The only other apparatus necessary is two pieces of rubber tubing of stout make about 8 inches long, and two needles such as are used for venipuncture, and which can be put directly into the tubing. The drawing will make

the above description clearer.

In carrying out the operation the donor and recipient are placed parallel and side by side, or head to head with feet in opposite directions, whichever is found most convenient. I usually find the two right arms best, in which case the second position is adopted.

A small table of suitable height is placed between the two couches, and on this the arms are brought close together, and the usual preparations carried out for sterilizing the skin and

making the veins prominent. Before inserting the needles I find it an advantage to fill the syringe with medicinal paraffin first, then empty it and refill it with a solution of sodium citrate, subsequently half emptying it and then leaving the piston with the groove midway between the side openings.

A needle already attached to the syringe is then inserted into the recipient's vein (this is usually done first, as it is the more difficult) and the piston turned round till the groove is opposite the recipient's opening, and if the needle is in the vein a little blood appears in the syringe immediately the piston is slightly pulled up. The piston is then turned to "midway" again and the donor's needle inserted into his vein, the same manoeuvre being carried out to ascertain whether the needle is satisfactorily in the vein.

If the venipunctures have been carried out satisfactorily, a little vaseline is smeared over the skin round the entry of the needle and the tourniquet removed from the recipient's arm. Blood is now drawn from the donor, the piston turned and pushed down, delivering the full amount to the recipient; another turn, and the blood is drawn from the donor as the piston slides up the syringe barrel; turn again and depress the piston, and the charge is delivered to the recipient, and so on.

The operation is so simple that if venipuncture has been successful 500 c.cm. of blood can be transfused in a very short time (ten minutes), and there is certainly much less reaction after this procedure than after any other.

Where conditions allow there can be no doubt that arm-to-arm transfusions should be done, and this simple type of apparatus is capable of doing the operation efficiently. It is made by Duffaud et Cie, Paris, and is the invention of a Frenchman (Dr. Joubet). It is certainly one of the most beautiful pieces of apparatus I have ever used, but as sent out by the makers it is accompanied by two or three pieces of tubing and two kinds of needles and cannulae—one for the donor and one for the recipient; to my mind these are totally unnecessary, and only tend to complicate what can be a very simple technique.

The syringes are made in two sizes—5 c.cm. and 10 c.cm.; personally I consider the 5 c.cm. the better; there is no point in using the 10 c.cm. syringe when 500 c.cm. of blood can be comfortably delivered in a few minutes with the smaller apparatus.

The syringe is not on the English market, but can be obtained from the makers direct or from Messrs. Bell and Croyden, who have promised to hold a stock of them, since when bought direct it requires about two months before they are delivered through the custom-house.

MINIMAL RISES OF TEMPERATURE IN RHEUMATOID ARTHRITIS.

BY

L. SCHMIDT, M.D.,

MEMBER OF THE INTERNATIONAL COMMITTEE ON RHEUMATISM.
PISTANY, CZECHOSLOVAKIA.

THERE is one type which stands out from the large group of rheumatoid arthritis cases; it is distinguished by constant though often minimal rises of temperature, and is associated with a very slow course, which is unrelenting in its progress and often defies all forms of treatment. Outwardly these cases are hardly distinguishable from those of other types.

In a discussion some years ago of pyrexia in rheumatoid arthritis¹ I stated that "the febrile types of rheumatoid arthritis are certainly commoner than we generally assume." I presumed then that the rise of temperature in such chronic articular cases might be due to the action of toxins, and further observations have served to confirm this view to a large extent, so that I have found this a useful basis for rational therapy. Though at that time I only considered temperatures well above 98.6° F. of importance, I have gradually become convinced that minimal rises of temperature, even of only a few tenths of a degree, if continuous and not due to any other cause, are of decided importance from a prognostic as well as from a therapeutic point of view. Morning temperatures of 97.9° to 98.2° F., which are often regarded as normal by medical practitioners and the general public, should receive serious attention in these cases, since they indicate the need for a systematic recording of the afternoon temperature. It will almost invariably be found that the afternoon temperature is above 98.6° F., and that almost without exception the accompanying signs are of serious prognostic significance.

A survey of these cases is not very cheering. The patients mostly state that they have been ill for years or at least for many months. In spite of various therapeutic measures, the pain, swelling, deformity, and atrophy of muscles and skin slowly increase. Psychological disturbances become superimposed on the organic troubles and find expression in the facies. The emaciation and obvious anaemia, which are almost constantly associated with this disability, emphasize the tragedy of the aspect.

