Part III.—Bibliography and Epitome.*

ACTA HAEMATOL.

VOL. 9. 1953.

Encephalographic and Psychologic Changes in Pernicious Anemia. *Diefenbach, W. C., et al.* 201

ACTAS LUSO-ESPAN. NEUR. PSIQUIAT.

VOL. 12. 1953.

Psychoses and Cycloid Reactions. *Polonio, P.* 1
Neurosis. *Merenciano, M.* 22
Treatment of Mental Patients by Means of Prolonged Hypoglycemic Coma. *Seggiaro, J. A.* 33
Anguish in Rilke. *Carrasco, P. T.* 45

ACTA NEUR. PSYCHIAT. BELG.

VOL. 53. APRIL, 1953.

Functional Syndromes of the Sylvian Margin. *Lopez-Ibor, J. J., and Ortiz de Zarate, J. C.* 247
The Semiology of Myoclonias. *Krebs, E.* 268
Diffuse and Multiple Sclerosis. *de Morsier, G., and Feldman, H.* . . 279

MAY.

Psychoses in Children. *Kamp, L. N. J.* 309
Hypophyseal Tumour with Atypical Perimetric Symptoms. *Francois, J., and Verriest, G.* 331
The Diagnosis and Treatment of Nasal Liquorrhoea During and After Cranial Injury. *Adriaenssens, R.* 342

JUNE.

Gliomas of the Midbrain. *De Haine, A., et al.* 355
Apraxia for Dressing, Visual Crises and Unilateral Spatial Agnosia in a Right-sided Parieto-occipital Syndrome. *Van Reeth, P. C.* 366
Multiple Intracranial Haematomas. *Hozay, J.* 388
Neurofibromatosis in Uniovular Twins, one with Clinical Epilepsy. *Troch, C.* 393
Heredoataxia with Ocular Semiology and Special Characters. *Decock, G., and Macken, J.* 398

ACTA PSYCHIAT. NEUROL.

VOL. 28. 1953.

A Case of " Pack Palsy " from the Korean War. *Bonn, F.* 1
Autoradiographic Observations on the Uptake of S^{35}-labelled Sodium Sulphate in the Nervous System of the Adult Rat. *Bostrom, H., and Odeblad, E.* . 5
The Agonal Nature of Cerebral Red Softening. *Cammermeyer, J.* . . 9
Aphonia. *Eitenger, L.* 27
A Contribution to the Aetiology of Familial Infantile Cerebral Sclerosis. *Erak, P.* 35
A Study in Schizophreniform Psychoses. *Finkelstein, Z.* 45

* A number of extracts in this section are reproduced from *Chemical Abstracts*. To the Editors of this Journal we extend our grateful thanks.

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

E.E.G.s of Boys with Behaviour Disorders. *Forssman, H., and Frey, T. S.* 61
Ischaemic Changes in the Brain Following E.C.T. *Larsen, E. F., and Vraa-Jensen, G.* 75
Diagnostic Problems in Tuberous Sclerosis. *Presthus, J.* 81

ACTA PSYCHIAT. NEUROL. SUPP.

1925.

A Study of Manic-Depressive Psychosis. *Stenstedt, Å.* 79

AM. J. MED. SCI.

VOL. 225. 1953.

Some Recent Contributions in the Field of Geriatric Psychiatry. *Silverman, A. J.* 101
Electrophoretic and Chemical Serum Protein Fractions in Multiple Sclerosis. *Saifer, A., et al.* 287

AM. J. DIS. CHILD.

VOL. 85. 1953.

Migraine in Children. *Krupp, G. R., and Friedman, A. P.* 146
Transverse Myelopathy in Childhood. *Paine, R. S., and Byers, R. K.* . . . 151
Measles Encephalomyelitis. *Fox, M. J., et al.* 444

AM. J. MED.

VOL. 14. 1953.

