EPITOME OF CURRENT JOURNALS

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**Avian and Focal Cerebral Ambulatory Hemangioma of simultaneously perfused regions to these cells.**

The response is abnormal to heteroceptive impulses to attempts at spasticity postural to spinothalamic tract syndrome. The causative agent of amytrophic lateral sclerosis has a predilection for attaching the upper neuron either at its point of origin (the motor cortex) or anywhere along its course, but chiefly in the brain stem and the spinal cord. As further proof that the pyramidal pathways become involved anywhere along their course is the concomitant implication of other ventralateral tracts of the spinal cord, for example, the spinothalamic and the spinoocerebellar, in 21, or one-half, of the cases. From the point of view of the pyramidal neuron, amytrophic lateral sclerosis can be classified anatomically into forms originating in the cortex, the peduncle, the brain stem, and the spinal cord. Pathologically, 36 cases belong to the degenerative and six to the inflammatory type. (R. M. S.)

**Ruptured Aneurysm of Left Anterior Cerebral Artery.**

—A case of moderately large ruptured saccular "berry" aneurysm of the left anterior cerebral artery occurring in a man of 54 is reported. The disturbed vascular supply resulted in swelling of the left frontal lobe, causing dislocation and herniation of the brain stem through the incisura with resultant notching of the contralateral crus by the free edge of the tentorium, thereby producing ipsilateral cerebral signs. Attention is called to the disturbed state of consciousness and the behaviour of the patient both with regard to the problem of differential diagnosis and the explanation to be found in the pathological state of the cortex and subcortex of the left frontal lobe. (R. M. S.)

**Vitamin E Therapy of Neuromuscular Disorders.**

The author was unable to demonstrate any outstanding clinical response to the use of vitamin E and alpha tocopherol in the treatment of amytrophic lateral sclerosis and progressive spinal muscular atrophy with progressive bulbar palsy. (R. M. S.)


*The Diagnosis and Management of Subarachnoid Hemorrhage.* I. J. Sands. 973.

The Symptomatic Nervous System: Influence on Sensitivity to Heat and Cold along with Certain Types of Pain. O. R. Hyndman and J. W. Sargent. 1,017.

Regulation of the Treatment of Epilepsy by Synchronised Recording of Respiration and Brain Waves. R. S. Schwab, A. Grunwald, and W. W. Sargent. 1,017.

Innervation of the Brain to Locate Speech Area in Left-Handed Persons. W. J. Gardner. 1,035.

*Amyotrophic Lateral Sclerosis: Origin and Extent of the Upper Motor Neuron Lesion.* C. Davison. 1,039.

Ruptured Aneurysm of the Left Anterior Cerebral Artery with Production of Ipsilateral Cerebral Signs. M. T. Moore and A. A. Beckman. 1,057.

Vitamin E and Alpha Tocopheral Therapy of Neuromuscular and Muscular Disorders. R. N. DeJong. 1,068.


Innervation and "Tonus" of Striated Muscle in Man.

In a study of normal subjects and of patients suffering from various diseases of the nervous system, Hoefer attempts to determine by analysis of action potentials to what extent the clinical concept of normal and abnormal tone of skeletal muscle is covered by that of postural myotatic reflex regulation. In cases of spasticity no impulses are to be recorded from the muscles at rest. Spasticity is an exaggeration of the normal stretch reflex. The response may be produced by proprioceptive as well as by heteroceptive stimuli. Rigidity differs from spasticity in that a basic continuous influx of impulses is found and retained, while, in addition, the stretch reflex is exaggerated in a manner very similar to that associated with spasticity. In rigidity a component of "tonic" activity is found which is not understandable in terms of postural segmental regulation. (R. M. S.)

Diagnosis and Management of Subarachnoid Hemorrhage.

In a study of subarachnoid hemorrhage a series of 120 hospital-treated patients are presented, the youngest of whom was 3 weeks and the oldest 75 years of age. Fifty-five were females and 65 males. The condition of 27 was of unknown origin; in 30 it was due to arteriosclerotic degeneration of the vessel walls, in 9 to trauma, in 25 to ruptured intracranial aneurysm, and in 16 to the action of bacteria or their toxins on small capillaries; in two it was secondary to massive cerebral hemorrhages, in 3 it followed intraventricular hemorrhages, in 4 it was caused by a blood dyscrasia, and in 4 it accompanied a vascular cerebral neoplasm. Of these 120 patients, 41 died and 79 recovered. (R. M. S.)

