Part III.—Bibliography and Epitome.

THE AMERICAN JOURNAL OF ORTHOPSYCHIATRY.

VOL. VIII. JANUARY, 1938.

APRIL, 1938.

Social Maturity and Stability of Non-Delinquents, Proto-Delinquents, and Delinquents.

The writer studied a group of 91 non-delinquents, 112 proto-delinquents and 71 delinquent boys, using his "Personality Inventory for Children". The Furfey Revised Developmental Age Scale was used to determine social maturity.

There was a general superiority for the non-delinquents, and a definite difference in social maturity between the proto-delinquents and the delinquent groups.

Comparison of emotional stability showed a superiority for non-delinquents over delinquents. When the proto-delinquents were compared with the non-delinquents, the non-delinquents were definitely superior with regard to general neurotic score, freedom from insecurity symptoms, low irritability threshold, school adjustment and health, but there was no superiority in home adjustment. The gross neurotic score showed no difference between delinquents and non-delinquents. The neuroticism of the delinquent may be due to his feeling of rejection, which tends to force him into a world of easy satisfaction and easy victories manifested by retardation in social maturity. The higher score of the proto-delinquents may be due to the sympathetic interest of an outside agency which functions as a parent surrogate. G. W. T. H. FLEMING.

The Analytic Character of the Rorschach Ink Blot Test.

The writers investigated the responses to the Rorschach test of 43 paranoid psychotics and 52 college students. Normal people and psychotics appear to resemble each other in many ways. They present similarities in (1) the degree and kind of adjustment, associative, dissociative and repressive; (2) intelligence, analytical ability and originality; (3) stereotypy; (4) ideas of persecution and grandeur, and (5) intraversion and extraversion. The psychotics provide evidence of greater dissociation and less rapport with the environment, but many normal people present similar tendencies. Occasionally normal people present original form responses just as indicative of pathology as the responses of psychotics.

The writers conclude that the difference in symbolic significance between the two groups is one of degree and not kind. G. W. T. H. FLEMING.

Constructive and Destructive Tendencies in Children: An Experimental Study.

The writer found specific differences between the performances of well-adjusted and maladjusted school and pre-school children. The older well-adjusted children exhibit a distinct tendency to polarize their performances towards the constructive side; the older maladjusted show a similar tendency, but also a small gravitation towards maximum destructiveness. The older delinquent children from an atmosphere of severe discipline displayed an extreme tendency towards maximum constructiveness.

The older children show the influence of socialization; the constructive-destructive modes of expression of the pre-school children are far more varied and less stereotyped than those of older children.

The writer thinks that the disproportionately high peak of constructiveness for neurotic and delinquent children represents a defence formation against destructive tendencies. The constructive play of maladjusted children showed neurotic features, i.e., hesitation, indecision, apprehensiveness and excessively cautious or blocked movements. Lacking the atmosphere of discipline, etc., it is possible that the high peak of constructiveness in delinquent children might be turned into an equally high one of destructiveness. G. W. T. H. FLEMING.

THE AMERICAN JOURNAL OF PSYCHIATRY.

VOL. XCIV. JANUARY, 1938.

MARCH, 1938.

The Experimental Neurosis and the Problem of Mental Disorder.

The writer describes his experience with the development of an experimental neurosis in three sheep, and subsequently Sutherland has developed it in one pig. The neurosis in the three sheep was very definite, and appeared to be a permanent condition, as absence from the laboratory had no effect. One sheep exhibited the experimental neurosis for nine years. The neurosis appears to be caused by the equivalent of a human conflict situation. The pig, which had previously been quite docile outside the laboratory, became asocial, fighting with the others and occasionally attacking the attendant when he entered the pig-pen.

G. W. T. H. FLEMING.

A Review of the Results from the Employment of Malaria Therapy in the Treatment of Neurosyphilis in the Florida State Hospital.

The writers found from a review of 190 cases treated by malaria with chemotherapy and 20 cases treated by chemotherapy alone that the former gives much better results. Individuals under thirty years of age respond much better than do older persons. The severity of the reactions more than their number has a definite influence on the results secured. G. W. T. H. FLEMING.

Hereditary Form of Primary Parenchymatous Atrophy of the Cerebellar Cortex Associated with Mental Deterioration.

The writer describes an hereditary form of cerebellar ataxia occurring in five members of a family traced through three successive generations. The disorder appeared between the ages of 40–50 and was characterized by a steady and rapid progression, death occurring within two years after the final appearance of symptoms. The onset is usually insidious, with dysphagia and dysphonia, followed by progressive ataxia of the lower extremities and then of the upper ones. Towards the end, mental symptoms of organic disease of the brain occur. Histologically the essential changes were a selective destruction of Purkinjë cells with preservation of the basket fibres in the superior vermis and adjoining areas. In one case the frontal and parietal lobes were atrophied, owing to a diffuse reduction of cells, most marked in the third and fifth layers of the frontal and parietial cortex. These changes were present to a lesser degree in the other case.

G. W. T. H. FLEMING.

The Diagnostic Value of the Rorschach Test.

The writers submitted the Rorschach test to a very critical examination on 50 cases. The Rorschach and final clinical diagnosis were compared and there was an agreement in 84·7% of cases. The writer making the clinical diagnosis had no knowledge of the result of the Rorschach test.

G. W. T. H. FLEMING.

Some Clinical and Physiological Aspects of the Brain Potentials.

The writers consider that the changes in cerebral potential represent changes occurring because of differences in concentrations of ions, particularly potassium, within the neurones. These brain potentials are related to those seen in the peripheral nerves and spinal cord. The presence or absence of the slow alpha-rhythm is related to the emotional state of the patient. Quick frequencies were the rule in schizophrenic patients, but are not peculiar to them.

G. W. T. H. FLEMING.

Post-operative Psychoses.

The operation serves as the precipitating factor in a latent psychosis. Organic factors may play a part; possibly protein shock may follow the absorption of protein from the operative site. The clinical syndrome is characterized by ideas of mutilation and of death, confusion, hallucinations, delusions and excitement.

G. W. T. H. FLEMING.

Results of 15 Years' Experience with the Ketogenic Diet in the Treatment of Epilepsy in Children.

The writers give the results of their treatment of 501 epileptic children. Of these 92 were cases of symptomatic epilepsy and 409 of idiopathic epilepsy. 31% of those with idiopathic epilepsy were rendered free from attacks and 16% became definitely improved. About 11% of those with symptomatic epilepsy became free from attacks with the ketogenic diet. If the patient has been free from attacks for more than seven years there is little likelihood of recurrence.

G. W. T. H. FLEMING.

MAY, SUPPLEMENT, 1938.

ARCHIVES OF NEUROLOGY AND PSYCHIATRY.

VOL. XXXIX. JANUARY, 1938.

New York Academy of Medicine, Section of Neurology and Psychiatry.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.

FEBRUARY, 1938.

CLEVELAND NEUROLOGICAL SOCIETY.

DETROIT SOCIETY OF NEUROLOGY AND PSYCHIATRY.

NEW YORK NEUROLOGICAL SOCIETY.

MARCH, 1938.

Case Reports:

PHILADELPHIA PSYCHIATRIC SOCIETY.

BOSTON SOCIETY OF PSYCHIATRY AND NEUROLOGY.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Psychologic Structure of Catatonia.

By means of the use of sodium amytal in a group of 62 patients, the author found that the catatonic condition rests on an inability to choose among different lines of action. The other symptoms of mutism, stereotyped movements, etc., are not common to all patients, but are determined by the psychosomatic peculiarities of the individual patient and his experiences. The writer considers that inhibition of higher cortical centres by sodium amytal is the probable mechanism by which the over-inhibited catatonic patient shows his release phenomena.

G. W. T. H. FLEMING.

APRIL, 1938.

Case Reports:

NEW YORK ACADEMY OF MEDICINE, SECTION OF NEUROLOGY AND PSYCHIATRY.

PHILADELPHIA PSYCHIATRIC SOCIETY.

NEW YORK NEUROLOGICAL SOCIETY.

PHILADELPHIA NEURGLOGICAL SOCIETY.

Metrazol Shock Treatment of the "Functional" Psychoses.

The authors found that metrazol gave a relatively high rate of recovery in manic-depressive conditions and those without psychosis. In the schizophrenic group the recovery-rate was high only when treatment was given within six months of onset. The metrazol convulsion differs from the *grand mal* attack in the presence of "throwing about movements" prior to the tonic phase and in the common dislocation of the jaw. In a considerable number of male patients there was patting of the pubic region. Patients who subsequently recovered exhibited less fear of the treatment than those who did not recover. Metrazol is much superior to prolonged narcosis in the treatment of manic-depressive conditions.

G. W. T. H. FLEMING.

Mechanism of Migraine Headache and Action of Ergotamine Tartrate.

The writers found that changes in the intensity of migraine headache were closely related to changes in the amplitude of pulsations of some branches of the external carotid artery. Factors which decreased the amplitude of the pulsations decreased the intensity of the headache.

Manual pressure on the common carotid artery of the same side as the migraine reduced the intensity of the migraine headache. In some subjects the headache was temporarily abolished by pressure on the temporal and occipital arteries alone.

Ergotamine tartrate diminished the intensity of the headache and reduced the amplitude of the pulsations of the above-mentioned arteries by almost 50%; this is due to vasoconstriction of the temporal and middle meningeal arteries.

G. W. T. H. FLEMING.

Restlessness in Children.

Cases of marked restlessness and morbid hunger in man, associated with mental deficiency, show a high incidence of cerebral lesions, probably of the frontal lobes.

The syndrome of restlessness, morbid hunger and mental deficiency resembles the "syndrome of the prefrontal region" experimentally produced in primates and other animals. In other cases showing excessive motor activity it would appear to be due to psychological disturbances.

G. W. T. H. FLEMING.

Human Autonomic Pharmacology : XI. Effect of Benzedrine Sulphate on the Argyll Robertson Pupil.

The writers consider the A. R. pupil as one in which the pupil is myotic to the extreme point with no reaction to darkness, flash-light or daylight, while the reaction to accommodation is preserved. The incomplete A. R. pupil does not react to flash-light, but widens slowly in darkness and constricts slowly in a bright room.

The light reflex can be restored partially by instillation of a dilute solution of benzedrine sulphate or by repeated subcutaneous or oral ingestion of the drug. The pupil then dilates, widens in darkness and constricts in daylight, i.e., it becomes an incomplete A. R. pupil.

The writers think it possible that local injury to the iris muscle or to the tissue of the iris itself causes the A. R. pupil. G. W. T. H. FLEMING.

Autonomic and Motor Localization in the Hypothalamus.

The writers operated on cats under light ether or pentobarbital sodium anæsthesia and performed an incomplete hemidecerebration. Induced shocks were subsequently applied, but in no case was the stimulus excessive. Three areas on the wall of the third ventricle yielded sympathetic and motor responses on stimulation. A completely silent area separated them. The anterior region corresponded to the supra-optic and anterior hypothalamic nuclei and the posterior pair to the posterior hypothalamic nucleus. The intervening silent area corresponded to the infundibular nucleus, the hypothalamic periventricular nucleus, and the dorsal median and ventral median hypothalamic nuclei.

Stimulation of the anterior area caused bilateral opening of the palpebral fissures, retraction of the upper and lower eyelids, protrusion of the eyeballs and marked dilatation of the pupils, respiratory and circulatory changes, contraction of the bladder and somatic movements. Contraction of the facial and masticatory musculature gave an expression closely simulating rage and anger.

The posterior area could be divided into a caudal and a rostral portion, stimulation of the former gave rise mainly to tonic responses, of the latter to clonic responses.

Stimulation of the caudal portion caused bilateral retraction of the eyelids, pupillary dilatation and protrusion of the eyes, unilateral pilomotor erection on the ipsilateral side, tonic contraction of the respiratory muscles, with cessation of respiration in inspiration and a marked increase in blood-pressure. The blood-pressure fell off and continued to fall after the cessation of stimulation, in contrast to the result obtained on stimulating the anterior hypothalamic nucleus. The facial expression was one of sham pain. When the stimulation ceased the tonic phase passed off and rhythmic running movements, lashing of the tail, with panting movements, supervened. This after-effect is exactly similar to the somatic movements occurring during stimulation of the rostral portion of the posterior region.

Stimulation of all the rostral portion led to exactly the same optic, pilomotor and bladder response as did stimulation of the caudal portion. The nares, face and tongue made movements giving the appearance of panting.

Stimulation of the pre-optic and supra-optic regions had no effect, except promptly and completely to inhibit the after-effect of stimulation of the posterior hypothalamic regions.

Stimulation of the thalamic surface of the third ventricle gave no response, stimulation of the pretectal region led to constriction of the pupils and closing of the eyelids, and that of the anterolateral wall of the aqueduct of Sylvius to strong running movements with increase in the blood-pressure and panting.

In all cases pushing the electrode into the ventricular wall a millimetre or two abolished the response obtained from the surface. No injury was caused by the shocks as the same responses could be obtained hour after hour.

G. W. T. H. FLEMING.

MAY, 1938.

Case Reports:

Special Articles:

CHICAGO NEUROLOGICAL SOCIETY.

NEW YORK NEUROLOGICAL SOCIETY.

Electro-Encephalography: IV. Localization of Seizure Waves in Epilepsy.

The writers worked out a method of localizing the region of the head beneath which seizures appear to originate. They found localizing signs in 14 out of 37 cases of *grand mal* and in 5 out of 18 of *petit mal*. The posterior region appeared to be primarily involved in 6 of 37 cases of *grand mal* and in 8 of 18 cases of *petit mal*. Localizing signs were obtained in 33 out of 55 patients examined. The writers thought that it was possible that the wave forms from over traumatic scars might be specific to this condition. The seizure waves from grossly damaged cortical tissue were different from those arising on a different pathologic basis. The spiked portion of the seizure wave varied independently of the slow-wave portion. G. W. T. H. FLEMING.

Differential Features of "Cerebellar" and "Vestibular" Phenomena in Macacus rhesus.

Lesions, which were controlled by serial sections, were of three types—those confined to the cerebellum, to the vestibular apparatus, and mixed.

Lesions of purely cerebellar structures provided symptoms related mainly to muscular inco-ordination of a particular part of the body. Ataxia and dysmetria with inconstant and variable hyporeflexia and hypotonia were the rule with small, unilateral lesions. With large, bilateral lesions the hypotonia did not occur.

Lesions of the purely vestibular structures provided postural asymmetries, asymmetries in movement of the body as a whole, especially in homogeneous mediums, such as air and water, spontaneous nystagmus, abnormalities in induced nystagmus, abnormalities in position and labyrinthine reflexes and inconstant variable changes in muscular tone and tendon reflexes. Ataxia was not present.

