reformation is not reform at all so far as he is concerned ; he has been reformed from without, but inwardly he is wholly unregenerate. The will power must be led forth from its retreat." I should like to quote more fully from Dr. Sainsbury's learned and philosophical work, which should be read and meditated by every drug *habitué*, but those of your readers who are interested in this subject are, no doubt, acquainted with it already.

In conclusion, I would suggest that Dr. Douglas should make known through THE LANCET the after-history of his cases. An easy cure without the intervention of personal effort is, in my opinion, a premium to renewed indulgence, but if the results claimed for this method have stood the test of time the publication of statistics of cases permanently cured will be most interesting.

I am, Sir, yours faithfully,
Oscar Jennings, M.D. Paris.

Oct. 5th, 1909.

THE ANTITRYPTIC INDEX IN DIAGNOSIS.

To the Editor of THE LANCET.

SIR,—In your first leading article in to-day's issue of THE LANCET you allude to the non-specificity of the rise of the antitryptic index of the serum in malignant disease. This statement I can thoroughly endorse as a similar rise occurs in all of the general bacterial diseases so far examined, as well as in numerous conditions in no way associated with bacterial activity. The rise in antitryptic values in all these conditions I have long considered as possibly an index of the liberation of endocellular enzymes and other products owing to cell-destruction, and not merely of leucocytic products as your article suggests. In spite, however, of this non-specificity there is a limited range within which estimation of the antitryptic index is of the greatest diagnostic value in the differential diagnosis of cancer. In cases where the index is normal discoverable cancer can be almost positively excluded, six cases of 100 failing to conform to this rule. Since 94 of these cases showed a rise, the great value of the method lies in the demonstration not of rise but of absence of rise. Your article reflects only on the inverse of this. I have elsewhere shown how this mode of blood examination can, in conjunction with other clinical evidence, enable us to distinguish in many cases ulcer of the stomach from carcinoma of that organ, benign stenosis of the oesophagus from malignant, the presence or absence of malignant mediastinal neoplasm, carcinoma mammae from simple growths, benign cerebral tumours from malignant, and so on, and guide us as to recurrence. Hence, feeling as I do that, within the limits I have indicated, the estimation of antitryptic values is often of great service in diagnosis, as well as in other no less important directions, I venture to hope you will find room for this letter, and in so doing correct an impression of the worthlessness of the method that might arise from the perusal of your article.

Of all the numerous observations which I have published and of others as yet unpublished, I have not yet encountered a rise in antitryptic index which could not be confirmed by other methods of estimation undertaken by other observers. This holds true of the chemical method, the viscosity method, and that of electro-conductivity. I know of few blood estimations capable of corroboration by three distinct reliable methods.

I am, Sir, yours faithfully,
Harley-street, W., Oct. 9th, 1909. E. C. HORT.

THE STANDARDISATION OF THE DIGITALIS SERIES OF HEART TONICS.

To the Editor of THE LANCET.

SIR,—On June 19th last there was published in THE LANCET a paper entitled "Proposed International Standard for the Physiological Assay of the Heart Tonics of the Digitalis Series," which I read before the Seventh International Congress of Applied Chemistry on May 31st, 1909. Since this paper was published I have deemed it wise to modify my definition of a heart tonic unit, and would be pleased if you will give publicity to the following statement, which is taken from a paper presented before the American Pharmaceutical Association on August 19th :—

Ten times the normal minimum fatal dose (M.F.D.) per gramme body weight of frog of the injected drug properly diluted for the standard preparation is considered as a heart tonic unit (H.T.U.) ; consequently the number of H.T.U. in a given cubic centimetre of a preparation of the heart tonics is equal to one-tenth of the quotient

obtained by dividing 1 by such M.F.D.—i.e., the number of H.T.U. in each cubic centimetre of fluid is one-tenth of the reciprocal of the M.F.D. To illustrate: If the minimum fatal dose of a given drug per gramme body weight of a frog is found to be equivalent to 0.01, then the given substance, assuming that it belongs to the group of heart tonics, would contain 10 heart tonic units: $M.F.D. \frac{1}{0.01} \div 10 = 10 \text{ H.T.U.}$

Definition.—A heart tonic unit (H.T.U.) is ten times the normal minimum fatal dose per gramme body weight of standard test frogs kept under proper test conditions. This rule can be applied to any of the heart tonics as a means of expressing such values in whole numbers.

It is to be understood that the H.T.U. is a measure of toxic value, although such toxic values may be translated directly into therapeutic values, based on the U.S.P. average dose or any other dose, but there is great discrepancy in doses for the preparations which we expect in the near future to consider in another paper.

Proposed Standards for the Most Important Preparations of the Digitalis Series of the Heart Tonics.

—	M.F.D.	Exact No. of H.T. units per c.c.	No. of H.T. units in round numbers per c.c.
Digitalis :			
Extract... ..	0.0005	200	200
Fluid extract, U.S.P. 1890	0.0015	66	65
Tincture, U.S.P. 1900	0.015	6	6
Digitalin (Germanic)	0.00005	2000	2000
Squill :			
Fluid extract, U.S.P. 1890	0.0012	83	80
Strophanthus :			
Tincture, U.S.P. 1900	0.0000833	1200	1200
Convallaria—Fluid extract :			
Rhizome and roots, U.S.P.	0.00025	400	400
Herb	0.00015	666	650
Flowers... ..	0.00009	1111	1100

I am, Sir, yours faithfully,
E. M. HOUGHTON, M.D.
Detroit, Michigan, Sept. 30th, 1909.

THE BENHAM TOP.

To the Editor of THE LANCET.

SIR,—Mr. C. E. Benham asks in THE LANCET of Oct. 2nd why, if my explanation of the phenomena of his top be the correct one, the green colour seen as the after-image of the black disc is not seen on the black lines. It should be noted that the red colour appears on the black lines corresponding to a portion of the retina which has not been stimulated at all because for that portion of the retina the black lines are only a continuation of the black disc. This seems to have been generally overlooked by those who have offered an explanation. We have therefore to account for the red colour appearing on a part of the top corresponding to a portion of the retina which has not been stimulated by light. The conditions are perfect for a contrast phenomenon, as there is a large mass of a dilute colour and a small dark portion. In many contrast experiments the induced colour so overpowers the inducing colour as to make it very difficult to ascertain the presence of the latter.

I am, Sir, yours faithfully,
Hendon, Oct. 7th, 1909. F. W. EDRIDGE-GREEN.

VACCINATION WITH ATTENUATED LIVE CULTURES.

To the Editor of THE LANCET.

SIR,—Referring to my paper with the above title, published in THE LANCET of August 21st, I beg to draw attention to the fact that while typhoid vaccine (dead or alive) may be with advantage prepared with *broth cultures*, the dead or live dysentery vaccine and the mixed dysentery-typhoid vaccine should always be prepared with *pepton-water cultures*, as the inoculation of broth cultures of the Shiga-Kruse bacillus often induces a very painful infiltration at the seat of the inoculation.

I am, Sir, yours faithfully,
Colombo, Sept. 16th, 1909. ALDO CASTELLANI.