Effects and Treatment of Nerve Gas Poisoning. *Grob, D., and Harvey, A. M.* 52
Drug Addiction Problem. *Bobbitt, J. M.* 538
Chemistry of Drugs of Addiction. *May, E. L.* 540
Phenomena of Tolerance. *Seevers, M. H., and Woods, L. A.* 546
Clinical Characteristics of Addictions. *Isbell, H., and White, W. M.* . . 558
Psychiatric Aspects of Drug Addiction. *Wikler, A., and Rasor, R. W.* . 566
Treatment of Drug Addiction. *Fraser, H. F., and Grider, J. A., jun.* . . 571
History and Mechanism of International and National Control of Drugs of Addiction. *Tennyson, A. L.* 578
Phenobarbital Sensitivity Syndrome. *McGeachy, T. E., and Bloomer, W. E.* 600

AM. J. MENT. DEF.

VOL. 58. JULY, 1953.

Mental Deficiency—1952. *Whitney, E. A.* 1
Parent Counseling as a means of Improving the Performance of a Mentally Retarded Boy. *French, A. C., et al.* 13
Easing the Load of the Limited. *McLean, M. C.* 21
Vagrant Reminiscences of an Oligophrenist. *Wallin, J. E. W.* 39
The Retarded Child in a State School. *Richards, M.* 56
Therapy and Training Programs for Middle Grade, Epileptic, Physically Handicapped and Emotionally Disturbed Older Children. *Kille, E. C.* 88
More Fun for Institutionalized Retarded Children. *Benoit, E. P.* . . . 93
E.C.T. in Mental Deficiency. *Campbell, J. A.* 112
Speech Measurements of Institutionalized Mentally Handicapped Children. *Schlanger, B. B.* 114
The Role of Orthopedic Surgery in a Hospital for Mental Deficiency. *Kragrath, D., and Muller, G. M.* 123
A Survey of Special Types Encountered in Mental Deficiency Clinics. *Gibson, R.* 141
The Effects of Different Types of Supervision on the Behaviour of Mental Defectives in a Sheltered Workshop. *Tizard, J.* 143
Comparison of Three Etiological Groups of Mentally Retarded Children on the Vineland Social Maturity Scale. *Cassel, M. E., and Riggs, M. M.* 162

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

AM. J. ORTHOPSYCHIAT.

VOL. 23. JULY, 1953.

Education's Debt to Orthopsychiatry. *Krugman, M.* 445
Children in the Present World Situation. *Marshall, J.* 454
Cultural Factors in Personality Adjustment of Children. *Klineberg, O.* . 465
Psychogenic (Hysterical) Dysphagia. *Karpman, B.* 472
Changes in the Goodenough Drawings after a Gratifying Experience. *Riechenberg-Hackett, W.* 501
Clinical Data and Dynamic Considerations in Certain Cases of Childhood Schizophrenia. *Weil, A. P.* 518
Juvenile Alcoholism. *Falstein, E. I.* 530
Minimal Professional Requirements for Staffs of Rural and Semirural Clinics. *Curran, F. J.* 552
Maternal Attitudes of Acceptance and Rejection During and after Pregnancy. *Zemlick, M. J., and Watson, R. I.* 570
The Significance of Identification in Therapy. *Schrier, H.* 585
The Working-Through Process in Dealing with Anxiety around Adoption. *Barnes, M. J.* 605
The Family Caseworker's Contributions to Parent Education through the Medium of the Discussion Group. *Meyer, M. S., and Power, E. J.* . 621
Treatment of a Withdrawn Girl. *Kahn, J. P.* 629

AM. J. PSYCHIAT.

VOL. 109. JUNE, 1953.

*Dormison, a New Type of Hypnotic. *May, P. R. A., and Ebaugh, F. G.* . 881
The Diagnostic Use of Amobarbital in Brain Disease. *Weinstein, E. A., et al.* 889
*Report on the Use of Succinyl Choline Dichloride in E.C.T. *Moss, B. F., et al.* 895
*The Treatment of Tuberculous Patients with E.C.T. *McClellan, J. H., and Schwartz, A.* 899
The Human Life Cycle and its Interruptions. *Linden, M. E., and Courtney, D.* 906
Psychotherapy of Aged Persons. *Goldfarb, A. I., and Turner, H.* . . . 916
*Measurements of Changing Psychopathology with the M.M.P.I. *West, L. J.* 922
Frontal Bone Hyperostosis in Psychoses. *Notkin, J.* 929

Dormison, A New Type of Hypnotic. Its Therapeutic Use in Psychiatric Patients.

