The muscles of the body generally gradually recovered tone under a course of massage carried out on Eastern methods.

REMARKS.

It is noticeable that, as in Celli's case, very marked amelioration in the patient's condition occurred after the second injection. After a very careful inquiry, no cause for the occurrence of the disease could be discovered. The early symptoms seemed to point to conditions which might admit of the case being classified as one of rheumatic tetanus.

NOTE ON THE TECHNIQUE OF SERUM DIAGNOSIS OF ACUTE SPECIFIC FEVERS.

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IN view of the great and growing importance of serum diagnosis the following method of applying the serum test may be of interest:

The blood, which is readily obtained in sufficient quantities from the finger tip by breaking off one of the points of a steel nib, and by then pricking the back of the finger near the nail, is drawn off into a pipette, such as is represented in Fig. 1. This pipette is converted into a blood capsule by sealing it in the flame at the points indicated in the figure by the letters *xx*. After twenty-four hours, or as soon as the blood has duly separated into serum and clot, the ends of the blood capsule are broken off and the separated serum is drawn off by a capillary pipette, as indicated in Fig. 2. The amount of serum which is drawn off is indicated by placing a mark *y* on the outside of the capillary pipette. The serum is then blown out into a watch glass, and is diluted first 5-fold by filling up the capillary pipette four times in succession with normal salt solution, and by blowing this salt solution out into the serum in the watch glass. In this manner any desired dilutions are obtained. It is convenient to make 5-, 10-, 25-, 50-, and 100-fold dilutions of each sample of serum.

Having diluted the serum in this manner a small quantity of the diluted serum is allowed to run up into the sedimentation tube represented in the diagram by Fig. 3. For the sake of clearness, let it be supposed that diluted serum has been allowed to run up the tube to the point indicated by the letter *a* in Fig. 3. This point is now indicated on the outside of the sedimentation tube by a red mark. Having filled in the tube in this manner with the desired amount of diluted serum, the point of the capillary pipette is now turned upwards, so as to admit a bubble of air into the point of the capillary pipette.¹ The diluted serum now occupies the position indicated in Fig. 3 by the space *c* to *d*, the bubble occupying the space between the letters *b* and *c*. Having thus introduced our bubble of air, which is to serve the purpose of an index, the end of the capillary pipette is immersed into the emulsion of either typhoid or, as the case may be, Malta fever bacteria, and the emulsion is allowed to run in until it reaches the point *a*. We have now introduced an equal quantity of diluted serum and of typhoid or Malta fever emulsion into our sedimentation tube. The next step is to mix the bacterial emulsion with our diluted serum. This is easily done by aspirating by means of the india-rubber tube the contents of the capillary pipette two or three times in succession into the mixing chamber *z*. Having thus obtained an intimate mixture of an equal portion of the diluted serum and of the bacterial emulsion, we blow the contents of the tube down into the stem of the pipette, taking care not to blow it down too near the end of the pipette, and we seal the point of the pipette in the flame. We then label the capillary pipette 1 in 10, if we have mixed an equal volume of 5-fold diluted serum with a bacterial emulsion, 1 in 20, if we have employed a 10-fold diluted serum, and so on. We then put up a control tube of the bacterial emulsion mixed with normal serum or with salt solution, and finally

we place the whole series of sedimentation tubes upright in an ordinary test tube labelled with the name of the patient and the date. Figs. 4 and 5 represent such capillary pipettes after the lapse of twenty-four hours. In Fig. 4 the dark shading seen at *x* represents a pellet of either typhoid or Malta fever bacteria which have been immobilised and agglomerated by a serum from a person who is undergoing, or who has undergone, the specific fever which corresponds to the variety of bacteria which have been employed. Fig. 5 represents the control pipette which in the case of the eminently motile Malta fever or typhoid bacteria remains evenly turbid.

Fig. 1. Capillary pipette for drawing off blood from finger. Fig. 2. Method of drawing off serum from blood capsule. Fig. 3. Sedimentation tube filled in and ready for mixing. Fig. 4. Sedimentation effect produced by specific serum. Fig. 5. Control tube.

In conclusion, I may mention that Mr. A. E. Dean, jun., 73, Hatton Garden, E.C., is, at my suggestion, making sero-sedimentation tubes of stout glass. Provision is made in these tubes for preventing the escape of the contents when the tubes are placed upright so as to allow of sedimentation taking place.

¹ The capillary pipette, as represented in Fig. 3, is somewhat too short. The calibre of the stem perhaps also unnecessarily wide. This convenient implement for drawing blood was suggested to me by Professor Ehrlich.

THE Duke of Fife has consented to preside at a dinner in aid of the Alexandra Hospital for Children with Hip Disease on Thursday, April 8th, at the Hôtel Métropole.