EPITOME OF CURRENT JOURNALS

AMERICAN JOURNAL OF PSYCHIATRY

Vol. 98. No. 3. November 1941.

Narcolepsy. W. F. Murphy. 334.
Encephalopathy Alcoholica. N. Joliffe and H. T. Thompson. 344.
The Incidence and Significance of Alcoholism in the History of Criminals. M. G. Gray and M. Moore. 347.
Follow-Up Results in Insulin Shock Therapy after One to Three Years. T. D. Rivers and E. D. Bond. 382.
The Vitamin B Requirement during Insulin Shock Therapy. W. Goldfarb and K. M. Bowman. 393.
The Treatment of Childhood Schizophrenia by Metrazol Shock Modified by B-Erythroidin. F. Cottington. 397.
The Effect of Convulsive Treatment on Memory, I. Sherman, J. Mergener, and D. Levitin. 401.
Studies on the Corpus Callosum, VIII. The Effects of Partial and Complete Section of the Corpus Callosum of Psychopathic Epileptics. A. J. E. Akeelatis. 409.
Experiences with a New Criminal Code in New York State. B. Apfelberg. 415.
Electroencephalograms of Manic-Depressive Patients. P. A. Davis. 430.
Evaluation of the Results of Psychoanalytic Therapy R. P. Knight. 434.
Mental Disorder in One of a Pair of Identical Twins. G. E. Hobbs. 447.

ARCHIVES OF NEUROLOGY AND PSYCHIATRY, CHICAGO

Vol. 46. No. 3. September 1942.

*Corpus Striatum and Thalamus of a Partially Decorticate Monkey. S. W. Ranson, S. W. Ranson, Jr., and M. Ranson. 402.
*Changes in the Brain in Persuiss with Convulsions. V. B. Dolgopol. 477.

Objective Measurement of Intracranial Blood Flow.—For the objective measurement of a function of total intracranial blood flow in man, a method was devised which in its basic principle resembled that used to study the blood flow to extremities by the venous occlusion plethysmographic method. The values obtained appear to be of the same order of magnitude as the actual volume flow of blood through the cranium. It is estimated that the total intracranial blood flow of normal man does not exceed levels of 750 to 400 c.c. per minute under the conditions of these experiments. (R.M.S.)

Corpus Striatum and Thalamus.—A study of the fibre connections of the corpus striatum and thalamus of a partially decorticate monkey. (R. M. S.)

Subcortical Hematoma.—Eight cases of solitary subcortical hematoma, in all of which the patients were subjected to surgical therapy, are reported. In three cases hemorrhage was of traumatic origin, in four it was spontaneous, and in the eighth the case was doubtful. The ages of the patients varied from 5 to 62 years, but six patients were under 40. In six cases the
fibres. The earliest sensory perception is actually conveyed along the slow, unmyelinated fibres, but the patient was found to have prothrombin deficiency, a condition which may be interpreted as indicative of hepatic damage. (R. M. S.)

Peripheral Neuropathy.—Sensory dissociation is a characteristic feature of the peripheral neuropathy complicating alcoholism and other conditions associated with disturbed nutrition. Light touch, vibration, and position senses and "first" pain sense are affected earliest and most severely. These sensations are carried by the large, myelinated A and B fibres, which are affected earliest and most severely in such conditions. "Second" pain sense, which is conveyed along the slow, unmyelinated C fibres, is spared. Immediate dysesthesia represents a stage of injury of the peripheral nerve at which some of the myelinated (A and B) fibres are still functioning, while others have been blocked. Delayed dysesthesia represents the stage at which practically all of the myelinated (A and B) fibres have been blocked, only small, unmyelinated fibres continuing to function. The delay in perception results from the very slow transmission along the C fibres. The sensory dissociation and dysesthesia of peripheral neuropathy may be duplicated experimentally by producing ischemia of an extremity. As the ischemia progresses, the loss of function of the peripheral nerve becomes more severe and the dysesthesia changes from the immediate to the delayed type. In peripheral neuropathy of this type, the large, myelinated (A and B) fibres are primarily affected. This indicates that these fibres have greater metabolic needs, and are therefore most susceptible to nutritional deficiency. (R. M. S.)