Dormison is a drug of a new type that, when used as a hypnotic, is highly efficient and relatively nontoxic and noncumulative. It is the hypnotic of choice in elderly, senile, and arteriosclerotic patients and it has definite advantages over other hypnotics in other types of patients.

The hypnotic effect is highly specific, and dormison is of little value as a sedative since toxic or near-toxic doses are required to produce an adequate sedative effect in disturbed patients. Cumulative effects have been observed only when large doses were given as a sedative.

The danger of addiction may be less than with other hypnotic-sedative drugs, as dormison is ultra-short-acting and tends to lack their stupefying and euphorigenic action. Nevertheless, dormison should not be given as a sedative to patients who have previously been addicted to other drugs, and it should be used as a hypnotic in these cases only under hospital conditions. In view of previous reports and the authors' findings on cumulation and addiction, barbiturates should not be given to patients receiving dormison until such time as extensive data are available on the potentiating effect of dormison on barbiturates in man.

(Authors' abstr.)

Report on the Use of Succinyl Choline Dichloride (A Curare-like Drug) in Electroconvulsive Therapy.

Succinyl choline dichloride i.v. is a useful drug to produce muscular relaxation in patients receiving E.C.T. who would otherwise be poor risks because of susceptibility to fractures and pre-existing fractures. It has also proved of value in

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

treating severely disabled cardiac patients for whom even slight exertion may be dangerous. This drug is potent and effective, but ultra-short-acting, seldom lasting more than five minutes. Artificial respiration is easily and adequately performed by standard routine methods. Oxygenation can be maintained at levels superior to that of bed rest. No untoward effects have yet been observed in over 300 electric treatments. (Authors' abstr.)

The Treatment of Tuberculous Patients with Electroshock Therapy.

From clinical experience with patients suffering from severe mental illness, aggravating and aggravated by advanced stages of pulmonary tuberculosis, the authors have no doubt about the value of electrochock therapy, and its safety, in the treatment of such patients. The results indicate that, when patients are so psychotic that they cannot co-operate in treatment for their tuberculosis, electroshock therapy may improve their mental status to the extent that they will accept treatment. The authors think some of these patients might have been successful in their suicidal attempts, or have died as a result of the tuberculosis, had it not been for the use of electroshock therapy. Moreover, there appears to be a uniformly specific improvement in the pulmonary tuberculosis following E.C.T., regardless of the stage of advancement when the treatment is started. This may be a secondary effect of electroshock therapy.

It is conjectured that electrotherapy, by hypothalamic stimulation, may alter cortical activity in such a way as to mobilize bodily defenses against various invading organisms.

All the objections to the use of electroshock treatment for tuberculous patients that Dr. Close quotes in his article were considered and discussed by the staff prior to starting treatment. Some of the staff had similar objections, but they have not been substantiated by the authors' observations, which have convinced them of the value of electroshock therapy in the treatment of tuberculous patients. (Authors' abstr.)

Measurements of Changing Psychopathology with the Minnesota Multiphasic Personality Inventory.

The M.M.P.I. is widely accepted as the best of the questionnaire-type personality tests. It is simple to administer and score, conservative of the clinician's time, well accepted by patients and provides an extensive anamnesis and a graphic indication of psychopathological status that is easy to interpret. It should not be used as a substitute for the physician's history-taking (which is so important in the early development of a therapeutic relationship), nor should it be used alone to "make" a diagnosis. With experience in the use of the M.M.P.I. characteristic profiles can be recognized as indicative of personality structure and disturbance that are not limited to diagnostic categories of any particular school. Examples have been selected to demonstrate how the M.M.P.I. can be used in measurement of changing psychopathology, thus indicating its value in analysis of clinical progress and results of treatment. (Authors' abstr.)

