

rats when the colours are not too close together on the spectrum. If these conclusions are valid, we may be led to question the assumption that the cones are the organs of colour vision, providing it can be shown conclusively that the retina of the rat's eye is coneless.
M. HAMBLIN SMITH.

Whole and Part Methods in Trial and Error Learning. (*Journ. Comp. Psychol.*, vol. xv, p. 395, June, 1933.) Hanawalt, E. M.

Trained white rats were employed in the experiments, which were concerned with the learning of maze patterns. The part-connecting method proved less economical than the whole method. Practice in establishing connections between adjacent parts during learning contributed very little to final learning. The important factor in causing waste in learning was breaking up the unity of the total pattern. Individual differences among learners seemed to be a factor in learning efficiency, regardless of the method employed.
M. HAMBLIN SMITH.

The Behaviour of Albino Rats in Choosing Food. (*Journ. Comp. Psychol.*, vol. xv, p. 419, June, 1933.) Hausmann, M. F.

Previous experiments have shown that the albino rat, when presented with a food-choice situation, regulates the intake of the various components so as to maintain the total caloric and the total liquid intake fairly constant. In the present investigation a calorically useless substance (saccharin) was substituted for a useful component (sugar). The animals were not deceived by the substitute; after a period of adjustment they regulated their intake of food in accordance with their real tissue needs. The relative intensity of various specific food desires cannot be explained on a mechanistic basis.
M. HAMBLIN SMITH.

The Docile Nature of "Hypotheses". (*Journ. Comp. Psychol.*, vol. xv, p. 429, June, 1933.) Krechevsky, I.

The term "hypothesis" is used to indicate the appearance of systematic modes of response during the pre-solution period in a case of discrimination learning. The experiments were conducted with albino rats. The results were those which would be expected if hypothesis behaviour were docile and purposive. If any behaviour act can be established to be docile and purposive, hypothesis behaviour is definitely so.
M. HAMBLIN SMITH.

Hereditary Nature of "Hypotheses". (*Journ. Comp. Psychol.*, vol. xvi, p. 99, August, 1933.) Krechevsky, I.

Thirteen "bright" rats and 14 "dull" rats, previously untrained, together with 20 "average" unselected rats, were run for 14 days in an unsolvable situation. The hypotheses attempted by the animals were observed. The modes of these hypotheses are partly a function of the heredity of the animal. The bright rats seemed to prefer spatial hypotheses, the dull rats preferred non-spatial (visual) hypotheses, and the control rats showed no preference. No general difference in brightness or dullness was found, and it is concluded that "maze-brightness" is a specific response ability.
M. HAMBLIN SMITH.

Psychobiological Studies of Social Behaviour in Aves. I: The Effect of Complete Gonadectomy on the Primary Sexual Activity of the Male Pigeon. II: The Effect of Complete and Incomplete Gonadectomy on Secondary Sexual Activity. (*Journ. Comp. Psychol.*, vol. xvi, pp. 25, 59, Aug., 1933.) Carpenter, C. R.

The overt pattern of primary sexual activity was not essentially changed in form by partial or complete castration. Reduction by as much as 85% of the normal amount of testicular tissue did not preclude normal sexual behaviour; but further reduction may reduce the frequency of copulation. The reduction of the frequency of primary sexual activity is a gradual change, and not a sudden

drop. Partial castration, beyond a critical range, delays the maturation of sexuality.

There is a group of activity patterns which cluster around and intercorrelate with primary sexual activity; these patterns have been termed "secondary sex behaviour". Partial castration to some extent, and complete castration to a greater degree, tend to dissociate temporarily the concomitance of the two forms of activity. There is a compensatory aggressiveness of the females associated with some partial and all completely castrated males. It is suggested that the cyclic character of the reproductive activities of the male pigeon is largely determined by the changing behaviour of his female mate.

Histologically, there is evidence that reorganization and growth may occur after partial abolition of the male primary sex-organ. M. HAMBLIN SMITH.

The Responses of Horses to the Situation of a Closed Feed-box. (*Journ. Comp. Psychol.*, vol. xv, p. 445, June, 1933.) Gardner, L. P.

The problem which confronted the horses was to open a covered feed-box containing grain. Sixty-eight subjects of various ages and breeds were used. The rate of learning was very rapid; three or four trials perfected the opening technique. Retention of this learning lasted, in some cases, for six to twelve months. Younger horses were somewhat slower than older subjects. Sex differences were not great. In first trials draft horses and farm horses opened the boxes more quickly than did military horses. M. HAMBLIN SMITH.

Delayed Reactions in Primates in Horizontal and Vertical Planes. (*Journ. Comp. Psychol.*, vol. xvi, p. 143, Aug., 1933.) Yudin, H. C., and Harlow, H. F.

It is more than conceivable that differences in rate of acquisition of horizontal as opposed to vertical spatial orientation might influence mnemonic ability of these fields. If such tendency exists, it should be exaggerated in the monkey as compared with the child, for the monkey is a vertically-minded creature as contrasted with the horizontally-minded infant. Four monkeys were tested. No evidence was obtained to indicate that monkeys show superior ability in making delayed reactions to containers placed in vertical planes than to those in horizontal planes.

M. HAMBLIN SMITH.

Social Behaviour of Primates. I: Social Facilities of Feeding in the Monkey and Its Relation to Attitudes of Ascendance and Submission. (*Journ. Comp. Psychol.*, vol. xvi, p. 171, Oct., 1933.) Harlow, H. F., and Yudin, H. C.

Social behaviour arises out of simpler individual functions, of which it is probable that the most important are the primary drives of sex, hunger, thirst, etc. These primary drives set up a condition of excited and emotional behaviour which is not specific to the particular tension, thus predisposing response to factors in the environment. Social factors, acting through imitation, tend to increase this non-specific behaviour; this condition is described as social facilitation. Such facilitation may be demonstrated experimentally in the monkey. The degree of facilitation depends upon many factors, of which active competition is probably the most important. Feeding behaviour leads to the formation of many important forms of social behaviour, such as attitudes of ascendance-submission, and to emotional behaviour, which may be described, anthropomorphically, as greed, envy and fury. It is suggested that social facilitation of feeding responses may play an important part in the formation of more complicated social attitudes.

M. HAMBLIN SMITH.

Comparative Behaviour of Primates. VI: Food Preferences. (*Journ. Comp. Psychol.*, vol. xvi, p. 187, Oct., 1933.) Maslow, A. H.

Ten primates were tested for food preferences, as regards bananas, oranges, apples, carrots and bread. The preferences varied from day to day, in the same