Tabes Dorsalis.—Sensory dissociation and dysesthesia were noted in 18 patients with tabes dorsalis. In 11 of these patients the dysesthesia was delayed, and in each of these there was marked delay in pain perception. The delay in pain perception and the dysesthesia have been related to blocking of fast conducting impulses, allowing more slowly conducted impulses to be perceived at a later time and in uninhibited fashion. It is suggested that the physiological mechanism of the delayed pain perception and dysesthesia associated with tabes dorsalis is analogous to that previously noted with disorders of the peripheral nerve. (R. M. S.)

Brain Changes in Pertussis.—The changes in the brain in pertussis are apparently noninfectious. They are most likely of circulatory origin and consist in œdema, ischemic cellular degeneration, multiple haemorrhages (usually small) and lymphocytic plugs in veins and capillaries. On rare occasions a secondary "encephalitic reaction" may be observed in addition to the aforementioned changes. (R. M. S.)

Bilateral Lesions of Globus Pallidus.—Three monkeys with large bilateral lesions in the globus pallidus showed none of the signs which point to striatal disease in man. None of the animals showed cogwheel resistance to passive movement; none had any trace of a Parkinsonian tremor. Choreiform and athetoid movements did not occur. The animals did not have the typical mask-like face and slowness of movement characteristic of paralysis agitans. The question is raised whether damage to the hypothalamus may not play a part in producing the Parkinsonian syndrome in man. (R. M. S.)

Intracranial Blood Flow in Insulin Coma.—The authors conclude from their studies that hypoglycemia coma, induced by the administration of insulin, is associated with either no change or a slight increase in total intracranial blood flow. (R. M. S.)

*The Electroencephalogram as an Aid in the Study of Narcolepsy. J. B. Dynes and K. H. Finley. 598.

Vol. 46. No. 4. October 1941.

*Physiology of the Spinal Cord: I. Role of the Anterior Column in Hyperreflexia. O. R. Hyndman. 695.
*Cerebral Arteriography: Its Place in Neurologic Diagnosis. S. W. Gross. 704.

Wernicke Syndrome.—Twenty-seven cases of Wernicke's syndrome (three of which occurred in non-alcoholic patients) are analysed and the following conclusions
reached. The syndrome as originally described by Wernicke is probably a combination of several nutritional deficiencies affecting the nervous system and need not necessarily be complete in any case. The authors believe that abnormalities in the skin include: (a) the ophthalmoplegia is a thiamine deficiency; (b) the clouding of consciousness may be related to anything which interferes with proper cerebral metabolism, some of the known offenders being lack of carbohydrate, lack of oxygen, lack of thiamine or nicotinic acid or riboflavin or of all three, and probably a lack of many other substances now under investigation; and (c) the ataxia is difficult to evaluate and its response to therapy has not as yet been worked out. Other deficiency syndromes and do superimpose themselves on the more usual Wernicke picture, and these require specific treatment. The ophthalmoplegia is invariably preceded or accompanied by peripheral neuropathy. Delirium, with its marked increase in psychomotor activity, and hence in total metabolism, frequently precedes the development of this syndrome. In the recovered patients, the development of a Korsakoff syndrome is the rule. This does not show a consistent response to thiamine hydrochloride, as has frequently been claimed. (R. M. S.)

Cortical Frequency Spectrum in Epilepsy.—The Grass method of frequency analysis has been used to obtain the cortical frequency spectrums of epileptic patients, of the parents of epileptic patients, and of normal persons. Study of records made during seizures discloses the following: (a) In petit mal attacks a disproportionately high peak appears in the 2 to 3 per second region; (b) in a psychomotor seizure an abnormally high peak appears in the 4 to 7 per second region; and (c) in grand mal attacks an abnormally high peak is evident in the 20 to 29 per second region. The average spectrums of epileptic patients made in the intervals between seizures disclose a disproportionately large amount of energy at frequencies below 9 per second. However, the spectrums of patients subject only to grand mal have an abnormally great amount of energy in the 20 to 29 per second region. Patients having periodic grand mal attacks show an increase in energy in the faster frequencies as the day of the occurrence approaches. The average spectrums of a group of parents of epileptic patients show abnormalities similar to those seen in the average spectrums of epileptic patients, but these abnormalities are less extreme. (R. M. S.)