**Sympathetic Nervous System.**

Evidence is presented to show that a sympathectomy has a pronounced influence on the interpretation of high and low temperatures when the sympathectomized part is compared simultaneously with a normally innervated part. A cold object feels warmer and a hot object feels cooler to the sympathectomized hand than to its normal mate. When a sympathectomized zone of the skin is tested alone no alteration can be elicited in the sensibility to or the discrimination of touch, pain, and temperature as compared with these faculties on the normal side. A sympathectomy diminishes, and almost abolishes, the aching and stinging pain in the hand and foot that results from exposure to severe cold. (R. M. S.)

**Amyotrophic Lateral Sclerosis.** Forty-two cases of amytrophic lateral sclerosis were studied histopathologically with reference to the origin and extent of the lesion of the upper motor neuron. Disease of the upper motor neuron originated in the giant pyramidal cells of Betz in only about one-third of the cases; the remaining two-thirds the pyramidal tracts became involved in the pons, the medulla oblongata or the spinal cord. The duration of the illness had no influence on the extent of involvement of the giant pyramidal cells of Betz. The causative agent of amytrophic lateral sclerosis has a predilection for attaching the upper neuron either at its point of origin (the motor cortex) or anywhere along its course, but chiefly in the brain stem and the spinal cord. As further proof that the pyramidal pathways become involved anywhere along their course is the concomitant implication of other ventralateral tracts of the spinal cord, for example, the spinothalamic and the spinoocerebellar, in 21, or one-half, of the cases. From the point of view of the pyramidal neuron, amytrophic lateral sclerosis can be classified anatomically into forms originating in the cortex, the peduncle, the brain stem, and the spinal cord. Pathologically, 36 cases belong to the degenerative and six to the inflammatory type. (R. M. S.)

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**Vascular Pattern of Lesions of Multiple Sclerosis.** R. S. Dow and M. A. S. Mirsky.


Cerebral Fat Embolism: A Clinicopathologic Study of Two Cases. N. W. Winkelman.

Vasospasm and Focal Cerebral Ischemia: An Experimental Study. J. Bergland.

Avian Thiamin Deficiency: II. Pathologic Changes in the Brain and Could Not Be Demonstrated.

**Hemangioma of Vertebral Artery with Compression of Cord.**

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A case result was varies accordingly. As the claim schizophrenic (R. M. S.)

Biochemical Disturbances in Mental Disorders.—By means of the biochemical test they describe, the authors claim to be able to differentiate at least two forms of schizophrenia. In about 60 per cent. of the cases, the schizophrenic pattern is characterized by the presence of an anti-insulin factor; in the remaining 40 per cent. in whom the anti-insul factor is absent, the clinical pattern or syndrome may be due to other disturbances. (R. M. S.)

Continuous Ambulatory Insulin Shock Technique.—The authors recommend that patients with chronic schizophrenia of long standing should be treated daily with mild hypoglycaemic shocks for an indefinite period. (R. M. S.)

Cerebral Fat Embolism.—In fat embolism the changes within the central nervous system result from the plugging of the blood vessels by fat emboli. Within the gray matter anemic infarcts are the usual lesions, while within the white matter hemorrhagic infarcts are more common. Unless death follows quickly the lesions are of different ages. They explain the progressive cerebral picture. (R. M. S.)

Vasospasm and Focal Cerebral Ischemia.—The effects of mechanical and electrical stimulation on the spinal vessels of thirty cats, one dog, and four monkeys have been studied. The pial vessels in cats contract vigorously on mechanical or electrical stimulation. The dog's spinal vessels are not as sensitive to this type of stimulation as the cat's; the monkey's are less so than the dog's. Such evidence as there is suggests that these spasms are not dependent on a neurovascular mechanism. They resemble closely the local spasms in peripheral vessels described by Lewis and others as muscular, and not neuromuscular. They are localized to the site of stimulation and are not propagated, as are the neurovascular reactions described by Ricker and Chase in the mesenteric vessels of rabbits. (R. M. S.)

Avian Thiamine Deficiency.—Using dietary methods described before and staining methods which demonstrate the neurofibrillar structure of the neuron, the following observations were confirmed: (1) The first neuronal histological change in thiamine-deficient pigeons is degeneration of the distal part of the neuron, and changes in myelin are secondary to this; (2) degeneration proceeds centralward and is accompanied by slight shrinkage or sclerosis of the cell body; (3) the large nerve fibres degenerate first and the medium later, the small fibres usually remaining intact; and (4) opisthotonos may not be avoided by any chemical or biological treatment of the Wernicke syndrome. In the present study the early axonal changes were shown to consist of thickening of the neurofibris and generalized swelling, followed by the formation of varicosities, in the distal parts of cell processes. This is followed by fragmentation. The following generalization may be made: The neurological manifestations of an acute or a chronic deficiency in thiamine are accompanied by impaired function and then by degeneration of the primary neurons of the proprioceptive nervous system and the central terminations of the optic nerves. Changes occur next in internuminal neurons of these same systems. Finally, after prolongation of the deficiency, the efferent nervous system becomes affected. (R. M. S.)

