

BLOOD SEDIMENTATION RATE.

By JOHN HATCHER.

The blood sedimentation rate is not a specific laboratory test for any one disease, though sometimes it quite wrongly is described as a diagnostic test for tuberculosis. It is, however, true that properly applied it is a very valuable means of assessing the effects of treatment in this disease. The test itself is very simple and merely consists of measuring the rate at which the coils in a column of blood in a given time settle. The exact explanation of this phenomenon has as yet been by no means fully settled, but in general it is dependent upon the following three facts:

- (1) Time the blood is allowed to stand.
- (2) The red blood cell count.
- (3) Certain physiological and pathological conditions.

APPLICATIONS OF THE TEST.

Experience has shown that in normal healthy individuals the sedimentation rate remains constant at the normal level, an increase occurs in any anæmia and is very marked in severe acute anæmia. Any process which involves extensive destruction of the body cells, as for example, what occurs in most infections and toxic conditions, this is of course one of the principal causes of an increased rate of fall. In general the rate is increased in all cases where there is tissue breakdown on any scale or where foreign protein, as for example a vaccine enters the blood. The normal time varies with different techniques; it has, however, always a tendency to be slightly higher in women, particularly so at the menses. A purely physiological increase occurs in pregnancy when the rate is definitely raised often to a pathological level. The applications of the test are many; it is associated in particular with two diseases, tuberculosis and acute rheumatism, in tuberculosis the rate of sedimentation parallels the activity of the disease and in acute rheumatism it is an excellent index of prognosis.

TECHNIQUE.

There are several methods of carrying out this test, but the three principal techniques are those of Cutler, Westergren and Wintrobe. Whole blood is, of course, required, that is to say blood which has been prevented from clotting by the addition of an anti-coagulating reagent, usually 3 per cent. sodium citrate solution. Blood for the test is obtained from a vein, usually a superficial arm vein and care should be taken to avoid the application of a very tight tourniquet, but a tourniquet applied moderately tightly will do no harm and greatly facilitate the identification of a suitable vein.

CUTLER'S METHOD.

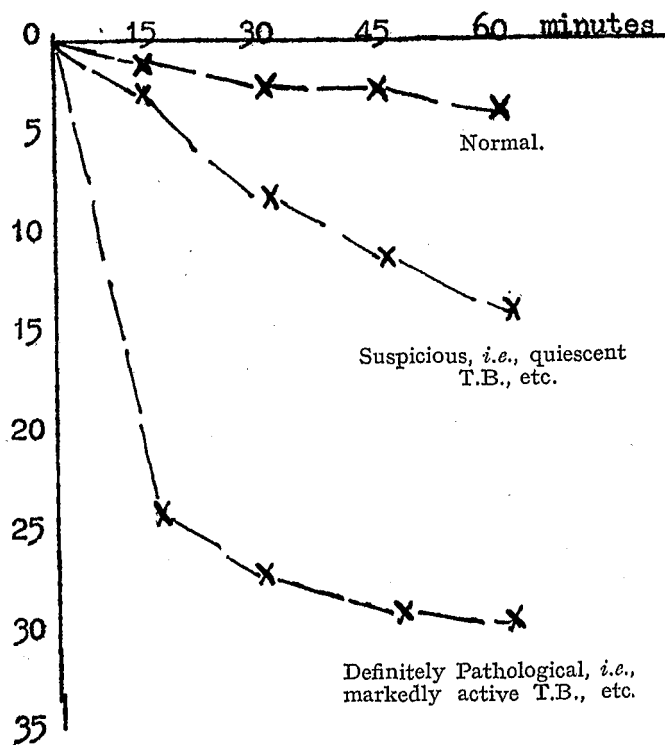
This is an American method and is largely used in this country, in the original technique quite a large amount of blood was required, but only 1 cc. of whole blood is necessary for the method as usually carried out now. Cutler's tubes are short graduated glass tubes, graduated from 0-40 mm. with a total capacity of 1 cc. A 1 cc. syringe of the tuberculin pattern, preferably all glass is required and care must be taken to ensure that the syringe is dry, or at least well rinsed out with sodium-citrate. The syringe is first charged with 1 cc. of sterile 3 per cent. sodium citrate saline solution, taking care to expel any bubbles which may form. A vein puncture is then carried out in the usual way, but care is taken to draw blood up only to the 1 cc. mark on the syringe, this gives a dilution with citrate saline of 1 in 10. Well mix the blood and citrate in the syringe by withdrawing the plunger to its limit and inverting the blood several times, the Cutler's tube may then be filled. This tube must be stood in a perfectly upright position and the sedimentation rate read every quarter of an hour for an hour. The normals for this method are a sedimentation rate of 2-8 mm. for men, 2-12 mm. for women at the end of an hour.

WESTERGREN'S METHOD.

This is a continental method which is also much used in this country; Westergren tubes are very different from Cutler's tubes being long and having a tiny bore. A 2 cc. syringe is used, charged with .4 cc. of citrate-saline solution, a special stand is usually supplied with the Westergren tubes, which ensures their being kept upright. With this method it is customary to make two readings only, at the end of one and two hours. Normals are for men 3-5 mm. at 1 hour and 7-15 mm. at 2 hours, for women 4-7 mm. in 1 hour and 12-17 mm. at two hours.

WINTROBE'S METHOD.

This is essentially a technique for the laboratory as distinct from the Clinical Ward Test Room, heparin is used as an anti-coagulating reagent and Wintrobe's hæmatocrit tubes are required. Normals are 0-9 mm. for men and 0-20 mm. for women, the great advantage of the technique is that specimen can afterwards be centrifugalised in the hæmatocrit and the cell volume determined.



Typical readings with Cutler's Method.

MENTAL HOSPITAL WORKERS AND THE L.C.C.

Mental Hospital workers have been advised by Mr. George Gibson, the General Secretary of the Mental Hospital and Institutional Workers' Union, to boycott the service of the London County Council, as they could secure posts outside the L.C.C. area on better terms.

"The joint conciliation committee of the Mental Hospitals Association—to which the L.C.C. is not a party—and the union have granted wage increases since 1928 of 10s. a week for male nurses, and 8s. 11d. a week for females. Under the L.C.C. there has been an increase of only 6s. a week for males and 4s. for females in the same period. The Mental Hospitals' Association comprises about 80 per cent. of the authorities. Out of 81 authorities only eight have not yet adopted the award of the conciliation committee."

About 5,000 people are involved in the London area.

We fear there is little hope of this Council of autocrats listening to reason; it neither understands nor sympathises with nursing opinion.

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