

# **THE CONDUCTION OF THE NERVOUS IMPULSE**

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The Conduction of the Nervous Impulse by Keith Lucas

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**KEITH LUCAS**

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MONOGRAPHS ON PHYSIOLOGY

EDITED BY

ERNEST H. STARLING, M.D., D.Sc., F.R.S., F.R.C.P.

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### EDITOR'S PREFACE.

IN no science is the advance at any one time general. Some sections of the line are pushed forward while other parts may remain for years with little movement, until in their turn they are enabled to progress in consequence of the support afforded by the advance of the adjacent sections. The increasing number of series of monographs in different sciences is a recognition of this fact, as well as of the concentration of interest which characterizes this age of specialization.

In the present series it is intended to set out the progress of physiology in those chapters in which the forward movement is the most pronounced. Each monograph will contain an account of our knowledge of some particular branch of physiology, written by one who has himself contributed in greater or less degree to the attainment of our present position. It is hoped that by securing the help of men who are actively engaged in the advance of the subject the outlook of each monograph will be forwards rather than backwards. An exhaustive account of previous writings on the subject concerned is not aimed at, but rather an appreciation of what is worth retaining in past work, so far as this is suggestive of the paths along which future research may be fruitful of results. The

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more valuable the monographs in inspiring the work of others, the greater will be the success of the series.

The present volume deals with a subject which is fundamental for the understanding of the working of the nervous system. Delayed in its appearance by the outbreak of the war, it might have been lost but for the services of Dr. Adrian, who had co-operated with Keith Lucas in many of his researches, and managed to find time, in the midst of his military duties, to edit and complete the material left behind by the author. Interesting as is the work, revealing the train of thought which guided him in his researches, it is only by reading Keith Lucas's original papers, cited in the text, that we can form some idea of his scientific personality, and appreciate the greatness of the loss science has suffered by his untimely death in the service of his country. His whole life was in his work and so the work reveals the man. In reading Lucas's papers, one is impressed in the first place with his courage. No problem is too difficult to attack—indeed the difficulty only adds zest to the undertaking. But withal there is no blind enthusiasm. One finds throughout a clearness of vision which views and evaluates in a spirit of detachment the difficulties, and a cool planning out of the best possible means to overcome them and obtain an answer to the problem set before him. His mechanical genius enabled him to attain a perfection of experimental technique which has been rarely equalled and never surpassed, without, however, warping his judgment as a biologist, or leading him to adopt the Procrustean method of fitting the phenomena of the living tissue to some mechanical schema.

The qualities, which had rendered Keith Lucas

eminent as a physiologist, are just those required in the new science which set out on the conquest of the air; and from the beginning of the war he applied all his inventive faculties to solving the practical problems which confront our aviators. How valuable his work was in this department will be disclosed later. His loss to the flying service is as great as his loss to physiology. But his work is for all time, and will serve as a sure vantage ground from which other men may carry on the quest so ably initiated by Keith Lucas.

ERNEST H. STARLING.

