Correspondence.

"Audi alteram partem."

THE ARRANGEMENT OF THE AUTONOMIC NERVOUS SYSTEM.

To the Editor of THE LANCET.

SIR,—Since the appearance of Gaskell's book on the "Involuntary Nervous System" in 1916 there has been a tendency amongst English writers to consider that the main problems of this system were settled by Gaskell. Thus, in the Croonian lectures now appearing in your columns Dr. Langdon Brown says: "It is not depreciating the work of subsequent investigators to say they have chiefly filled in the gaps and completed the details in the great plan" drawn up by Gaskell. This point of view probably arises in large part from the form in which Gaskell puts his account in the "Involuntary Nervous System." This book is the substance of his lectures to students. In it, he first gives a summary of those of his conclusions which he arrived at in 1886, and which have survived. In the rest of the book he gives the facts known at the time of writing, and the conclusions to be drawn from them, but as the treatment is not historical he does not deal with the fundamental differences between the conclusions so drawn and those which he and others held in 1886-1889. Except as regards the origin of the nervous system from an invertebrate type, and views as to the relation of the innervation of the layers of the embryo, the theories are with little modification those I gave in one or other of my summaries more than 15 years ago.¹

Gaskell's contribution was to bring into one system all "visceral nerves" and to connect all efferent "visceral" fibres with small medullated fibres. Both of these points had been frequently discussed earlier. The most illuminating part of his conclusions was that the sympathetic fibres arose from the thoracic and upper lumbar regions only of the spinal cord. Whilst his conclusions brought a clarity into part of the arrangement of the autonomic system which did not previously exist, a still larger part was left in not less confusion than it was before.

I may briefly summarise the problems of fundamental importance which were so left, and which I have been more or less concerned in elucidating.

It was supposed that the efferent fibres might have on their course one or several nerve cells or none at all. The modern theory is that there is one nerve cell interposed between the central nervous system and the periphery, and one only.

The ganglia of the posterior roots and the various peripheral ganglia were held to consist of both "visceral" efferent and of sensory nerve cells, and there was extreme difference of opinion with regard to some ganglia as to the relative proportion of the two kinds of cells. The theory of admixture of the two kinds of nerve cells is now generally discarded.

French writers advocated Cl. Bernard's theory that there were true reflex actions from peripheral ganglia, and those who contested this view gave no satisfactory explanation of the facts. The explanation was afforded by observations on "axon reflexes." Connected with this was the theory that the ganglia were coördinating centres for impulses coming from the central nervous system. Facts have found against this theory.

There was no general plan of the distribution of the nerve fibres of the white rami to the several ganglia. This has now been made.

Nothing definite was known of the relation between the distribution of the fibres proceeding from a sympathetic ganglion to the skin and the distribution of the afferent fibres of the corresponding spinal nerve. This has been determined.

The ganglia of the sympathetic system were held by some observers to be divided into two sets—the proximal for motor and the distal for inhibitory nerves. It has been shown that this theory has no foundation. The ganglia are connected with all kinds of nerve fibres which run to a given area.

The theory of "crossed innervation" of the circular and longitudinal coats of the gut was widely accepted, and in the form then accepted it has been shown to be erroneous.

¹ Schafer's Text-book of Physiol., vol. ii., p. 618, 1900; Brain, vol. xxvi., p. 1903; Ergeb. der Physiol., Bd. ii, p. 819, 1903.

The old question of direct vaso-dilator fibres—i.e., of "visceral" fibres in the spinal nerves—gave no sign of being settled. Some observers held that they ran in anterior roots, others that they ran in posterior roots, and some denied their existence. It is now held that they are afferent fibres.

The conception of the "visceral" system (autonomic system) as a single system has been essentially modified. It is now held that the bulbar part of the "cranial outflow" and the "sacral outflow" form one system for the gut and its appendages (my oro-anal system), and that it is essentially different in phylogenetic development from the sympathetic.

I may add that my experiments on the autonomic nervous system started from observations on the action of pituri sent me by Professor Liversidge. They developed step by step in logical sequence from the result of the observations made by Dickinson and myself on the action of this poison.

I am, Sir, yours faithfully,

Cambridge, May 26th, 1919.

J. N. LANGLEY.

"OURSELVES ONLY."

To the Editor of THE LANCET.

SIR,—Mr. E. H. Worth's letter in THE LANCET May 24th should appeal to all non-panel men who value a defensive organisation, and it is to be hoped that any not already members of the National Medical Union will join that body without delay. Intending members may be reminded that the subscription for the latter half of the present year is only half a guinea, and members joining before July 5th will be eligible for attendance at the annual general meeting on that date, when the objects and work of the Union will be explained. The meeting will be followed by a dinner which (as in previous years) will, I understand, not be limited to members, and at which ladies will be welcomed. Tickets (7s. 6d.) can be obtained at the offices of the Union, 346, Strand, W.C. 2, to which address, also, applications for membership should be sent.

There is an impression in some quarters that the work of the National Medical Union is limited to opposing the National Insurance Acts, but this is quite erroneous. A large field of activity lies ahead, for the traditional freedom and dignity of our profession will shortly be assailed in new directions. The Union (which it may be mentioned is not a trade-union), while not disapproving of a public medical service under certain conditions and limitations, will take care not to advise acceptance by the profession of any unsatisfactory scheme that may be launched. Its function is to prevent further encroachments on our independence, and in this work it deserves whole-hearted support.

I am, Sir, yours faithfully,

EDWIN SMITH,

Late Hon. Treasurer, National Medical Union.
London, S.W., May 25th, 1919.

THE ORIGIN OF LIFE: THE WORK OF THE LATE CHARLTON BASTIAN.

To the Editor of THE LANCET.

SIR,—Now that the war is over and the time of bacteriologists is not so much taken up with work connected with the saving of human life, may I suggest that they devote a little attention to a question of far-reaching importance—namely, the Origin of Life? This question has never yet been settled owing mainly to the strenuous opposition of bacteriologists to the views of my father, the late Dr. H. Charlton Bastian, F.R.S. He it was who for 50 years, in spite of every opposition from such men as Pasteur, Tyndall, and Huxley, claimed, as the result of most careful experiment, to have proved that living matter is capable of coming into being in suitable media and under favourable conditions at the present day from non-living matter.

The truth of his doctrines and the reality of his alleged facts as set down in several publications, notably "The Origin of Life,"¹ have never been disproved. They have for the most part only been met by mere bald denials, unsupported by any fresh or independent evidence, and seemingly based on *a priori* views as to what seemed to a bacteriologist possible or impossible.

Surely this is unscientific. If the alleged facts are not true, or if there has been some faulty technique admitting of

¹ Watts and Co., second edition, 1913.