JULY.

VOL. 110. 1953.
Psychiatry and Citizenship. *Cameron, D. E.* 1
Function in Psychiatry. *Oberndorf, C. P.* 13
Intellectual and Affective Functions in Chronic Brucellosis. *Reitan, R. M.* . 19
Group Psychotherapy in Association with Alcoholics Anonymous. *Thompson, C. E., and Kolb, W. P.* 29
Cardiac Epilepsy Simulating the Anginal Syndrome. *Janjigian, E. R.* . 34
A Comparative Study of the Amnestic Syndrome in Various Organic Conditions. *Kral, V. A., and Durost, H. B.* 41
An Outline and Bibliography for a Seminar in Clinical Psychology for Resident Physicians in Psychiatry. *Mercer, M., and Hecker, A. O.* 48
Mental Health Among the Slave Population on Southern Plantations. *Postell, W. D.* 52
Fluctuations of Temporal Lobe E.E.G. Abnormality During Psychic Function. *Ostow, M.* 55
Psychological Implications of the "Activating System." *Linn, L.* . . . 61

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

AUGUST.

Report on Second Ithaca Conference on Psychiatric Education. *Whitehorn, J. C.* 81
Money. *Peffer, P. A.* 84
*A Critical Evaluation of Carbon Dioxide Inhalation Therapy in Mental Disorders. *Frank, J. A.* 93
The Development of Client-Centred Therapy in the Writings of Carl Rogers. *Lebo, D.* 104
Some Observations on the Role of an Army Psychiatrist. *Brown, S. L.* . 110
*The Factor of Hypoxemia in Electroshock Therapy. *Holmberg, G.* . . 115
*The Occurrence of Methemoglobinemia During Insulin Coma Therapy. *Grimshaw, J. A.* 119
*Studies in Responsibility of the Adrenal Cortex in Schizophrenia. *Dickes, R., et al.* 124
Bromide Delirium with Unusual Course. *Levin, M.* 130
Prejudices and Opinions of Mental Hospital Employees Regarding Mental Illness. *Middleton, J.* 133
A Motivation Center. *Freeman, R. V., and Schwartz, A.* 139
A Balanced Concept of Child Training with Social Implications. *Zimmerman, F. T., and Burgemeister, B. B.* 143

A Critical Evaluation of Carbon Dioxide Inhalation Therapy in Mental Disorders.

1. The clinical, experimental, and theoretical literature on carbon dioxide oxygen inhalation therapy (C.D.T.) is reviewed and critically evaluated.

2. The over-all improvement rate in 238 nonpsychotic patients treated with C.D.T., collected from the literature, is 61 per cent. The highest rate of improvement (83 per cent.) is reported in psychophysiologic disorders, the lowest (46 per cent.) in stutterers. The evidence indicates that these high improvement rates are exaggerated since most workers include " minimal " improvement in their statistics. If these patients had been correctly classified " unimproved," the rates would be lower and much more accurate.

3. C.D.T. is apparently of little value in the treatment of psychoses, severe obsessive-compulsive, and hypochondriacal reactions.

4. C.D.T. may be a useful adjunct to psychotherapy, causing rapid release of unconscious repressed memories and affects (abreaction), thereby shortening the duration of psychotherapy.

5. C.D.T. is capable of causing amelioration of some neurotic symptoms without the use of concurrent psychotherapy. Ideally, however, C.D.T. should be combined with or followed by psychotherapy in order to induce lasting improvement in the patient through the development of insight into the cause of his symptoms and emotional difficulties.

6. No fatalities or lasting complications from C.D.T. have been reported. It is apparently the least harmful form of somatic therapy in psychiatry. However, since C.D.T. is " potentially " dangerous both physically and psychologically, it should be given only by psychiatrists or other physicians with special psychiatric training. Indiscriminate use by untrained personnel might result in serious complications.

