight junction. The tube itself must be attached by a stitch or in some other way, lest it be blown out. Such a tube permits air or fluid to be drained out of the chest, but stops the in-drawing of air. The inside of the valve should be moistened with lotion at each dressing. The airtight joint fails after ten days or so, but by this time it has done its work in preventing the collapse of the lung and cicatrization of its pleural covering, which are the causes of persistent large cavities, and should prevent the need for severe and extensive thoracoplasty operations later.

Drainage of pleural cavity by long tube stitched into chest-wall to make an air-tight joint. Tapes passing round the chest are tied to the tube as an additional security.

Another method, better than a valve-tube, is the use of a drainage-tube fixed in the chest in a similar manner to the above and long enough to reach under the patient's bed, where its open end is kept constantly immersed under water or weak antiseptic (see figure). This is a very clean and comfortable way for the patient, and saves much trouble and material in dressings during the first 10 to 14 days. The wound heals like a clean incision, the gauze remains dry, the discharge passes down the tube into the bottle, which is emptied at regular intervals and the water changed. The amount of discharge is easily measured. The end of the tube is kept under water or is clamped from the time of the operation onwards, so that no air can be sucked into it. Changes in the intrathoracic pressure during respiration are shown by the oscillations of the level of fluid in the bottle. Assuming the diameters of the bottle and tube to be as 6 : 1, and the amount of oscillation of the level of fluid in the bottle to be $\frac{1}{4}$ inch, we have oscillation of the fluid in the tube to the extent of 9 inches.

Once a day or oftener the tube is clamped at its upper end near the chest, and by pinching it from above downwards to its lower end it is emptied of its contents and collapses; then the tube is released and clean fluid fills it up to the

clamp. When the clamp is removed we have a column of water, anything up to 2 feet in height, exerting a negative pressure on the contents of the hæmothorax cavity and the lungs.

Possible objections to this form of drainage occur at once to the mind. (a) The tube might become blocked with clot. This is not so likely to occur with the kind of fluid we have in an infected hæmothorax as in that from an ordinary empyema, especially if we use a tube of wide bore. (b) Cellulitis of the tissues of the chest wall might occur. Stitching the tissues firmly round the tube should limit the possibility of this. During the operation the surrounding tissues should be packed off with gauze while the incision is made in the pleura, and the tube fixed in place as soon as possible to drain away the infected fluid. (c) The long tube might interfere with the nursing of the patient. This is not so in practice, but the gain in comfort from the dressings and bandages not getting soaked in discharge would more than counterbalance it. (d) The air-tight joint will fail sooner or later inevitably. This is so, and happens in seven to 14 days after the operation, but this period allows the tube to fulfil its purpose of reducing the size of the cavity and expanding the lung.

The prognosis as regards life in infected hæmothorax is not unfavourable, provided the condition is recognised and appropriately treated. Of my 31 infected cases 4 died (in France). Elliot states that death from sepsis practically never occurs after the end of the second week following the wound. Convalescence, however, is apt to be very tedious, and everything possible should be done in the way of fresh air, cheerful surroundings, tonics, and generous diet to build up the strength and nutrition of the patient.

I wish to thank Lieutenant-Colonel A. H. Waring, R.A.M.C., and Major J. H. P. Graham, R.A.M.C., for the opportunities I have had of seeing and treating practically all the cases of penetrating wounds of the chest which have reached No. 7 General Hospital, and Captain C. M. Roberts, R.A.M.C., for his kindness in taking the photograph illustrating drainage by a long tube.

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Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CASE OF HEMIPLEGIA FOLLOWING PLEURAL EFFUSION.

BY G. DE B. TURTLE, M.D. DURH., M.R.C.P. LOND.,
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THE following case appears to be of sufficient interest and rarity to warrant recording:—

Patient, aged 23, was admitted into hospital on Feb. 19th, complaining of cough and shortness of breath. On examination he was found to have dullness over the left side of the chest up to the level of the fifth rib with absence of breath sounds and marked ægophony. The heart was displaced to the right side. About 20 oz. of serous fluid was aspirated from the pleural cavity and on examination this was found to contain an excess of mononuclear cells, and some red blood corpuscles, but no pus cells. On Feb. 24th, as the dullness had not decreased, the chest was again aspirated, but owing to the needle becoming blocked only about 6 oz. of serum was withdrawn. On Feb. 28th the dullness had increased and had reached to the level of the clavicle, and there was also considerable cardiac displacement. The chest was again aspirated and 60 oz. of serous fluid withdrawn. For some days his condition improved very much, with returning breath sounds over the left lung.

On the morning of March 4th he suddenly sat up in bed, gave a cry, and fell back. On examination he was found to be hemiplegic on the right side with complete motor aphasia. The paralysis of the arm and leg was complete, but the associated movements of the face could be partially performed on the right side. He was not at any time

unconscious and appeared to understand all that was said to him, although when asked to put out his tongue he only opened his mouth. In a few hours there were an increase of the knee-jerk, ankle clonus, and a definite Babinski response in the right leg. Sensation seemed to be very slightly impaired. The bladder and rectum were not affected, and he was able to make his wants known. He remained in much the same condition for about a fortnight when the power of extruding the tongue returned.

A regular course of instruction was commenced, making the patient write from copy with his left hand, and in the course of another fortnight considerable improvement took place; he was able to move the leg but not the arm, whilst the face movements were practically normal. He was able to recognise objects handed to him and to name them, although sometimes he made a mistake, calling a knife a "pencil," &c.; when this happened he was always aware of the fact, and could sometimes correct himself. His pleural condition meanwhile had much improved, there being no re-accumulation of fluid, but a large coarse friction remained for some time all over the left lung. Faradism and massage were employed daily to the affected leg and arm.

