15 cases of idiopathic epilepsy with an average duration of 15-6 years, dilantin sodium was gradually substituted for phenobarbital. Results were satisfactory, though some complications occurred. (H. de P.)

Non-Luetic Abnormalities in Spinal Fluid.—165 patients were investigated in whom no organic cause for the abnormality had been found at a previous examination. In 42 per cent. the abnormality remained unexplained; in 54 per cent. organic disease was confirmed or discovered, of which the most common were cerebral vascular disease and chronic alcoholism. It is suggested that the effects of alcoholism and drug-addiction should be further investigated. (H. de P.)

Frontal Lobectomy.—Cases are described which have survived this operation and which show a wide variation in symptomatology. One case is described in detail with the tests used after removal of a frontal lobe tumour in a man of above average intelligence who showed good response to instruction, but lack of initiative and tendency to stereotypy. It is noted that psychosurgery is the substitution of one disease for another, and suggested that frontal lobectomy destroys the “ability to organize life at a normal cultural and intellectual level.” (H. de P.)

Changes in Rhythm of Brain.—Experiments were carried out on the isolated olfactory bulb of the frog. When removed from the body the rhythm improves in amplitude and regularity. Its maintenance depends on a steady flow of energy, which is supplied by the metabolism of the cell. Separate factors controlling brain potential are analysed, and the problem of unification of the beat of many cells discussed. Electrical currents can spread through the brain either by nerve impulses or by electric fields. These functions may be applicable to brain function in epilepsy. (H. de P.)

Cushing’s Syndrome.—A case of Cushing’s syndrome with psychotic symptoms of depression is described. It is suggested that such symptoms are not uncommon in this condition. The case described was not typical and showed also extra-pyramidal neurological signs. There was a suggestion
of chronic encephalitis, which is not commonly found. It remains in doubt whether the mental symptoms are directly
due to hypophyseal dysfunction or to associated dysfunction of other endocrines.
(H. de P.)

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Personality Changes accompanying Cerebral Lesions : (i) Rorschach Studies of Patients with Cerebral Tumors. M. R. Harrower-Erickson. 859.
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Status Epilepticus as a Complication of Metrazol Convulsive Therapy. N. G. Becker and S. I. Stein. 993.
The External Genitale Bodies: Degeneration Studies following Occipital Lobectomy. W. J. German and B. S. Brody. 997.
Primary Intracranial Sarcomas.—The tumours described have certain features in common. They are of connective tissue nature and must be derived from the leptomeningeal tissue. They are very cellular and contain numerous mitoses. They form scanty intercellular substances characteristic of connective tissue. They spread mainly along the perivascular and leptomeningeal spaces, but may break out of them into the neural parenchyma and then spread diffusely, without forming a capsule. No two of these tumours are ever exactly alike. (R. M. S.)

Serum Protein in Schizophrenia.—Long-term studies of 14 patients with schizophrenia, 11 with manic depressive psychoses, and seven with symptoms of both conditions revealed abnormal variations in the nonprotein nitrogen of the blood and in the total proteins, cholesterol, and fatty acids of the serum in all the persons who showed marked changes in clinical status. The patients whose symptoms showed little change rarely had abnormal variations in these constituents. (R. M. S.)

Histological Changes following Metrazol Convulsions.—Serious lesions were found in the brains of all animals which underwent convulsions from metrazol. Strong evidence of chronic neuropathological lesions, in contrast to changes which might be imputed to lethal seizures only, was observed in animals which had seizures over periods of more than 8 days. The degree and extensiveness of the lesions in these experimental animals corresponded in general with the number and severity of the seizures observed. The type of damage to the brain seemed to be influenced by the length of time during which the animal had seizures. (R. M. S.)

Arrest of Circulation to C.N.S.—Permanant pathological lesions may occur in the cerebral cortex of the cat after complete arrest of the circulation for 3 minutes and 10 seconds. Frank necrosis and softening of the cortex have been observed after circulatory interruption for 3 minutes and 25 seconds.

Circulatory arrest for periods in the neighbourhood of 7½ minutes causes complete destruction and liquefaction necrosis of the cerebral cortex. The motor and visual cortices sustain the earliest and most profound damage. The olfactory, orbital, and temporal regions of the cortex are the least susceptible. Lamina I and to a lesser extent lamina II are the least vulnerable of the cortical layers, while laminae III and IV are the most vulnerable. The Purkinje cells rank next to the nerve cells of the cerebral cortex in susceptibility. The lateral geniculate nucleus is the most vulnerable of the basal nuclei in the cat, and it is followed, in order of susceptibility, by the hypothalamic nuclei, the thalamic nuclei, the globus pallidus, and the caudate nucleus. The brain stem and spinal cord are uninjured by periods of circulatory arrest compatible with continued survival of the animal. (R. M. S.)

Defects of Memory in Psychoses of Senium.—It was found that in patients suffering from the psychoses of the senium there are a greatly increased tendency to perseverate and a greatly accelerated tendency to secondary elaboration of memorized data. The first process, by interfering primarily with registration, and the second process, by interfering with retention, contribute materially to the improvement of recent memory in these patients. (R. M. S.)

BRAIN

Vol. 63. No. 2. June 1940.