7. C.D.T. may be of value in certain patients who are hostile to psychotherapy or who for various reasons are unable to receive other forms of treatment. Such individuals frequently become more co-operative during C.D.T., since they feel that something " active " is being done to help them and they frequently request further psychiatric treatment.

8. A major difficulty of C.D.T. is the increasing severe anxiety that it induces, which causes many patients to discontinue treatment prematurely.

9. The mode of action of C.D.T. is unknown. There is no scientific evidence that CO_2 is a specific agent in the treatment of nonpsychotic mental disorders, since many other anaesthetic agents exert similar effects.

10. Suggestions for further research are made, with particular emphasis on the need for adequate controls, prolonged follow-up studies, and physiological and biochemical analyses of the effects of C.D.T. on man and experimental animals.

(Author's abstr.)

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

The Factor of Hypoxemia in Electroshock Therapy.

The arterial oxygen saturation in electroshock therapy has been determined with the aid of a photoelectric oximeter. The following observations were made:—

1. Electroshock causes rather severe, but transitory, hypoxemia.
2. Impaired respiration after the convulsion can give rise to severe and rather prolonged hypoxemia.
3. If more than one shock is necessary to produce a convulsion the degree of hypoxemia is considerably increased.
4. The administration of pure oxygen for a period of ½ to 1 minute (1 minute in elderly individuals) immediately before as well as after the shock considerably reduces the degree of hypoxemia.
5. The oxygen administration prolongs the convulsion. The intensity of the convulsion is probably also somewhat increased, thus possibly increasing the risk of skeletal injuries.
6. The addition of 6 per cent. carbon dioxide to the oxygen gas is a somewhat poorer protection against hypoxia than pure oxygen. Carbon dioxide also appears to increase further the duration of the convulsions.
7. When a muscle-relaxing agent is used and oxygen insufflated, a maximum oxygen saturation of the arterial blood can be obtained throughout the treatment. The convulsion is thereby greatly prolonged. (Author's abstr.)

The Occurrence of Methemoglobinemia During Insulin Coma Therapy.

Five cases of methemoglobinemia resulting from the accidental substitution of sodium nitrite for potassium citrate in the gavage mixture given to terminate insulin coma treatment are recorded. The simple and efficacious treatment by intravenous injection of methylene blue is presented.

It is speculated that further research might show that the intentional production of methemoglobinemia in nonhypoglycemic subjects would be a safe and useful method of treatment in schizophrenia. (Author's abstr.)

Studies in Responsitivity of the Adrenal Cortex in Schizophrenia.

Eleven chronically hospitalized schizophrenic patients, in good physical and nutritional health, were studied by hourly eosinophile and lymphocyte counts after injections of saline and ACTH on consecutive days.

Wide variations in the fasting levels of these blood elements existed among different patients and in the same patients from day to day.

Saline elicited variations in eosinophile counts so that 5 of 11 subjects showed decreases of 50 per cent. or more after 4 hours. The lymphocytes varied by at least 29 per cent. for each subject at some point in the study after saline was injected.

The response of the eosinophiles to ACTH was greatest 3 hours after injection.

Ten of the 11 subjects showed a 50 per cent. or more variation in eosinophiles at some point in the procedure. All 11 subjects had more than a 50 per cent. variation in their lymphocyte counts.

The adrenal cortical response of the schizophrenics the authors have studied, as measured by the eosinophile and lymphocyte responses to ACTH and by physiological variation, falls within the normal range.

Studies of the 17-ketosteroid and corticosteroid excretion after ACTH in 11 cases of acute schizophrenia also showed varying responses in different subjects. (Authors' abstr.)

AM. J. SYPH. GON. V.D.

VOL. 37. 1953.

Effect of Adrenocortical Hormones on Lightning Pains and Visceral Crises of Tabes Dorsalis. *Moore, J. E.* 226
Important Details Concerning Argyll Robertson Pupil. *Benton, C. D., jun.* 232

AM. PRACT. DIG. TREAT.

VOL. 4. 1953.