Cutaneous Pressure-Vibration Spots.—Excision studies failed to substantiate the conventional claim that the cutaneous pressure qualities are mediated by specific sense receptors, since the sites for study were selected with extreme care and no such receptors were found. The possibility that the neurovascular system of the skin operates either in a direct or in an indirect manner in the mediation of cutaneous pressure and vibration is suggested by two observations. (a) The neurovascular system of the skin is unusually sensitive to pressure and vibratory stimulation and is equally sensitive to pressure when stimulated. (b) Biopsy specimens taken from the cutaneous areas highly sensitive to pressure and vibratory stimulation were found to contain a richer afferent arterial nerve supply than the skin from other parts in which the nerve was less sensitive to pressure and vibration. The presence in several of the biopsy specimens from spots sensitive to pressure and vibration of certain tubular, straight canals having muscular walls which appeared to unite the glomus bodies of the stratum subcutaneum with the capillary zone of the stratum papillare and the presence of its rich reticular nerve supply served to strengthen the authors' belief that the arteriovenous anastomoses in the skin are in some way related to sensory interpretations. (R. M. S.)

Nicotinic Acid and Intracranial Blood Flow.—Nicotinic acid and quinine nicotinate administered intravenously increase the intracranial blood flow for periods lasting from 20 to 60 minutes. This effect, which paralyses the flushing of the skin, diminishes gradually after the height of the reaction, which occurs within several minutes of the injection. Nicotinamide has no significant effect on the total intracranial blood flow; neither does it cause flushing of the skin. (R. M. S.)

Muscular Shortening and Dystrophy.—A hereditary familial disease has been described. It is characterized by a short, "webbed" neck as well as by shortness of the neck muscles, long dorsal muscles, and flexor muscles of the upper extremities of the arms. This shortness prevents the complete bending of the neck and back, as well as the stretching of the arms. There are also underdevelopment and weakness of the proximal muscles of the arms and the gluteal muscles. Decrease in or absence of deep reflexes was found in some members of the family. The webbing, which is formed by the shortened trapezius muscle, causes the neck to appear broader than usual. The cervical portion of the spinal column was normal. Roentgen examination revealed that all the vertebrae were present. The outstanding symptom of this disease is the shortening of certain muscles. In some cases, some features of progressive muscular dystrophy were present. However, most of the members of this family exhibited mainly shortening and underdevelopment of some muscles. The authors, therefore, believe that this heredofamilial anomaly is a special type of heredofamilial muscular disease. (R. M. S.)

After-Discharge following Cortical Stimu-
lization.—A report of a study of tonic and clonic after-discharges following cortical stimulation in monkeys, both before and after cortical and subcortical ablations. (R. M. S.)

Anticonvulsive Action of Azosulfamide.—The red dye azosulfamide is shown to have anticonvulsive action in some patients with epilepsy. No serious toxic effects were encountered. (R. M. S.)

Cerebral Arteriography.—Cerebral arteriography is indicated for the detection and localization of intracranial aneurysms, especially in recurring attacks of "spontaneous" subarachnoid hemorrhage. It is also indicated for the localization of intracranial arteriovenous fistulas, varices, vascular tumors and vascular malformations, for the differentiation of aneurysm and tumour and for the localization of neoplasms when the result of pneumoencephalographic examination is not conclusive. (R. M. S.)

Vol. 46.


*Neurologic Symptoms following Extensive Occlusion of the Common or Internal Carotid Artery. A. B. King and G. R. Langworthy. 835.


*Topical Arrangement within the Spinothalamic Tract of the Monkey. T. A. Weaver and A. E. Walker. 877.


*Removal of Tumor Arising Anterior to the Medulla. A. Ecker. 908.

Vascular Supply of Spinal Ganglia.—Most of the vessels supplying the spinal ganglion originate from the main vascular trunk (the spinal arterial branch) at right angles or by way of recurring arcs, arising off and frequently against the direction of the blood flow in the mother branch. This explains the fact that higher pressure and a longer time are needed to inject the arteries of the spinal ganglion than the spinal and radicular ramifications of the same segmental vessel. If analogy drawn from other, better known parts of the nervous system is permissible, the arterial supply of the spinal ganglia may be considered to be rather vulnerable. There may be some relation between this fact and the frequent occurrence of cellular loss in the spinal ganglia, reduction in the number of posterior root fibres and mild degeneration of the posterior column in an otherwise normal spinal cord after the third decade of life, a concept which is further substantiated by the gradual reduction of sensibility, most readily discernible as a reduction of vibratory sense, from the third decade of life on. (R. M. S.)