Lesions of the roof nuclei and juxtarestiform system were associated with predominantly vestibular features. Lesions of combined known vestibular and cerebellar structures were associated clinically with symptoms referable to both these systems. In addition other features such as tremors appeared which were not present with simple lesions. G. W. T. H. FLEMING.

Sensory Discrimination in Monkey, Chimpanzee and Man after Lesions of the Parietal Lobes.

The writers made lesions of the post-central gyrus and the posterior parietal lobules. Several weeks after the operation these lesions showed no effect on weight discriminatory ability in the monkey; in the chimpanzee the disability disappeared on training; in man marked blunting of this ability was reduced by training to a small but definite permanent deficit.

In man an extensive parietal lesion induces a relatively small permanent deficit in the ability to discriminate weight and roughness. In man and the chimpanzee, damage to the posterior parietal lobules of the parietal lobe reduces ability to discriminate weight and roughness. G. W. T. H. FLEMING.

Acid-Base Balance of the Blood in a Patient with Hysterical Hyperventilation.

In a patient with hysterical hyperventilation, during the period of observation the maximum respiratory rate varied from 75–140 per minute. The blood showed changes in arterial pCO_2, plasma bicarbonate and pHs similar to those observed in respiratory alkalosis in normal subjects. There was no significant diminution in the concentration of fixed base, but there was an increased concentration of fixed and undetermined acid, the sum of which was approximately 10 milli-equivalents per litre. These changes suggested that mild acidosis was superimposed on respiratory alkalosis.

In two experiments the patient was treated by hypnosis and suggestion. During these experiments the respiratory rate returned to normal and changes were observed in the acid-base pattern of the blood, which were parallel to the

normal carbon dioxide dissociation curve. The data confirm the hypothesis that the principal factor in producing hyperventilation tetany is diminution in pCO_2 and not increase in pHs. G. W. T. H. FLEMING.

A New Series of Anticonvulsant Drugs Tested by Experiments on Animals.

The writers estimated the efficiency of various drugs on the convulsive threshold of cats by means of an apparatus delivering an interrupted current measured in milliamperes and graded in intensity.

Of the usual drugs used phenobarbital was by far the most effective. Five drugs not previously used as anticonvulsants—diphenylhydantoin, acetophenone, acetophenone oxime, benzophenone and propriophenone—were found to have a greater anticonvulsant effect than luminal and a lesser soporific effect. There is a chemical similarity between luminal and diphenylhydantoin, while the acetophenones have linkages in common with the latter. On the other hand many drugs with similar structures and linkages are quite ineffective.

G. W. T. H. FLEMING.

Pathogenesis of Encephalitis Occurring with Vaccination, Variola and Measles.

The writer produces evidence to support the belief that these encephalitides are the response of the central nervous system to the virus of the exanthema. The response of the brain appears to be allergic. The incubation period of the encephalitis corresponds to that of the particular exanthem concerned.

G. W. T. H. FLEMING.

JUNE, 1938.

NEW YORK ACADEMY OF MEDICINE, SECTION OF NEUROLOGY AND PSYCHIATRY.

PHILADELPHIA NEUROLOGICAL SOCIETY.

NEW YORK NEUROLOGICAL SOCIETY.

Descending Connections from the Hypothalamus.

In the mid-brain, descending connections which mediate impulses induced by hypothalamic stimulation occupy a wide area in both the central and tegmental region.

At the pontile level there does not appear to be any exclusive or predominant disposition of descending hypothalamic paths in either the periventricular or midline region. Any concentration of paths is probably in the pontile tegmentum.

Stimulation after hemisection reveals that even as far down as the first cervical segment of the spinal cord, the connections which carry descending impulses from the hypothalamus are chiefly uncrossed, but that there is a smaller crossed component in the paths unconcerned with the respiratory and vasomotor effects.

G. W. T. H. FLEMING.

Vascular Pattern in Various Lesions of the Human Central Nervous System.

The writers found that there was a general nonspecificity of most of the alterations in the vascular bed of the central nervous system irrespective of the ætiology.

Hæmorrhages in the grey matter are apt to be of a " net " type, while those in the white matter are of a nodular or " ring " type. They think that this is related to a difference in formation of the perivascular sheaths in the two regions, or to a difference in the resistance offered by the grey and white matter to the passage of red cells.

When circulatory disturbances are generalized throughout the brain, hæmorrhages are most frequent in the white matter. Massive cerebral hæmorrhages due to arterial and arteriolar disease and hypertension show a border zone of less advanced circulatory disturbance. Old foci of softening are completely or partially avascular and are surrounded by an avascular rim, which in turn is surrounded by a relatively anæmic zone as compared with the surrounding normal tissue. Early foci of softening or of ischæmic necrosis show varying degrees of complete or incomplete anæmia or of hyperanæmia. Hyperanæmia is seen only in the less severe lesions.

G. W. T. H. FLEMING.

Psychiatric Aspects of Artificial Fever Therapy.

The writers, using the Kettering hypertherm, found that the hyperpyrexia exaggerated the patient's normal personality characteristics, i.e., the phlegmatic was little disturbed, the aggressive became more aggressive, the contented euphoric, the pessimist more dissatisfied, the hypochondriac greatly concerned with his physical condition.

By the application of understanding and sympathy and the treatment of the earliest symptoms of delirium the incidence of delirium was reduced from 1 in 4 to 1 in 18.

At the end of two years 87 cases of general paralysis had been treated. Of the group receiving combined fever and tryparsamide therapy 71·4% were benefited, while 58·1% of the malaria group were benefited. In 52% of the combined group the spinal fluid findings were improved or reversed while 39·5% of the malaria group were similarly affected. Seven cases of schizophrenia showed no benefit. G. W. T. H. FLEMING.

Destruction of the Hypothalamus in Cats.

The writer carried out experiments on 80 cats, with either unilateral or bilateral lesions of the hypothalamus, investigating their reactions to the localized or diffuse stimulation of the intact or destroyed portions of the hypothalamus and contiguous structures, and the effects of the intrahypothalamic or intravenous injection of various drugs.

Sodium amytal injected into the hypothalamus of one side caused a fall in blood-pressure and diminution in the respiratory rate and excursion.

Circumscribed lesions in the region of the lateral hypothalamic nucleus with the cat under ether anæsthesia may cause running motions and other body movements, whereas acute lesions further back produce mydriasis and respiratory disturbances.

Destruction of one side of the hypothalamus produces, twenty or more hours after the operation, apathy and torpor, alternating with variable periods of restlessness and manifestations of emotional irritability. Complete destruction of the hypothalamus causes, after the same period, persistent stupor, which may give place to disorganized manifestations of rage when the animal is annoyed or restrained.

Sodium amytal modifies the sympathetic and emotional mimetic functions of the hypothalamus and corresponding functions served by the perihypothalamic part of the diencephalon, and probably other portions of the nervous system.
G. W. T. H. FLEMING.

Reduction of Increased Intracranial Pressure by Concentrated Solutions of Human Lyophile Serum.

Human blood-serum is dried in a high vacuum from the frozen state. This in solution is then filtered through a bacterial filter to remove certain lipide aggregates and desiccated again. This dried product was dissolved either in distilled water or a 50% solution of sucrose, the concentration of the dried serum in solution being four times that of normal serum. This solution was given intravenously to seven patients with increased intracranial pressure. There was a prolonged reduction of cerebrospinal fluid pressure accompanied by an increase in blood-pressure. Up to 200 c.c. of this lyophile serum was given without any ill-effect. Its use in circulatory failure seems indicated. G. W. T. H. FLEMING.

BRAIN.

VOL. LXI. MARCH, 1938.

Increased Spontaneous Activity Produced in Monkeys by Brain Lesions.

The author performed unilateral or bilateral removal of the frontal poles of the brain of five macaques and by doing this produced permanent overactivity. The lesions included the prefrontal cortex and the tip of the caudate and putamen. Unilateral removal of the prefrontal cortex in two animals produced only a slight increase in activity. Subsequent removal of the other prefrontal cortex produced a great increase. Unilateral and bilateral removal of areas 8, 10, 11 and 12 in two animals had little or no effect. Bilateral removal of area 9 produced a definite increase in activity in two animals. Overactivity was produced in three animals by removal of the tip of the caudate nucleus and putamen after the removal of the prefrontal cortex on the same side had failed to produce an increase. The author's results are not in agreement with those of Kennard and Eclors. He considers that activity is controlled through the prefrontal cortex, particularly area 9, and also through the striatum. G. W. T. H. FLEMING.

The Neurone as Studied by Micro-Incineration.

Using the micro-incineration method the author found that ganglion cells contain rich deposits of heat-resistant mineral ash in the Nissl bodies and in the nucleolus. The axone hillocks, the axis-cylinder processes and the main body of the axis cylinders of the cerebral and peripheral nervous system are completely free from calcium, silica and iron, and are free from other heat-resistant mineral ashes, but contain fine traces of not completely heat-resistant minerals, which are vaporized, or volatilized at or below the heat of micro-incineration. The myelo-axostroma, including the tubular outer membrane of the myelin sheath, the axolemma, and the connecting threads and lamellæ between them, in the central and peripheral nervous system, contains a small amount of bluish heat-resistant mineral ash. The lipoid part of the myelin sheath is always completely free from any mineral ash residue. The glial reticulum, the sheath of Schwann and the endoneural sheaths of the peripheral nervous system contain moderate amounts of heat-resistant mineral ash, the largest amount being in the nuclei of the glial and Schwann cells. The glial reticulum and its ash residue are most dense in the white matter of the hemisphere, less dense in the long projection pathways of the brain-stem, including the optic tract, least dense in the white columns of the spinal cord.

The granular cells of the cerebellar cortex and the ganglion cells of the allocortical areas are richer in mineral ash residue than morphologically similar ganglion cells from isocortical areas or from the basal ganglia. There is great variation in the mineral distribution corresponding to cortical architectural fields. The content of heat-resistant mineral ash in the same neurone is relatively greater during autogenetic development than after differentiation.

G. W. T. H. FLEMING.

Observations on the Pathways Transmitting the Sensation of Taste.

The writers conclude that in some people the greater superficial petrosal nerve forms part of the pathway for the transmission of taste from the anterior two thirds of the tongue. Taste impulses pass from the chorda tympani by way of the otic ganglion and internal sphenoidal nerve to reach the greater superficial petrosal nerve; from this point they are carried by way of the geniculate ganglion and nervus intermedius to the pons. These conclusions are based on observations on a patient who developed loss of taste following excision of the greater superficial petrosal nerve, and on two patients who showed preservation of taste, following section of the chorda tympani. G. W. T. H. FLEMING.

JUNE, 1938.

Some Observations on Headache.

The absolute value of the intracranial pressure bears no relation to the presence of headache. Headache does occur as the result of any sudden alteration of pressure, whether an increase or a decrease. Painful sensation does not appear to be caused by pressure upon the pia mater, the brain tissue or the walls of the ventricles. The cortical veins and arteries and the choroid plexuses are insensitive to clamping and to endothermy. The dura mater is not the sensitive structure which is responsible for the common headaches of intracranial tumour. The characteristic headache of intracranial tumour is probably caused by an abnormal state of tension in the walls of the cerebral blood-vessels.

G. W. T. H. FLEMING.

Gliomatosis cerebri.

The writer describes three cases of cellular diffuse overgrowth of neuroglial cells throughout areas of the cerebral hemispheres. These areas are blastomatous malformations arising upon a congenital developmental defect.

Clinically the cases gave a long history of epilepsy followed by mental symptoms, especially failure of memory, character changes and symptoms of increased intracranial pressure. There is a close relationship to Von Recklinghausen's disease. The tumours are polar spongioblastomas, but Russell and Bland consider them to be piloid astrocytomas. G. W. T. H. FLEMING.

The Central Pathway in Man of the Vasomotor Response to Pain.

In normal subjects the vasoconstrictor responses to equal stimuli on symmetrical skin areas are equal and vary directly with the intensity of the stimulus. In ten subjects with lesions of the sensory pathway below the level of the thalamus, the vasomotor response varied directly with the change in the subjective appreciation of the stimuli, while in five subjects with lesions of the sensory tracts in the thalamus or cerebrum there was no effect on the magnitude of the vasoconstrictor response.

The evidence presented suggests that in man the ascending pathway for the vasomotor response to somatic stimulation is the spino-thalamic tract, and that the vasomotor reflex is complete in the brain-stem below the level of the sensory thalamus. G. W. T. H. FLEMING.

Vasomotor Control of Cerebral Vessels.

The present position with regard to the regulation of blood-flow within the brain and its meninges is that an intracerebral regulation does exist in which chemical agents, especially CO_2, play a predominant part, that cerebral vasoconstrictor nerves are present, but that they are only about one-tenth as effective in the pia as the vasoconstrictor nerves are in the skin, and that vasoconstrictor nerves are distributed unequally to different parts of the brain.

There is evidence of the existence of cerebral vasodilator nerves.

G. W. T. H. FLEMING.

BRITISH JOURNAL OF PSYCHOLOGY.

VOL. XXVIII. JANUARY, 1938.

A Preliminary Investigation of the Interview.

Bias introduced into the instructions given to an interviewer affected judgment in about 40% of cases. When true records were presented there was agreement in 60%.

This suggests that there is some fundamental basis of reference to behaviour and appearance in character diagnosis which sets a limit to the operation of the biased attitude. Interviewers show a greater degree of independence in their assessments of sociability than of reliability. Assessment of emotional ability presented too difficult a task to the untrained interviewer. A general impression of the candidate sometimes served as a resistance to bias and was sometimes the medium through which bias operated. G. W. T. H. FLEMING.

APRIL, 1938.

The Threshold of Unconsciousness.

Experiments were carried out on the writer with nitrous oxide, ethylene and acetylene.

Changes in character commenced with the advent of severe intoxication, with an exaggerated estimate of the subject's own ability. While intaking acetylene

the writer announced that he felt capable of conducting the Government, whereas it was found that he was unable to multiply by nine! Rarely a sense of inferiority was noted. On recovering from the unconsciousness of 70% nitrous oxide to the consciousness of 50%, there was the curious experience of awakening from death to life. With the approach of unconsciousness loss of sight occurred before loss of hearing; understandable replies could be obtained after there was inability to write them.

G. W. T. H. FLEMING.

Some Changes in Social Life in a Community with a Falling Intelligence Quotient.

