the greatest care should be taken to obtain Jamaica rum and not Demerara rum.—I am, Sirs, yours faithfully,
MEREDITH YOUNG, M.D. Edin.

Stockport, April 23rd, 1906.

THE ARMY MEDICAL RESERVE.

To the Editors of THE LANCET.

SIRS,—The important question of first finding the necessary material to form such a corps is clearly put by your correspondent, "War Dog," in THE LANCET of April 21st, p. 1136. There are many who, I think, will agree with me that too much is made of military training in medical matters. Surgery and medicine are essentially the same, whether practised in the navy, army, or civil life, with the exception that in the latter a wider field is essential. The skeleton of a certain necessary administration is fully provided by the Royal Army Medical Corps. The civil surgeon, on the whole, is generally admitted to have proved a complete success. Any friction which did take place, in the future will probably disappear under the vastly improving conditions of the *personnel* of the standing corps. Should another war take place there must of necessity be a further call upon the profession with the result of an equally satisfactory response. The idea of specially training a body of such men surely is unnecessary. As to a reserve of men like myself, who have seen service under all conditions at the front and in hospitals, most of us are now settled in some way or other, and I think I may say that we are not looking for further trouble unless the country cannot do without us. Carry a large water-bottle and a packet or so of common cigarettes: these are the first requirements of a wounded soldier. I have always found the officers of the Royal Army Medical Corps willing and anxious to give at short notice any special instruction which might be required.

I am, Sirs, yours faithfully,

J. L. AYMARD,

Late Civil Surgeon, 7th Dragoon Guards.

Wimpole-street, W., April 21st, 1906.

To the Editors of THE LANCET.

SIRS,—The idea of enrolling into a medical reserve the larger number of civil surgeons who were attached to the army during the late war is a scheme which one would have thought should have suggested itself to the authorities long ago; moreover, the confidential reports possessed would have enabled a pick to be made of the many they have to choose from, to say nothing of the advantages of practical experience possessed by these men gained in actual warfare, an experience which no training could ever give to the new men. That such a scheme has presented itself to the authorities may be taken for granted and it may be of interest to ask why it has not been adopted. It will doubtless be fresh in our memories the snub which the War Office received during the course of the war to its offers of commissions in the Royal Army Medical Corps offered to the civil surgeons; it is not likely they would care to receive a second. Again, if the authorities as it seems fear a refusal to enrol from experienced men one is naturally lead to ask if the reason for such refusal is probably due to a "knowledge of good and evil" which is possessed by the civil surgeons of the real state of matters in the Royal Army Medical Corps. Hence the reason for asking young men to enlist in a reserve of a service they have no experience of the shortcomings of. A civil surgeon who has once served knows that if he joined he would be entering a service possessed of many attractions of a social and gay life, but would invariably recognise that during his term of service he would lose ground in things medical and surgical. His time of training would be spent learning military routine, administrative duties, and compiling red tape returns, but that he would gain anything in medical or surgical work he knows would be almost impossible. If, on the other hand, all administrative work—returns of sick, payment of men, checking of hospital supplies, balancing of accounts, and the other multitudinous duties which at present fill in the greater part of medical officers' time—were carried out by military officers who have passed into the reserve or have been enrolled specially, as is the case in the army pay department, the civil surgeon would then feel more inclined to join a service in which he could conscientiously bring to bear with value and interest the experience which his practice has taught him. Until some

scheme is adopted by the Royal Army Medical Corps of removing clerical duties to lay shoulders so long will the corps fail to fulfil its full duties to itself and to the nation.

I am, Sirs, yours faithfully,

THE AUTHOR OF THE "ARMY MEDICAL SYSTEM," &C.

April 21st, 1906.

CANCER GENESIS: TYROSIN AS A PROBABLE CAUSE OF LEUCOCYTOSIS IN CANCER.

To the Editors of THE LANCET.

SIRS,—I have noticed that under certain conditions it is possible to obtain what appears to be pure crystals of tyrosin from the juice of cancer cells and chemical experiments appear to support strongly the presence of tyrosin as Hoffmann's and Piria's reactions can be elicited. The importance of the presence of tyrosin in cancer becomes at once apparent when inquired into from the bio-physiological chemical standpoint of the initiation or cause of carcinoma and the subsequent course of the disease from a histological and clinical aspect. Tyrosin is paraoxyphenyl- α -amido-propionic acid and is the result of the prolonged action of pancreatic secretion on proteid matter. Tyrosin can be readily prepared from horn shavings by the action of sulphuric acid. Horn is an epithelial structure and the presence of tyrosin in epithelial cancer—particularly in epithelioma and mammary cancer—is not so extraordinary as it would seem. If tyrosin be decomposed we get various compounds, amongst which are paraoxyphenyl-propionic acid and β -phenyl-propionic acid. The former is hydroparacumaric acid and the latter is hydrocinnamic acid.

It is an accepted fact that the subcutaneous injection of either cumaric acid or cinnamic acid causes a well-marked leucocytosis.¹ During digestion, especially towards the end of the process in the small intestine, there is a marked leucocytosis normally taking place in the walls of the intestine and its villi. Is it not possible that the presence of tyrosin serves the purpose, amongst others, of calling up this leucocytosis, which is usually accepted as part of the method of fat absorption from the intestine, another of the results of pancreatic functions?

We here would appear to have a possible explanation of the non-inflammatory presence of leucocytes in the growing margin of a cancer and also a reason in support of my contention that the initiation of the cancer process is due to leucocytic action,² inasmuch as, owing perhaps to aging or faulty chemical action, epithelial cells may attract leucocytes by reason of the presence of accumulated tyrosin within or about the cells. Another most important matter bearing on the above is the fact that lately in all cases of cancer, wherever it may occur in the body, it has been stated that the mucous membrane of the stomach ceases to secrete hydrochloric acid and abundance of lactic acid is found to take its place. Now lactic acid is hydroxy-propionic acid and this fact at once points to an apparent connexion with tyrosin, which is a propionic derivative in combination with phenol, elsewhere in the body in cancer cases.

It would appear that one of two things is taking place: (1) that the stomach is trying to rid the system of the propionic radicle in an allotropic form; or (2) that the propionic radicle is being attached to a phenol radicle in the intestine and is being taken up in excess from the intestine and therefore appears in the tissues more or less free. The presence then of tyrosin in cancer tissue, especially in view of the alleged favourable action of trypsin on cancer, would appear quite compatible with the contention that the fundamental cause of cancer would probably be found to be some chemical disturbance in cell metabolism, directly or indirectly. Apart from the propionic-kresol compounds, there would appear to be also a chinolin compound allied to kynurenic acid present, as crystals which appear to be chinolinic in form have also been seen.

The above is a short *résumé* of the matter so far as I have worked at the subject at present, and further work on these lines aimed at increasing or diminishing tyrosin in cancer tissue ought to prove interesting and profitable in

¹ Drage: Subcutaneous Injection of Cinnamate of Sodium, THE LANCET, July 12th, 1902, p. 66, and May 23rd, 1903, p. 1441.

² Forbes-Ross: Leucocytes in Cancer Genesis, Brit. Med. Jour., October, 1905.