

MEASURING THE COLOUR OF BLOOD.

ESTIMATION OF THE HÆMOGLOBIN CONTENT.

By John Hatcher, F.I.L.M.T.

Hæmoglobin is an iron-bearing substance contained in the red blood cells of the blood. Its principal function is to carry oxygen from the lungs to the tissues of the body, and the blood owes its characteristic red colour to its presence. The measurement or estimation of hæmoglobin content of the blood cells is a very important point in the laboratory investigation of any blood disease and particularly so in the investigation of anæmia. Not only does its estimation give a valuable indication of the patient's condition and subsequently is an essential means of assessing response to treatment, but in conjunction with a count of the red blood cells gives information on which the type of anæmia concerned can be classified, a most important point to the physician in deciding the appropriate form of treatment to be carried out.

Methods of Estimation.

The Hæmatologist has many methods of hæmoglobin estimation at his disposal, ranging from the simple but inaccurate direct matching, to complicated and very accurate procedures, involving the estimation of the oxygen combining power of the blood. In clinical use, one of the reasonably accurate but simple methods is usually selected; in this type of method a carefully measured volume of blood is converted to either acid or alkaline hæmatin, or in the case of Haldane's method, carboxyhæmoglobin and the resulting colour progressively diluted with distilled water till the colour matches that of a standard. The level of the diluted blood is then read off in the graduated tube in which the dilution is made. This figure represents a percentage of the standard. Most modern instruments are calibrated so that 100 per cent. equals 14.8 grams per cent. of hæmoglobin, and the finding is reported as a per cent. of the standard. The actual colour comparison is made in some form of direct reading colimeter. In recent years many laboratories have adopted methods in which the colour matching is made in a photo electric colimeter. While the more complicated types of photo electric colimeters are still fairly expensive, the great increase in accuracy and, to a certain extent, the increased speed, with which readings are made, well repays the additional outlay.

Collection of the Blood Specimen.

The collection of the blood specimen, is not particularly unpleasant for the patient. Only a very small amount of blood is required, and usually this can be obtained from a finger prick with a small needle. Certainly the operation is no more unpleasant than an accidental prick with a sewing needle; this is rather fortunate, as it is usually necessary to repeat the investigation at intervals while treatment is in progress.

It is customary to report the hæmoglobin estimation as a percentage figure. This represents a percentage of the standard with which the comparison is made, and as already has been mentioned, most modern hæmoglobometers, as the instruments are called, have their standard calibrated so that 100 per cent. equals 14.8 grams per cent. of hæmoglobin. This figure of 14.8 grams per cent.

is now generally accepted as the average normal. Unfortunately, there are methods in use in which the actual standard has rather a different value, usually considerably higher, and this has caused a certain amount of confusion. The full implication will be understood when it is realised that 100 per cent. of Haldane's method had until recently a value of 13.8 grams per cent., while the original Sahli method 100 per cent. equalled 17.3 grams per cent.; in other words, 100 per cent. on Haldane's scale was the same as 80 per cent. on the original Sahli. This important point is now fully appreciated and it is customary to not only report the percentage figure, but also its value in grams per cent.

Q.A.I.M.N.S. REGIMENTAL ASSOCIATION.

In order that all who have served in army nursing organizations may be banded together in comradeship, a new Regimental Association has been formed for the purpose of:—

- (a) Fostering esprit de corps and strengthening invisible ties.
- (b) Organising social gatherings to develop and maintain friendships between past and present members.
- (c) Assisting members with limited means by some help in cases of emergency.

All who have at any time served as under are eligible to join:—

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Application for full particulars should be made to the Hon. Secretary, Q.A.I.M.N.S. Regimental Association, 20, John Islip Street, Millbank, London. S.W.1.

THE VOICE OF WESTERN AUSTRALIA.

We read with the greatest interest from cover to cover, the varied activities of our Australian colleagues published in the June issue of *The Journal of the West Australian Nurses*.

From its pages we learn that our Australian Sisters of the A.T.N.A. are also seeking a solution to the present *impasse* in the acute shortage of desirable entrants to the Nursing Profession, and in this we, in the Old Country, have a real fellow feeling.

The reasons for this condition are various; but we in this country believe that the first and fundamental cause of the acute chaos is due to the recognition by the State of semi-trained women—*i.e.*, the Assistant Nurse. By this Act (Nurses Act, 1943) nursing standards were de-graded and the fully qualified Registered Nurse was subjected to unprecedented injustice!

We are very proud to see generous space given to the Diamond Jubilee issue of THE BRITISH JOURNAL OF NURSING and of the campaign in the National Council of Nurses of Great Britain and Northern Ireland to keep and maintain the independence of their leagues and associations, and in which courage has won the day.

There is much we would like to say, but space does not permit of further appreciation of the voice of the A.T.N.A. which often cheered our great leader, Ethel Gordon Fenwick, for its sound understanding in nursing affairs.

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