The writer has previously stated that the average level of native mental capacity is falling at the rate of approximately one point of intelligence quotient per decade. The consequences of this fall will be—a fall in academic standards in the schools, a change in the curriculum of schools towards less abstract and generalized studies, an increased cost of education, increased unemployment in the less-skilled occupations, decrease in the average real earning capacity of the community as a whole, a rise in the frequency of delinquency, proneness to aggression between nations, if inhibitory forces prevail either (*a*) an increase in the social equipment provided for phantasy compensations or (*b*) an increase in religious expression, an increase in the percentage of people adopting extreme or uncompromising political view-points, together with a growth of a generally conservative position, an increased retardation in the percolation of "cultural news" together with a lowering of the intensity of cultural life and a diminution in the rate of scientific discoveries and other specialized advances, a shift of cultural and recreational interests to crude tastes and forms of expression, together with an increased divergence of interests between different groups and a greater domination by the average, a check to the growth of social and political freedom, and a reversion to a more detailed prescription of individual behaviour.

G. W. T. H. FLEMING.

THE INTERNATIONAL JOURNAL OF PSYCHO-ANALYSIS.

VOL. XIX. JANUARY, 1938.

APRIL, 1938.

JULY, 1938.

Moses an Egyptian.

Etymologists consider Moses to be an Egyptian name. It is not unreasonable to infer that the bearer of that name was himself an Egyptian. Some support for this inference is found by a comparison of the Moses legend with the " humble and noble family " hero myths. The usual intention of these myths is to replace by a ficticious noble origin the actual humble parentage of a national hero. In all respects the Moses legend follows the classical story of " exposure ", but in the matter of parentage there is a significant reversal. According to the story Moses' parents were Jewish Levites and he was adopted into the royal house of Egypt. It is tentatively suggested that this distortion of the usual tale may reveal the myth's inner meaning. Moses, the Jewish national hero, was an Egyptian nobleman ; the myth undertakes the task of transforming him into a Jew.

S. M. COLEMAN.

A Contribution to the Patho-Psychology of Phenomena Associated with Falling Asleep.

Certain phenomena, occurring when the subject is on the point of falling to sleep and closely related to hypnagogic manifestations, *déjà vu* and the " aura " of epilepsy are described. These phenomena are more frequently experienced in fever and in childhood. Since they are not a normal part of the process of falling to sleep, they are an indication of some disturbance of this process. It is concluded that these phenomena are due to a revival of very early ego-attitudes. A kind of " estrangement " takes place between two parts of the ego ; the one part, which remains wider awake and is therefore on a higher level of differentiation, observing the other, which has already regressed a long way and is revelling in the hallucinatory possession of an object that in reality has been lost.

S. M. COLEMAN.

THE JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY.

VOL. XXXIII. JANUARY, 1938.

APRIL, 1938.

Judging Personality from Expressive Behaviour.

The writer carried out experiments in which 323 judges estimated the personalities of fifteen male subjects from brief motion picture records of their behaviour. The results were checked against an elaborate research on the personalities of the subjects. The accuracy of the judgments was found to vary with the judge, the subject and the aspects of the personality being judged. Judges who had strong interests in either the graphic arts or dramatics were more successful than those whose dominant interests were in science or philosophy. Subjects who were introverted tended to be least accurately judged. Well-judged traits were inhibition-impulsion, apathy-intensity, placidity-emotionality and ascendance-submission. The most successful group of judges had little interest in conceptual understanding and great interest in what is concrete.

G. W. T. H. FLEMING.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

VOL. LXXXVII. JANUARY, 1938

FEBRUARY, 1938.

MARCH, 1938.

APRIL, 1938.

MAY, 1938.

JUNE, 1938.

JULY, 1938.

Concrete Model and Abstract Copy: A Psychobiological Interpretation of the "Closing-in" Symptom of Mayer-Gross.

An attempt is made to show that the closing-in symptom, described by Mayer-Gross, is only one manifestation of a larger disturbance—the ability to make an abstract copy from a concrete model. This disturbance has special presenting characteristics depending on the nature of the disturbing factor and the personality factor so damaged.

The material upon which these conclusions are based is drawn from widely different sources: (1) a normal child; (2) an elderly man with advanced cerebral arterio-sclerosis showing constructive apraxia, the "closing-in" symptom, echolalia and echopraxia; and (3) a young man with a schizophrenic reaction showing disturbance in the use of metaphor. S. M. COLEMAN.

The Phenomenon of Transference in a Case of Phobia (Anxiety Hysteria).

Report of a case of anxiety hysteria subjected to psycho-analysis. This study is of interest in that it shows with special clearness the importance of the repetition compulsion in the transference situation. S. M. COLEMAN.

The Clinical Syndromes of Echolalia, Echopraxia, Grasping and Sucking.

The clinical syndromes of echolalia, echopraxia, grasping and sucking are described in various pathological neuropsychiatric conditions. The syndromes are considered as appearing in two main types of neurophysiologic disturbances: (*a*) in conditions due primarily to dysfunction of the processes of brain integration, and (*b*) in disorders primarily due to interruption of pathways such as are produced in vascular disease.

(*a*) Those conditions capable of disturbing brain integrative function prevent the proper organization of fine movements which flows from man's acquisition of the erect posture, speech and handedness. In these states, changes of personality occur which may go on to visible organic degeneration or which may remain at the psychotic level. Here the tetrad may be automatic without modification by the deteriorated personality, or may occur in association with psychotic ideas and feelings. In these conditions the syndrome is present usually without pyramidal tract signs, although language may be deteriorated to jargon with neologisms in the degenerative group.

(*b*) Those conditions, such as vascular disease, which interrupt pathways leave the personality relatively intact and capable of modifying the responses. In these states there are usually associated pyramidal tract signs, aphasia and occasionally apraxia. Here the essential lesion is considered as disruption of parts of the premotor area, probably together with disease of the auditory cortex.

The occurrence of the syndrome in post-convulsive states, including those following insulin shock, may make it indicative of a low rate of brain oxygen consumption. In these conditions it is transitory, followed by gradual restoration of normal speech. The relation of the syndrome to the normal development of the child is indicated and the psycho-analytic implications are briefly discussed.

S. M. COLEMAN.

Multiple Sclerosis: I. The Etiological Significance of the Regional and Occupational Incidence.

It is concluded that in multiple sclerosis a racial susceptibility is not well established. The geographical distribution in the United States and in Europe shows a higher incidence in the North than in the South. Evidence of urban preponderance of its incidence cannot be conceded. An occupational predominance of wood-workers seems to be present in Scotland, England and Germany. Its existence in the United States requires further investigation.

Familial cases need not be considered as due to a higher familial susceptibility. There is nothing against the hypothesis of a more effective contact with the causative agent incurred by members of the same family, mostly siblings. A new familial case of two sisters is reported and discussed. For establishing the infectious origin of the disease, the cases which occur in social groups are of greatest importance. Some of these cases are reported. Two cases of conjugal multiple sclerosis are described. Such conjugal cases can be best explained by an infectious origin of the disease. S. M. COLEMAN.

Use of Histamine Phosphate and Peptone Solution in the Treatment of Neuroses and Psychoses.

Applying Marshall's theory of psycho-allergy the authors present a new ambulatory type of treatment with histamine phosphate in increasing doses. They found it to be successful in improving 51% of an experimental group of 35 psychotic and neurotic patients. S. M. COLEMAN.

AUGUST, 1938.

A Study of Fifty Cases of Bromide Psychosis.

The literature of bromide psychosis and bromide intoxication is summarized. Although bromide psychoses have been known since 1869, it is only since Wuth's contribution in 1927 that an accurate method of determining the presence of bromide in the blood has been available.

A report is given of fifty cases of bromide psychosis admitted to Bellevue Psychiatric Hospital. 70% were women. Thirty-three had a delirious reaction in which the outstanding diagnostic symptoms were: paraphasic speech disturbances, visual hallucinations "at a distance", confabulatory memory defects, vestibular disturbances and occasional findings of micrographia, micropsia and macropsia. A few cases are described in detail including one of bromide hallucinosis. The majority in this series used bromides following alcohol. In some the bromide psychosis was superimposed on other mental diseases.

Treatment of the intoxication or psychosis consists in stopping the drug, giving sodium chloride by mouth or intravenously, forcing fluids and controlling the stage of excitement by wet packs or continuous baths. The advisability of restricting the indiscriminate sale of bromide to the public is considered.

S. M. COLEMAN.

Cerebellar Coma.

Two anatomo-clinical cases of unilateral cerebellar disease are presented. At post mortem one case showed a purulent state of a small part of one cerebellar hemisphere. In the other there was softening and destruction of the cortical layer in one hemisphere caused by atheroma of the blood-vessels. In both subjects a striking feature was frequent attacks of coma, each lasting from ten to fifteen minutes and unaccompanied by any manifestations characteristic of epilepsy or hysteria. S. M. COLEMAN.

The Clinical Syndromes, etc. (see above).

SEPTEMBER, 1938.

The Abortion of Recurrent Depressive Psychoses.

In the writer's opinion a series of life events, acting on a particular type of personality, best explains the onset of the recurrent depressive psychoses. The record of the facts preceding the illness are usually meagre. The friends and family in many cases cannot know the crucial facts, and the person best calculated to provide these is ill and his thinking distorted. Three cases are reported, demonstrating that an intimate knowledge of the patient's life over a long period of time may give a real clue to the causation of the depressive illness and may be serviceable in preventing its recurrence. It is concluded that the time for psychotherapy is following a depressive state rather than during it.

S. M. COLEMAN.

Some Clinical Neurological Findings in Epilepsy.

The neurological findings of 100 selected cases suffering from convulsions are presented. These are tentatively classified from the ætiological standpoint into toxic, infectious, traumatic, congenital, etc., groups. One group consists of 31 cases of unclassified individuals. The findings in each of these groups are presented in the paper under their proper captions. The following is a summary of the findings in the 100 cases taken as a whole. The observed clinical neurological material indicates involvement of the extrapyramidal as well as the pyramidal systems as stressed by previous investigators.

Definite disturbances in automatic associated movements were observed in 15 cases; changes in co-ordination in 17 cases; tremor of the fingers in many, one case showing a choreathetosis of the right upper extremity; motor disturbances associated with muscle strength diminution in 12 cases; trophic changes in 21 cases. The tendon reflexes were unequal in one-third of the cases. The abdominal and cremasteric reflexes showed inequalities in almost every group except those of encephalitis and congenital syphilis. The Babinski was positive in 12 patients. 34 cases presented positive sensory findings; segmental changes were observed in a few cases.

Positive findings in the pupils were observed in 26 cases; visual field changes in 3 cases; papilloedema in 2 cases; optic neuritis 1 case; bitemporal pallor 1; blurring of the disc margins, a number of cases; lateral nystagmus 16 cases; nystagmus in all directions 3; involvement of the extra-ocular muscles 4 cases.

Fifteen cases showed a right facial paresis and 18 a left. Fibrillary twitching of the tongue occurred in 5 cases; in 2 the tongue was deviated to one side. Two cases of reflex epilepsy, one of these suggesting a possible Brown-Séquard convulsive syndrome, were presented. It is suggested that some of the above may have been due to trauma to the spine or other parts sustained in the course of seizures

S. M. COLEMAN.

Neuronitis of the Cranial Nerves.

The form of peripheral nerve disease or polyneuritis termed "neuronitis" may involve the cranial nerves exclusively. Three cases are reported in which one or more of the cranial nerves were affected. Retrobulbar neuritis may result from this disease. The ætiology of neuronitis is unknown, but it is apparently of infectious origin. The disease in the three cases described ran a benign and self-limited course.

S. M. COLEMAN.

Some Uses of Diallylmalonylurea in Psychiatry.

Diallylmalonylurea (dial and urethane), being available in solution and stable, can be administered parenterally with safety. It is an effective hypnotic and sedative. Its use does not seem to be complicated by any unfavourable reaction. The individual dosage has been 3 gr. (2 c.c. of solution). In no case was more than 15 gr. given in the 24 hours. Sleep has been induced from one-half to three-quarters of an hour after administration. Intravenous injection of the drug will produce lucid periods in catatonic schizophrenics. S. M. COLEMAN.

Prostigmin in Myasthenia Gravis.

Prostigmin, the dimethylcarbamic ester of 3-hydroxyphenyl-trimethyl-ammonium methyl sulphate, has been found effective in controlling the symptoms of two cases of myasthenia gravis, temporarily in one, and without relapse for nine months in the other. In one case, which eventually went to a fatal termination, there developed a rapidly increasing tolerance or refractoriness to the drug. This phenomenon was not observed in the other case and has hitherto not been stressed in the literature. S. M. COLEMAN.

JOURNAL OF NEUROLOGY AND PSYCHIATRY.

VOL. I (NEW SERIES), NO. 1. JANUARY, 1938.

The Laurence-Moon-Biedl Syndrome: A Pathological Report.

The writer reports his autopsy findings in a case of the Laurence-Moon-Biedl syndrome, aged 7. There were widespread abnormalities, developmental defects of the skeleton, kidneys and probably eyes, and abnormalities in the pituitary body, thymus and gonads. The findings in the brain were slight, being a diminution of volume of the frontal lobe, and a paucity of cells in the tuberal nuclei. The writer thinks that there is some analogy between this condition and pituitary basophilism. It would appear to be a germinal affection.

G. W. T. H. FLEMING.

APRIL, 1938.

THE PSYCHIATRIC QUARTERLY.

VOL. XII. JANUARY, 1938.

APRIL, 1938.

The Use of Methylene Blue in the Treatment of Catatonic Dementia Præcox Patients.

The writer, depending on the known fact that a minute quantity of methylene blue is capable of greatly increasing the oxygen-combining and oxidative powers of living cells, applied this to the treatment of catatonic dementia præcox. One stuporose patient and two relatively recent catatonic patients responded to treatment. Only one injection of 50 c.c. of a 1% solution was given intravenously. One case of involution melancholia and a greatly deteriorated catatonic showed no response. G. W. T. H. FLEMING.

Concerning Hallucinations of Smell.

The writer found hallucinations of smell present in 4% of a group of 500 non-selected psychotics. The majority of the cases fell in the involutional period of life. The tendency is for the smells to be unpleasant.

Hypogonadism was a common underlying factor. Olfactory hallucinations occur in two forms, one as a form of memory, the other a spontaneous experience. G. W. T. H. FLEMING.

Sudden "Exhaustive" Death in Excited Patients.

The author analysed 376 cases of sudden death in excited patients. The majority were young women with periods of intense excitement of some two weeks to a month duration. Autopsy revealed a constant general visceral and encephalic vascular congestion. The explanations advanced for the sudden inexplicable death have been :

Psychic and emotional tension ;
Vagal hypertonia ;
Sudden atony of the circulatory system ;
Severe toxæmia causing cardiovascular collapse.

The author does not consider any one of these enough, but thinks a combination of factors is to blame, i.e., exhaustion of the tissues by toxæmia, injury by toxæmia, and extreme hyperpyrexia to an already emotionally sensitized central nervous system, existing in a constitutional make-up with parasympathetic-sympathetic imbalance and a cardiovascular system unable to bear the strain of continued hyperactivity. G. W. T. H. FLEMING.

