

Chapter II

Method

Apparatus

A two-floor barrel-shape table was constructed. The whole area of the table was painted gray. Upper floor was used as a "field" where rats are to be surrounded by stimuli. Down from the upper floor, there was an alley to water box. Six windows (each being 6 X 10 inches) were made on the area of the below wall to gain light. A small part of the upper floor wall (4 X 4 inches) was cut out for the entrance.

Diameter of the circular table was 100 centimeters and the length of the "cylinder" was 75 centimeters. The distance between upper and lower floor was 45 centimeters and between the upper floor to the edge of the barrel was 30 centimeters. The barrel shape table is fixed on 75 centimeter-long table leg.

Twenty-four wooden blocks (each being 3 X 3 X 3 inches) were provided for signs (or cues, or stimuli) in the experiment. Twelve were painted black and the rest white.

Water box was located at the end of the alley. It was in the same condition with an ordinary home cage.

Sample

A sample in this study was 41 female rats, each weighed around 150-180 gms., and aged somewhere between 120-150 days. These

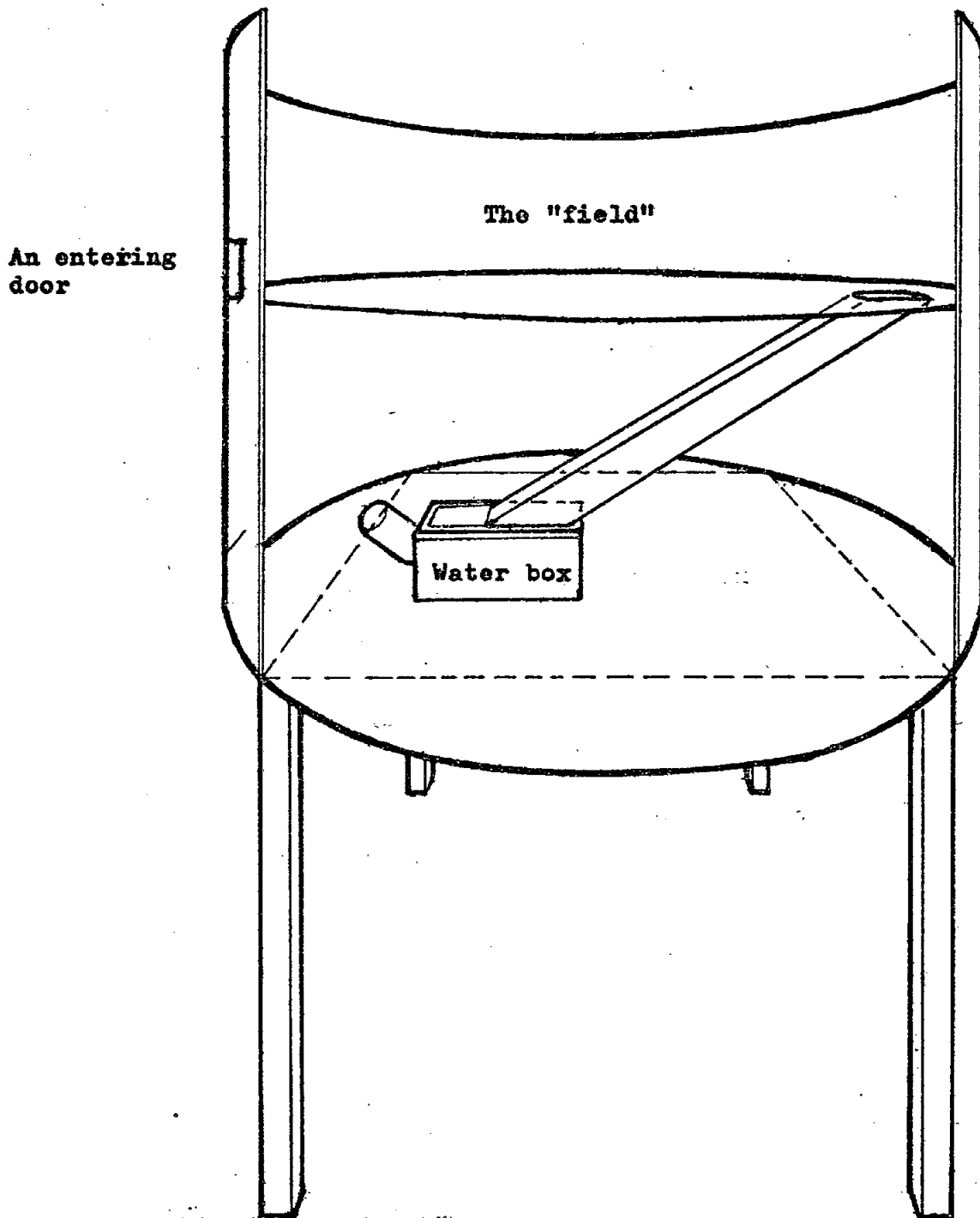


Figure I A perspective of an apparatus used in the study

rats were kindly provided from Faculty of Science, Mahidol University. No previous training or investigation was introduced to these rats.

They were divided into three groups: the black-cue group (BC), the white-cue group (WC) and the black and the white-cue group (BWC). When being run in the "field", BC group were to be exposed to the 12 black cues (wooden blocks), WC group to the 12 white and BWC group to 6 black and 6 white.

Each rat was kept four days in an individual home cage to gain familiarity before the test days. On the fourth day, they were let to "explore" the plain apparatus.

Procedure

1. Twelve blocks were set randomly in the "field" and the location of them was fixed during the experiment. Changing of blocks was contingent upon a group of rats BC, WC or BWC. Especially for BWC group, the blocks were arranged almost in chessboard-like pattern.

2. Rats were to be deprived of water for 24 hours before each test trial. No water was available in the home cage during eight days of test trial, but food was always available.

3. A rat was picked by its tail and put into the "field" by an entering door. The entering door was closed with the gray paper after a rat passed through. A rat was run freely through the surrounding blocks to find its way(s) to satisfy its thirst.

4. When a rat reached the water box, it was allowed being

there until finished drinking; Then, it was brought back to its home cage.

