occur in response to cutaneous and proprioceptive stimuli have a strictly localized cortical control. The localization was determined by the following experimental facts:—

Removal of the gyrus proreus and sigmoid gyri and incidental ablation of a small part of either the coronal or the longitudinal gyrus resulted in permanent disturbances of the reactions of the contralateral legs. The deficiencies consisted in a complete failure of the five placing reactions and a profound depression of the hopping reactions. This condition represents a maximal cortical deficiency, for complete unilateral decortication or removal of all tissue of one hemisphere above the hypothalamus produced no greater disturbances in the reactions. The absence of ipsilateral effects shows that the control is entirely contralateral.

Bilateral removal of the same frontal area was followed by a permanent maximal deficiency of the reactions of all four legs. Cats so operated on were as defective in respect to these reactions as animals lacking all neocortex or as wholly decorticate preparations.

Bilaterally equal deficiencies were produced when the entire cortex and putamen-caudate of one hemisphere and only the sigmoid gyri and gyrus proreus of the other side were ablated. The reactions of the contralateral legs were not modified by removal of temporal or occipital cortex or of the gyrus proreus. The reactions remained normal in both contralateral legs after extirpation of all cortex except the sigmoid gyri, the gyrus proreus, the rostral part of the longitudinal gyrus and a small fraction of the coronal gyrus. This result was not modified by total ablation of the opposite cortex.

Stress is laid on the fact that a remnant of rostral cortex is able to manage in normal fashion the placing and hopping reactions of the opposite legs. This shows conclusively that the representation of these reactions is strictly localized and functionally independent of all other cortical areas.

Evidence is presented which suggests that the essential cerebral mechanism consists of sensorimotor cortex. There is some indication that the sensory cortex exerts its influence through the motor (pyramidal) projection area. The area frontalis is not involved in the control. The tendency of decorticate cats to assume peculiar attitudes of the legs is largely, but probably not entirely, attributable to the deficiencies of the placing and hopping reactions.

R. M. S.

**NEUROPATHOLOGY**


Ephedrine hydrochloride was used as a sympathicomimetic drug, to observe its effect on blood-sugar mobilization in chronic encephalitis. Seven of the 14
blood-sugar curves obtained in chronic encephalitis showed a reversal of the ephedrine action. This failure of blood-sugar mobilization after stimulation with ephedrine, in chronic encephalitis, may be due to lesions involving to a greater or less extent central sympathetic nuclei. The blood-sugar curve was raised after injection of ephedrine in patients treated with parasympathetic depressants. This confirms the evidence of the existence of parasympathetic predominance in chronic encephalitis. It also speaks against the presence of local liver changes in this disease.

R. G. G.

[125] Changes in the brain in legal electrocution.—George B. Hassin. Arch. of Neurol. and Psychiat., 1933, 30, 1046.

From a study of the brains of five criminals, the writer concludes that in legal electrocution changes take place in the central nervous system of the same nature as those seen in concussion. They, with the possible exception of those in the blood-vessels, are not specific, for some occur also in cerebral injuries following fracture of the skull and increased intracranial pressure.

Some changes, such as swelling of the ganglion-cells and satellitosis, are reparable. Other changes, such as tearing of the brain tissues and of the blood-vessels, are irreparable. Regardless of the apparent death of an electrocuted person, some simpler, primitive functions of the brain (glial reaction and draining of the perivascular spaces by the subarachnoid space) continue for a very short time.

R. M. S.


This is a study of the cerebrospinal sugar as measured in milligrammes per 100 c.c. of cerebrospinal fluid in uncomplicated and untreated neurosyphilis. The values obtained ranged between 40 and 112 mg., with a mean value for all cases of 62.75 mg. No true difference could be demonstrated between the mean values of the different types of neurosyphilis studied.

C. S. R.


That vasoconstriction of cerebral vessels occurs in the course of some generalized fits cannot be denied; many competent observers have seen this occur in the exposed human and animal brain, but that this vasoconstriction
is always the cause of the generalized seizure may well be disputed. It is more logical, in view of the generalized evidence of sympathetic stimulation in the course of a convulsion, to consider the following hypothesis: That during a convulsive seizure (caused by camphor and some other toxic substances) there is a discharge (by many causes) of stimuli (i.e., energy) which flows out through all available neural mechanisms (i.e., via the cerebrospinal and vegetative nervous pathways); the discharges over the cerebrospinal system result in motor phenomena, those over the vegetative nervous pathway producing characteristic sympathetic 'discharge reactions' (salivation, large pupil, pallor of mucous membranes and not unlikely cortical blanching, sweating), all presumably associated with increased secretion of sympathetic substance, which incidentally in great part constitutes a factor of safety for the maintenance of haemostasis in the organism.