Amyloid Neuritis.—In a case of non-septic amyloidosis extensive degeneration was found in the peripheral nerves. These were of ischemic origin, the blood vessels having undergone narrowing or occlusion from the presence of amyloid in the media. (R. M. S.)

Section of Vagus-Spinal Accessory Complex.—Operative section of the cephalic third of the vagus-spinal accessory complex was followed by sensory changes over the larynx and lower portion of the pharynx; no evidence of disturbance of motor function, other than transient rise in pulse rate and blood pressure, occurred. After section of the cephalic third of the vagus-spinal accessory complex, motor fibres central to the section remained intact while severe sensory evidence of degeneration up to the nucleus of the tractus solitarius. It was thus possible to differentiate clearly sensory from motor fibres in the cut roots. Most of the sensory fibres of the vagus nerve are contained within the cephalic third, approximately, of the vagus-spinal accessory complex. These sensory fibres occur within the large dorsal roots, which also contain a few motor fibres. (R. M. S.)

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Pyruvic Acid in Wernicke Syndrome.—Patients with the Wernieke syndrome show inability to metabolize pyruvic acid properly. After prolonged treatment with thiamine hydrochloride and with thiamine hydrochloride plus other members of the vitamin B complex, this defect in pyruvic acid metabolism is corrected. This is...
The topographical study that found in those Otitic Thrombosis *Primary Minute Pharmacology of Effects Graphic Sclerosis in Multiple among subsequently the mode patients more of Electroencephalogram Associated and greater regularity is found breathing thethetic system. and psychological metrazol proof Therapeutic results in cases of melancholia and schizophrenia were comparable to those obtained by orthodox metrazol therapy. The method adds further direct proof for the contention that fear plays no role in metrazol convulsive therapy. The technique is offered as a simple means of improving rapport and diminishing resistiveness in patients undergoing this therapy. (R. M. S.)

**Emotional Excitation and Insulin Content of Blood.**—The results of investigations reported in this paper show clearly that the insulin content of the blood of normal and that of psychotic subjects are the same. Apparently, psychotic and normal persons do not differ with regard to the secretion of insulin in periods of rest but differ only with respect to the reactivity of the autonomic centres controlling the secretion of insulin via the vagus nerve and the release of epinephrine via the sympathetic system. (R. M. S.)

**Convulsive Seizures and Rheumatic Heart Disease.**—The incidence of convulsive seizures in patients with rheumatic heart disease is higher than the incidence in the general population. (R. M. S.)

**Patterns of Breathing and Personality.**—A type of breathing characterized by a smaller volume of tidal air and greater regularity is found among chronic "schizophrenic" patients more commonly than among normal persons. The mode of breathing is an index to some of the personality components of normal persons. Those sharing to a greater degree the breathing characteristics common among schizophrenic patients are found frequently to be "schizoid" in disposition. Suggestive evidence is presented for the existence of racial characteristics in the breathing pattern. These have been demonstrated in races whose personality configurations are also generally distinctive. (R. M. S.)

**Intraspinal Meningiomas.**—Meningioma is the product of an admixture of elements—the specialized arachnoid-type cell, its multipotential stroma and at times dural components which, as a rule, are of neural crest origin, and its only mesodastic structures are a result of dural attachment. One hundred and thirty intraspinal meningiomas have been classified into eight types. Each tumour has been examined both clinically and pathologically. Diffuse meningomatos, the hepatoelastic transformation of embryonically arrested leptomeninges, has been delineated in a separate category and differentiated from gliomatos, sarcomatosis and melanomatosis of the meninges. (R. M. S.)

**Section of Spinothalamic Tract at Level of Inferior Olive.**—Evidence is presented indicating the efficacy of section of the spinothalamic tract in the medulla for relief of high, intractable pain. The results of the operation in a case of carcinoma of the breast with metastases are given. By means of the Marchi technique, the collaterals of the spinothalamic, spinocephal and spino cerebellar tracts have been followed through the brain stem. The position of the spinothalamic tract in relation to the inferior olive has been ascertained, and a topical arrangement of fibres within the tract is described. Fibres from the lower dermatomes occupy a lateral position, while fibres from the upper ones lie medially. (R. M. S.)

**Estrogen Therapy of Depressions with Menopause.**—Diethylstilbestrol has been sufficiently effective in the trials reported here to warrant further use in the treatment of involutional melancholia. (R. M. S.)

