

THE ELEMENTARY NERVOUS SYSTEM

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The elementary nervous system by G. H. Parker

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G. H. PARKER

**THE ELEMENTARY
NERVOUS SYSTEM**

MONOGRAPHS ON EXPERIMENTAL BIOLOGY

EDITED BY

JACQUES LOEB, Rockefeller Institute

T. H. MORGAN, Columbia University

W. J. V. OSTERHOUT, Harvard University

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BY

G. H. PARKER, Sc.D.

MONOGRAPHS ON EXPERIMENTAL BIOLOGY

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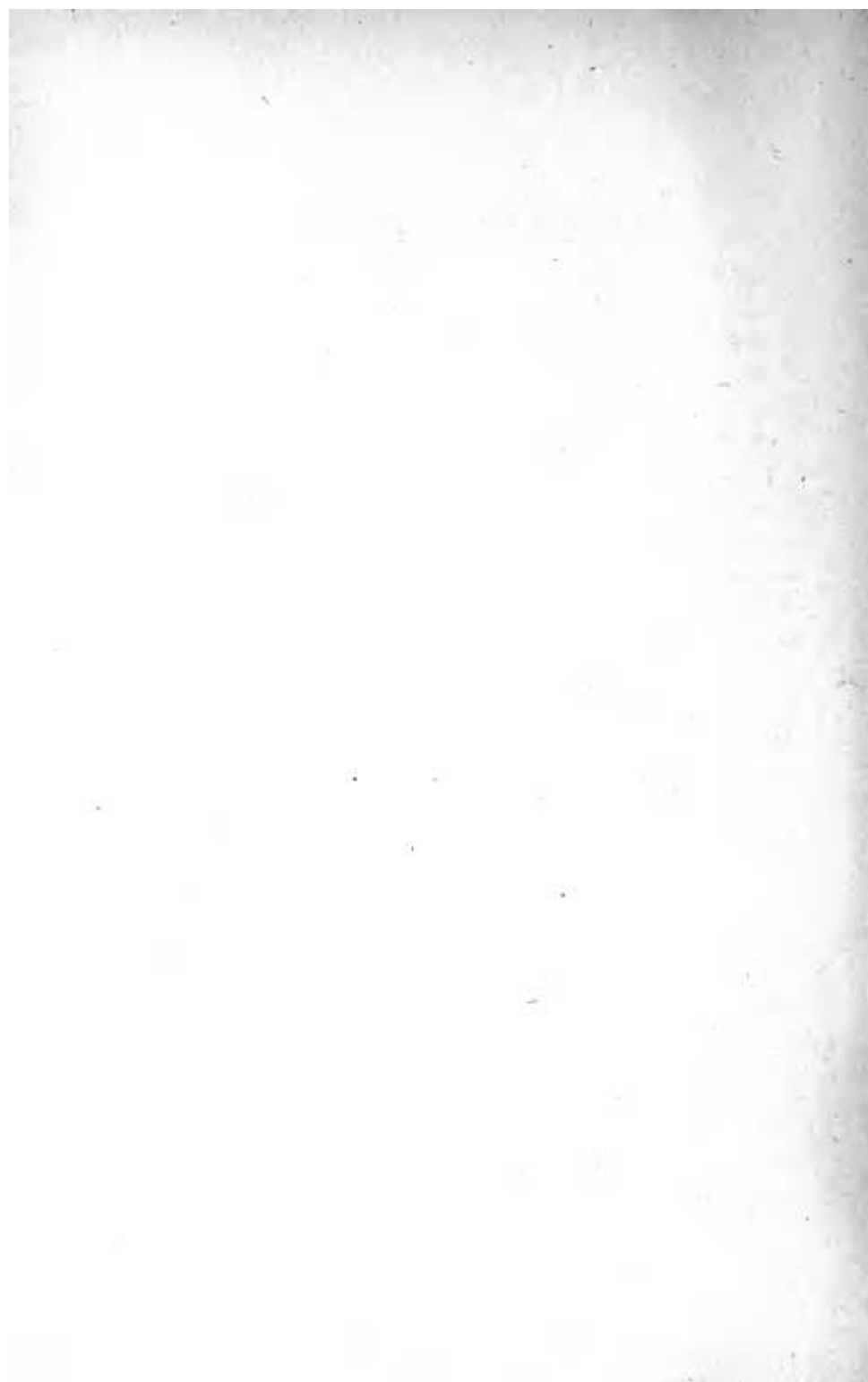
EDITORS' ANNOUNCEMENT

THE rapidly increasing specialization makes it impossible for one author to cover satisfactorily the whole field of modern Biology. This situation, which exists in all the sciences, has induced English authors to issue series of monographs in Biochemistry, Physiology, and Physics. A number of American biologists have decided to provide the same opportunity for the study of Experimental Biology.

Biology, which not long ago was purely descriptive and speculative, has begun to adopt the methods of the exact sciences, recognizing that for permanent progress not only experiments are required but that the experiments should be of a quantitative character. It will be the purpose of this series of monographs to emphasize and further as much as possible this development of Biology.

Experimental Biology and General Physiology are one and the same science, by method as well as by contents, since both aim at explaining life from the physico-chemical constitution of living matter. The series of monographs on Experimental Biology will therefore include the field of traditional General Physiology.

JACQUES LOEB,
T. H. MORGAN,
W. J. V. OSTERHOUT.



AUTHOR'S PREFACE

THE dependence of human affairs upon the nervous system of man is so absolute that it was inevitable, as soon as this relation was understood, that the activities of the simpler animals should be interpreted as though these creatures were miniature human beings. That such interpretation was carried far beyond its legitimate bounds, even by the scientifically trained, is now admitted on almost all sides, but it is no easy or simple task to ascribe to this movement its proper bounds. That these bounds are vastly more restricted than has usually been supposed is certain. An approach to a clearer understanding of what they are is assured through the application of experimental and quantitative methods to the questions concerned rather than by a continuation of the older more purely observational procedure. It is from this standpoint that an attempt has been made in this volume to portray the elementary nervous system as it exists in the simpler animals and in the simpler parts of the more complex forms. It is believed that this treatment of the subject may help in the solution of the general problem by removing once and for all some of the old misunderstandings concerning the nervous system and by inviting the student's attention to new methods of attack.

The subject matter of the volume is drawn almost entirely from the three simpler phyla of the multicellular animals, the sponges, the cœlenterates, and the ctenophores. This is intentionally done for the reason that the activities of such animals as the echinoderms, worms and