Psychobiology, Volume 1

Dunlap Knight

Title: Psychobiology, Volume 1

Author: Dunlap Knight

PSYCHOBIOLOGY

EDITED BY

KNIGHT DUNLAP

Johns Hopkins University

VOLUME I

BALTIMORE, MD.
1918

CONTENTS

ANNOUNCEMENT

PSYCHOBIOLOGY is established for the publication of research bearing on the interconnection of mental and physiological functions. It will include in its volumes therefore, not only investigations of what is sometimes called "psychological physiology" but also investigations in pharmacology, physiology, anatomy, neurology and psychiatry in so far as the results of these investigations have explicit bearing on problems of mental life, or mental factors are included in the essential conditions of the investigation.

We would emphasize the fact that in spite of the increasing tendency in the several sciences represented, especially in psychology, to seek practical results, and formulate as quickly as possible conclusions having immediate application, it has been our purpose to establish another journal devoted to pure science, in which the ideals of those whose primary interests are in sound scientific progress shall be represented as fully as possible. In pursuance of this purpose, we urge contributors to pay attention to the details of method and technique which alone can give their conclusions value, and we set no arbitrary limit of length. Papers submitted will be accepted in so far as space permits, if they conform to the following standards. (1) They must be in the proper field of the journal. (2) They must possess sufficient importance.. (3) They must be adequately written. Unnecessary length and brevity are alike excluded by this last criterion.

Manuscript may be sent directly to the editor-in-chief. When an article lies in the special field of one of the associate editors, it may be sent to him.

THE RETENTION OF HABITS BY THE RAT AFTER DESTRUCTION OF THE FRONTAL PORTION OF THE CEREBRUM

S. I. FRANZ AND K. S. LASHLEY

From the Government Hospital for the Insane and the Psychological Laboratory of The Johns Hopkins University

Much has been written regarding the neurology of learning and especial attention has been directed to the cerebrum. Comparatively little evidence has been adduced to show what cerebral elements are used in the formation of habits, although recent experimental investigations show that the frontal positions of the cerebrum are utilized by monkeys, dogs, and cats.[1] In only those animals with a highly developed brain is there a distinct differentiation of the frontal (as an association area) from the central (so-called motor and sensory-kinesthetic) area, and in fact the possibility of the histological differentiation of numerous areas of the brains of many of the lower animals is slight. The relatively simple and homogeneous character of the cerebral cortex in the rodents makes their cerebral physiology worthy of study, and there is the added advantage that the animals acquire habits rapidly and much information is at hand regarding their normal reactions.

At the same time, on account of their low cost and ease of housing, many different experiments on the brain may be made which are not possible with animals having larger and more highly developed brains. Such experiments on rats may be expected to give results of at least suggestive value respecting the functions of corresponding parts of more highly evolved brains. Thus, if it is found that these animals can acquire habits after the removal of certain small or large parts of the cerebrum,

[1] For most of the evidence: S. I. Franz, The Frontal Lobes, New York: Science Press, 1907, pp. 64.