5. Time spent by each rat from the entering door to the end of the alley was taken and used as the performance measure.

6. Analysis of variance and t-test were the statistical techniques used for the data obtained.

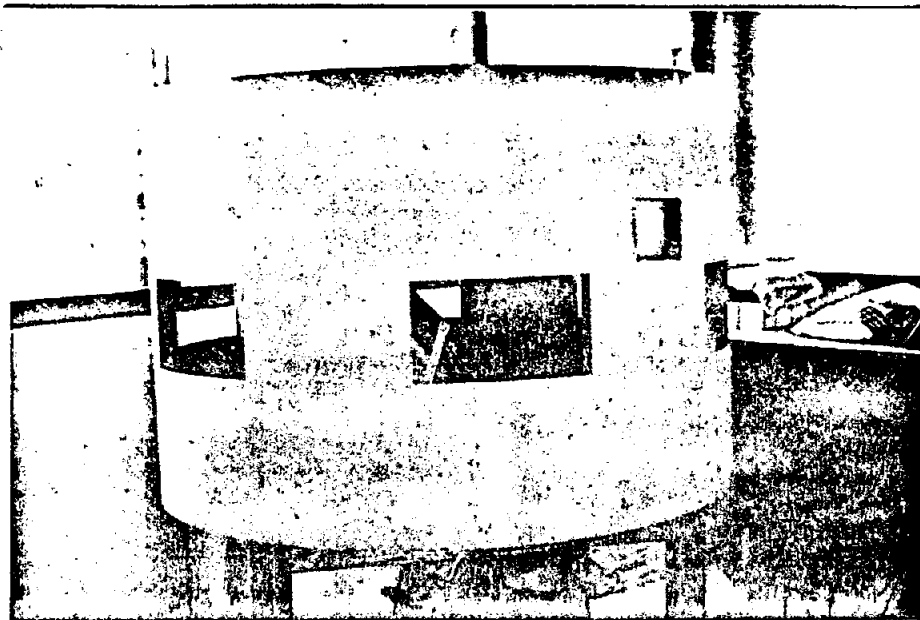


Figure II An apparatus used in the study

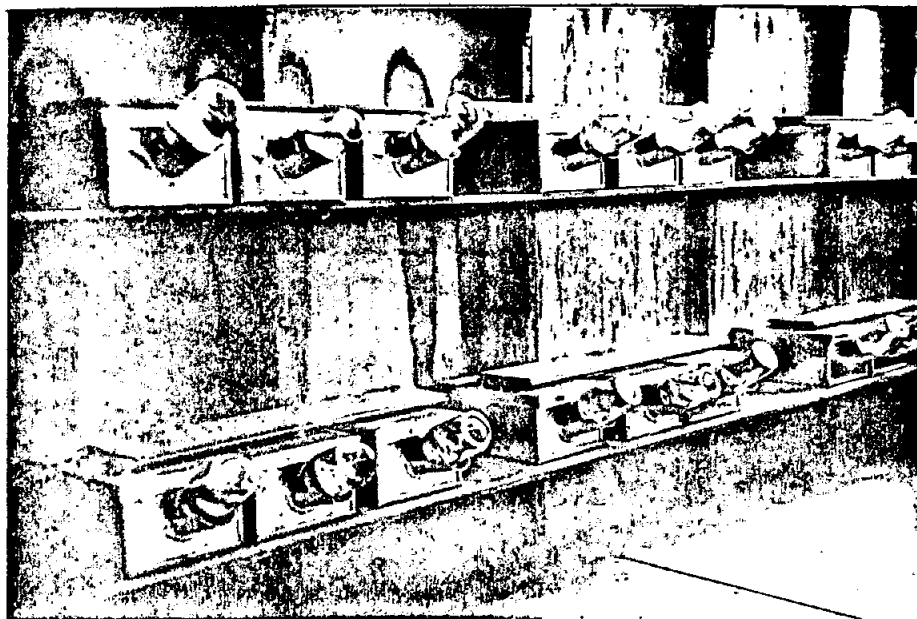


