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EXPERIMENTAL STUDY OF MAZE LEARNING IN YOUNG OPOSSUMS

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Summary.—Maze learning by 7 young opossums showed fewer errors throughout learning than did learning by mature rats.

Studies on the behavior of the mature *opossum* have shown the animal capable of learning with little difficulty experimental problems used with other animals. Such tasks include the Guthrie-Horton puzzle box (James, 1955), a conditioned avoidance problem (James, 1937, 1958), the Fink Arrow Maze (James, 1959), a two-choice discrimination (James, 1960), and an operant lever response (unpublished study by the author).

To the author's knowledge, there have been no investigations published on the learning capability of the *young* opossum. The present study is a comparative evaluation of maze learning behavior of the young opossum with that of the full-grown white rat.

Procedure.—Seven young opossums, approximately 60 days from the pouch, and seven mature rats, 90 days old, were used as *Ss*. The opossums averaged 242 gm. in weight, and the rats 140 gm.

The Maze was of Lashley 11 design (Lashley, 1929), measuring 38 in. × 18 in. × 6 in., with a center 4½-in. runway, and three culs-de-sac and a food compartment opening on the sides. An incorrect response was contingent on

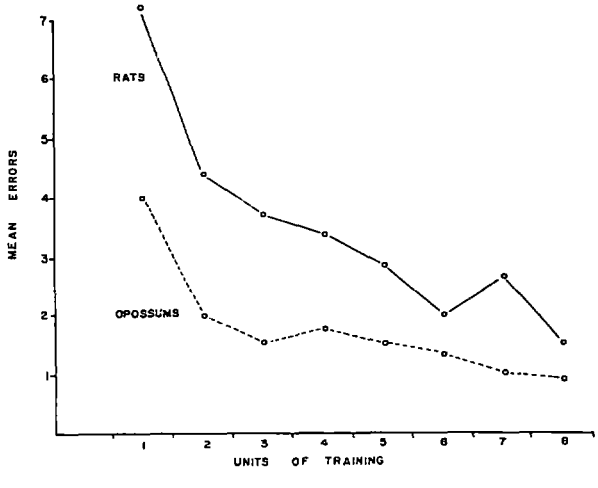

FIG. 1. Maze learning performance (one unit equals ⅛ of the trials)

the animal's entering entirely into the incorrect alley. Five successive errorless trials constituted the learning criterion, the animal being tested five times daily.

Results.—The Vincent curve in Fig. 1 contrasts the maze-learning performance of the two groups. The difference in over-all mean errors for opossums (16.9) and rats (30.9) was statistically significant ($t = 2.46$, $df = 13$, $.05 > P > .02$). A possible explanation for the relative superiority of the young opossums was that these animals are less distractable and less curious in their exploratory behavior than white rats, and this tendency was conducive to faster learning in the present experimental situation. The results of this study are of interest to those concerned with comparative psychology.

REFERENCES

JAMES, W. T. An experimental study of the defense mechanism of the opossum with emphasis on natural behavior and its relation to mode of life. *J. genet. Psychol.*, 1937, 51, 95-100.

JAMES, W. T. The behavior of the opossum in the Guthrie-Horton puzzle box. *J. genet. Psychol.*, 1955, 87, 203-206.

JAMES, W. T. Conditioned responses in the opossum. *J. genet. Psychol.*, 1958, 93, 178-183.

JAMES, W. T. Behavior of the opossum in the Fink Arrow maze. *J. genet. Psychol.*, 1959, 94, 199-203.

JAMES, W. T. A study of visual discrimination in the opossum. *J. genet. Psychol.*, 1960, 97, 127-130.

LASHLEY, K. S. *Brain mechanisms and intelligence.* Chicago: Univer. of Chicago Press, 1929.

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