

**THE UNIVERSITY OF CHICAGO. A
STUDY OF SENSORY CONTROL
IN THE RAT. A DISSERTATION,
DEPARTMENT OF PSYCHOLOGY,
PP. 1-123**

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FLORENCE RICHARDSON

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The University of Chicago
FOUNDED BY JOHN D. ROCKEFELLER

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RAT

A DISSERTATION
SUBMITTED TO THE FACULTY
OF THE
GRADUATE SCHOOL OF ARTS AND LITERATURE
IN CANDIDACY FOR THE DEGREE OF
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DEPARTMENT OF PSYCHOLOGY

BY
FLORENCE RICHARDSON

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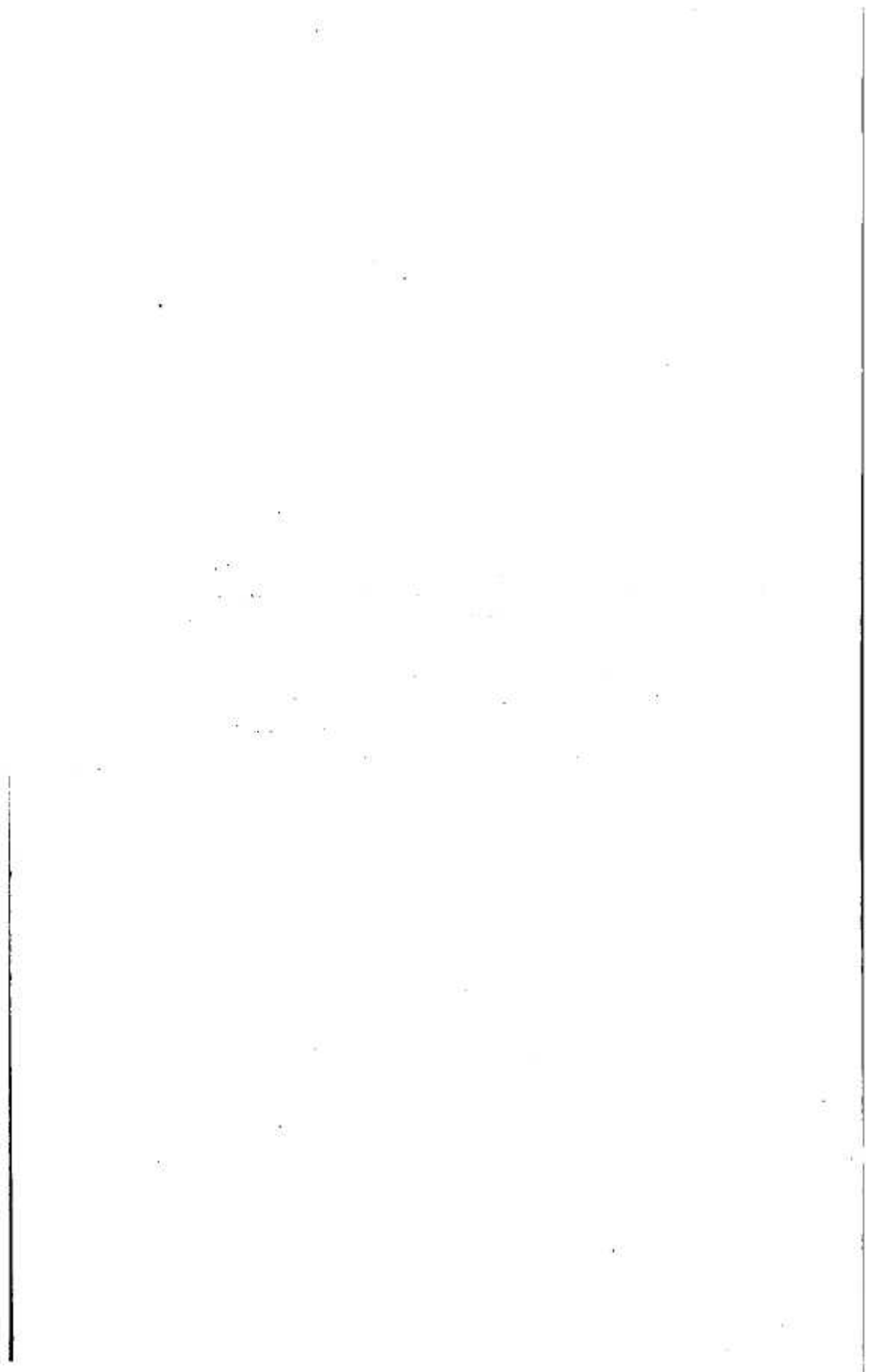
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INTRODUCTION.

a. Problem and Scope of Present Study.

The work presented here grew out of a series of tests upon the rat, begun in April, 1906. Watson,¹ in an investigation which he was carrying on at the time, had found that the only necessary sensory avenues employed by the rat, in learning the maze, were the kinæsthetic and organic, and that visual, olfactory, auditory and tactual impressions could in all probability be dispensed with.

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The present problem parallels that of the above investigation and may be briefly stated as an attempt to determine the function of the different sense organs in the reactions of the rat to situations requiring various types of movement. In problems like that of the maze, the general activity of running is the one most utilized. The sensori-motor arcs need only to be integrated: Whereas the coördinations which are employed in the learning of such problems² as Nos. I, II, and III of the present series (such as digging, bending the back and climbing upward through holes; stepping on a plane and advancing upon it until a trap door falls; raising the head and lifting a latch with the snout, etc.) are not so habitual to the animal. The sensori-motor arcs involved in the learning of these problems must be established more or less *de novo*, and at the same time be combined into a series which can function more or less automatically.

It may be assumed that since running, which is the chief form of activity involved in the maze, is so reflex-like in character, it might well be carried out by the use of kinæsthetic sensory impressions alone. The coördination involved in problems of the manipulation type, not being so reflex in character, would, if the factors involved in the formation of human habits

¹ Watson, J. B., *Psych. Rev.*, Mon. Supp., vol. viii, no. 2, 1907.

² These problem boxes are described in detail further on.