Pathological Changes in the Brain in Cases of Experimental Phosphorus Intoxication.

The authors carried out experiments on 15 rabbits, giving intravenous injections of 1% solution of yellow phosphorus in oil. Acute swelling of the microglia was characteristic, although encountered in only 25% of cases, general changes being present in 50%. These changes were—the cytoplasm appeared larger and more vacuolated, the nucleus enlarged, at times displaced. The dendrites appeared thick, with partial swelling, either at the bases or the extremities. Monster microglia cells were occasionally found. In acute swelling the microgliacyte was considerably enlarged and became more globoid. The cellular membrane and nucleus were strongly argentophil. At times the dendrites appeared shorter and plumper, as though distended by fluid; at other times areas of swelling alternated with areas of shrinkage, so that a rosary effect was produced.

G. W. T. H. FLEMING.

A Study of the Problem of Suicide.

The writer studied the clinical symptoms of a group of 17 successful and 34 unsuccessful suicides amongst the patients in a state hospital. Every case of unsuccessful suicide in manic-depressives or involutional melancholia had a history of insanity in the family, while this varied amongst the cases of dementia præcox. Amongst unsuccessful attempts the family history of insanity was not outstanding. In practically all cases there was found some defect of development and instability of mood, with obvious difficulty in sexual adjustment. Depression regarding finances, unemployment and disappointment in sexual and marital adjustment are merely a superficial expression of widespread, intrapsychic and frequently unconscious strife. Common findings were unresolved Œdipus and homosexual situations. All the cases of manic-depressive insanity showed frequent and marked expressions of somatic complaints. Delusions of grandeur were common, and were more marked in cases of dementia præcox and cerebral arterio-sclerosis. Some patients committed suicide in a state of elation, which indicates a loss of the usual inhibitions, resulting in material which had previously been repressed being allowed free expression. This was followed by increasingly severe condemnations by the superego.

The depressions of later life may result from conflicts which have been present in the individuals for a long time, and which produce psychotic symptoms with the increasing failure at adaptation and repression. There was a preponderance of males over females and of Roman Catholics over other religions. Most of the unsuccessful attempts occurred amongst women, and were not as a rule repeated.

G. W. T. H. FLEMING.

Schizophrenia in Children.

The author describes a group of 29 children admitted to the New York State Psychiatric Institute between 1930 and 1937.

Eighteen cases began before the age of seven. There were three types of onset, acute, insidious and insidious followed by an acute episode. One-third of the cases deteriorated rapidly.

Acute anxiety is regarded as a bad sign. Regression is expressed by a reversal to very primitive forms of behaviour. Paranoid tendencies are the least frequent, and are only observed in the oldest children. In 19 of the 29 cases the mother was aggressive, over-solicitous and over-anxious whilst the father was very unobtrusive. The children under the age of 7 were mostly boys (8 : 1). Twelve cases showed an anomaly of speech development which the author describes as dissociation between language sign and language function.

G. W. T. H. FLEMING.

The Startle Pattern in Epileptic Patients.

The writers carried out experiments on two groups of 50 and 78 epileptics using a .38 or a .22 calibre cartridge. About 20% showed either absent or incomplete eyelid reflexes following the startle stimulus. There was also present deterioration of the lid reflexes to a puff of air in the ear, the pricking of the nostril and the approach of an object to the eye. These disorders showed no relation to changes in the alpha rhythm of the electro-encephalogram. At least half of the epileptics failed to show any of the secondary reactions commonly associated with the startle response—fear, flight, curiosity, attention, laughter, annoyance, etc.

G. W. T. H. FLEMING.

1. Psychology and Psychopathology.*

The Psychology and Psychopathology of Self-awareness. (*Arch. Chil. de Criminol., vol. i*, 1937.) *Delgado, H.*

The author commences by a study of the genetic aspect of self-awareness; every spiritual act is a reality in that the ego participates in it; it is a personal experience even though the object may be the ego itself or the body or the outside world. The adolescent mentality perceives a social ego in relation to its surroundings; a personal ego, the character; and an immediate ego which gives unity to all the actions of the spiritual subject. In the child at first the ego is purely impersonal and develops gradually along the following lines: (*a*) the reiteration of impressions; (*b*) alternations of satisfaction or dissatisfaction of its desires; (*c*) imitation, especially of the parents; (*d*) volition; (*e*) self-criticism.

The phenomena of self-awareness may be summed up thus:

(1) Distinction between awareness of the self, and that of others or the exterior world.

(2) The conviction of a personal existence. It is not, as Descartes maintained, the consequence of the act of thinking, since under abnormal conditions there may be oblivion of one's own personality.

(3) The apperception of the relationship of the exterior world to corporal sensations.

(4) The intuition of the conservation of our self as it is.

(5) The sense of activity. Awareness of one's own activity as a concrete entity, especially with regard to acts of will.

(6) Awareness of autonomy. The ego is lord of its own domain.

(7) Intuition of personal unity.

(8) The intuition of continuity of the personal existence.

* A number of abstracts in sections 3–5 are reproduced from *Chemical Abstracts* by kind permission of Prof. Crane of Ohio University, to whom the Editors wish to express their thanks.

The author now proceeds to describe abnormal states of the ego in its relation to the exterior world and to other persons. He classifies these abnormalities thus :

(A) Lack of distinction between the ego and the exterior world, or that of others, which occurs in schizophrenia and cases of transition, and also in cases of paranoid schizophrenia.

(B) The belief in personal non-existence. The sensation of the patient who imagines himself to be dead and only existent as a phantom.

(C) Depersonalization. Awareness of one's own life as if it were that of another person. The case of psychasthenics and other types of auto-analysis and " derealization " (Mayer-Gross) and melancholics or those suffering from ideas of delusion.

Depersonalization has been classified by Haug :

Phenomena of depersonalization.
- (1) According to the form of—
  - (*a*) Seizures
    - Epilepsy.
    - Cerebral circulatory disturbances.
    - Schizophrenia and other abnormalities.
  - (*b*) States and periods in majority of cases.
- (2) According to the content of—
  - (*a*) Autopsychic.
  - (*b*) Somatopsychic.
  - (*c*) Allopsychic.
- (3) According to the agreeable or disagreeable quality.
- (4) According to the intensity of the depersonalization and according to the amount of self-awareness present.
- (5) Source of illness :
  - (*a*) Organic. Cerebral, or some psychosis.
  - (*b*) Functional (neurasthenic, psychasthenic, manic-depressive psychosis, epilepsy, hysteria).

(D) Transformation of the personality. Alterations of sentiment. The conviction of the possession of another personality, as in schizophrenic states.

(E) Loss of the feeling of activity and of the belief in free choice. This is found in the cases of morbid automatism and depression or what Gruhle calls " paralysm of the ego ".

(F) Belief in possession of the personality by other forces (hypnotism, spiritualism). In former times this was attributed to diabolic possession or sorcery.

(G) Duplication. Awareness of self and others at the same time. What Morton-Prince calls co-conscious personalities. Duplication with autoscopia. Multiple pseudo-personalities. Personifications or hallucinations described by Standmaier.

(H) Alternative personality, double or multiple. Described by W. S. Plumer and McDougall. The case of total amnesia of previous states. Y. Bezoari.

Architectural Fields of the Frontal Lobe and the Functions of Intelligence. [*Campos Architectonicos do Lobo Frontal e Funccoes da Intelligencia*]. (*Rev. de Neurol. e Psychiat. de São Paulo, vol. iii, p.* 131, *July–Sept.*, 1937.) *Silveira, Annibal.*

The author asks whether it is possible to localize anatomically the various functions of intelligence. The anatomo-clinical method is still the best for this procedure, but workers have arrived at very different conclusions. It seems to the author that the chief reason for this is that the significance of the afferent and efferent systems is not sufficiently taken into account. Confining his study to the structure of the frontal lobe he goes on to describe the distribution of the areas of Campbell, Brodmann, and of Economo and Koskinas in analysing the functional significance of the cellular striata and of several other areas. The author then proceeds to review research done on myelinization by Fleschig, and more particularly that of Vogt, which compares topographically with that of Brodmann. He quotes the work of Foerster on cortical stimulation and the electro-encephalographic

work of Kornmüller. The author considers that the conclusions of Anglade and Feuchtwanger, and particularly those of Kleist, furnish material for further consideration. He offers a personal opinion on the subject of Kleist's so-called " lack of initiative " (*Mangel an Antrieb*) and the " apraxia of co-ordinated action " (*Handlungsfolge*) and " alogical disturbances of thought ". He points out the remarkable relation between the objective localization of Kleist and that of Auguste Comte in 1850 using a subjective method. The author finally observes that amongst the patients at the Asylum Juquery (São Paulo, Brazil) he often finds the syndrome of the frontal lobe, either with or without neurological disturbances. In support of his thesis he believes it possible to distinguish the frontal symptoms caused by repercussion from parieto-temporal lesions from those that are primarily frontal. He briefly illustrates this fact with ten observations, and compares them with those of pneumo-encephalography respectively. Y. BEZOARI.

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2. Psychiatry.

The Disorders of Metabolism in Asthenia, and their Relations to the Clinical Picture and Treatment of Schizophrenia [*Die Stoffwechselstörungen bei der Asthenie und ihre Beziehungen zum Krankheitsbild und zur Behandlung der Schizophrenie*]. (*Klin. Wochenschr., vol. xvii*, 1938.) *Jahn, D.*

The author finds that some of the physical symptoms of asthenia resemble those found in schizophrenia. The changes in the blood resemble those produced by histidine or histamine. The special feature here is that the effects of histidine resemble alterations found in mild cases, whereas histamine causes changes comparable to those in severe cases of schizophrenia. As, however, these changes can be found in mentally normal patients and in epileptics, they cannot be regarded as the cause, or at least not the only cause of the mental symptoms. The beneficial effect of insulin treatment might be explained as making the patients more susceptible to adrenaline. Cardiazol is supposed to act by stimulating the vegetative centres. S. L. LAST.

Schizophrenia in Childhood [*Über die Schizophrenie im Kindesalter*]. (*Schweiz. Arch. f. Neur. und Psych., vols. xxxix and xl*, 1937.) *Lutz, I.*

This is a clinical study based on the author's 20 cases of undoubted schizophrenia in childhood. The symptoms appear very much like those found in adults, but are not as varied. Two main varieties are described. In the first group the onset is insidious and progress slow, resembling hebephrenia. In the second group the onset is rather sudden; deterioration occurs in more sharply defined attacks, the picture resembling catatonia. Truly paranoid psychoses have not been found in children. The differential diagnosis can be difficult, and great care must be taken to exclude organic causes. The attempt to treat one case with insulin was not successful. S. L. LAST.

Beri-beri in Alcohol Addicts. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 380, *July* 30, 1938.) *Jolliffe, N., and Goodhart, R.*

Types of cardiovascular dysfunction secondary to dietary deficiency are illustrated by four cases.

Disturbances of this nature are seen in approximately one-third of the alcohol addicts admitted to the Bellevue Hospital, New York, who also show peripheral neuritis. The clinical picture presented by these patients is comparable to that of the endemic beri-beri of the Orient. The cardiovascular disturbances probably represent manifestations of vitamin B_1 deficiency. T. E. BURROWS.

Anorexia Nervosa. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 1085, *Sept.* 17, 1938.) *Farquharson, R. F., and Heyland, H. H.*

The authors report eight cases presenting the typical syndrome of emaciation, amenorrhœa, low basal metabolic rate, low blood-pressure and often rather low fasting blood-sugar values with a flat sugar-tolerance curve. Although the syndrome bears a superficial resemblance to that of Simmonds's disease it is actually quite distinct.

This syndrome develops as a result of an underlying mental conflict and appears usually in the unstable period of adolescence, most commonly in intelligent girls whose emotional constitution and autonomic nervous control are unstable. These patients respond well to proper psychotherapy.

If the co-operation of the patient and family can be obtained, cures should be effected for all patients placed in a suitable environment, with the exception of those who have serious mental disease. T. E. BURROWS.

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3. Neurology.

Narcolepsy (*A Report of* 62 *Cases*). (*Clin. Med. Surg., vol. xlv, pp.* 318–19, 1938.) *Gorrell, R. L.*

In a series of narcolepsy patients, benzedrine sulphate (I) gave relief to 15, none to 2; caffeine and strychnine gave no relief to 1; ephedrine sulphate (II) gave relief to 3, none to 1; thyroid extract gave no relief to 5. A ketogenic fluid-restricted diet gave no relief to 1; and spontaneous improvement was noted in 5. I is better tolerated by narcoleptics than by normal individuals; e.g., 1 narcoleptic has taken 80 mgrm. daily for two years with no ill-effects. Although II is effective in about 75% of narcolepsy cases, tolerance is quickly established and increasing doses are needed. At present, Gorrell is trying to decrease the dosage of I gradually in narcolepsy patients, on the theory that narcolepsy is a habit which may be broken by the aid of I. MARION HORN (Chem. Abstr.).

Meningo-Encephalitis in Mumps. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 17, *July* 2, 1938.) *Finkelstein, H.*

The author reports 16 cases of mumps, and shows that the incidence of meningo-encephalitis in this disease is not as unusual as it was formerly thought to be. Of these 16 cases, 4 had severe clinical signs and symptoms of involvement of the central nervous system lasting several days; 6 cases showed mild symptoms, such as headache, listlessness and anorexia. The remaining 6 cases showed no symptoms of involvement of the central nervous system. However, examination of the spinal fluid showed an increased cell-count in every case and a raised protein content. T. E. BURROWS.

Follow-up Studies of the 1933 *St. Louis Epidemic of Encephalitis.* (*Journ. Amer. Med. Assoc., vol. cxi, p.* 15, *July* 2, 1938.) *Bledeck, J. F., et al.*

A re-study of patients in the St. Louis area who suffered an attack of encephalitis in the summer of 1933 shows complete recovery of 66%, but only 6·3% are physically unable to resume their previous occupations. Severe Parkinsonism so far has been quite uncommon. Mild subjective nervous complaints are the most common sequelæ, particularly headaches, nervous irritability, loss of memory and drowsiness. T. E. BURROWS.

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4. Pathology and Biochemistry.

Ascorbic Acid in Cerebro-spinal Fluid. (*Journ. Clin. Invest., vol. xvii, pp.* 169–72, 1938.) *Pijoan, M., Alexander, L., and Wilson, A.*

The rate of reduction of 2, 6-dichlorophenolindophenol by ascorbic acid is much more rapid than reductions by SH compounds, such as cysteine. This fact is taken advantage of in a new photo-electric method for the detection of ascorbic acid in cerebro-spinal fluid, in which the interference of SH groups is important. The ascorbic acid content of cerebro-spinal fluid is the same as that of plasma. J. B. Brown (Chem. Abstr.).