Pathology of Amyotrophic Lateral Sclerosis.—In five cases of amyotrophic lateral sclerosis measurements showed that most of the large nerve fibres in the ventral spinal roots had disappeared, whereas the small fibres appeared normal. The large ventral horn nerve cells suffered a similar fate, the small cells remaining relatively normal. Accurate measurements of the corticospinal tract fibres were made impossible by glial tissue, but it appeared that here the large fibres also suffered the greater damage. All posterior spinal roots appeared normal. In two cases in which bilateral degeneration of the pyramidal tracts was marked muscular hypertonus was not noted, the deep reflexes were normal or hypoactive and extensor plantar responses were absent. In these cases the large fibres in the ventral roots were more extensively damaged than in any of the other cases. It might be inferred from this observation that signs of degeneration of the pyramidal tracts are dependent for their production on the large ventral root fibres. (R. M. S.)

Diseases of Muscle.—A valuable contribution to the study of the effects of prostigmine with a discussion of the factors limiting the use of this drug in the treatment of myasthenia gravis. (R. M. S.)

Neurologic Symptoms following Occlusion of Internal Carotid Artery.—Occlusion of the carotid artery produces atrophy of the optic nerve and loss of vision in the eye on the same side, due to closure of the opthalmic artery. The circulation is also impaired in the anterior choroidal, anterior cerebral and middle cerebral arteries, which are terminal branches of the internal carotid artery. There may occur softening of the brain, which is usually maximal in the field of the middle cerebral artery. Temporal hemianopia, due to involvement of the optic radiation, may be present in the visual field of the opposite eye. Contralateral hemiplegia and hemianesthesia, more marked in the face and arm than in the leg, also result; they appear to be due to cortical destruction rather than to injury to the internal capsule. If the left cortex is involved in a right-handed person, there may be a variable degree of aphasia. Dysarthria and dysphagia are often present during the first few days after the vascular occlusion, but disappear later. (R. M. S.)

Treatment of Cystic Craniopharyngioma by Intraventricular Drainage.—A new
method of treating craniobuccal cysts, characterized as intra-ventricular drainage, is here described. The basic principle consists of establishing a communication between the dome of the cyst and the floor of the lateral ventricle. (R. M. S.)

**Bony Changes in Pseudohypertrophic Muscular Dystrophy.**—The older view that muscular dystrophy is a disease which involves muscle only may have to be revised to include the concept of a more generalized pathological process. In addition to the alterations in creatinine and carbohydrate metabolism and the possible disturbance of the endocrine glands, there is involvement of bone, as indicated by the authors’ roentgenographic studies. It is the authors’ opinion that the changes cannot be explained on the basis of disuse alone, but may be an explanation of a mesodermal defect, resulting in muscular and skeletal defects. (R. M. S.)

**Topical Arrangement within Spinothalamic Tract.**—The course and localization of the spinothalamic tract were traced in 11 monkeys after anterolateral chordotomies and midline posteroanterior myelotomies had been performed at different levels of the spinal cord. In general, as higher levels in the spinal cord are reached, fibres from lower segments tend to become concentrated laterally and dorsally within the anterolateral column, and fibres from higher levels are situated more medially and inferiorly although there is no absolute segregation at any level. Within the medulla, fibres from the lower levels are concentrated at the periphery of the bulb, whereas fibres from the cervical region lie medially. Although there is evidence that such an arrangement exists, the topical localization of the fibres in the pons, the midbrain or within the nucleus ventralis posterior of the thalamus could not be demonstrated by the methods used in this investigation. (R. M. S.)

**Removal of Tumour arising Anterior to Medulla.**—There is reported a second case of apparently complete, successful removal of a meningo-ma which arose from the anterior rim of the foramen magnum and which had displaced the medulla and spinal cord backward. (R. M. S.)

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**BRAIN**

Vol. 64. No. 4. December 1941.

Phantom Limbs and Body Shape. G. Riddoch. 197.


The Component Reflexes of Micturition in the Cat. Part III. F. J. F. Barrington. 239.

Visual Disorientation with Special Reference to

---


Lesions of the Right Cerebral Hemisphere. W. R. Brain. 244.


