

Part III.—Epitome of Current Literature.*

1. Anatomy and Physiology.

Factors Controlling Brain Potentials. (*Cold Springs Harbor Symposia Quant. Biol.*, vol. iv, pp. 292-304, 1936; *Trans. Amer. Neur. Assoc.*, vol. lxii, pp. 55-60, 1937.) Gerard, R. W.

Encephalograms were made upon frogs, cats and human beings. The evoked potentials, automaticity, slow waves, synchrony, distance action and neural, chemical and physical control of rhythms were studied. Carbon dioxide and anæsthetics increase the magnitude and rate of rhythm, then abolish it. KCl in isotonic solution locally applied abolishes activity; CaCl₂ restores it. Insulin hypoglycæmia increases fast rhythms; glucose counteracts the effect and resembles Ca⁺⁺.

JAMES C. MUNCH (Chem. Abstr.).

Electrical Activity of the Cat's Brain. (*Arch. Neur. and Psychiat.*, vol. xxxvi, p. 675, Oct., 1936.) Gerard, R. W., Marshall, W. H., and Saul, L. J.

The authors investigated the spontaneous electrical activity as well as that evoked by auditory, optic, somæsthetic, etc., stimuli of the cat's brain from the inferior colliculus forwards.

As impulses pass centrally there is considerable interaction between those in separate elements of one sensory system, or even between those of separate systems (optic or auditory). A rhythm of from 2-4 a second is commonly present throughout the optic structures, from the chiasm to the striate cortex. This is usually disrupted by visual stimuli but is sometimes enhanced; occasionally illumination of each eye produces one of these opposed effects. Other spontaneous rhythms associated with the heart-beat or respiration were highly localized; intense, though often irregular, activity was the rule in the main afferent and efferent systems, and in the grey masses of the brain-stem.

The writers conclude that individual neurones possess a potential rhythmicity and automaticity which lead to "beating", and that the cell groups are normally unified by a distance action in addition to conducted impulses.

G. W. T. H. FLEMING.

Action Potentials of the Brain. (*Arch. Neur. and Psychiat.*, vol. xxxvi, p. 1214, Dec., 1936.) Davis, H., and Davis, P. A.

The writers found that under standard conditions a given person reproduces on successive tests his own type of record, which may be characterized by, amongst other things, the presence or absence of a regular alpha rhythm, ranging from 8-13 waves per second.

They then investigated eight pairs of identical twins (18-58 years old). The records from one twin resembled those from the other as closely as the records of the same person on successive tests. In two instances both members of a pair of twins showed a feature which is unique in this series of over 140 records, i.e., a rate of 13 per second. In another case it was an unusual mixture of frequencies with a different rhythm dominating at the vertex from that found at the occiput.

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