Vasoconstriction of cerebral vessels is certainly not the only mechanism capable of causing convulsive seizures.

R. G. G.


A short review is given of the modern biological approach to the study of the vegetative nervous system as postulated by Jacques Loeb, Zondek, Kraus and others.

The basis of this study is an investigation of the autonomic nervous system using the intravenous pharmacodynamic method, made on a group of 15 epileptic patients of so-called cryptogenic type.

Of these patients seven were tested with adrenalin, pilocarpine and atropin, while five were tested with atropin only. During a basal metabolism procedure five patients were tested in addition with adrenalin and two with atropin and pilocarpine respectively. This was done to ascertain the effects of these pharmacological substances on the basal metabolic rating. Prior to the pharmacodynamic tests basal metabolic and sugar tolerance tests were made on all patients.

The three pharmacological substances have proved to be amphotrope in nature, meaning that depending upon the dose used and upon the state of tonicity of each individual system they all influence the sympathetic and parasympathetic systems. Adrenalin and pilocarpine are of little if any value in the determination of the autonomic system type, whereas atropin almost seems to be a specific for this purpose.

The authors were not able to verify the assertion of Danielopolu relative to the disappearance of the clinostatic decrease in the pulse-rate at the
moment of vagal paralysis. In determining the type of the vegetative nervous system the authors were guided by the pulse-rate and the oculocardiac reflex at rest as well as by the response of the autonomic system to atropin. They believe that the strength of the vagal tonus may be estimated by the dose of atropin necessary either to inhibit or completely paralyse it. On the basis of this observation the suggestion is that the dose of atropin required for paralysis of the vagus should be used for the purpose of determining the particular type of the autonomic nervous system. The dose of atropin was always low in individuals with a predominance of the sympathetic system, while in cases of vagotonia larger doses were necessary to inhibit the vagus.

In the group of 11 cases it was found that three were of the vagotonic, three of the amphotonic and five of the sympatheticotic type.

In two of three cases of vagotonia the basal metabolism was quite low—minus 17 and minus 22—while in the third case it was within normal limits. In the group of amphotonics the basal metabolic rate was within normal limits although near the end of the minus scale in one case. There was a predominance of minus readings among the sympatheticotics but within normal limits.

In three cases adrenalin in varying doses produced a slight rise in the basal metabolic rate within the first minute or two, no change showing at the end of the sixth minute from the basal metabolic rate uninfluenced by adrenalin. There was an increase in the basal metabolic rate of eight and nine points respectively in two other cases. A small dose of atropin produced no change in the basal metabolic rate, but a small dose of pilocarpine was followed by a decrease of two points, probably due to a stimulation of the vagal system as evidenced by a decrease in the pulse-rate.

Paleness or flushing, headaches and at times syncopal attacks produced by adrenalin were some of the severe subjective and objective reactions. Pilocarpine may also occasionally produce similar reactions although they are not as severe. In one case pilocarpine produced a profuse salivation, 70 c.c. saliva being collected in 13 minutes. In a number of cases it produced abdominal distension with audible peristalsis. Atropin also occasionally produced more or less pronounced objective and subjective signs and symptoms. In one case a dose of 0·001 gm. produced a severe convulsion. In all patients, and irrespective of the dose used, atropin produced sleep shortly after its administration. From this observation we can assume that atropin not only acts on the peripheral end of the vagal system, but on the vegetative centres as well, probably on the periventricular grey matter—the sleep regulatory area of von Economo.

The limited number of cases permits neither generalizations nor final conclusions, and this study is offered only as an additional contribution to our knowledge of the subject.