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*Structure of the Neurohypophysis with Special Reference to Nerve Endings. E. Vazquez-Lopez. 1.

*The Systemic Nervous Affinity of Triorthocresyl Phosphate (Jamaica Ginger Palsy). C. D. Aring. 34.


**Neurohypophysis and Nerve Endings.**—Histological examination of the pars nervosa of the horse pituitary has been made after silver or gold impregnation. In contrast to previous work the whole structure has been studied as a functional entity, fibrous tissue, blood vessels, neuroglia, nerve fibres and all bodies being examined in relation to each other, with a view to assessing their function. It seemed that the very large number of nerve endings of sensory pattern were so arranged that they formed a perivascular receptive apparatus. This lead to the conclusion that the nerves of the pars nervosa are mainly centripetal conductors, and that the pars nervosa is primarily a sensory organ. There was no evidence that it is a specific gland of internal secretion, but rather it constitutes a chemo-receptive or presso-
The effects of radioactive iodine on cardio-circulatory function are discussed. Davies' observations on the afferent nervous system, Trotter and Davies' observations in cutaneous sensibility, and Borings' experiment on nerve division. It then deals with the electro-physiological study of sensory function and the anatomy of cutaneous sensibility. The problems of cutaneous pain and tactile sensibility and of the validity of Lewis's hypothesis of a nocifensor mechanism are dealt with in the light of present anatomical knowledge. (D. W.)

JOURNAL OF CLINICAL INVESTIGATION


The Nature of the Arterial Hypertension produced in Normal Subjects by the Administration of Angiotonin. R. A. Wilkins and C. N. Duncan. 721.


The Significance of Porphyria in Lead Poisoning. R. Kark and A. P. Meiklejohn. 91.


Sensory Neuron Degeneration.—Abnormal gait and sensory neuron degenerative changes in pigs produced by factors deficient in the diet other than thiamin, riboflavin and nicotinic acid were prevented when dessicated whole liver or brewer's yeast were fed. The various fractions obtained in manufacture of anti-pernicious anaemia extract were also tested for protection, and that used in the treatment of pernicious anaemia was most effective when given orally in large doses. (J. N. C.)

Variations in Blood and Spinal Fluid Pyruvic Acid.—Fasting pyruvic acid levels in blood and c.s.f. were examined and variation from the normal was found in "acute" peripheral neuropathy and in most of the cases associated with hyperpyrexia. (J. N. C.)
CURRENT JOURNALS


The Investigation of Personality in Patients treated by Prefrontal Leucomyotomy. E. L. Hutton. 275. 

Auxiliary Genes for Determining Sex as Contributory Causes of Mental Illness. L. S. Penrose. 308. 

JOURNAL OF NERVOUS AND MENTAL DISEASE

Vol. 94. No. 4. October 1942.

Félix Vicq D'Azary and Benjamin Franklin. R. Spillman. 428. 

Toxic Psychosis Due to Thiocyanate. M. R. Plesset. 447. 
Intracranial Lesions as a Cause of Sudden Death. E. V. Swift, and F. P. Moersch. 452. 

Vol. 94. No. 5. November 1941.

Two Cases of Myelodysplasia. A. Austregesilo and A. R. de Mello. 529. 
A Case of Puerperal Psychosis recovering from Four Attacks. H. G. Hadley. 540. 
Complications and Unusual Phenomena arising in the Course of Metrazol Treatment of the Psychoses. 


The Challenge of Social Neuroses. W. Eliasberg. 676. 
Pneumographic Patterns during Convulsive Therapy of Schizophrenia. E. Friedman and H. Barry. 688. 
The Narcoleptic-Catatletic Syndrome and its 

Accompanying Mental States. S. Brock and B. Weinel. 700. 
Family Periodic Paralysis associated with Exophthalmic Goiter. A. G. Hildebrand and E. J. Kepler. 713. 
Epilepsy and Suicide. C. Prudhomme. 722. 
Hallucinosis as a Clinical Entity and its Interpretation. A. Gordon. 732. 

JOURNAL OF NEUROPATHOLOGY AND PSYCHIATRY, Lенинград

Vol. 9. No. 10. 1940.

Tentative Treatment of Atypical and Delayed Alcoholic Psychoses by Hypoglycaemia. Malkin and Yankovsky. 3. 
Psychic Changes in the Initial Stages of Chronic Mercurial Intoxication. Semenova. 22. 
Polyganglio Radiculitis. Luria. 45. 