Gower's Tract.—Chromatolytic changes were observed in large cells resembling motor neurones in the ventro-lateral fringe of the spinal grey matter of the 12th thoracic and upper six lumbo-sacral segments in monkeys and cats, following cord section. The cells, which were most numerous in the 4th and 5th lumbar segments, gave axones which immediately crossed the midline and ascended in the opposite ventro-lateral white matter. This ascending tract is part of Gower's tract, and the authors suggest the name “border cells” for the large cells of origin. (D. J. W.)

Poliomyelitis Virus.—Poliomyelitis virus (Rockefeller M.V.) was introduced into the C.N.S. of sixty Rhesus monkeys via the nose, eye, cortex, cord, and sciatic nerve. The animals were sacrificed in the preparalytic and acute paralytic stages of the disease. The results suggest that the selectivity of the virus is determined by three principal factors—the differential susceptibility of certain areas, their accessibility to an effective concentration, based
upon the kind and quantity of neuronal connection, and the portal of entry, which modifies the second factor. It is possible that immunological processes occurring during the disease enable some cells to survive early sublethal doses. (D. J. W.)

Amytonia Congenita and Congenital Myopathy.—Study of an affected family shows that amytonia congenita in infancy changes to non-progressive myopathy in adolescence. The clinical picture of amytonia congenita may be produced either by a congenital myopathy or by a spinal affection related to the Werdnig-Hoffman disease. (D. J. W.)

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*Postural Reflexes and Grasp Phenomena in Infants. B. L. Pacella and S. E. Barrera. 213.


Micro-Electrodes and Superior Cervical Ganglion.—Micro-electrodes in the superior cervical ganglion of the cat or rabbit show on preganglionic stimulation axon-like spikes. Their brief duration and sharp localization and all-or-none character suggest they come from single cells. Latency varies considerably. Frequency of response may be independent of the stimuli. The spike is followed by one negative and two positive after potentials, the last coinciding with the slow after potential of the ganglionic record. (W. M. H.)

Pupillary Reactions in Cortical Lesions.—Ablation of the sensory or sensorimotor cortex does not raise the threshold to pain reaction, the indicator being reflex dilation of the pupil caused by inhibition of the Edinger Westphal nucleus. Massive cortical lesions lower the threshold. Cortical areas which inhibit extrapyramidal movements produce dilation of the sympatheticomized pupil. A cortical control by inhibition is indicated. (W. M. H.)

Postural Reflexes in Infants.—A study of 100 healthy, newborn premature and full-term infants showed a definite effect of head posture in relation to trunk upon grasping movements. The latter are not necessarily a part of the tonic neck reflex mechanism. The relationship was shown between the position of the body in space and reflex postures in the limbs or toes. (W. M. H.)

Ether and Nembutal Action on Nervous System.—A full report, too lengthy to summarize, on the action of these drugs on potential responses of the nerve axon, synapse, rhythmically active nerve cell, spinal cord and brain. (W. M. H.)

Motor Performance after Parietal Ablation.—Unilateral removal of the parietal lobe, like ablations of areas 6 or 4, causes disability with relative disuse of the operated extremity and greater involvement of the distal joints. However, accuracy of control is increased by focused visual attention; in emotion control of gross movements may be almost perfect. Tactile deficit following unilateral or partial ablations of either areas 3.1.2, 1.2, or 5 and 7 is shown in the placing and hopping responses. Propriconception is much less affected, but complete bilateral parietal removal abolished the hopping and tactile and proprioceptive placing reactions. Knee-jerks, at first absent, may become hyperactive. Resistance to manipulation remains diminished. Atrophy of muscles was noted in one case. (W. M. H.)

Reflexes in Spinal Monkeys.—After spinal transection in the monkey autonomic functions return more slowly than somatic reflexes and fail to return to their normal efficiency. Cooling of one limb fails to cause a drop in temperature in the other during the period of "shock" following transection. (W. M. H.)

Effects of Stimulation of Frontal Lobe.—In both cats and monkeys an area on the orbital surface inhibits respiration and gastric tonus and causes a rise in blood pressure. The latter effect is found especially in monkeys. In cats the inhibition of tonus in gastric muscles is less frequent. (W. M. H.)

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The Effect of Renin on Urine Formation. G. W. Pickering and M. Prinzmetal. 314.


Sympathomimetic Amines and Perfused Blood Vessels.—The vasoconstrictor effect of sympathomimetic amines was determined by perfusion of cat's hind legs. Amines with hydroxyl groups in the ortho- or para-position and with unsubstituted phenyl ring are largely dependent for their effect on the presence of adrenaline. It is suggested they may block local tissue mechanisms for the inactivation of adrenaline. Dihydroxy- and meta-hydroxy-compounds appear to act independently. (W. M. H.)

Inactivation of Adrenaline.—d- and l-adrenaline, epinine, and corbasil, a derivative of ephedrine, given by mouth are
eliminated in the form of conjugated derivatives in the urine. Epinephrine and adrenaline are not eliminated to any extent as protocatechuic acid, as would be expected if inactivation were by the amine oxidase. Oxidation of adrenaline given by mouth (in doses up to 30 mg.) is prevented by adding 1 per cent. acetic acid along with glycine. (W. M. H.)

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