

THURSDAY, NOVEMBER 10, 1910.

## PHYSIOLOGY AS A SPECULATIVE SCIENCE.

*Biological Physics, Physic, and Metaphysic. Studies and Essays.* By Thomas Logan, Edited by Q. McEannan and P. H. Aitken. Vol. i., *Biological Physics*. Pp. xxx+576. Vol. ii., *Physic*. Pp. viii+284. Vol. iii., *Metaphysics*. Pp. vi+110. (London: H. K. Lewis, 1910.) Price, 3 vols., 24s. net.

IN a prefatory note we read that Dr. Thomas Logan was an Ayrshire man, who received his medical education at Glasgow and Aberdeen, and spent almost half a century on busy practice as a public health officer and general practitioner, first in Scotland, latterly in Yorkshire. He died three years ago, at the age of sixty-nine, leaving behind him the manuscript of the three volumes now published. It is stated that his editors were not permitted to make alterations or excisions of any of the text, which therefore appears in the form the author wished, and is illustrated by a number of cuts borrowed from standard works on anatomy and histology. The first volume is entitled "Biological Physics," the second "Physic," the third "Metaphysics."

Dr. Logan would appear to have been very early impressed with the truth of the aphorism, "Circulatio Circulationum omnia Circulatio," and the great bulk of his volumes is devoted to the repetition and amplification of this text. He possessed a great facility with the pen, and was never at a loss for a word or words to express his meaning. Hence his sentences run to 10, 15, or, in favourable instances, 25 lines or more in length. As a philosopher, he committed himself to unbridled speculation and unchastened teleology, employing the deductive method that has found so little favour since the end of the sixteenth century. Thus, for example, he showed (i., p. 165) that the axon of a nerve-cell must be—and therefore is—

"a compound of at least four tubes circulating fluids and substances of different consistence, and qualities, along its intra-spaces, each circulation differing from the other according to the consistence of its material and the freedom from obstacles to its onward progress, the two inner being necessarily slow, but the two outer necessarily relatively quick."

With every nerve-fibre acting as a four-fold tube, there can be no doubt that circulation might proceed merrily indeed; but anatomical or microscopical evidence either that these fibres are tubes, or that they do serve as circulatory channels. Dr. Logan offered none. He was, also, on purely *a priori* grounds, a firm believer in the importance and activity of the pituitary gland. After describing its position in the skull, he went on to say (i., p. 94):—

"Situated thus, it, the pituitary body, must become the receptacle of a mixture of materials, consisting of cerebro-spinal lymph, endothelial cell debris, neuroglial oozings, and whatever else obtains an entrance into it, which it must of anatomical necessity dispose of, and *this*, we claim, must be *its function*; and surely no mean function, yea, a function second to none in the whole category of glandular functions in its direct bearings on the great problem of life and health."

NO. 2141, VOL. 85]

It may be noted in passing that he offered a solution for one at least of these great problems, by saying what life is (i., p. 445):—

"Life, therefore, is a tripartite, but indissolubly united, transcendental entity, beginning with the vitalisation of the elements of nutrition; culminating in their organic incorporation, and ending with their devitalisation and elimination."

Discussing the pituitary and pineal bodies, he did not agree that they are survivals of once important organs (i., p. 97):—

"*Survivals forsooth!* 'Tis nothing less than an insult to *nature*, and an impeachment of her working and administration of the law of 'evolution,' to manufacture and propagate this story of her prodigality in the use of most valuable cephalic, or brain, space as a museum for the storage of obsolete organisms, and her persistent exhibition of a juvenile affection for the display of some of the works of her 'prentice hand in this, the gallery of her latest, best, and finest productions! These structures, called pituitary and pineal glands respectively, are illustrations of the truth of this exclamation and contention, and, it seems to us, that their more exhaustive study will reveal many facts indicating that they are structures of the greatest functional importance in the regulation of the cerebro-spinal lymph circulation, a circulation of equal importance with the great blood-circulation, and a circulation, in fact, emanating from the blood-circulation, and the last of the *great series* of circulations involved in the *chain of vital processes* called by the names deglutition, digestion, absorption, circulation proper, nutrition, assimilation, secretion, and excretion."

Dr. Logan was no less successful in tracing out the path followed by these pituitary products; speaking of the tongue, he said (i., p. 545):—

"Here, then, we claim to see the theatre of one of the concluding acts of the great cerebro-excretory circulation and the final disposal of the residual pituitary material, which finds its way through the pituitary gland, and which in turn finds its way through the lateral sphenoidal foramina openings into the tonsillar bodies, and thence into the amorphous and semi-adipose material matrix, in the inter-muscular spaces of the tongue, where it affords that semi-plastic and faintly-fluid material in the discharge of which the epithelial covering and papillary structures of that organ are constantly engaged."

One may doubt whether obscurantism could go further. Enough of Dr. Logan's writing has been quoted to exhibit the surge and flow of verbiage on which he launched his *a priori* theories, and floated his elaborate yet elusive and illusory deductions. Throughout his essays he was content with speculation and assertion, rarely did he come down to the level of simple fact and commonplace proof of his novel views. So little was he in agreement with the modern spirit or methods of scientific investigation that one cannot but see in him a writer fated to live some two or three centuries after his time. His volumes illustrate very clearly the strength and the weakness of the undisciplined scientific imagination, so-called, and show the limitations of the arm-chair man of science to perfection. They should be of no little interest to collectors of the literary curiosities of science.

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