**Danlos-Ehlers Syndrome.**—In the case here described the diagnosis of Danlos-Ehlers syndrome can be made. There were hyperelasticity of the skin, hypermotility of the joints and a tendency to form normal and deficient scar. Multiple small tumours of the skin, however, were not found. During the course of hospitalization for bladder diverticulotomy, transient paralysis of the left vocal cord developed. A review of the history disclosed that on previous occasions similar short-lived episodes of difficulty in speaking had occurred. The cause of the paralysis of the vocal cord is not known; the relation between it and the Danlos-Ehlers syndrome is discussed. (R. M. S.)
degree but sometimes extensive, was found in 14 cats. 
Haemorrhage in the brain substance (cerebral cortex and white matter, cerebellum, region of the third ventricle and third ventricle) was found in 9 cats, usually of a punctate type but more extensive in two instances. Whether similar changes are to be expected in human beings treated therapeutically I think cannot be determined from this material. (R. M. S.)

Multiple Sclerosis in American Negro.—Negroes in Baltimore are as subject to multiple sclerosis as the native and the foreign-born white population. The clinical features of the disease in the Negro are similar to those seen in the white man. The disease in the Negro is often mistaken for syphilis and in some instances may occur with syphilis in the same person. (R. M. S.)

Human Pyramidal Tract.—The fibres of the pyramidal tract undergo the following postnatal changes. Early in life all the axons are apparently present and are small, delicate, uniform in calibre, crowded and possibly of different chemical nature than when mature. During this period they may be nonfunctional and vulnerable to small lesions. At 8 months of age, when voluntary movements are attempted, certain fibres commence to expand at a more rapid rate than others. Individual growth continues, until at 2 years of age the pyramidal tract simulates in miniature that of an adult. At 22 years of age the pathway possesses a few large, more medium, and many minute axons. In senility, on the basis of observations on one specimen, there is a decrease in number and diameter of fibres. It seems reasonable, also, to conclude from the study that integration of the pyramidal tract occurs through morphological and chemical changes in both the axons and the myelin sheaths rather than in the latter alone, and that different physiological motor states may be explainable, in part at least, on a neuroanatomical basis. (R. M. S.)

Graphic Rorschach Test 1.—An original graphic technique and procedure is described which is designed to act as a confirmation, supplement, and extension of the Rorschach method. (R. M. S.)

Electroencephalographic Effects of Increased Intracranial Pressure.—Animal experiments show that the electroencephalogram is altered by acute rises of intracranial pressure only when the increases are sufficient to alter cerebral blood flow. The pressures required for these acute effects lie for the most part beyond those of clinical experience. Certain phenomena (rise in blood pressure in response to increased intracranial pressure) occurs in the absence of electrical activity of the cortex. (R. M. S.)

Measurement of Intellectual Impairment in Psychiatric Disorders.—A simple two-minute clinical test for the measurement of mental impairment is described. The test, consisting of the serial subtraction of 7 from 100, was standardized for normal children of 433 normal persons. Nine hundred responses from 580 patients with a wide variety of psychiatric disorders were analysed. Its advantages as a quickly applicable and reasonably accurate test for intellectual efficiency are emphasized. (R. M. S.)

Primary Degeneration of Corpus Callosum.—This report on primary degeneration of the corpus callosum (Marchiafava’s disease), records the forty-third case in the medical literature and the second in the United States, all the other cases having been reported from Italy. The patient was of Swiss ancestry and, like the great majority of similarly affected persons, was a chronic alcohol addict.

The essential pathological process was one of demyelination with reactive proliferation of phagocytic glia cells and blood vessels.

It is suggested that, in common with Wernicke’s haemorrhagic encephalitis and other degenerations of the nervous system associated with alcoholism and other toxic agents, the essential etiological moment is a deficiency of a member of the vitamin B complex, probably of a constituent known as vitamin B1 or thiamine.

In common with other degenerative processes, a constitutional factor is of marked importance. The racial factor so consistent in this disease may determine the site of degeneration in the corpus callosum. (R. M. S.)

of correlated lateral habits with this primary neural sidedness. (R. M. S.)

Tractotomy and Trigeminal Neuralgia.—Section of the spinal trigeminal tract may be regarded as an attempt to cure the neuralgia without having to perform the procedure and to sacrifice the function of the trigeminal area. In those cases in which the neuralgia is of extreme severity and the age and general condition of the patient are such as to make a secondary operation within the next few years a serious possibility tractotomy is contraindicated. Tractotomy therefore is best suited for comparatively young persons with neuralgia of moderate severity. In cases of bilateral neuralgia the indication for tractotomy is more urgent than in the ordinary case of unilateral pain because of the disability attending complete anaesthesia of both sides of the face. Bilateral section of the spinal trigeminal tract can be done safely in one stage provided the operator satisfies himself after the procedure on the first side is finished that no posticus palsy has occurred. (R. M. S.)