Vitamin C Content of Human Non-scorbutic Cerebro-spinal Fluids. (*Proc. Soc. Exptl. Biol. Med., vol. xxxviii, pp.* 164–6, 1938.) *Jetter, W. W., and Bumbalo, T. S.*

In 50 ambulatory patients on a diet adequate in vitamin C, the ascorbic acid content of the cerebro-spinal fluid varied from 0·7 mgrm.%, to 2·1 mgrm.% with a median of 1·2 mgrm.%. C. V. Bailey (Chem. Abstr.).

The Cerebro-spinal Fluid of Children, with Particular Reference to the Influence of Glycolytic Enzymes. (*Arch. Kinderheilk., vol. cxiii, pp.* 223–7, 1938.) *Rimele, Bruno.*

If the cerebro-spinal fluid is sterile there is no decomposition of sugar, indicating that there is no glycolytic enzyme present. Cellular increase has no influence on the decrease of the spinal-fluid sugar.

Eleanor M. Humphreys (Chem. Abstr.).

Relations Between the Blood-Brain Barrier, Composition of Cerebro-spinal Fluid and Functional State of the Central Nervous System. (*Bull. biol. méd. exptl. U.R.S.S., vol. i, pp.* 412–14, 1936; *Physiol. Abstracts, vol. xxii, pp.* 971–2.) *Shtern, L. S.*

A brief review of the work of the author and his colleagues. The cerebro-spinal fluid is considered to play a dominant role in humoral co-ordination of the activities of different parts of the central nervous system. M. W. B. (Chem. Abstr.).

The Diagnostic Utility of the Determination of Trytophan in the Cerebro-spinal Fluid. (*Klin. Wochenschr., vol. xvii, pp.* 982–3, 1938.) *Mezey, K., and Kraus, M.*

To 1 c.c. of fluid add 3 c.c. of concentrated HCl and 3 drops of Ehrlich's -dimethylaminobenzaldehyde reagent. After 24 hours compare the blue colour with a standard prepared from a solution containing 2 mgrm.% of tryptophan in HCl. The test is not specific for tuberculous meningitis or neurosyphilis, but in the latter case it is of diagnostic aid in establishing the presence and degree of the destructive processes in the nerve parenchyma. H. L. Mason (Chem. Abstr.).

Significance of Ammonia in Cerebro-spinal Fluid. (*Z. Kinderheilk., vol. lix, pp.* 446–61, 1938.) *Brühl, Heinz H.*

Ammonia is a product of brain tissue metabolism, but is not detectable in normal cerebro-spinal fluid. It is present, often in considerable amounts, in conditions of hyperirritability of the brain. In conditions affecting the brain-stem the amount is between 0 and 90 $\pm$ 10γ %. In increased irritability of the cerebral hemispheres, and especially in states characterized by convulsions, the NH_3 values are higher and may be as much as 450γ %. Thus determination of the NH_3 concentration may aid in localizing brain lesions, and serves as an indicator of cerebral irritability. The distribution method employed is described.

E. M. Humphreys (Chem. Abstr.).

Use of Cerebro-spinal Fluid and Synthetic Salt Solutions in Studies of Tissue Metabolism. (*Proc. Soc. Exptl. Med., vol. xxxvii, pp.* 268–71, 1937.) *Alexander, Benjamin, and Hastings, A. Baird.*

The metabolism of rat liver in the synthetic medium was not significantly different from that in cerebro-spinal fluid, when care was taken to make the composition of the medium approximately equal to that of the cerebro-spinal fluid.
C. V. BAILEY (Chem. Abstr.).

The Central Nervous Regulation of the Blood. (*Arch. intern. Pharmacodynamie. vol. lviii, pp.* 432–6, 1938.) *Paschkis, Karl, and Martos, Kathe.*

The injection of the bacterial protein "pyrifer" or nucleic acid into rabbits causes a leucocytosis which can be prevented by previous treatment with phenobarbital. Rabbits treated with phenobarbital showed a definite leucopenia after nucleic acid injections. M. L. C. BERNHEIM (Chem. Abstr.).

Carbohydrate Metabolism in Patients with Nervous Diseases Curable with Vitamin B_1. (*Preliminary Communication.*) (*Klin. Wochenschr., vol. xvii, pp.* 938–9, 1938.) *Molnár, Isltán, and Noszkó, Szilárd.*

In 9 out of 10 cases the glucose-tolerance curve was much flatter than normal and remained so in five cases after favourable response to treatment with vitamin B_1 for 15 days. The fasting values for blood-sugar were normal, as were the time relations of the tolerance curve. H. L. MASON (Chem. Abstr.).

Sensory Neuron Degeneration in Vitamin Deficiency. Degeneration of the Posterior Columns of the Spinal Cord, Peripheral Nerves and Dorsal Root Ganglion Cells in Young Pigs Fed a Diet Containing Thiamin (B_1) and Riboflavin, but otherwise Deficient in Vitamin B Complex. (*Journ. Exptl. Med., vol. lxviii, pp.* 207–20, 1938.) *Wintrobe, Maxwell M., Mitchell, David M., and Kolb, Lawrence C.*

Young pigs were given an artificial diet presumably adequate in all respects. As they developed, the quantity of yeast was gradually reduced, while thiamin (vitamin B_1) and riboflavin were given instead. The rate of growth decreased, the general condition of the animals became impaired, and marked ataxia without motor weakness developed. Histologically, severe degeneration of the posterior columns of the spinal cord, the dorsal root ganglion cells and the peripheral nerves was found. C. J. WEST (Chem. Abstr.).

Effect of Certain Nutritional Deficiencies on Various Phosphorus-containing Fractions of the Chick Brain. (*Proc. Soc. Exptl. Biol. Med., vol. xxxvii, pp.* 553–6, 1937.) *Engel, R. W., and Phillips, Paul H.*

Certain nutritional deficiencies, among them the lack of the encephalomalacia factor, vitamin A, or B_4, cause a disturbance of normal phosphorus metabolism in the brain of the chick. C. V. BAILEY (Chem. Abstr.).

Humoral Transmission of Nerve Impulses at Central Synapses. I. Sinus and Vagus Afferent Nerves. (*Chinese Journ. Physiol., vol. xii, pp.* 1–36, 1937.) *Chang, H. C., Chia, K. F., Hse, C. H., and Lim, R. K. S.*

Central vagus or sinus stimulation causes liberation, at synapses in the brain, of acetylcholine, which then stimulates the secretion of adrenaline. Another pressor substance may also be produced. Central stimulation of the sympathetic similarly liberates sympathin. B. C. P. A. (Chem. Abstr.).

Action of Iodoacetic Acid and Lactates on Nerve. (*Trans. Physiol. Inst. Leningrad, vol. xvii, pp.* 124–5, 1936.) *Zhukov, E. K.*

Frog nerve, after its conductivity has been abolished by CH_2ICO_2H, does not recover for several hours. Poisoning develops before loss of activity, for if the nerve is placed in Ringer solution at the first sign of decreased conductivity the progressive development of nonconductivity is not prevented. Na lactate restores excitability and conductivity in poisoned nerve, but only if O_2 is present.

B. C. P. A. (Chem. Abstr.).

Hyperthermia of the Central Nervous System and the External Secretion of the Pancreas. (*Compt. rend. soc. biol., vol. cxxvii, pp.* 1453–4, 1938.) *La Barre, J., and Echague, E. S.*

In dogs transcerebral diathermy decreased the secretory response of the pancreas to intravenous injections of secretin. This effect was not observed after thoracic section of the vagi.

L. E. Gilson (Chem. Abstr.).

Localized Thermal Changes in the Cat Brain. (*Journ. Neurophysiol., vol. i, pp.* 115–24, 1938.) *Serota, H. M., and Gerard, R. W.*

The temperature of the cat and dog brain (relative to that of the blood) as measured by a thermocouple was decreased by intraperitoneal nembutal anæsthesia (35 mg./kg., or 25 mg./kg. supplemented by ether), and increased by metrazole. Under optic, somesthetic or olfactory stimulation, localized increases were noted in the temperature of the visual, cutaneous or olfactory systems of the brain respectively. These temperature changes are attributed in part to the extra heat produced by the active neurons, and in part to local vasodilatation induced by metabolic products of the active neurons.

Marion Horn (Chem. Abstr.).

Facilitation of Reflex Action in the Spinal Cat Following Asphyxia of the Cord from Cyanide and Increased Intraspinal Pressure. (*Journ. Neurophysiol., vol. i, pp.* 166–75, 1938.) *Porter, E. L., Blair, R. K., and Bohmfalk, S. W.*

Reflex action in the spinal cat was facilitated by rapid injection of 0·1% NaCN into the external jugular vein. The minimum effective dosage was 0·05 mg./kg. Similar results were obtained with asphyxia produced by increased intraspinal pressure.

Marion Horn (Chem. Abstr.).

Functional Activity and pH of the Cerebral Cortex. (*Journ. Cellular Comp. Physiol., vol. x, pp.* 277–89, 1937.) *Dusser de Barenne, J. G., McCulloch, W. S., and Nims, L. F.*

The pH of the cerebral cortex with simultaneous electrocorticogram was determined in curarized monkeys (*Macaca mulatta*) under dial or ether anæsthesia by a method previously published (*Proc. Soc. Exptl. Biol. Med.*, vol. xxxvi, p. 462, 1937). Hyperventilation or intravenous injection of sodium bicarbonate resulted in a marked "alkaline" shift of the cortex, with increased electrical activity and excitability in the curarized animal under artificial respiration. Hypoventilation or intravenous injection of diluted HCl produced the reverse effects. After-discharge in the cerebral cortex resulted in a decreased pH at the site of the after-discharge, whether this was induced electrically by direct electrical stimulation of the focus or neurally by a disturbance propagated from a distance.

Ruth Berggren (Chem. Abstr.).

Study of Mechanism and Diagnosis of Certain Intoxications of the Nervous System. (*Journ. Physiol. path. gén., vol. xxxv, pp.* 735–45, 1937; *cf. C. A.*, 31, 1881.) *Richard, A.*

In dogs poisoned with Pb tetraethyl, there is first a fall in the chronaxie of the biceps muscles followed by a rise before death. The chronaxie of antagonistic muscles becomes equal or often inverted. This inversion is prevented by section of the sciatic nerve. Epileptic crises occur when the cortical chronaxie becomes lowered. In human cases of As poisoning and in experimental dogs with As and Mn poisoning alteration in the chronaxie of antagonistic muscles occurs; this also results from cyanosis and intravenous injection of morphine and oxidimorphine. Application of the latter to the exposed cortex has little effect.

B. C. P. A. (Chem. Abstr.).

Quantitative Studies on a Case of Migraine. (*Amer. Journ. Digestive Diseases Nutrition, vol. v, pp.* 189–91, 1938.) *Fainer, Rivkah.*

A decrease of reducing blood sugar, residual N, uric acid and Ca was found at times between attacks. The sugar tolerance is increased. During attacks a marked drop of the blood sugar was noted. Allantoin appeared in the urine after severe attacks, and the blood-serum Ca was about 28·5% higher than at calm between attacks. EDWARD EAGLE (Chem. Abstr.).

The Reflexogenic Chemoreceptors of the Carotid Sinus and the Action Currents of the Phrenic Nerve. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 782–3, 1938; *cf. C. A.*, 32, 1311.) *Verdonck, A.*

The injection of small doses of KCN or Na_2S in the rabbit increased the frequency and amplitude of the oscillations of the inspiration groups of the oscillogram of the phrenic nerve. L. E. GILSON. (Chem. Abstr.).

Lability of the Antiblastic Substances of the Brain. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 806–9, 1938.) *Maisin, J., Pourbaix, Y., and Camerman, J.*

Hog brains were dried at low temperature within 5 hours after slaughtering, extracted with Et_2O, and the concentrated Et_2O extract mixed with several volumes Me_2CO to precipitate the antiblastic substances together with other compounds. In mice treated with benzopyrene the incidence of cancer was 44% in the group fed 100 mgrm. of the precipitate per day, 61% in the group fed 400 mgrm. of the whole dried brain per day, and 85% in the control group. Other lots of material prepared from brain which was allowed to stand several days before drying and extracting had little or no antiblastic action.

L. E. GILSON (Chem. Abstr.).

Relations Between Metabolism of the Brain and State of Hæmato-Encephalic Barrier. II. Metabolism of Brain and Hæmato-encephalic Barrier During Depression of Central Nervous System. (*Bull. biol. méd. exptl. U.R.S.S., vol. i, pp.* 368–70, 1936.) *Kassil, G. N., and Plotitsina, T. G.*

A study of the brain's exchanges of various substances during narcosis under various narcotic agents. There is increased elimination of sugar, inorganic phosphorus and Ca and retention of K. The behaviour of K and Ca varied under different narcotics. The cerebro-spinal fluid showed changes that were not so well marked as the metabolism of the brain.

III. Metabolism of Brain and Hæmato-encephalic Barrier during Excitation of Central Nervous System. (*Ibid., pp.* 415–17.) The afferent and efferent blood and the cerebro-spinal fluid were analysed after stimulating the brain by intraventricular injection of strychnine or by electrical currents. Details are given of the changes in sugar, inorganic P, K and Ca. The metabolism of the

brain during excitation is quite different from that during depression, while the composition of the cerebro-spinal fluid varies less during excitation than during depression. M. W. B. (Chem. Abstr.).

The Influence of Faradic Stimulation of the Brain upon the Excitability of a Muscle Devoid of Nerve Connections with the Centres. (*Bull. biol. méd. exptl. U.R.S.S., vol. i, pp.* 424–25, 1936; *Physiol. Abstracts, vol. xxii, p.* 910.) *Versilova, O. V., and Magnitskiĭ, A. N.*

Faradic stimulation of the brain in cats induces a change of chronaxie in the denervated gastrocnemius, usually an increase, while the rheobase is hardly affected. It is concluded that faradic stimulation leads to the formation of chemical substances, which pass into the blood-stream and influence the functional lability of the muscle. M. W. B. (Chem. Abstr.).

Influence of Brain Metabolites on pH and Eh of Blood of Hepatic and Portal Veins. (*Bull. biol. méd. exptl. U.R.S.S., vol. i, pp.* 168–9, 1936; *Physiol. Abstracts, vol. xxii, p.* 810.) *Utevskaya, L. B.*

Efferent blood from the brain was injected into the portal vein. With the brain in a state of rest, excitation or depression, both the pH and Eh of the blood in the portal and hepatic veins fell. M. W. B. (Chem. Abstr.).

