way, was whether the entrance of sugar as such into the circulation might not raise the sugar content of the blood. In spite of the experiment quoted by these authors on the effects of introducing dextrose into the stomach and the jejunum, we are no nearer a solution of the problem, for it is quite conceivable that the more rapid increase and higher percentage attained when the sugar was given by Einhorn's tube than by the mouth may be explained by an alteration in the "fixed acid" to base equilibrium of the blood brought about by the associated intestinal secretion. If their view, that the increased blood-sugar is due to the dextrose passing "through the liver to circulate for half an hour or more in the systemic circulation" were correct, we should expect that varying doses of sugar would give different percentage in the blood, but Berghard and Cushing have shown this is not the case, 30 g. and 200 g. giving the same rise and only differing in the rate at which their effects pass off.

Drs. Spence and Brett quote us as stating that an actual change in the hydrogen-ion concentration of the blood occurs during digestion; that, of course, was not our intention; what we wished to say was that there is a change in the relation of fixed acids to bases, which is compensated by carbon dioxide elimination or retention, as we pointed out in a subsequent communication.³

With regard to their experiments upon the effects of food upon the sugar content of the blood in normal persons, they raise the question as to what is a normal person. Judging from the scanty data they furnish, we should expect that the subject of their experiments suffered from hyperchlorhydria, for an "immediate rise," which was "greatest in the first half hour or so and reaches its maximum within 60 minutes," is very suggestive of that condition. It was only after considerable experience with animals, and when we had made a large number of experiments with human beings, that we came to the conclusion that a perfectly healthy man, like a normal dog or rabbit, reaches his maximum at the second, or, occasionally, at the third hour, after a meal taken in the morning subsequent to a 12 hours' fast.

We are, Sir, yours faithfully,

P. J. CAMMIDGE,
J. A. CAIRNS FORSYTH,
H. A. H. HOWARD.

Nottingham-place, W., Jan. 2nd.

STANDARDISATION OF CELL EMULSION IN WASSERMANN TEST.

To the Editor of THE LANCET.

SIR,—I was under the impression that all careful serologists had for some time realised the necessity for accurate standardisation of the red cell emulsion used in the Wassermann test, and I hope that the exact study by Dr. J. W. Bigger on this point, appearing in your issue of Dec. 31st last, will convince any who have not already made the discovery for themselves. Two years ago I worked out the relationship between cell concentration and complement activity, and found, like Dr. Bigger, that with emulsions ranging in cell content from 3 per cent. to 6 per cent. the activity of any given sample of complement forms a linear function of the cell dilution. Since that time I have made a practice of standardising the cell emulsion by means of the Sahli colorimetric method. This I find even simpler and easier than the Haldane procedure, and the method can be utilised, if necessary, by artificial light, needs no gas for its accomplishment, and only occupies a very few minutes.

Taking the "5 per cent." cell emulsion as prepared by my laboratory attendant, 200 c.mm. are mixed with N/10 hydrochloric acid in the Sahli hæmoglobinometer to ascertain the actual hæmoglobin (as hæmatin) in the emulsion; the strength of the latter is then adjusted as needed, so that 200 c.mm., when diluted in the Sahli tube to equality with the standard, reach the 80 mark. This is equivalent to 1.4 g. hæmoglobin per 100 c.cm. of

emulsion, and with average sheep's blood cells represents a true 5 per cent. emulsion of cells. This is, I believe, the optimum concentration for use in Harrison's technique, which in improved form I follow. Apart from the matter of convenience, I believe it is not less sound practice to base the strength of the cell emulsion upon the hæmoglobin content rather than upon cell counts or upon the method advocated by F. C. Lewis in 1920.

By following a technique of exact standardisation of cell emulsion on these or equivalent lines, the accuracy and consistency of Wassermann tests week by week is very definitely enhanced.

I am, Sir, yours faithfully,

A. F. SLADDEN,

Swansea, Jan. 2nd, 1922. Director of Beck Laboratory.

MAURITIUS.

To the Editor of THE LANCET.

SIR,—I read with interest the account in THE LANCET of Dec. 31st last of the lantern demonstration I recently delivered before the Royal Society of Tropical Medicine and Hygiene. May I, however, point out that the method of introduction of *A. costalis* there mentioned, though probable, must still be regarded as hypothetical, as there is no absolutely definite proof that it occurred, and, further, it is believed that the mosquito found its way ashore, not at Port Louis, but at Petite Rivière Bay, in the Black River District. Again, the real reason that streams shaded by trees are free from the larva of *A. costalis* is that the green water weed on which the larva feeds cannot develop without sunlight.

The letter from Dr. C. L. D'Avoine on infectious disease in Mauritius in the same issue is interesting, and, in the main, correct. The conditions in most of the sugar estate camps are very unsatisfactory, and this is one reason why ankylostomiasis is so prevalent in the island. At the same time insanitary conditions are by no means limited to the coolie class, because the poor creoles and the Chinese as a rule have very insanitary surroundings. Dr. D'Avoine is wrong in saying that Port Louis has a good water-supply. A few places in Port Louis have a good water-supply derived from the Mare Vacoas Reservoir, and the excellent filter-beds at La Marie, but the greater part of Port Louis is supplied by unfiltered and polluted water from the Grand River, N.W., and portions of the suburbs of the town still draw a highly insanitary supply from the Dayot and Bathurst Canals.

I am, Sir, yours faithfully,

ANDREW BALFOUR.

Wellcome Bureau of Scientific Research,
Endsleigh-gardens, N.W., Jan. 3rd, 1922.

PRESENTATION TO DR. JOHN MCVAIL.—The retirement from the Scottish Board of Health of Dr. John McVail has been marked by a farewell presentation from his colleagues on the Board and members of the staff. Sir George McCrae, in making the presentation, referred to Dr. McVail's long and varied experience in the medical profession, first as a private practitioner, then as medical officer of health for the counties of Stirling and Dumbarton, thereafter as one of the Scottish National Health Insurance Commissioners, and latterly as one of the members of the Scottish Board of Health. In each of these capacities Dr. McVail had displayed exceptional abilities in discharging the difficult and onerous duties falling upon him. He had made a number of valuable contributions to medical literature, particularly on matters relating to public health, and had been specially selected on several occasions to undertake inquiries on behalf of Government Departments and Commissions. As one of the Insurance Commissioners he had taken a leading part in the introduction and carrying into operation of the Health Insurance Act of 1911. Sir James Leishman spoke of the zeal and enthusiasm with which he had carried out the difficult duties connected with the introduction of the National Insurance scheme. Sir Leslie Mackenzie, Mr. J. Jeffrey, Dr. J. R. Currie, and Mr. Peck also spoke. In reply, Dr. McVail referred to the changes that had taken place in medical science and practice since he first qualified, and particularly in regard to public health administration.

³ Brit. Med. Jour., 1921, ii., 618.