Equine Encephalitis in Man.—Ten cases of Western equine encephalitis occurring in man are reported. In 5 cases the termination was fatal and complete autopsy studies were obtained. The clinical features of this disease are surprisingly consistent from case to case. The onset is usually insidious, headache is a common presenting symptom, nausea, elevation of temperature and lethargy. After a week or two the symptoms subside. In about 10 per cent. of cases the disease terminates fatally. Neurological signs consist of stiffness of the neck, muscular weakness and hyporeflexia. The spinal fluid shows moderate pleocytosis, with mononuclear cells predominant. In fatal cases, lesions are found scattered...
Changes in E. E. G. by Standardized Hyperventilation—
It is suggested that the appearance of five cycle and delta waves during hyperventilation is due to cerebral vascular stimulation, which in turn causes diminution in the supply of oxygen and dextrose to the cerebral cortex. (R. M. S.)

Vascular Cell Changes in Thiamine-Deficient Animals.
—Hemorrhages occur in the brains of thiamine-deficient pigeons and are accompanied by perivascular sclerosis and interstitial cell proliferation. The hemorrhages are preceded by vasodilation and are first perivascular and later infiltrating. In all instances the various lesions were preceded or accompanied by degenerative changes in neighbouring neurons and are thought to be due to metabolic changes in the neurons consequent to thiamine deficiency. In very acutely deficient kittens, acute swelling of oligodendrocytes and clasmatodendrosis of astrocytes were observed, whereas in chronically deficient kittens the oligodendrocytes were slightly, if at all, changed, and the astrocytes were markedly hyperplastic and hypertrophied. (R. M. S.)

Myasthenia Gravis and Excision of Thymic Tumour.—The literature containing reports of cases in which myasthenia gravis was treated by thymectomy is reviewed. Two additional cases are recorded. One patient is considerably improved, although mild myasthenic symptoms persist after two years; the death of the other, two days after operation, was partially attributable to bronchopneumonia and atelectasis. Further evidence is presented that benign tumour and hyperplasia of the adult thymus are in some way associated with myasthenia gravis. The results of the studies thus far are insufficient to establish whether this relation is primary or secondary. (R. M. S.)

Hemicochorea.—A case of hemicochorea of the left side is reported in which curare principle was used to control the spontaneous choreiform and ballistic movements. Three perivascular lesions were observed, one in the right pallidum, one in the left prerubral field and one in the right lower optic radiation. The second lesion was in the left prerubral field, directly in the course of the crossed subthalamicocortical fibres. The subthalamic decussation and a part of the fibres in the right subthalamic nucleus were demyelinated. On the left side a part of the crossed subthalamicocortical fibres were degenerated below the level of the lesion, as indicated by gliosis. The first lesion was in the frontal end of the right lateral segment of the pallidum and extended across the internal capsule. It destroyed the medial group of the palidodubthalamic fibres. It also involved a part of the frontopontile fibres, frontolateral, and striogranular fibres. The pallidocortical fibres were exposed or loss of myelinated neuropil, gliosis, and some loss of cells in the nucleus on the right side. The third lesion was in the posterior part of the internal capsule and affected a part of the lower optic radiation and adjacent radiations of the pulvinar. The probable explanation of the hemicochorea is the degeneration of the palidodubthalamic fibres. The possible routes of the released flow of impulses causing hemicochorea are discussed. (R. M. S.)

E. E. G. Studies on Neurosyphilis.—The electroencephalogram has a significant diagnostic value in neurosyphilis. (R. M. S.)

Mixed Tumours of Spinal Canal.—Three proved cases of mixed tumour of the spinal canal are presented. Characteristic symptoms of mixed tumours are: (a) the long duration of symptoms before the patient becomes incapacitated; (b) the roentgenological evidences of fusiform enlargement of the spinal canal with associated spina bifida. The intramedullary spinal and lumbar vertebrae in children were measured, and the normal range was found to be less than that of adults. In order to determine whether a spinal canal is enlarged, its measurements must be compared with the normal range in the subject's age group. A spinal canal that is larger than that within the particular distance of which increases 2 to 4 mm. in consecutive vertebrae shows evidence consistent with a diagnosis of mixed tumour. (R. M. S.)

Sickle Cell Anaemia.—The essential neuropathological features of sickle cell anaemia are small, necrotic and nekrobiotic lesions on a vascular basis, diffusely distributed with predilection for the border between the subcortical white matter; marked general hyperemia and congestion of blood vessels; hypertrophy

throughout the nervous system, being most noticeable in the region of the basal nuclei. The histopathological changes are characterized by the suppurative nature of the inflammatory elements. Polymorphonuclears are common and form focal, diffuse, and perivascular infiltrations. Mononuclear cells may also be prominent. Petechiae and scattered areas of demyelination are also present and in some cases overshadow the inflammatory lesions. (R. M. S.)