Diffusion into Glycerol of a Neurotoxic Substance Formed after Death by the Cerebral Tissue of Healthy Animals. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 19–22, 1938.) *Millischer, P.*

The brains of healthy animals form, after death, a toxin which produces paralysis similar to that sometimes observed in animals given antirabies treatment with rabbit brain preparations. If the brain is immersed in glycerol the toxin slowly diffuses out and nearly all of it is found in the glycerol after about four months. L. E. Gilson (Chem. Abstr.).

The Influence of Hypoglycæmia on the Sensitivity of the Central Nervous System to Oxygen Want. (*Journ. Neurophysiol., vol. i, pp.* 301–12, 1938.) *Gellhorn, Ernst, Ingraham, R. C., and Moldavsky, L.*

The blood-pressure rise in dogs in response to a low O concentration (6·2%) in the inspired air, which was taken as a measure of the degree of O want in the central nervous system, was augmented by insulin (I). This augmentation varied directly with the hypoglycæmia produced by I. The effect of I was abolished by intravenous administration of glucose (II), or (to a lesser extent) fructose (III), but not galactose (IV). The phenomenon was not related to the ionic changes in the blood K, Ca or H. Inhalation of 6·2% O induced Cheyne-Stokes breathing in some cases when the blood sugar was low, but not when the blood-sugar level was restored by injection of II, III or IV. The increased blood-pressure response to low O concentration observed in hypoglycæmia was greater than the blood-pressure rise obtained on inhalation of pure N at normal blood-sugar levels. This is due to the fact that hypoglycæmia, in contrast to N-inhalation, reduces the rate of oxidation in the brain more than in any other tissues.

Marion Horn (Chem. Abstr.).

Hæmoglobin Metabolism During Febrile Episodes of Schizophrenic Psychoses. (*Klin. Wochenschr., vol. xvii, pp.* 911–14, 1938.) *Scheid, K. F.*

Just before the psychotic episode there is an erythrocytosis with low colour index and small cells. Several days later the colour index is 1·0 or even higher and the erythrocytes are of normal size. The osmotic resistance, which is normal before the attack, increases during the episode, the blood bilirubin is increased

somewhat and there is increased urinary excretion of coproporphyrin I. The relation of urobilinogen excretion to hæmoglobin is abnormal, although the relation of the urinary to fæcal urobilinogen is normal. The evidence indicates a marked hæmolysis during the febrile episodes. H. L. MASON (Chem. Abstr.)

Choline Esterase Activity of some Rat Muscles after Destruction of the Cerebellum. (*Klin. Wochenschr., vol. xvii, p.* 889, 1938; *cf. C. A.* 32, 4183.) *Martini, Emilio, and Torda, Clara.*

The gastrocnemius muscle has a lower activity, 88–91, than the tibialis anterior, 150; the biceps, 169, less than the extensor communis digitorum, 263. The activity is expressed in terms of cu. mm. of CO_2 liberated in 1 hour by 100 grm. of muscle; 1 cu. mm. $CO_2 = 7{\cdot}1\gamma$ of acetylcholine cleaved. After destruction of the cerebellum the activity of the tibialis anterior fell to that of the gastrocnemius, and the activity of the extensor communis digitorum fell to that of the biceps. The effect is not due to trauma. H. L. MASON (Chem. Abstr.).

The Acetylcholine Content of the Nerves of Warm-blooded Animals. (*Journ. Physiol., vol. xciii, p.* 34, 1938.) *Loewi, O., and Hellauer, H.*

Acetylcholine is present in all efferent nerves. Preganglionic fibres contain about six times as much as postganglionic fibres. Purely sensory nerves and purely sensory nerve-fibres do not contain even traces of acetylcholine.
E. D. WALTER (Chem. Abstr.).

The Occurrence of Acetylcholine in Gastric Juice. (*Amer. Journ. Physiol., vol. cxxii, pp.* 631–8, 1938.) *Block, Ernst, and Necheles, H.*

Human and canine gastric juice does not destroy acetylcholine. Neither gastric juice nor saliva contains acetylcholine esterase. Gastric juice constantly contains small amounts of acetylcholine, and also a second substance which lowers the blood-pressure after atropine and contracts the isolated strip of intestine. It is either identical with or closely related to Euler's and Gaddum's substance P. Gastric juice contains a toxic substance which relaxes the isolated strip of intestine and renders it irresponsive to acetylcholine and histamine. This substance also depresses or abolishes the response of the leech to acetylcholine.
E. D. W. (Chem. Abstr.).

Distribution of Cholinesterase in the Human Brain. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 24–6, 1938.) *Nachmansohn, D.*

Values are given as mgrm. acetylcholine hydrolysed by 100 mgrm. tissue in 60 minutes at 37°; occipital cortex 1·2, parietal cortex 1·3, caudate nucleus 30, putamen 46, thalamus 2·7, anterior quadrigemina 5·9, posterior quadrigemina 3·1 and cerebellum 8·2. L. E. GILSON (Chem. Abstr.).

The Cholinesterase Content of Blood-serums from Normal and Myopathic Subjects. (*Australian Journ. Exptl. Biol. Med. Sci., vol. xvi, pp.* 39–51, 1938.) *Hicks, C. Stanton, and Mackay, M. E.*

The serums from cases of myasthenia gravis and familial periodic paralysis show higher and serums from cases of myotonia congenita show lower cholinesterase activity than do normal serums. A method of using the isolated rectus abdominis muscle of the frog to establish cholinesterase activity of serum within five seconds of mixing with substrate is described. Prostigmine (1 : 500,000) was found to be more stable and as efficacious as eserine in stopping the reaction between enzyme and substrate. Addition of quinine sulphate to myotonic serum *in vitro* showed no alteration of the rate of cholinesterolysis.
EDWARD EAGLE (Chem. Abstr.).

The Effect of Strychnine Stimulation on the Acetylcholine Content of the Central Nervous System and its Abolishment by Dial Narcosis. (*Klin. Wochenschr., vol. xvii, pp.* 667–8, 1938.) *Fegler, J., Kowarzyk, H., and Lelusz-Lachowicz, Z.*

Strychnine (0·15 mg./kg. intravenously) lowered the acetylcholine content of the central nervous system of rabbits, but not after dial narcosis unless large amounts (1·5 mg./kg. intravenously) were given.

H. L. MASON (Chem. Abstr.).

Chemical Topography of the Brain. (*Journ. Biol. Chem., vol. cxxiv, pp.* 481–8, 1938.) *Randall, Lowell O.*

The mean H_2O content in 23 brains was higher in the grey areas (the frontal cortex, parietal cortex and caudate nucleus) than the white areas (the corona radiata, frontal white and parietal white), while the brain stem and thalamus had intermediate values. The various lipides—total, and Me_2CO-soluble lipide, total and free cholesterol, phospholipide, phospholipide fat acid, lipoid P and lipide N—were higher in the white areas than in the grey and intermediate in the mixed areas. The iodine number of the phospholipide fat acids was higher in the grey than in the white tissues. The acid-soluble N, creatine, inorganic P, protein and total N were higher in the grey than in the white and intermediate in the mixed tissue. Only acid-soluble and ester P had a similar distribution over all the areas. No differentiation could be made in any of the constituents between the various grey areas or between the various white areas. Except in one instance (acid-soluble P) the variation of the constituents among individuals was much less than the variation among the areas. A. P. LOTHROP (Chem. Abstr.).

Lesions of the Nervous System in Experimental Alcoholic Intoxication. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 386–8, 1938.) *Lhermitte, J., de Ajuriaguerra and Garnier.*

Rabbits were given absinthe liquor equivalent to about 1 c.c. EtOH per day for 40–90 days. If the diet was deficient in vitamin B_1 lesions of the brain and spinal cord developed. The histological description is given. If sufficient vitamin B_1 was furnished the lesions were slight or did not occur.

L. E. GILSON (Chem. Abstr.).

The Role of the Nervous Component in the Development of Blood Dyscrasias. I. The Influence of Chemical Intoxication and of Trauma on the Central Nervous System. (*Arch. sci. biol.* [*U.S.S.R.*], *vol. xlv, No.* 1, *pp.* 133–49 [*in English, p.* 150].) *Mytnik, P. Ya.*

II. The State of the Blood in Relation to Sequence of Benzene Poisoning and Trauma to Nervous System. (*Ibid., No.* 2, *pp.* 103–21 [*in English, pp.* 121–2], 1937.)

Benzene poisoning (I) produces in animals a severe leucopenia and a less severe loss of red cells and hæmoglobin and also internal hæmorrhages. Trauma to the nervous system (II) produces marked leucocytosis and a slight increase in the red cells and hæmoglobin as well as internal hæmorrhages, trophic ulcers of extremities, etc. When the two types of injury were used alternately the following different results were observed. When I was followed by II the blood changes produced (in dogs and rabbits) were predominantly those of I. When II preceded I the blood changes were typical of II, i.e., a marked leucocytosis was observed. The role of the central nervous system in various pathological intoxications is discussed. W. A. PERLZWEIG (Chem. Abstr.).

The Role of the Nervous System in Anaphylaxis. (*Arch. sci. biol.* [*U.S.S.R.*], *vol. xlv, No.* 2, *pp.* 83–100 [*in English pp.* 100–2], 1937.) *Kanarevskaya, A. A.*

A neuro-dystrophic process was produced in dogs by the operative introduction of a glass marble in the region of the tuber cinereum. Such dogs show a markedly increased sensitivity and severity of anaphylactic reactions upon injections of horse-serum. In some of the operated dogs symptoms of anaphylactic shock were evoked by the injection of the first dose of foreign serum, thus showing that the neural injury can take the place of sensitization, and that anaphylaxis may involve trauma to the nervous system. W. A. PERLZWEIG (Chem. Abstr.).

Changes in Metabolism in Certain Cases of Emotional Stimulation. (*Arch. sci. biol.* [*U.S.S.R.*], *vol. xlv, No.* 3, *pp.* 119–26 [*in English, p.* 126], 1937.) *Mittelshtedt, A. A., and Novakovskaya, E. S.*

Studies are reported on 2 dogs and 2 men. The body weight, O_2 consumption, urinary volume, total N, and creatinine and creatine excretion were determined before and after emotional disturbances (sound effects for dogs, lectures and examinations for the men). Emotional stimulation was followed by loss of weight, increased O_2 consumption, loss of body protein and appearance of urinary creatine. The role of inhibitory factors in the nervous control of metabolism is discussed. W. A. PERLZWEIG (Chem. Abstr.).

The Chemical Activity of the Nerves. (*Tisia, vol. ii, pp.* 116–25, 1937.) *Polimanti, Osvaldo.*

Theories on the mechanism of nerve function are discussed. Experimental evidence is presented in favour of the supposition that nerve activity is connected with the development of chemical agents. If, e.g., the vagus or sympathetic nerve of a rabbit has been cut, the central nerve-endings immersed in Ringer solution and the nerves faradically excited for a considerable time, the solution seems to be specially activated, and causes vagus or sympathetic effects on hearts of *Testuda græca, Bufo* or *Emys* either *in situ* or suspended according to Engelmann. It is concluded that all nerves have secreting power, and even the mental activity of man is closely connected with similar biochemical and secretion processes. The vagus nerve produced in Ringer solution a chronotropic and an inotropic action on the heart; the sympathetic nerve had opposite effects. The active agents produced seem to be very unstable; their activity rapidly decreases after a time. The secretive agent is effective also within the organism of an animal of another family. If Ringer solution containing the unknown active substance was applied to the gastrocnemius of frogs which were previously fatigued and showed no reaction to stimulation, a new reaction could be induced. The activity of the nervous system as a whole is therefore to be considered purely chemical.

S. S. DE FINÁLY (Chem. Abstr.).

The Problem of Swelling of the Brain [*Das Problem der Hirnschwellung*]. (*Deutsche med. Wochenschr., p.* 1440, 1937.) *Riebeling, C.*

The author stresses the differences between œdema and swelling of the brain. He quotes the theory that swelling is nothing but an intracellular œdema, but disputes it, as in his investigations the dry substance appears to be increased; the author believes this to be due to a higher protein content. Treatment should therefore consist in giving water to such a patient. A case of schizophrenia is reported who was given a prolonged shock (? insulin), and then failed to rouse when the usual methods were used; the patient did, however, respond favourably to the administration of large quantities of water by mouth, rectum and intravenously. However, the patient died a week later and swelling of the brain was found at the post-mortem. S. L. LAST.

Experiments to Investigate the Intoxication Theory of Dementia Præcox, with Special Regard to the Use of Total Transfusions [*Untersuchungen zur Beleuchtung der Intoxicationstheorie bei der Dementia Præcox mit besonderer Berücksichtigung der Versuche mit Total-transfusionen*]. (*Zeitschr. f. d. ges. Neur. u. Psych., vol. clx, p.* 598, 1938.) *Reiter, P. I.*

The author used three methods to investigate the theory of the toxic origin of dementia præcox. Following the procedure of Gamper and Kral he injected mice with the cerebro-spinal fluid of dementia præcox patients. These results did not show any toxic effect. In the second series tissue culture was used. Osteoblasts were cultured in cerebro-spinal fluid of patients suffering from dementia præcox. No constant changes were found. In the third group of experiments the author tried to replace the patient's blood by normal blood. He argued that if one could make a blood-transfusion on so large a scale as to replace the greater part of the blood, any toxic substances in the blood would be reduced considerably. Blood from eight to nine donors was used per patient and up to 5500 c.c. were transfused in one session. This method was used on four patients, two of whom had a very good remission, one a certain improvement, and the fourth showed no change in his mental condition. The remission, however, did not last long, but the brief improvement can be regarded as being in favour of the hypothesis that dementia præcox is of toxic origin. S. L. LAST.

Poliomyelitis Virus in Human Stools. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 6, *July* 2, 1938.) *Trask, J. D., Vignec, A. J., and Paul, J. R.*

The authors report on an epidemic of eight clinical cases of poliomyelitis. In three of the cases the virus was obtained from the nasopharynx, and in one case from the stools. Identification of the virus was carried out by the production of the disease in monkeys.

The attacks in all cases which yielded the virus were mild and non-paralytic. It is probable that some of the attacks might not have been regarded as examples of poliomyelitis without this finding. The case in which the virus was obtained from the stools was ill for only 3 or 4 days, and yet the virus persisted in the fæces for at least 24 days. T. E. BURROWS.

The Significance of the Positive Kline Exclusion Test Unconfirmed by the Kolmer or Kahn Test. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 142, *July* 9, 1938.) *Myers, R. M., and Perry, C. A.*

The authors show that a negative Kline exclusion test may be accepted as proof of the absence of syphilitic infection, and that in definite instances a positive result unconfirmed by the Kolmer or the Kahn may be significant of syphilis.
T. E. BURROWS.

