

*Conditioned Withdrawal Responses with Shock as the Conditioning Stimulus in Adult Human Subjects.* (*Psychol. Bulletin*, vol. xxxi, p. 111, Feb., 1934.) Razran, G. H. S.

The withdrawal response to an electric shock is of great interest in some special problems, but its general value as a method for the discovery of the laws of conditioning in adult human beings is very limited. Many of the recorded observations indicate that the experiments have not normally yielded results of pure conditionability. While conditioned responses are not brought about by consciousness, attention and the like, they are affected, much more than the so-called native responses, by subjective processes, and their true course is obscured by the latter. The supposition that these subjective processes are themselves governed by laws which are the same, identical, similar, or derivable from the laws of conditioning does not remove the difficulty.

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*The Irradiation of a Tactile Conditioned Reflex in Man.* (*Journ. Comp. Psychol.*, vol. xvii, p. 47, Feb., 1934.) Bass, M. J., and Hull, C. L.

The points of stimulation in these experiments were four in number—the left shoulder, the left side of the small of the back, the middle of the left thigh and the middle of the left calf. There is a definite spread of cutaneous conditioned excitatory tendency from the shoulder towards the feet, and from the calf towards the head. There is also a definite analogous spread of the inhibition resulting from experimental extinction. In both cases the spread takes the form of a gradient, the magnitude of the tendency diminishing progressively with distance from the point of origin. The results are in accord with the findings of Anrep, in spite of wide differences in the technique of the experiments. The authors express scepticism concerning the validity of Pavlov's neurological speculations as distinguished from his experimental findings.

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*The Physiology of Sleep. X: The Effect of Alcohol and Caffeine on Motility and Body Temperature During Sleep.* (*Amer. Journ. Physiol.*, vol. cvi, p. 478, 1933.) Mullin, F. J., Kleitman, N., and Cooperman, N. R.

In human male subjects 300–375 c.c. of 19% alcohol taken one hour before retiring causes a lowering of motility and body temperature during the first half of the night, with an increase in both during the last part of the night's sleep. Large doses of caffeine (4–6 gr.) produce a marked increase in motility and body temperature during sleep.

J. F. LYMAN (Chem. Abstr.).

*Behaviour in Its Relation to the Development of the Brain. Part I.* (*Bull. Neur. Inst. N.Y.*, vol. i, p. 229, June, 1931.) Tilney, F. R., and Kubie, L. S.

The authors aim to demonstrate the correlation of behaviour and the development of the brain. Their chief purpose is to establish an explanatory basis for adjustive reactions in terms of cerebral structure. The plan of the investigation is outlined, and is based on the fact that all structures of the body attain adequate differentiation before they are capable of specialized reactions. The maturing process in six different species—opossum, rat, guinea-pig, pig, cat and man—are to be followed in two concurrent studies: (1) The development of the brain; (2) the development of behaviour, with the object of establishing chronological relations between the developmental processes.

In the structural investigation three methods are employed: (1) Organogenetic studies by means of the Born method of reconstruction; (2) histogenetic studies; and (3) myelinogenetic studies. The results of the structural investigation up to June, 1931, are reported, including a review of the developmental processes in the end-brain of the domestic cat, which result in the formation of the paleo-cortex, archicortex and neocortex. It shows that these processes pass successively through a three-layer and a four-layer stage, recapitulating respectively ichthyopsid and reptilian conditions before the ultimate mammalian six-layer cortex is attained.