Anomie Syndrome.—In the amnestic or Korsakoff syndromes, the major manifestations—possibility, confusion, disorientation, loss of "time sense" and difficulties in altering the orientative set (Einstellungs- störung)—appear as consequences of the disruption of integrated behaviour when the past is not freely available. The hypothesis is offered that both retrogressive deficits and inability to deal with transient events can be understood as parts of the difficulty in freely evoking past utilizations. Utilization of post-traumatic events is most seriously disturbed because they are not met by the background of past experience essential to full perception. (R. M. S.)
and proliferation of endothelial and adventitial elements of the walls of small blood vessels; siderotic pigment in intravascular and extravascular spaces; intravascular lesions of uncharacteristic type (softenings, thromboses, etc.), small hemorrhages and extravasations; intravascular lipid material and fat embolism of capillaries and precapillaries; focal and diffuse changes in the nerve cells in cortical and subcortical gray structures, and focal areas of demyelination in the subcortical white matter similar to those seen in subacute combined degeneration. (R. M. S.)

Diverticula of Lateral Ventricles.—A case is reported in detail and similar cases are described to illustrate that in rare instances protrusions, or diverticula, of the lateral ventricles may develop and extend into the cerebellar fossa near the apex of the tentorium.

It is suggested that these diverticula are the result of long-standing high intracranial pressure, with resultant internal hydrocephalus, and the development of a weak point in the floor of the lateral ventricles overlying the incisura tentorii. Any large area occupying lesion in the cerebellar fossa tends to keep the infratentorial pressure high and prevent the formation of such diverticula.

With the aid of ventriculography these diverticula should be diagnosed with a fair degree of certainty when one is aware of their occurrence; otherwise they may be confused with a posterior protrusion of an enlarged third ventricle, a displaced fourth ventricle, or other abnormalities in this region. (R. M. S.)

Intracranial Blood Flow in Dementia Paralytica.—The authors' studies suggest that the total intracranial blood flow diminished in persons who have patho-

logical diminution in brain volume, but that the blood flow per unit of brain substance may well be normal.

Demented general paralytics and patients with marked cortical atrophy of the nonsyphilitic type showed most variation from the controls. (R. M. S.)

Factor of Hypoxia in Shock Therapies.—Patients with schizophrenia receiving various forms of shock therapy were studied and it was found that the oxygen content of the arterial blood diminished with the metrazol treat-

ment when the convulsions were modified by administra-

tion of ephyroidine or curare. Electrical shock therapy also revealed depression of the oxygen supply to the brain. A comparison was made between these physio-

logical results and those obtained with other therapeutic agents: (1) sodium cyanide; (2) thiamine deficiency, (c) insulin. With all these hypoxia occurred, with con-

sequent depression of brain metabolism. The relation of this depression to the ameliorative effect on the course of the disease is discussed. (R. M. S.)

Parapyramidal Fasciculotomy in Brain Stem.—Siris reports a case of postencephalitis parkinsonism in which anotomy of the reticular formation in the medulla was made in the hope of interrupting para-

pyramidal pathways at a level more cephalic than is obtained by chordotomy. Relief was only transitory. Impairment of pain and temperature sensation in the contralateral lower limb was secured. Trigeminal sensation was undisturbed. The possibilities for further investigation of this problem are discussed. (R. M. S.)

Studies of Vibration.—Vibration sensibility was studied in the faces of nine patients who had been subjected to unilateral retrogradianer neuratomy. Thresholds of vibration sensibility at frequencies of 100 double vibrations per second were ascertainment for five different points on each side of the face, and the upper limit of frequency of vibration perceived was determined at these points under the limitation imposed by our apparatus. It was found that the loss of tactile sensibility and the preservation of pressure sensibility in the face are associated with diminution in vibratory sensi-

bility in the lips and tongue. On the forehead and cheeks vibration was delivered by the apparatus under the conditions of the present experiment could not be perceived in most instances. It is suggested that the per-

ception of vibratory stimuli in the face depends on the stimulation of both touch and deep pressure receptors. Vibration sensibility therefore is to be regarded as the perception of repetitive mechanical stimuli delivered either to deep or to superficial receptors of both varieties. The type of apparatus used, the manner in which it is used, and the innervation of areas stimulated determine the relative importance of pressure on tactile end organs in the perception of vibration. (R. M. S.)

E. E. G.'s. of Thiamine-deficient Pigeons.—It is sug-

gested that the changes in brain potentials in thiamine-

deficient pigeons indicate marked facilitation of cortical dischage during the initial phases of thiamine deficiency, before its final depression. This type of effect is com-
pared to that of oxygen and dextrose deficiency, in which similar changes in brain potentials occur. (R. M. S.)