5. Pharmacology and Treatment.

Death Due to Insulin Shock Therapy in a Case of Schizophrenia (*Clinical and Pathological Description*) [*Todesfall infolge Insulinshockbehandlung bei einem Schizophrenen. Klinische und pathologisch-anatomische Beschreibung*]. (*Zeitschr. f. d. ges. Neur. u. Psych., vol. clx, p.* 444, 1937.) *Leppien, R., and Peters, G.*

This is a very interesting case of a male catatonic, aged 19, who died after a very short course of insulin shock treatment. The treatment was interrupted when he had generalized twitchings after having had 25 units of insulin. This was followed by sub-febrile temperatures and vomiting for a few days. Treatment was resumed, and on the evening of a day on which he had had 20 units of insulin followed by glucose he had twitchings on the right side of his body. They gradually

increased in spite of treatment with glucose, adrenaline and chloral hydrate. The blood sugar was 100 mgrm.% three days after the injection, when the convulsions spread to the left side. On the fourth day he developed flaccid paralysis and died in coma. At the post-mortem, general hyperæmia was very marked. There were diffuse changes in the ganglion cells, especially in the motor cortex, but also in other parts of the brain; in the same regions the glia was increased. There were some changes in Sommer's sector of the cornu ammonis and glia shrub-work (Spielmeyer) in the cerebellar cortex. The authors say that most of these changes are like those due to vascular lesions, especially those of the ganglion cells.

S. L. LAST.

Status Epilepticus Complicating Insulin Shock Therapy. (*Delaware State Med. Journ., vol. x, pp.* 85–7, 1938.) *Morrow, J. K.*

In a 28-year-old man undergoing insulin therapy for schizophrenia, a series of epileptiform convulsions occurred during the second phase of the treatment. The convulsions were unaffected by administration of glucose, but were eventually controlled by intravenous administration of phenobarbital sodium. Treatment with insulin was not resumed, as it was believed to constitute too great a risk to life. The patient showed definite mental improvement after the convulsions, and the improvement was maintained to the time of writing, seven months afterwards. The author attributes the convulsions in such cases to prolonged mild hypoglycæmia or to cerebral irritability produced in the coma, and suggests that they may be avoided by limiting the duration of shock, preventing prolonged hypoglycæmia, and raising the threshold of irritability (when convulsive signs have begun) by intravenous sedatives. MARION HORN (Chem. Abstr.).

Insulin Shock Therapy: A Case Showing Unusual Features. (*Delaware State Med. Journ., vol. x, pp.* 101–4, 1938.) *Morrow, J. K.*

A case of catatonic dementia præcox showing improvement, but not complete remission, under insulin therapy is reported. Early in treatment epileptiform seizures occurred, in one instance almost 24 hours after insulin administration. The improvement in mental state paralleled the occurrence of seizures, and stopped when the seizures no longer occurred. MARION HORN (Chem. Abstr.).

Insulin and Circulation. (*Zentralbl. inn. Med., vol. lvii, pp.* 761–70, 1936.) *Meyer, H. E.*

Electrocardiographic tests were made in the hypoglycæmic condition on ten healthy individuals and on ten individuals suffering from cardiomuscular disorders. The electro-cardiographic changes following the administration of insulin appear in essentially more pronounced degree in the individuals suffering from cardiac disorders than in the healthy group. The experiments indicate that the greatest care must be exercised in treatment with insulin in all diabetic patients suffering from heart disorders, especially those with coronary sclerosis, even though the patients do not complain of heart trouble. Clinical data are given.

M. G. MOORE (Chem. Abstr.).

Alterations of the Sugar Content of the Cerebro-spinal Fluid During Insulin Shock Treatment of Schizophrenia. (*Klin. Wochenschr., vol. xvii, pp.* 769–73, 1938.) *Dussik, K. T.*

The sugar content of the spinal fluid falls much more slowly than the blood sugar, reaching the lowest level during the deepest coma at about the time the blood sugar begins to rise. After the treatment, the increase of sugar in the spinal fluid lags behind the rise in the blood, but often goes above normal by the next day. H. L. MASON (Chem. Abstr.).

The Sugar of the Cerebro-spinal Fluid During the Treatment of Schizophrenia with Insulin Shock. (*Klin. Wochenschr., vol. xvii, pp.* 886–7, 1938.) *Fischer, Max.*

The sugar of the fluid decreases slowly to 33–65 during the first hour, then to 21–40 by the third hour, and to 11–45 mgrm. % shortly before the end of the coma. After administration of sugar it increases very slowly, often being 26–29 when the patient has returned to normal. There is no relation between coma and the concentration of sugar in the cerebro-spinal fluid. H. L. MASON (Chem. Abstr.).

Effect of Insulin Shock on Behaviour and Conditional Reflex Action in the Well-trained Sheep. (*Proc. Soc. Exptl. Biol. Med., vol. xxxviii, pp.* 635–5, 1938.) *Rose, J. A., Tainton-Pottberg, A., and Anderson, O. D.*

Insulin shock radically and perhaps permanently altered the behaviour of a sheep whose conditioned reflexes and general behaviour had been studied for 7 years. During the year preceding the test the conditioned motor reflex had gradually failed. Insulin convulsions were induced on 7 consecutive days. After 1 hour of severe convulsions glucose was given by mouth; within 1 hour the conditioned reflex reappeared with abnormal vigour and 2·5 months later the reflex was of greater magnitude than the average for the preceding 6 years.
C. V. BAILEY (Chem. Abstr.).

Hypoglycæmic "Shock" [*Der hypoglykämische "Schock"*]. (*Wien. klin. Wochenschr.*, 1938.) *Beiglböck, W.*

This paper gives a very useful summary of the physical fingings in hypoglycæmia. The author deprecates the use of the word "shock", which implies collapse. Regarding the effect on the heart, the author stresses the inversion of the T-wave. What the effect on the heart is due to is doubtful, but there seems to be an acute damage of the heart-muscle; at the same time more strain is put on the heart, as the output per beat is increased by 30% and the output per minute by 50%. The rate of blood-flow is also increased; this is probably a contributory cause of the pulmonary œdema, which should be treated by strophanthin, blood-letting and oxygen. The number of red cells increases considerably, which is explained by the loss of water. A short lasting leucopenia is followed by leucocytosis. The blood pH increases considerably. The ions in the blood change, K decreases, Ca very often rises, Na and Cl as a rule show an increase. All these changes are the very opposite of those found in serous inflammation and anaphylaxis. These latter reverse the normal permeability of the cell, and Beiglböck's hypothesis is that hypoglycæmia increases the normal "directed permeability" of the cell. S. L. LAST.

On Insulin Shock Treatment of Schizophrenia [*Zur Insulinshockbehandlung der Schizophrenie*]. (*Zeitschr. f. d. ges. Neur. u. Psych., vol. clx, p.* 35, 1938.) *Plattner, P., and Fröhlicher, E.*

The authors have treated 67 cases of schizophrenia at the Bale University hospital. Their results were: Of 16 recent cases (under 6 months' duration) 10 remitted (62%). Of 9 cases of 6–18 months' duration 1 (11%) had a remission. The 42 cases of longer standing were divided into an intermittent group of 15, of which 5 (33%) remitted, but of the remaining 27 chronics none remitted. A number of other points are discussed, and a new method of classifying the patients is attempted. The authors find that cases showing a tendency to psychogenic reactions responded well, whereas cases with definite manic-depressive colouring reacted less favourably than the average. S. L. LAST.

Glycosuria after Insulin Coma [*Glycosurie nach Insulincoma*]. (*Klin. Wochenschr., vol. xvii, p.* 207, 1938.) *Lups, S.*

The author found frequent glycosuria immediately after insulin shock treatment. If hypoglycæmia was interrupted a short time after the giving of insulin it was less likely to occur than if coma was made to last the usual time, and he therefore concludes that the glycosuria could not be simply an alimentary one, but assumes that a disturbance of the normal function of the liver is to blame.

S. L. LAST.

On the Most Common Mistakes in Convulsion Therapy [*Über die häufigsten Fehler bei der Konvulsionstherapie*]. (*Psychiat. Neur. Wochenschr.*, 1938.) *v. Meduna, L.*

The author insists on the importance of producing at least two convulsions per week. "Mental equivalents" must be regarded as harmful and should be avoided. If an injection has been unsuccessful it is followed within 1–2 minutes by a dose containing 0·1 grm. cardiazol more than the first one. If that is unsuccessful a still larger dose is given the next day. In Meduna's opinion this method reduces the number of "negative" injections. He has given up to 4·6 grm. per day without seeing any untoward effects. He stresses the importance of using a very soft gag in order to avoid damage to the teeth. He also reports that only a few of his patients fear the cardiazol injection, and none of them have exhibited the states of panicky fear described by some workers. The treatment should not be given in a single room, but in a dormitory, with the convulsing patient well screened off. The number of assistants and spectators should be reduced to a minimum. Examinations and talk should be avoided as far as possible. The whole procedure should be treated as a simple and an everyday occurrence. 20 to 25 convulsions are the minimum number to be given. After complete remission has been achieved the patient should be given at least three more convulsions. Psychotherapy is regarded as important. It takes the form of reassurance, explanation and guidance. When the symptoms begin to fade the physician begins to explain their abnormal nature until eventually complete insight is reached. Discussion of past symptoms is not avoided, but the patient is not reminded of symptoms which he has forgotten. A psychotherapeutic session is given after every fourth or fifth convulsion. S. L. LAST.

Cardiazol in Reactive Mental States [*Cardiazol bei reactiven psychischen Zuständen*]. (*Psychiat. Neur. Wochenschr., vol. xl, p.* 2, 1938.) *Bücken.*

The author has found cardiazol useful in cases of psychopathic reactions. Cases of hysteria and prison-psychoses seemed especially suitable.

S. L. LAST.

The Convulsive Treatment of Schizophrenia. (*Journ. S. Carolina Med. Assoc., vol. xxxiv, p.* 159, 1938.) *McLendon, Sol B.*

Results thus far with pentamethylenetretazole (metrazole) in 16 cases of schizophrenia have been gratifying. Early cases were selected, as prognosis is better in those cases in which the psychosis has not been present more than two years. MARION HORN (Chem. Abstr.).

Demonstration of Pentamethylenetetrazol in Urine and in Blood. (*Pharm. Weekblad., vol. lxxv, pp.* 386–8, 1938.) *Schulte, M. J.*

Treat 50 c.c. urine with 5 c.c. 20% solution $Pb(OAc)_2$, filter and saturate the filtrate with $(NH_4)\ SO_4$. Shake this saturated solution with 20, 10 and 10 c.c. $CHCl_3$, remove the $CHCl_3$, and treat the residue with CuCl (*cf. Chem. Abstr.*, vol.

xxix, p. 428). For the determination of pentamethylenetetrazol in blood, dilute 20 c.c. blood 5 times, heat to boiling, add 30 grm. $(NH_4)_2SO_4$ and a few drops diluted AcOH. Filter and treat the filtrate as described above.

FELIX SAUNDERS (Chem. Abstr.).

Effect of Cardiazol on Glycogen and Vitamin Metabolism. (*Zeitschr. ges. exptl. Med., vol. ciii, pp.* 775–81, 1938.) *Weigand, Hans.*

The drug does not affect glycogen storage or vitamin A or carotene concentration in the liver nor the reducing power of the adrenals nor the blood picture.

MILTON LEVY (Chem. Abstr.).

Intravenous Measurement of pH during Epileptic Seizures Produced Experimentally by Cardiazole. (*Zeitschr. ges. Neurol. Psychiat., vol. clx, pp.* 334–45, 1937.) *Selbach, H.*

Epileptic seizures were produced in 23 rabbits by intravenous injection of cardiazole. During the seizure the blood pH is measured intravenously by means of a "hemoinometer" (compensation potentiometer; construction described). Respiration and temperature are recorded simultaneously. During the short initial hyperpnœic phase the blood pH rises; during the "tonic" and "clonic" phase there is a sudden fall of pH (average 0·5). During the early stage of the fit a rapid, momentary constriction of the vessels (both arteries and veins) of the ear and of the eye fundus was observed. Only such doses of cardiazole which were sufficient to produce this vasoconstriction caused true epileptic seizures with the characteristic "tonic" phase at the beginning.

B. C. P. A. (Chem. Abstr.)

Action of Benzedrine Sulphate on the Nervous System. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 748–51, 1938.) *Meidinger, F.*

In the frog small doses increase the excitability of the medulla while larger doses cause paralysis. The sciatic nerve is rendered inexcitable by increase of the rheobase without change in chronaxia. A 5% solution has a local anæsthetic action on the cornea of the rabbit. 10 mgrm. injected intravenously in the rabbit increases cortical excitability by decreasing chronaxia. Benzedrine causes an increase in body temperature in the rabbit; this effect is antagonized by 2-(diethylaminomethyl)-1, 4-benzodioxane (F 883).

L. E. GILSON (Chem. Abstr.).

Action of Benzedrine Sulphate on Organs with Smooth Muscles. (*Compt. rend. soc. biol., vol. cxxviii, pp.* 487–91, 1938; *cf. Clin. Abstr.*, 32, 5067.) *Halpern, B. N.*

A 10^{-5} solution has little or no effect on rabbit intestine, but concentrations of 10^{-4}–10^{-3} usually cause a marked decrease in tone, and sometimes a decrease in the amplitude of the contractions. Benzedrine antagonizes the inhibiting action of adrenaline on intestine. It has no effect by itself on rabbit or guinea-pig uterus. It seems to act directly on the muscles and not through the sympathetic nerves. It causes the relaxation of isolated intestine, uterus or bladder in which a state of contraction has been produced by acetylcholine, pilocarpine, $BaCl_2$ or posterior hypophysis extract.

L. E. GILSON (Chem. Abstr.).

The Treatment of Some Nervous Disorders with Prostigmine. (*Med. Klin., vol. xxxiv, pp.* 474–6, 1938.) *Altschul, Rudolf.*

Prostigmine has been used with considerable success in the treatment of some neurological disorders. Its action in multiple scleroses and spastic paraplegia is obscure.

G. H. W. LUCAS (Chem. Abstr.).

Distribution of Diethylbarbituric Acid in the Brain. (*Arch. exptl. Path. Pharmakol., vol. clxxxvi, pp.* 449–50, 1937.) *Keeser, E.*

The distribution of administered diethylbarbituric acid in the brain of dogs is similar to that in rabbits, i.e., in thalamus and midbrain and not in cortex.
B. C. P. A. (Chem. Abstr.).

The Relation Between Bulbocapnine Poisoning and the Various Endocrine Glands. (*Folia Endocrinol. Japon., vol. xiii, p.* 31, 1937 [*in German*].) *Mochizuki, N.*

The resistance of mice to bulbocapnine was lowered by the administration of thyroid extract. It was raised after thyroidectomy or injection of interenin (adrenal cortex preparation). The adrenals increased in weight and histological changes occurred in the cortex after repeated injections of bulbocapnine into white rats. RUTH BERGGREN (Chem. Abstr.).