Leyden-Westphal Syndrome in Malaria. Malkich. 51. 
Traumatic Ophthalmoplegia. Smynov. 55. 
Meningococcal Septicaemia. Strachovich. 62. 
Intradural Therapy and its Mechanism. Birbrayer. 64. 
Foreign Bodies in Gastro-Intestinal Tract in the Insane. Smirnov and Gurtsvev. 65. 
Disturbance of Sleep with Bulimia and Polydipsia. Footer. 68. 

Bilateral Injury of Parietal Cortex. Golandt. 3. 
Complex Tactile Kinetic Hallucination (Sterognostic). Ravkin. 14. 
Reduced Orientation. Chlenro and Shubert. 25. 
Pathological Anatomy of Encephalitis B. Chenisseo and Lukonsky. 30. 
Influenzal Psychoses. Yankovsky. 43. 
Psychedelic Changes in Brucellosis. Jekoboo. 49. 
Psychogenesis in Early Childhood. Blay. 56. 

Action of Morphic Preparations. 68. 
Treatment of Endogenous Depressions with Cortin. Koroelok. 75. 
Treatment of Schizophrenia. Ovcharenko. 78. 
Basic Changes in Subdural Insufflation of N₂O and O₂. 81. 

Vol. 0. No. 12. 1940.

Vol. 10.


Vol. 10.


Vol. 10.


JOURNAL OF NEUROPHYSIOLOGY

Vol. 4.


No. 5. July 1941. 


Cerebral Blood Flow and pH in Cortical Discharge.—Local increased acidity of the cortex resulting from neuronal discharge causes a vascular dilatation which tends to maintain a constant pH. Thus relative acidity caused by a metrazol discharge is followed by a relative alkalinity as blood flow is increased. It is suggested that small
alkaline waves concomitant with onset of facilitation may be due to DC voltage component of the cortical electrogram in a violent metrazol discharge. The features of the metrazol discharge are not altered by variations in pH of the cortex between 7.0 and 7.5 induced by hyperventilation, CO₂ and injection of acid or alkaline solutions into the blood stream. After discharge induced by contralateral cortical impulses shows local cortical pH and blood flow changes similar to those of a metrazol discharge. It is concluded that increased in pH is a result of vascular reaction to increased neuronal activity and is not important in facilitation processes. (W. M. H.)

"Endplate Potential."—The endplate potential (e.p.p.) set up by a nerve volley at the region of the myoneural junction is shown to be a local depolarization of the muscle fibres acting like a local catelectrotonic potential produced by a subthreshold electric stimulus. It spreads a short distance along the muscle fibres with considerable decrement and progressive slowing. The time course of its waning phase is little altered by heat in contrast with the rising phase. In the frog a second nerve volley sets up an e.p.p. which is 80–100 per cent larger than the first. Muscle spikes are initiated when e.p.p. reaches a certain critical level. Neuromuscular facilitation occurs when the required level is reached by summation of successive e.p.p.'s. (W. M. H.)

Isolation of Intrinsic Mechanism of Spinal Cord.—In two monkeys a study was made of the lumbo-sacral cord 10–14 days after complete transection at the last thoracic segment, and section of all the posterior roots. Thus it was possible to view the intrinsic and motor mechanism of the spinal cord cleared of all descending and posterior root fibres. In such a condition the skeletal muscle is wholly inactive. (W. M. H.)

Fibrillation in Skeletal Muscle.—In a preparation such as the preceding fibrillation is observed in leg muscles only if the sciatic nerve is cut. Atrophy developing in conditions of inactivation without denervation may thus properly be considered atrophy of disuse. (W. M. H.)

Initiation of Impulses at Neuro-Muscular Junction.—The rising phase of the muscle action potential set up at a focus of endplates by a nerve volley is shown to have a component due to endplate potential (e.p.p.), the initial step of the potential of normal muscle allowing of matching by the e.p.p. seen in curarized muscle. Simple spike and double step types of action potential differ only in the time of the spike origin relative to the e.p.p. In the latter the spike arises only when the e.p.p. has reached 16 per cent. of the peak potential. Large initial e.p.p.'s (12–18 per cent.) are probably the sole mechanism initiating muscle impulses normally and in sub-paralytic curarization; where initial e.p.p.'s are small an additional excitatory mechanism, possibly nerve action currents, forestalls the excitatory action of the e.p.p. (W. M. H.)