Periarteritis Nodosa.—A case of periarteritis nodosa with predominantly neurological manifestations is reported. It is emphasized, from a review of the litera-

ture, that involvement of the central nervous system in this disorder is not uncommon. Pathogenetically, the condition is regarded as periarteritis and the parenchymal changes as of vascular origin. (R. M. S.)

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because they showed an unusually rapid increase in amplitude and decrease in frequency of cortical potentials with over-ventilation. Simultaneous samples of blood were taken from the femoral artery and the internal jugular vein, and the values obtained for carbon dioxide content, pH, carbon dioxide tension and oxygen saturation were compared and correlated with simultaneously obtained samples of the electroencephalogram. The dilatation or constriction of cerebral arterioles which follows an increase or decrease of carbon dioxide in the arterial blood serves to protect the brain against undue shifts in carbon dioxide tension. The slow waves that appear in the electroencephalogram with over-ventilation are caused by a drop in cerebral carbon dioxide, and not by anoxia secondary to cerebral vasoconstriotion. The ease with which such slow waves appear in EEG following over-ventilation is a rough index of the relative incom-

petence of the cerebral vasoconstrictor response to low carbon dioxide tension.

In some supposedly healthy adults and in most persons with petitmal epilepsy, the cerebral vasoconstrictor response to low carbon dioxide tension is defective, this defect resulting in abnormal slowing of the electrical activity of the cortex during over-ventilation.

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The cerebral vasconstrictor response to low carbon dioxide tension disappear when a critically low level of oxygen tension is reached. (R. M. S.)

Pathological Changes in C. N. S. in Experimental Electric Shock. — Rabbits and rats were subjected to electric shock treatment simulating the treatment of patients with "functional psychoses." Hemorrhages were present within the meninges of the brain and spinal cord and within the brain stem and the spinal cord. These hemorrhages were usually confined to the immediate vicinity of the meninges, and were produced by the rupture of the walls of these vessels. A combination of causes was responsible for these ruptures: the sudden rise of the arterial blood pressure during the forcible contraction of the musculature, the vasospasm of the peripheral arteries following cessation of the electric stimulation and the stasis in the venous channels, which was aggravated by cessation of respiration for several seconds. No generalized ganglion cell disease or generalized proliferative glial reaction was observed. Such phenomena were confined to the immediate proximity of the hemorrhages and were usually combined with a somewhat farther-reaching edema of the surrounding tissues. (R. M. S.)

Encephalographic Ratio for Estimating Ventricular Enlargement.—The ratio of the transverse diameter of the anterior horns to the internal diameter of the skull as measured on encephalograms (or ventriculograms) exposed in the anteroposterior projection with the posterior part of the head down is proposed as an index of the size of the cerebral ventricles. The average value of the ratio for a "normal" group was found to be 0.23 with standard deviations 0.16 lateral, 0.09. On the average a significant correlation between the size of the ventricles and the size of the skull, and the ratio has the same average value for small and large skulls and for the skulls of infants, children, and adults. The great majority of normal values fall between 0.20 and 0.25; values above 0.30 indicate definite ventricular enlargement and provide a quantitative estimation of the degree of cerebral atrophy. Serial studies may give an indication of the course of the brain lesion and a basis for prognosis. (R. M. S.)

Familial Mental Deficiency.—Six cases of an apparently new type of familial mental deficiency are described. The clinical features consist of severe idiocy, stunted growth, characteristic physical anomalies and mental deficiency in the bones of the skull. Pathologically, there is ubiquitous swelling of the nerve cells with cytoplasmic infiltration of lipoid granules. The relation of this condition to juvenile amaurotic idiocy and gargoylism is discussed. Differences are indicated which appear to justify a separation of this type of mental deficiency. It is pointed out, however, that amaurotic idiocy, gargoylism, and the condition in the cases here reported show obvious similarities which warrant their inclusion in the same group of diseases. The pathogenesis of this condition is discussed, the morb'd process being considered an instance of localized lipidosis. From the etiological aspect the disease appears to have been hereditary and, probably, inherited as a recessive. (R. M. S.)

Alternating Tremor.—A case is reported of bilateral paralysis agitans which had been present for twelve years when thrombosis of the right middle cerebral artery developed, with resulting left spastic hemiplegia, from which the patient recovers during the next three years with about 60 per cent. of voluntary motor power. The tremor (of paralysis agitans) never returned to the affected extremities, however. The rigidity, previously present, was not altered. Post-mortem examination revealed complete destruction of the head of the caudate nucleus, the putamen, part of the globus pallidus, and portions of the internal capsule. Three-fifths of the pyramidal tract, the whole frontopontile system and a part of the temporopontile system, the frontothalamic fibres to the anterior lateral thalamic nucleus, the corticorubral and the corticonigral fibres were affected. (R. M. S.)