Figure III "Home" for an individual rat

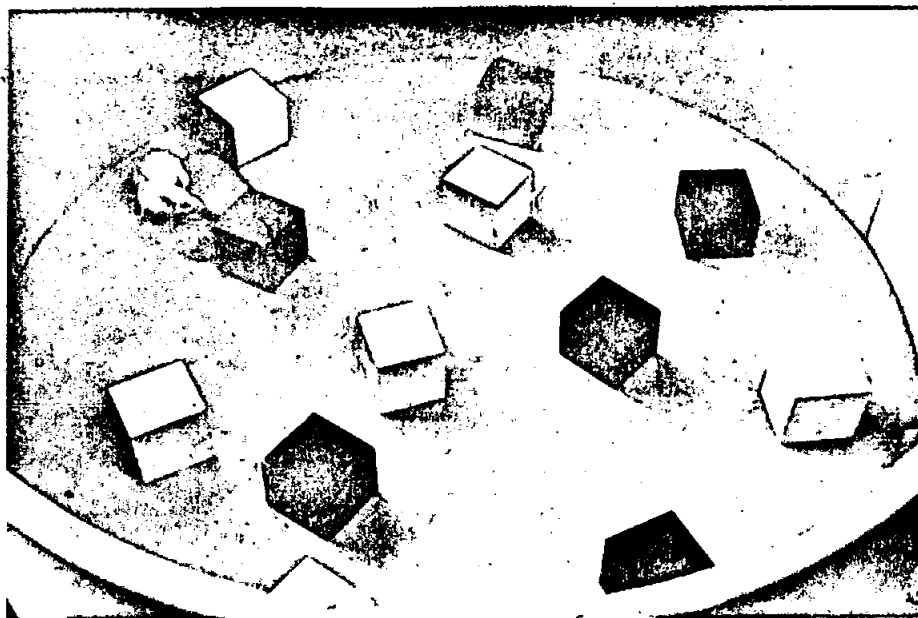


Figure IV The location of blocks for BWC group

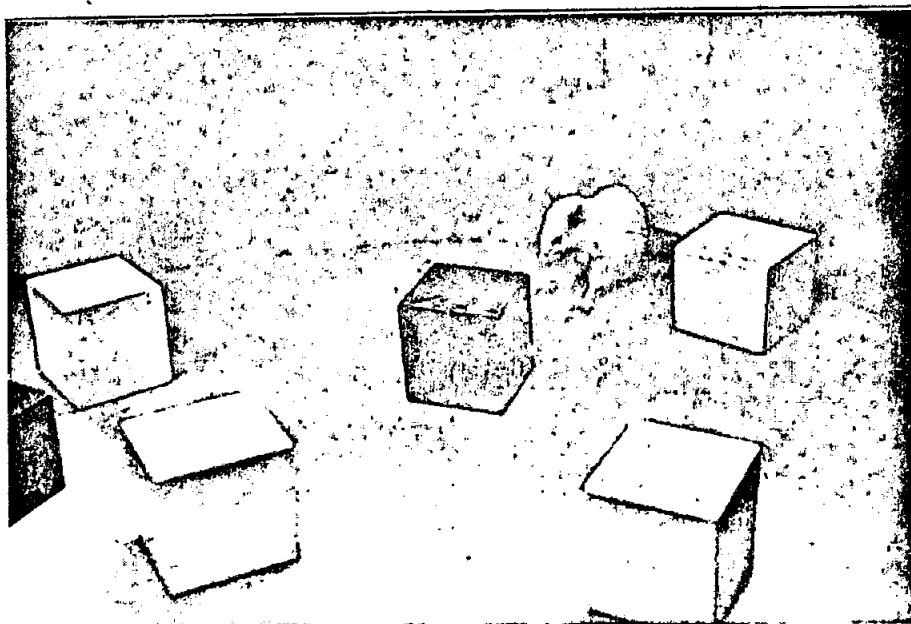


Figure V "Licking" or "Grooming" behavior

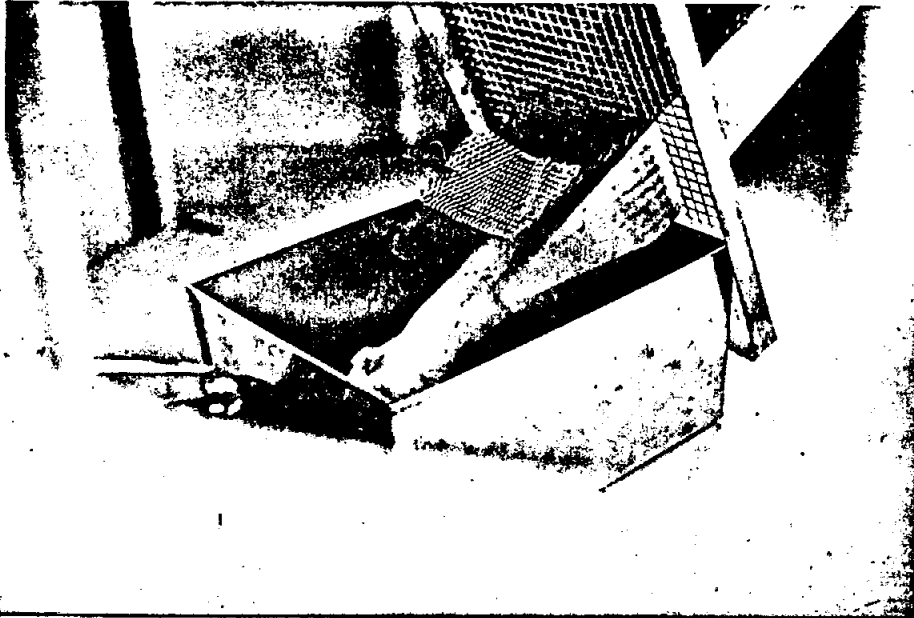


Figure VI, VII . Some drinking behavior of rats