Human Electro-Corticogram.—A compact apparatus is described for the recording of electrical potentials of the brain exposed at operation. Findings in abnormal conditions are given. (W. M. H.)


The Endplate Potential during and after the Muscle Spike Potential. J. C. Eccles and S. W. Kuffler. 486.

Reflex Activity in Spinal Extensors.—Cases of periartricular disease showing no obvious organic pathology nor voluntary muscle contraction were examined for abnormal muscle activity in the segments of the lesion. Activity in motor units were sometimes found when the subject was at rest. The rate of unit discharge was 3–24 per sec. The origin of these reflex discharges is thought to be in abnormal stresses in joints. (W. M. H.)

Steady Potential Fields and Neurone Activity.—The passage of potential waves through the cerebral hemispheres after neural connections are blocked depends on inter-cellular currents. These are considered to come from a potential from the axonic to dendritic pole of similarly oriented neurones. Inter-cellular currents may be of importance in the synchronizing of neurones and the mass functioning of the cortex. Steady potentials between the pial and ventricular surfaces of the frog's brain, caffeine potential waves and the effect of depolarization at points in the hemisphere are here described. (W. M. H.)

Fatigue and Refractoriness in Nerve.—The effect of prolonged repetitive stimulation of medullated nerve is to delay recovery of responsiveness (size of maximal response) in the relative refractory phase and, to a greater extent, recovery of
excitability. Excitability is reduced much more in the unconditioned (resting) than in the conditioned (refractory) nerve. Separate refractory states after two impulses are shown to sum in the same way as subnormality. Subnormality, the relatively slow recovery of excitability, is regarded as a continuation of the relative refractory state, during which responsiveness is recovered. (W. M. H.)

Acetylcholine Esterase Concentration during Human Fetus Development.—The periods of increase of choline esterase in the various parts of the nervous system of the human fetus follows the order of their morphological differentiation (midbrain and medulla, spinal cord, diencephalon, basal ganglia, and cerebral hemispheres). The most rapid concentration of the esterase in muscles of the shoulder girdle occurs when motility is developing (about 80 days). (W. M. H.)

Heat-Loss Mechanisms in Monkeys.—With the Horsley Clarke technique in monkeys an area in the preoptic region is shown on heating with a low voltage, high-frequency current to cause sweating and polyneura. A similar local control of the heat-loss mechanism is likely in man. (W. M. H.)

Endplate and Muscle Spike Potentials.—The difference between the anti-dromic spike potential set up by direct stimulation and the potential when a nerve volley is added, gives the size of e.p.p. during and after the muscle spike potential. Sub-paralytic curarization diminishes the size and shortens the duration of e.p.p. Also in refractory muscle e.p.p. decays more rapidly than in the normal. In the cat e.p.p. co-existing with the muscle spike (i) prolongs the refractory period, lengthening by 0.6 m. sec. the least spike interval for a testing nerve volley, and (ii) raises the threshold level of e.p.p. for initiating a spike. (W. M. H.)

JOURNAL OF PHYSIOLOGY

Vol. 100. No. 3. November 1941.


The Glycogen Content of the Frog's Heart. F. Davies and E. T. B. Francis. 326.

Latency and Conduction of Spinal Cord Potentials.—When a volley of sensory impulses is sent into the spinal cord potential changes may be detected in the ipsilateral and some contralateral dorsal roots. The latency of this dorsal root potential increases with the distance between the roots of stimulation and observation. It does not vary with change in the intensity of stimulation. The potential seems to depend on the integrity of the dorsal columns and is conducted at 1–2 m./sec. The potential is considered to arise presynaptically and excitation of secondary neurones to occur during its rising phase. (W. M. H.)

Abortive Impulses at Neuro-Muscular Junction.—At the endplate region of cats' solens abortive impulses spreading less than 1 mm. are observed on curarization in the refractory state of neuro-muscular transmission. It is shown that the endplate potential set up in normal muscle by an early second volley is diminished to one-third by refractoriness. With increasing volley interval the action potential of the second becomes steeper and greater till an inflexion on the rising phase shows the spike due to a fully propagated muscle impulse. With longer volley intervals the spike origin encroaches progressively earlier on the e.p.p. These observations on the role of e.p.p. in the rising phase of the action potential necessitate a revision of earlier views. (W. M. H.)