I regard these cases of articular rheumatism with a continuous though minimal pyrexia, when there is no demonstrable focus of infection in other organs and no evidence of tuberculous rheumatism (Poncet's disease), as being due to cryptogenic bacterial lesions of polymorphic etiology. The question of the primary seat of the lesion, and whether in certain cases it is the bacteria or only the bacterial toxins which invade the joints and there produce the various changes, must be left open. The important point is the entry of substances foreign to the body, or at least to the joints, into the joints and the surrounding tissues in such amounts that the irritation set up leads to various degrees of inflammation and their sequels. The joint tissues and the surrounding fluids are thus toxic whether they take the form of macroscopic or merely of microscopic exudates and chemotactic combinations. Absorption of such substances has, according to this view, the same significance as an auto-inoculation.

It seemed that the first step towards a cure of these arthritic patients must take the form of general treatment as in the case of tuberculosis, and here a so-called "mastkur" (fattening regime), carried out with great care and precision, plays an important part. Objectively improvement becomes manifest in two directions: the body weight increases, and the small rises of temperature tend to disappear, though in some cases only after a considerable time. Both these reactions are very delicate and of great prognostic significance; they usually run parallel.

Pursuing the reasoning outlined above the following conclusion was reached: When such an arthritic patient is in a negative phase and the organism is incapable of reacting it is not only useless but foolish to begin by increasing the supply of toxic molecules from the joints which the

organism is incapable of antagonizing; this is a well-known principle of all inoculation therapy. In articular rheumatism, however, just those organs are infected which, with the muscular action accompanying each movement of the body, act as a kind of peripheral pumping station, mixing the various body fluids in all directions. In these cases, more than in any others with localized lesions, movement of the joints means an increase in the inoculation of the body with toxins from the foci where they have been deposited. If, therefore, we wish to keep the body of the patient as free as possible from toxins from the joints and afebrile the further passage of toxins into the circulation must, as far as possible, be prevented by securing absolute rest for the joints—that is, by confining the patient to bed. The second essential in treatment is therefore recumbency, which, according to the individual case, is leniently or very strictly enforced.

When all that is possible has been done to facilitate the cure by a fattening regime and recumbency, the patient must be guarded from the various harmful forms of treatment which are sometimes warmly recommended. I refer particularly to the routine ordering of massage for such cases. I regard daily massage in these subfebrile cases as a grave error, analogous to repeated injections of tuberculin in febrile cases of tuberculosis. The same applies to the often indiscriminate use of diathermy and radiant heat. In balneological treatment mistakes are also too often made in these cases, when, regardless of the thermo-sensitive nature of the case, and irrespective of general or local reactions, the patient is allowed to continue his baths without rest or intermission, and is not granted time or opportunity to pass from the negative phase to the positive phase of improvement. The result is fatigue and exhaustion of the organism instead of beneficial stimulation; the condition remains stationary or becomes worse, whereas a rational plan of treatment adequately pursued might achieve improvement or even complete cure.

The line of thought which I have indicated in this paper has proved a sound working hypothesis in practice.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF VOLVULUS NEONATORUM.

THE following case seems of sufficient interest to be placed on record.

A male child, aged 4 days, was admitted to the South Eastern Hospital for Children, Lower Sydenham, with a history of vomiting green fluid since birth and of passing dark motions which, the evening before admission, had turned to fluid blood; this being passed continuously and in some quantity. He was a full-time child, large and well developed, and weighed 8 lb. 8 oz. He was not greatly distressed, the fontanelles were not depressed, but pallor was marked. Pulse 148, respirations 46, temperature 98.2° F.

On examination the abdomen was soft and the stomach slightly distended; nothing was found on palpation. Blood leaked almost continuously from the rectum, but on rectal examination nothing abnormal was discovered.

The following day the condition remained much the same, but the temperature rose to 100.6° F. in the afternoon; the flow of blood from the rectum was much less. No food was retained owing to persistent vomiting, and there was no obvious distension of the abdomen. The child died the following morning.

Post-mortem Examination.—The abdomen showed a slight general distension. On opening, a small quantity of dark blood-stained fluid was found, and present in the incision was a mass of black distended bowel. On further examination it was found that the stomach and duodenum were normal, that just beyond the duodeno-jejunal junction there had been an anti-clockwise rotation of the small bowel, so that this upper portion was tightly wrapped round the last portion of the ileum just above the ileo-caecal valve. The mesentery was, practically speaking, absent, being represented by a fibrous cord containing the superior mesenteric artery, over the front of which passed the duodenum, and which was (that is, the artery) constricted by the volvulus. There was therefore a complete strangulation of the whole of the jejunum and ileum, leaving the stomach, duodenum, and the whole of the large bowel looking quite normal. The rest of the organs did not show any abnormality.

