Part III.—Epitome of Current Literature.*

1. Anatomy and Physiology.

The Electrical Activity of the Cortex. (*Proc. Roy. Soc. Med., vol. xxix, p.* 197, *Jan.*, 1936.) *Adrian, E. D.*

Bremer, using preparations of the isolated cerebral cortex, found that regular potential waves at 10 a second occur as long as the blood supply is maintained. Repeated stimulation of a point on the rabbit's cortex brings about a state in which at each stimulus a wave of activity spreads out like a ripple, every ripple spreading slightly further than the last, until they may cover a disc one centimetre or more in diameter. If stimulation has been prolonged, there is usually an after-discharge of waves arising both from the stimulated point or from other points on the cortex : these waves spread outwards in the same way and at the same rate as those produced by the stimuli. Thus there appears the electrical counterpart of the epileptiform attacks which result from excessive stimulation of the cortex. Similar waves are developed as the result of injury to the cortex and from the use of convulsive drugs. It is thus seen that two conditions favour the development of large and relatively simple potential changes in the cortex. One is the absence of the usual stream of afferent impulses, the other is the epileptiform state ; these two conditions give rise to the characteristic waves of the human electrencephalogram, which name we owe to Berger. These waves only appear when the eyes are closed and the subject is in a sleepy and contented frame of mind. The focus of these waves in the occipital area moves from place to place. The Berger rhythm can be induced much more readily in some subjects than in others. Many people give large, regular waves when still feeling far from calm ; others need a couch, a darkened room and a dose of amytal. Nervous, apprehensive people are usually in the second category, but not always. In an epileptic fit we find a series of very large potential waves travelling widely over the cortex, both as an accompaniment of a fit, and as the prelude to one occurring spontaneously or induced by hyperventilation, etc. G. W. T. H. FLEMING.

Enzymic Activity of the Brain. (*Proc. Roy. Soc. Med., vol. xxix, p.* 200, *Jan.*, 1936.) *Quastel, J. H.*

The writer points out that the brain possesses phosphatases (splitting glycerophosphate, nucleic acid and hexosediphosphate), fumarase, glyoxalase, glutaminase, and an esterase which can split acetylcholine, but which is inhibited by physostigmine. There also exists an indophenol oxidase, which is three or four times more abundant in the grey matter than in the white. This oxidase activity seems to be inversely proportional to the size of the animal concerned.

Peroxidase catalase exists, although only to a small extent. The respiratory pigment-carrier cytochrome also exists in the brain.

When we consider the substances burned by the brain, we find sundry curious features. Fatty acids are unaffected, and only one amino-acid, glutamic acid, is acted on. The substances which keep up the high respiratory rate of brain cortex are glucose and substances intimately associated with carbohydrate breakdown, i.e., lactic and pyruvic acids. Fructose, mannose, α-glycerophosphate, galactose are all oxidized, the latter but feebly. Succinic acid is oxidized vigorously.

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