Synaptic Transmission by Acetylcholine.—Acetylcholine injected into the cord circulation in the dog has a transient depressant effect on the knee jerk. It augments the flexor reflex slightly. Eserine, prostigmine, and nicotine all depress the knee jerk and augment the flexor reflex. After eserine and prostigmine acetylcholine depresses or abolishes the knee jerk. After eserine the inhibition of the knee jerk caused by stimulation of the posterior tibial nerve is followed by an exaggerated rebound. The effects of acetylcholine are considered to resemble those of posterior tibial nerve stimulation, both before and after eserine. After stimulation of the central end of the cut sciatic nerve acetylcholine is found in the venous effluent from the cord if Ringer's solution containing eserine be used. Adrenaline facilitates the discharge of impulses from the spinal cord following the injection of acetylcholine. (W. M. H.)

Glycogen and Adipose Tissue. E. Tuerkischer and E. Wertheimer. 385.
Urea Formation in the Isolated Perfused Liver of the Rat. O. A. Trowell. 432.

Olfactory Reactions in Brain.—In the hedgehog electrical activity in the olfactory bulb and olfactory area of the brain has been studied in nembutal and chloralose anesthesia. Normal breathing produces at each inspiration a regular series of large potential waves of frequency about 15 p. sec. Forceful sucking of air through the snout increases the frequency to 45 p. sec. Small irregular waves replace these regular waves when a distinct odour is added to the air. It is suggested that the olfactory organ may be stimulated mechanically by the air current as well as chemically by the odours in it, and that different chemical stimuli produce different distributions of excitation and so different patterns in the brain. (W. M. H.)

Circulatory Effects with S-Methyl Iso-thiourea Sulphate.—In the anaesthetized decerebrate and pithed animal S-methyl iso-thiourea sulphate produces a considerable and prolonged rise in blood pressure, accompanied by some slowing of the heart. The rise in B.P. is found after blocking of sympathetic motor nerve endings by either ergotamine or F 933, and the slowing of the heart is independent of the vagus. Study of the relative effect of like concentrations in the whole animal and isolated heart indicates that the substance undergoes a change in composition in the whole animal. (W. M. H.)
CURRENT JOURNALS


Hemoglobinuria. C. L. Yule. 19.
The Fuel for Muscular Exercise. C. L. Genmill. 32.

PSYCHIATRIC QUARTERLY

A Comparative Table of the Main Rorschach Symbols. Z. A. Pietrowski. 30.
Problems of Cancer Therapy in a State Hospital. A. Moore. 107.
The Validity of the Shipley-Hartford Retext Test for Deterioration." B. Pollack. 119.

Anxiety in a Neurosis of 70 Years' Standing. C. P. Oberndorf and A. Eisendorfer. 221.
Folie a Deux—the Psychosis of Association. A. Gralnick. 230.
Mental Defectiveness with Unusual Syndrome of Congenital Physical Anomalies. S. Androp. 264.
Deeper Level of Regression. G. S. Sprague. 272.
Review of the Research Program of the New York State Psychiatric Institute and Hospital for 1941. N. D. C. Lewis. 295.
A 10-Year Comparative Study of the Treatment of General Paresis with Fever Therapy (Radiant Energy) and Chemotherapy. K. K. Slaght and N. Jones. 306.

SCHWEIZER ARCHIV FÜR NEUROLOGIE UND PSYCHIATRIC

Vol. 48. 1941.
Spiegelschrift bei Triebstö rungen. (Mirror-writing in disturbances of instinctive reactions.) K. Heymann. 29.
Années de la classification des tumeurs cérébrales. (Classification of cerebral tumors.) M. Jequier-Doge. 40.
Über Möglichkeiten artgleicher Normalserumbehandlung als Sukkurterapie. (The experimental use of normal serum as a therapeutic adjunct.) E. Stransky. 106.
Sitzungsbereichte—Comptes rendus des séances: Comptes rendus de la XLVIII: Assemblé de la Société Suisse de Neurologie, à Berne, les 7 et 8 décembre, 1940. (Transactions of the 48th meeting of the Swiss Neurological Society at Berne, December 7th and 8th, 1940.) 129.