The cause of the hemiplegia was undoubtedly embolic, probably a small fragment having become dislodged from a clot in the left pulmonary vein. At the beginning of the illness, on the bare possibility of the condition being an extensive thrombosis due to syphilis, a Wassermann reaction was done, which, however, proved to be negative. The condition is an exceedingly rare one. A number of cases have been recorded from time to time of sudden death occurring during the course of pleurisy, with a large effusion, and it is reasonable to assume that in a proportion of these fatal cases the cause of death has been an embolus from the pulmonary vein or auricular sinus becoming lodged in the internal capsule.

CASES OF POISONING BY SODIUM NITRITE AND BORIC ACID.

BY H. SINIGAR, M.D. LOND., D.P.H.

CASES of poisoning by sodium nitrite and by boric acid are so rare that the following notes of two fatal misadventures which have recently come under my notice may be of interest.

1. *Poisoning by sodium nitrite.*—An infant of 16 months was brought to me in a state of extreme collapse by its mother, who gave me this history. Her baby had for several weeks been suffering from eczema. Under a doctor's treatment this had greatly improved and she had brought the baby away for a change. After giving the baby the first dose out of a bottle of medicine which had been prescribed for him she placed him in his cot and left him. A quarter of an hour later she heard the baby cry and on going to him she found him pale and unconscious. She picked him up and brought him straight to me, together with the medicine and the prescription.

The prescription ordered sodium citrate in doses of $3\frac{1}{2}$ grains, with small doses of mag. carb. and sodium sulpho-carbolate. Nothing unusual was to be noted on tasting the medicine, and the only other fact elicited which might have had a bearing upon the case was that during the morning of the same day the baby had suffered slightly from diarrhoea. The child was moribund when I saw it, and died an hour after the administration of the medicine.

On enquiry it was found that the prescription had been misread and sodium nitrite had been dispensed instead of sodium citrate. The baby had therefore been given $3\frac{1}{2}$ grains of sodium nitrite.

Post-mortem examination revealed a flaccid empty heart and a marked degree of the status lymphaticus. There were no signs of gastro-intestinal irritation. In this case one can assume that a certain amount of cardio-vascular depression had been produced by the morning attack of diarrhoea, and that the dose of $3\frac{1}{2}$ grains of sodium nitrite acting on the already depressed circulatory system rapidly induced a further lowering of arterial tension with a fatal result.

2. *Poisoning by boric acid.*—I was called at 9.30 A.M. to see a woman of 70 years who, at 4 A.M. on the same day, had taken a teaspoonful of boric acid in mistake for Epsom salts. I found her with a flushed face, but with no other symptoms than the mental distress produced by her mistake. She had already vomited, and I therefore did not consider it necessary to do more than administer a mixture containing carbonate of magnesium and bicarbonate of soda. During the afternoon she vomited several times, and there was some diarrhoea. A fairly comfortable night and day followed. On the next evening great thirst supervened, but she appeared to settle down into a normal sleep. She died in her sleep 46 hours after taking the acid.

On post-mortem examination there was found on the posterior surface of the stomach near the middle of the greater curvature an area about 2 inches square showing numerous circular pock-like erosions of the mucous membrane. The whole thickness of the mucous coat was eroded, the sero-muscular coat being exposed in the floor of each erosion. The right auricle contained a large, firm, ante-mortem clot, the cusps of the mitral valve were thickened, and there was a small granulation on each cusp.

Southall.

MALARIA ACQUIRED IN ENGLAND.

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UP to the present this country has been free from disease imported as a result of the war, but it is of the utmost importance to report at once any case of disease so arising in the British Isles.

On May 30th last a man, aged 20 years, was admitted to hospital suffering from prostration and pyrexia of two days' duration. For several days, owing to the fact that the man had never been abroad, the diagnosis was in doubt, but eventually the absence of physical signs, save enlargement of the spleen, noted on the ninth day after admission, and the rigors (indicated in the chart by arrows), led to a correct conclusion, confirmed at once by the demonstration of the

Temperature chart of case of malaria. Q = quinine.

benign tertian parasite in the blood. Recovery was uneventful, the patient being transferred to another hospital on the seventeenth day after admission.

Careful interrogation both of the patient and his parents proved that he spent all his life in the North of England and Scotland before joining the Army, and was well until he reached a particular depôt, to which, as is well known, men who have returned from Salonika with malaria are drafted after discharge from hospital and from which cases of malaria are frequently sent to hospital. From this evidence it is reasonable to deduce that the infection arose at this depôt, the probability of an imported infective mosquito reaching that particular place being very slight.

THE PRESCRIBING OF COCAINE.—At Leeds recently, before the stipendiary magistrate, five summonses against a medical practitioner were heard, and one against another, under the regulations made under the Defence of the Realm Act in respect of the supplying of cocaine under illegal prescriptions. Druggists who had made up the prescriptions were also summoned. It was not suggested by the prosecution that any intentional infringement of the regulations had taken place, the offences having been committed in ignorance, but the summonses had been taken out in order that attention might be called to the law. Nor was it alleged that any undesirable results had followed from the giving of the prescriptions. In the case of the first medical man mentioned the summonses were dealt with under the Probation Act, the defendants being ordered to pay the costs. In the case of the second practitioner the summonses were withdrawn. The prescription on the occasion referred to in this summons had been given to an insured patient, words prohibiting the repetition of the prescription having been omitted. It was pointed out that this instruction was not now necessary, but that the druggist should retain the prescription.