Mr. Norman M. Dott has written at length on the subject of anomalies of intestinal rotation in the *British Journal of Surgery* (1923, vol. xi), and in the *British*

Medical Journal of February 5th, 1927 (p. 230); he has described a case of volvulus neonatorum which was successfully diagnosed and treated by operation, a result of the application of theory and study to practice which must have afforded him considerable satisfaction. The case he describes, however, differs from the above in several details; the absence of mesentery and the anti-clockwise rotation of the bowel are similar, but he describes the stomach and duodenum as being greatly distended, and the small bowel collapsed and cyanosed. This case, then, must be regarded as unique in the acuteness of the symptoms and the degree of vascular obstruction.

Our thanks are due to Mr. Dott for his interest and help in this case.

GILBERT W. CHARLESLEY, M.B., Ch.B.,
Honorary Physician,

GEORGE RICHARDSON, M.D., F.R.C.S.Ed.,
Honorary Pathologist,
South Eastern Hospital for Children.

EMBOLISM OF APEX OF LUNG.

EMBOLISM of the lung is fairly common, but if the apex of the upper lobe of the lung is involved, difficulty in diagnosis may arise. These notes on a case recently attended by me may therefore be of interest.

An unmarried woman, aged 40, had suffered from exophthalmic goitre for many years, but had managed to do her work as a booking clerk at a hotel, and had received no medical attention for two years. On December 25th, 1927, she was suddenly seized with shortness of breath and severe incessant coughing; she vomited her last meal and coughed up some bright red blood. She was first seen by me half an hour after the onset of these symptoms. Her pulse was about 140, she looked very ill, and the cough was incessant. She was given a small dose of morphine hypodermically, and a sedative for the cough. Restlessness was a marked symptom.

The next day many coarse râles were audible over the apex of the right lung, with bronchial breath sounds and markedly impaired resonance. She was still coughing up a little bright red blood; the temperature was 101° F. The heart's apex beat was two inches outside the nipple line. Her chief complaint was of the troublesome cough. The sputum was examined for tubercle bacilli with negative result. The systolic blood pressure was 160 mm. Hg, and the pulse rate 120 a minute, but with a few drops of Lugol's solution daily the pulse dropped to 80 and the blood pressure to 145 mm., the apex beat of the heart coming to lie in the nipple line. She could only take 1½ minims of Lugol's solution three times a day; larger doses caused coughing attacks. With rest in bed for a fortnight she lost her cough completely and the physical signs at the right apex of the lung cleared up entirely. She still had a systolic murmur at the apex of the heart conducted into the axilla.

Swanage.

W. A. REES, M.D.Lond., F.R.C.S.

DYSPHAGIA ASSOCIATED WITH ANAEMIA.

THE following case is similar in many points to the clinical type described in the article by Drs. Jones and Owen in the *Journal* of February 18th (p. 256), but the anaemia has been megalocytic ever since the patient came under my care in January, 1926.

A married woman, aged 50, complained of weakness, shortness of breath, and inability to swallow, unless the food was finely minced, and of soreness of the tongue and lips, for "years." She said she had been anaemic from girlhood, and at the time of the menopause she suffered from melancholia and was in an asylum. The difficulty in swallowing was worse sometimes than at others. At times she could only manage fluids—solid food seemed to stick, and she almost choked till she got it up again.

She was of a lemon yellow pallor with slight malar flush, the lips pale, with sore areas at both corners of the mouth; the tongue was smooth, clean, and sore at the edges. She had worn artificial teeth for many years. The spleen was palpable, the liver also was slightly enlarged. The blood count was as follows: red cells 1,410,000 per c.mm., haemoglobin 44 per cent., colour index 1.5, white cells 4,800 per c.mm. The films showed no nucleated red cells, marked poikilocytosis and anisocytosis, with many megalocytes. The coagulation time of the blood was prolonged: the blood of a normal control took 2 minutes 15 seconds to clot in Gibb's coagulometer, while the patient's blood took 2 minutes 45 seconds.

The patient improved a little on arsenic and hydrochloric acid after meals, but she would not persist with the acid as it increased the soreness of her mouth, even when well diluted. Latterly she has improved very much on liver, which she takes minced three times a week. She is now able to do most of her housework and goes out for short walks. Her red cells are now 2,690,000 per c.mm., but the colour index is still above unity.

SIDNEY ELISABETH CROSKERY, B.Sc., M.D.Ed.
Tunbridge Wells.