 Studies on Corpus Callosum.—In 18 cases of epilepsy the corpus callosum was sectioned in variable degrees. The extent of the division varied from merely section of the body and the posterior half of the genu to complete section of the corpus callosum. On the basis of this study the conclusion may be drawn that dyspraxia in the coordinate or dominant hemisphere or complete section of the corpus callosum occurs only when damage to the subordinate or dominant hemisphere coexists. (R. M. S.)

BRAIN


Spinal Cord Degeneration in Monkeys.—Eleven cases of the demyelinating disease of the spinal cord in monkeys described by Sherer in 1932, have occurred in the London Zoo in the last seven years. They were all in old-world monkeys, African and Asiatic. Pathologically the disease is indistinguishable from subacute combined degeneration of the cord and in three cases in which gastric analysis was performed there was achlorhydria. Macrocytic anaemia was found in one. It is not yet claimed that this disease is identical with subacute combined degeneration of the cord. (D. J. W.)

Aphasia in Children. — Aphasia occurred with the same regularity in thirty cases of cerebral hemisphere lesions in children as in adults. The picture is predominantly one of diminished speech production, purely motor aphasia recovering very rapidly, those with a reversible lesion recovering within four weeks. Little impairment in intelligence was found although right-sided lesions without aphasia showed retardation. This suggests that the brain damage rather than the aphasia is responsible for intellectual deterioration when it is present. (D. J. W.)

Cerebello-Olivary Degeneration.—A case is described of progressive ataxia due to parenchymatous degeneration of the cerebellum causing disappearance of the Purkinje cells with degeneration of the inferior olivary nucleus. Similar symptoms were present in the female patient's
mother and daughters. The cerebellar degeneration was most marked in the superior surface of the cerebellum. It is considered that the degeneration of the inferior olives is secondary to this. The case is therefore quite distinct from olivo-ponto-cerebellar atrophy where the oligary degeneration is primary. (D. J. W.)

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Contiguous Electric Activity in an Axon.—Stimulation of axons in contact (epiphasch) by interaction has been studied in Sepia. Current spread from the active axon serves as a polyphasic electrical stimulus to the contiguous axon. When the contact conditions allow of a large possibility of phase in the resting axon they produce no visible effect on it; when the negative phase predominates active electrical reactions arise. Spikes occur 2 to 5 m/sec after the afferent spike reaches the contact zone. Subthreshold afferent spikes will augment spontaneous oscillations of the efferent axon and in time produce a spike. The relation of these results to synchronisation of central cell bodies is discussed. (W. M. H.)

Polarization and Nerve Action Potentials.—In A fibres of amphibian and mammalian nerves spikes and negative after-potentials are increased in amplitude at the anode and decreased at the cathode; positive after-potentials are modified by polarization in the same way as the negative potentials they succeed. Study of conditioned responses shows a more rapid recovery and greater tendency to supernormality with cathodal polarization, slower recovery and suppression of supernormality with cathodal polarization. Thus polarization, while modifying after potential, does not alter the relationship of after potential to recovery. In C fibres the changes in amplitude are comparable with those in A fibres but the after potential changes are relatively greater. If the slower components of the action potential be included the increment-decrement law becomes an adequate formulation of the facts. (W. M. H.)

Stimulation of Peripheral Nerve Terminations by Active Muscle.—Secondary centripetal discharges are found in the ventral root and neighboring ventral and dorsal roots when a muscle is activated indirectly by a motor nerve volley. The latency of the discharge is equal to the sum of the conduction time of nerves to and from the muscle, neuro-muscular delay and a short utilization period. The time of origin of the discharges corresponds approximately to the period of the ascending phase of the muscle action potential at or near the junctional region. Secondary centripetal discharges follow exactly the stimulus frequency at frequencies yielding mechanical fusion of muscle contraction. Muscle contraction as responsible for their initiation is therefore excluded. (W. M. H.)


In the cat fall of blood pressure in the feet-down position is due to collection of blood in the liver. Evisceration fails to abolish the fall but diminishes the vascular compensation after the fall; removal of the liver both after evisceration and independently almost abolishes the fall. Recovery of blood pressure on return to the horizontal is due to the return of blood, accumulated in the liver, to the right side of the heart. (W. M. H.)

Hypertonic Glucose Solutions and Inflow of Normal Saline Solution into Subarachnoid Space.—Contrary to the findings of others in cats this report of increased c.s.f. pressure, increased brain volume, and diminished fluid of inflow of normal saline solution into the sub-arachnoid space of the dog on intravenous injection of hypertonic glucose solutions (50 and 25 per cent.) in dogs. The rapid production of cerebral edema is the most characteristic effect of hypertonic glucose and levulose solutions. Hypertonic sodium chloride (25 per cent.) has a similar action but the onset of edema is not so rapid. (W. M. H.)

Compensatory Mechanism of Splanchnic Circulation.—