Bismuth in Cerebro-spinal Fluid after Administration of Iodobismitol. (*Arch. Dermatol. Syphilol., vol. xxxvii, pp.* 1003–7, 1938.) *Hanzlik, P. J.*

Confirmation of Bi in cerebro-spinal fluid of 10 patients receiving iodobismitol with saligenin was obtained spectrographically. Concentrations varied from 1 : 150,000 to 1 : 1,300,000, but there was no correlation with Bi dosage or with the disease condition. The estimations were made as follows: 15 drops of cerebro-spinal fluid was evaporated on cratered carbon electrodes. A spectograph of the arc was made and the ratio between Bi and C lines determined. These ratios were located on a standard curve based on similar tests with standard solutions of $Bi(OH)(NO_3)_2$. O. HARTLEY (Chem. Abstr.).

Influence of Various Convulsant Poisons on Tissue Respiration and Glycolysis of Brain. (*Fukuoka Acta Med., vol. xxxi, pp.* 13–14, 1938.) *Okumara, N.*

The effect of convulsants on tissue respiration and glycolysis of mouse brain was examined by Warburg's method. Cocaine, phenol and strychnine increased, picrotoxin had no effect, and insulin diminished tissue respiration.
B. C. P. A. (Chem. Abstr.).

Some Conditions of Alcoholic Narcosis. (*Arch. sci. biol.* [*U.S.S.R.*], *vol. xlv, No.* 2, *pp.* 59–68, 1937.) *Bobkov, I. P., and Astapov, N. A.*

Cerebro-spinal fluid was removed by suboccipital puncture from the animals; 25–30 minutes later 30% alcohol was given by stomach-tube, 4–6 c.c. pure alcohol per kgrm. body-weight for rabbits and 6–8 c.c. per kgrm. for dogs. After 7–10 minutes the " pumped " animals (those from which spinal fluid was taken) became drunk, rapidly passing into complete narcosis lasting 5–7 hours. In the control animals the state of intoxication was much less and complete narcosis was not observed. The authors assumed that the difference in effect was due to increased meningeal permeability in the experimental animals. That this involves a lowering of the H-ion concentration in the region of the brain was shown by the following. After the removal of the spinal fluid, animals were alkalinized and acidified by intravenous injection of 2·5% sodium bicarbonate and 0·37% HCl solutions respectively, and the alcohol was administered by stomach-tube immediately afterward. The acidified animals became drunk and passed into complete narcosis, while the alkalinized animals were affected very little or not at all. In cats the removal of spinal fluid had the opposite effect upon alcohol intoxication and narcosis from that observed in dogs and rabbits, but the superimposition of the acid and alkali produced the same effect upon the development of intoxication and narcosis as in the other species. W. A. PERLZWEIG (Chem. Abstr.).

Action of Hordenine Compounds on the Central Nervous System. (*Journ. Physiol., vol. xcii, pp.* 422–38, 1938.) *Schweitzer, A., and Wright, Samson.*

Dimethylcarbamic ester of hordenine-HCl and dimethylcarbamic ester of hordenine methiodide have similar cholinesterase action *in vitro*, and similar actions on the response of muscle to motor-nerve stimulation. Hordenine-HCl increases muscle tone and the knee-jerk, and produces convulsions, mainly by a stimulating action on the spinal cord. Its action is qualitatively identical with that of eserine, but quantitatively it is 50–100 times more feeble. Hordenine methiodide and dimethylcarbamic ester of methyl hordenine methylsulphate depress the spinal cord and diminish or abolish the knee-jerk. Hordenine-HCl is a central depressant. Removal of the anti-cholinesterase grouping from hordenine-HCl thus abolishes its central convulsant action. Hordenine-MeI is a central depressant, about 50–100 times more potent than hordenine methiodide.

E. D. WALTER (Chem. Abstr.).

The Influence of Nembutal, Pentothal, Seconal, Amytal, Phenobarbital and Chloroform on Blood-sugar Concentration and Carbohydrate Mobilization. (*Amer. Journ. Physiol., vol. cxxii, pp.* 759–64, 1938.) *Hrubetz, M. Caroline, and Blackberg, S. N.*

Some effects of various barbiturates on carbohydrate metabolism in rabbits are presented. Nembutal and amytal produce no change in the mean blood-sugar levels at the time of deep anæsthesia; phenobarbital causes none in the first hour; pentothal and seconal bring about a rise in the first hour. All produce a fall in the blood-sugar level at the time of recovery from anæsthesia. All of the drugs studied cause a depression of the glycogenolytic power of the liver as shown by the relatively small effect of adrenaline on the blood sugar. The depression is probably not specific for the barbiturates, but may be the result of any liver damage, since $CHCl_3$ also causes the same depression.

E. D. WALTER (Chem. Abstr.).

The Action of Eserine or Prostigmine on the Superior Cervical Ganglion. (*Amer. Journ. Physiol., vol. cxxii, pp.* 708–21, 1938.) *Rosenbleuth, A., and Simeone, F. A.*

The results of a study of the influence of eserine or prostigmine on the superior cervical ganglion in cats are discussed with reference to their bearing on the theory of chemical mediation of the preganglionic nerve impulses by acetylcholine. The drugs slow the rate of decline of the mediator of the nerve impulses. This supports the chemical theory. E. D. W. (Chem. Abstr.).

Strychnine and the Acetylcholine Contraction of Striated Muscle. (*Compt. rend. soc. biol., vol. cxxvii, pp.* 1459–61, 1938.) *Bolly, M. H., and Bacq, Z. M.*

The action of acetylcholine on striated frog and cat muscles is abolished by concentrations of strychnine too low to inhibit the transmisson of nerve impulses. In this respect strychnine acts like curare. L. E. GILSON (Chem. Abstr.).

The Depressor Effect of Choline Substances and Histamine. (*Arch. Exptl. Path. Pharmakol., vol. clxxxv, pp.* 368–78, 1937.) *Sturm, A., and Dauter, H.*

Tonosphygmographic observations on human subjects yielded the following results: Intramuscular injection of 0·1 grm. acetylcholine in 15 cases caused a fall in blood-pressure noticeable even after 2 hours. Doryl (carbaminoylcholine chloride) injected subcutaneously (0·00025 grm.) in 15 experiments caused a marked vasodilatation, with a secondary fall in blood-pressure lasting 1–2 hours. The therapeutic effect of doryl is related to the capability of the vascular system to undergo tonus changes. In 16 experiments histamine caused a dilatation of

arteries and arterioles, which occasionally can be so unchecked as to cause an initial rise in blood-pressure (owing to damming of blood and increased tone on the venous system) before the depressor effect occurs.

EDWARD EAGLE (Chem. Abstr.).

Action of Narcotics, Antipyretics and Analeptics on Normal and Decerebrated Pigeons. (*Arch. exptl. Path. Pharmakol., vol. clxxxv, pp.* 95–101, 1937.) *Winiwarter, Friedrich.*

In normal pigeons the minimal sleep-producing and placing-reflex paralysing doses for paraldehyde, chloral hydrate, Na barbital and Na phenobarbital are 0·1 and 0·12, 0·04 and 0·06, 0·03 and 0·035, 0·012 and 0·02 and 0·004 and 0·006. In decerebrated pigeons the corresponding doses are 0·06 and 0·11, 0·02 and 0·04, 0·025 and 0·03, 0·012 and 0·016 and 0·002 and 0·006. The antipyretics, quinine, antipyrine and Na salicylate, do not cause sleep, but in large doses cause reflex disturbances. The behaviour of normal and decerebrated pigeons following soporifics, antipyretics and morphine indicates that disorders of placing-reflexes bear no direct relationship to soporific action.

EDWARD EAGLE (Chem. Abstr.).

The Action of Strophanthin on the Central Nervous System. (*Arch. exptl. Path. Pharmakol., vol. clxxxv, pp.* 42–56, 1937.) *Korth, C., Marx, H., and Weinberg, S.*

Strophanthin injected into the cerebral ventricles of unanæsthetized dogs exerts a marked stimulating action, particularly its characteristic effect on the cardiac nerves. Twenty γ was the smallest effective dose; 200γ proved fatal. Larger doses (even to 1·5 mgrm.) injected intravenously showed no effect. The effect of strophanthin can be abolished by intravenous injection of barbital. Strophanthin exerts a specific action on the central nervous system control of cardiac activity. EDWARD EAGLE (Chem. Abstr.).

Fundamental Effects of Anæsthetics and Hypnotics on the Central Nervous System. (*Arch. intern. pharmacodynamie, vol. lviii, pp.* 419–31, 1938.) *Spiegel, Ernest A., and Spiegel-Adolf, M.*

By measuring the " polarization index ", and thus indirectly cell permeability, it was found that ether, $CHCl_3$, chloral hydrate, the barbiturates and dial increase the density of the surface films in the mammalian brain *in vivo*. Asphyxia from the anæsthetic results in a diminished " polarization index ". Differences in conductivity in artificial biocolloid membranes could be obtained only with those containing lipoids in fine dispersion. M. L. C. BERNHEIM (Chem. Abstr.).

The Action of Various Members of the Morphine Series and Emetine on the Choline Esterase of the Brain. (*Arch. intern. pharmacodynamie, vol. lviii, pp.* 88–92, 1938.) *Kuhn, Harold H., and Surles, Doris.*

The inhibition of the choline esterase of the brain by drugs of the morphine series and emetine was shown to run approximately parallel to their emetic action.

M. L. C. BERNHEIM (Chem. Abstr.).

The Treatment of Syphilitic Primary Optic Atrophy. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 385, *July* 30, 1938.) *Moore, J. E., et al.*

Untreated primary optic atrophy always becomes bilateral, and leads to permanent and complete blindness in practically every instance within seven years after the onset of symptoms. Adequate routine antisyphilitic therapy seems to delay the development of blindness to some extent and permanently to arrest the atrophic

process in an occasional case. Subdural treatment by the Swift-Ellis technique brings about permanent arrest of optic atrophy in about 50% of cases, but carries a risk of sudden extinction of vision in about 10%. The observation periods in arrested cases range from two to twenty years. Malaria therapy brings about permanent arrest of optic atrophy even more frequently—85% in the authors' 26 cases—and for observation periods ranging from one to nine years. If treatment is begun while optic atrophy is unilateral, involvement of the normal eye may be prevented in 70% of cases. T. E. BURROWS.

Jaundice from Bismuth Compounds used in the Therapy of Syphilis. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 19, *July* 2, 1938.) *Nomland, R., Skolnik, E. A., and McLellan, L. L.*

Seventy-five cases in which jaundice occurred during therapy for syphilis were studied. In 32 the cause was thought to be a bismuth compound. In these 32 the jaundice began within six weeks after the last treatment. Ten of the patients had had only the bismuth compound. Twenty-two had had neoarsphenamine, but none within twelve weeks of the onset of the jaundice; in 15 cases more than fifteen weeks had elapsed since the last treatment with arsenic. All the patients with bismuth jaundice recovered, and most of them were subsequently given a bismuth compound without its causing harm. In 6 of the 32 the jaundice persisted for six weeks or more. T. E. BURROWS.

Complications Following the Use of Ergotamine Tartrate. (*Journ. Amer. Med. Assoc., vol. cxi, p.* 293, *July* 23, 1938.) *von Storch, T. J. C.*

Accessory symptoms associated with ergotamine tartrate therapy occur most frequently after its intravenous injection, less so after subcutaneous or intramuscular injection and infrequently after oral administration. The most commonly observed symptoms are in order of frequency—nausea, vomiting, numbness or tingling of the hands or feet, muscle pains, stiffness and fatigue. Other infrequent symptoms include choking sensations, insomnia, restlessness, substernal oppression, precordial, femoral or brachial pain.

These symptoms may be evidence of impending ergotism, which must be excluded before the treatment is resumed. Ergotism resulting from ergotamine tartrate is usually of the " convulsive " type. The recommended maximum dosage is as follows:

Intravenous.—Initial trial 0·25 mgrm.; 0·5 mgrm. in 24 hours; 1·0 mgrm. per week.

Subcutaneous.—Two injections of 0·5 mgrm. in 24 hours; 1 mgrm. per week.

Oral.—5 mgrm. taken at once, followed by 2 mgrm. hourly until a total of 11 mgrm. has been taken.

The author experienced no serious complications with 189 patients over 5 years. Contra-indications are septic states and obliterative vascular disease. The treatment should be used with caution in the presence of arterio-sclerosis, hepatic or renal disease and vitamin C deficiency. T. E. BURROWS.

6. Oligophrenia.

The Families in Mongoloid Idiocy [*Die Sippschaft der mongoloiden Idiotie*]. (*Zeitschr. f. d. ges. Neur. u. Psych., vol. clx, p.* 73, 1937.) *Schröder, H.*

The author investigated the relatives of 50 mongoloid idiots. As far as practicable these relatives were seen personally. Attention was paid to a number of

factors: The fertility of the parents was slightly higher than average. In 48% the mongoloid was the last born, in 30% the first born. The average age of the mothers was 32·3 years. Neither mothers nor grandmothers had a high number of abortions or miscarriages. The author could not obtain any evidence that contraceptive measures had usually been taken, nor could syphilis, tuberculosis or alcoholism be found frequently. He thinks that his figures for mental defectives occurring in these families are higher than normal; they were 3% for siblings. Malformations occurred fairly frequently, but figures for comparison are scanty. The figures for schizophrenia correspond to those of the normal population, but depressions occurred more frequently. There are also figures for the frequency of various physical diseases, ranging from cardiac diseases to appendicitis. The author concludes that heredity is responsible for mongoloid idiocy, and argues against van der Scheer's theory. S. L. LAST.

Mongolism in One of Twins and a Case of Two Mongol Children in the same Family [*Mongolismus bei einem der Zwillinge sowie ein Fall mit zwei mongoloiden Kindern in derselben Familie*]. (*Monats. f. Kinderheilk., vol. lxxvii, p.* 14, 1937.) *Lahdensuu, S.*

The writer describes twins of whom the female was normal and the male a mongolian imbecile. He also reports an instance of mongolism occurring in female and male half-sibs who were the offspring of the same mother; in this family a nephew of the mother was an idiot of unspecified type.

L. S. PENROSE.

Multiple Incidence of Mongolism in the Same Family. (*Amer. Journ. Psychiat., vol. xciii, p.* 533, 1936.) *Johnson, W. J.*

The writer describes an instance of twinning in which the female was a mongolian imbecile and the male suffered from dementia præcox. Two other families are recorded, in each of which a brother and a sister were mongolian imbeciles.

L. S. PENROSE.