R. G. G.
We have here the results of a study of the blood-cerebrospinal fluid barrier by Walter's bromide method in 53 cases of alcoholic mental disorders. Twenty-four cases showed low initial ratios for the distribution of bromide. Values above 3.3 were obtained in five cases. The proportion of low ratios was somewhat greater in Korsakoff's psychosis and chronic alcoholism than in delirium tremens and alcoholic hallucinosis. Most of the cases with high ratios were atypical clinically. The distribution of bromide between the blood and cerebrospinal fluid was investigated in 14 patients with schizophrenia who were intemperate. The initial determinations yielded low ratios in eight cases and a high value in one case. An analysis of these observations suggests that excessive use of alcohol tends to lower the ratio of distribution of bromide, regardless of the presence of a particular type of psychosis. The same tendency occurred in patients with chronic alcoholism who had at no time been psychotic.

C. S. R.
system to alcohol, with a resulting concentration of the alcohol, or to an active secretion of the alcohol by the choroid plexus. The authors favour the former hypothesis.

R. M. S.


It is well known that the tigroid substance of Nissl has no physical counterpart in the living cell. A long series of histological experiments by the writer leads him to conclude that the morphology (and occurrence?) of Nissl granules depends upon the fixative used, the plane and thickness of the section, and the intensity of staining. The distribution of the granules is governed by a preexisting factor, which probably consists in the mode of concentration and distribution of stainable basophil proteins in the living cell. Only when an essentially similar pattern is obtained after various fixing methods can typing of cells based on the arrangement of their Nissl material be regarded as justifiable.

A. B.


This is a very brief record of a case in which multiple ganglioneuromas of benign type were found in the cervical and abdominal regions—one near the stellate ganglion and the others retroperitoneally.

A. B.


This is the completed report of a case of Recklinghausen’s disease in which, besides the neurofibromatosis, there were numerous meningiomas and four distinct gliomas of the spinal cord. The latter belonged to the astrocytoma and cellular ependymoma types. There was also a syringomyelia with a presyringomyelic stage at each end of the cavity. The neurofibromas of the cranial nerves and dorsal roots did not quite conform to the types of tumours supposed to be present in these situations in Recklinghausen’s disease. The case also illustrates the continuous tendency to form new tumours in varying situations, and the inevitably poor prognosis.

R. G. G.

The author has examined 12 cases of so-called acute yellow atrophy both clinically and pathologically, and mentions such slight nervous symptoms as may sometimes be found in connexion with that morbid state. The pathological descriptions are very long and minute, ranging over all the tissues of the nervous system. The general character of the changes can be summed up as presenting an 'ectodermotropic-mesodermal' combination. This process is diffused throughout, and there is no affinity of the underlying agent for the basal ganglia. Of interest are the author's remarks in connexion with the so-called atypical glial nuclei of Alzheimer, which in both acute and chronic cases were to be seen mainly in globus pallidus, nucleus dentatus, and substantia nigra. They have been found in many infective and toxic affections, ranging from Addison's disease to catatonic psychosis. The author considers that his researches do not support the view ascribing to these glial forms some relation to liver conditions. He can only say that they are specially apt to develop in severe toxic parenchymatous lesions of the brain. There is a good description of lecithinoid degeneration.

S. A. K. W.

SENSORIMOTOR NEUROLOGY

Tuberose sclerosis and spongioblastoma multiforme (Sclérose tubéreuse et spongioblastoma multiforme).—L. Van Bogaert. Jour. de neurol. et de psychiat., 1933, 33, 802.

The author describes the case of a woman of 31, with a family history of tuberose sclerosis, who, since the age of 15, had pendulous tumours (mollusci) on the neck, axilli and back. For the last seven years she had epileptic attacks involving the right side of the body and affecting speech. Three years ago she began to have headaches and amenorrhoea and noticed an increase in weight. More recently she became blind and began to vomit. At autopsy were found (1) a spongioblastoma multiforme, the size of a tangerine orange, in relation to the thalamus; (2) three paraventricular nodules similar to those found in tuberose sclerosis; and (3) a hypernephroma at the upper pole of the left kidney.

W. H. McM.

Adenoma sebaceum and cutaneous fibromatosis occurring together, with a family history of tuberose sclerosis (Adenomes sebaces du type Pringle avec fibromatose cutanée dans une famille atteinte de sclérose tubéreuse).—G. Duwe and L. Van Bogaert. Jour. de neurol. et de psychiat., 1933, 33, 749.

The patient was a male, age not stated, who, in addition to the usual Pringle