

The author considers that inability to correlate and recall visual, auditory and kinæsthetic engrams is probably the cause of the failure to establish the fixed associations needed for correct spelling. Faulty spelling is often found in certain families in association with left-handedness, reading disability and speech disorders. This lends support to the theory noted above. Various specific types of spelling defect are analysed and discussed, and their origin explained.

Tests for discovering certain types of spelling difficulties are given, also a short description of methods of restraining.

J. L. FAULL.

Psychological Weapons in Animal Fight. (*Character and Personality*, vol. ii, p. 3, Sept., 1933.) Hingston, R. W. G.

This article gives an extremely interesting account of the meaning of animal colour and adornment, showing the possession of two distinct colour schemes by most living creatures. There is first the dull scheme, which harmonizes with surroundings, and is the cloak of concealment; and secondly, the bright scheme, colourful, awe-inspiring and often beautiful, used in attack and display of power. Thus is established a correlation between the physiological and psychological aspects of instinct. When an animal is alarmed, one of two reactions occurs; fear, with concealment or flight; or anger, with attack; and an appropriate colour scheme is demonstrated for each reaction. It is pointed out that axillary hair occurs only in the human creature, and is explained as part of the attack-decorative scheme. So-called "courtship" behaviour of animals is shown to be an erroneous conception, if thought to be analogous to human courtship. In animals courtship behaviour is really "erotic behaviour", and is a hostile demonstration calculated to outdo rivals.

F. H. HEALEY.

Recent Research on Animal Behaviour. (*Character and Personality*, vol. ii, p. 74, Sept., 1933.) Zuckerman, S.

This paper consists of two distinct parts. The first part is a *résumé* of the monograph of Wiesner and Sheard, *Maternal Behaviour in the Rat*. The view is taken that the gonadotropic factors of pregnancy urine, and of the anterior lobe of the pituitary, are identical, and the statement is made that in primates œstrin is secreted in large quantities during pregnancy. The retrieving response in the maternal rat was specially studied.

The second part is a *résumé* of Bingham's monograph, *Gorillas in a Native Habitat*. This investigator found that the gorilla is a frugivorous social animal, spending most of its time on the ground, and that this animal sleeps just where and how he likes, being little concerned about the so-called "nest" or "hut" buildings. He failed to solve various vexed questions, such as relating to the marital life of the gorilla, but the author showed that a naturalistic study of the gorilla can be carried out scientifically.

F. H. HEALEY.

The Problem of Relative and Absolute Transfer of Discrimination. (*Journ. Comp. Psychol.*, vol. xvi, p. 199, Oct., 1933.) Gundlach, R. H., and Herington, G. B.

The "relative transfer of discrimination", reported by many observers, does not necessarily involve either the "transposition of structures", or any vague glimmerings of relational judgments and concepts. Until investigators use stimulus values selected in terms of the human or animal subject's threshold for discrimination, all theorizing as to the nature of the processes in these situations is idle.

M. HAMBLIN SMITH.

Colour Vision and Colour Preference in the Albino Rat. (*Journ. Comp. Psychol.*, vol. xv, p. 373, June, 1933.) Walton, W. E.

The white rat possesses some preference for greens and blues. It is not certain whether this is an acquired or a native preference, but it is significant that human subjects prefer the same colours. Coloured lights may be discriminated by white

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