Anti-Convulsant, Anti-Epileptic, and Anti-Parkinsonism Drugs. *Hand, B. M.* 17
Psychiatric Aspects of Menopause. *Karliner, W.* 256

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

AM. SURG.

VOL. 19. 1953.

Value of Serial Studies of Cerebrovascular Permeability with Radioactive Iodinated Serum Albumin, etc. *Ashkenazy, M., and Crawley, J. W.* . 155

ANÂIS. PORTUG. PSIQUIAT.

VOL. 4. DECEMBER, 1952.

General Problems of the Neuroses. *Fernandes, B.* 13
The Anatomo-physiology of the Diencephalon. *Lima, A.* 39
Neuroses and Anxiety States. *Polonio, P.* 77
Neuroses of Infancy. *dos Santos, J.* 95
Some Aspects of Neuroses in Adolescents. *Fontes, V.* 112
Anxiety and the Circulation. *Ibor, L. jun.* 129
An Obsessive Psychoneurosis. *Sveiro, L. N.* 141
Medical Psychology and Psychosomatic Medicine. *Krapf, E.* . . . 173
Differential Diagnosis of the Neuroses. *da Costa, N.* 180
Feeling in Anxiety. *Santos, D.* 195
The Mechanism of Conversion. *Sargant, W.* 208
Neuroses from the Social Point of View. *Siebra-Dinis, J.* 222
A Study of a New Rorschach " Symptom." *Schachter, M.* 312

ANAESTHESIOL.

VOL. 14. 1953.

Antabuse and Anesthetic Agents. *Cooper, B. M., et al.* 29

ANN. INT. MED.

VOL. 38. 1953.

Failure of Cortisone and ACTH in Treatment of Morphine Abstinence Syndrome. *Fraser, H. F., and Isbell, H.* 234
Nicotinic acid in Treatment of Depression. *Tonge, W. L.* 551
Further Studies on Electrocerebral Dysfunction and Use of Anticonvulsants in Labile Diabetes. *Fabrykant, M.* 814

ANN. MED. PSYCHOL.

VOL. 111 (1). APRIL, 1953.

" Letters to Mothers." *Chatagnon, P., and C.* 457
Claustration. *Gayral, L., et al.* 469
Heart and Brain. *Roger, H.* 602
The Use of " Neuroplegics " in Psychiatry. *Cossa, P., et al.* . . . 628

VOL. 111 (2).

A Contribution to the Psychology and the Psychopathology of Mystics. *Baruk, H., et al.* . . . . . 1 and 145
Treatment by Intrafrontal Injection of Novocaine. *Duplay, J., and Cossa, P.* 33
Electro-shock and Arterial Tension. *Laboucarié, J., and Bénazet, J.* . . 41
Manic-depressive Psychosis and the Rorschach Test. *Fusswerk, J.* . . 162

ARCH. INTER. STUDI, NEUR.

VOL. 2. NOVEMBER, 1952.

The Structure and Biological Activity of Neurones Cultivated *in Vitro*. *Levi, G.* 7
A Study of the Genesis of Necrotic Myelopathy. *Sorgo, W.* 23
Histochemical Research on Phosphatases in Cells Subject to X-Rays. *Angelo, D. B.* 29
A Semiological Study of Phantom Limbs after Plexus and Root Lesions. *Hécaen, H., et al.* 41
Prognosis and Progression in Parkinson's Disease in Patients under Medical Treatment. *Markovich, S., and Schwab, R. S.* 47

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

ARCH. NEUR. PSYCHIAT.
VOL. 69. APRIL, 1953.

Psychotic Reactions in Problem Drinkers Treated with Disulfiram (Antabuse). *Macklin, E. A., et al.* 415
Visual Disturbances as the Result of Nystagmus on Direct Forward Gaze. *Nathanson, M., et al.* 427
*Intellectual Functions in Myxedema. *Reitan, R. M.* 436
Symptoms and Signs Referable to the Basal Ganglia in Brain Tumor. *Sciarra, D., and Sprofkin, B. E.* 450
*Endogenous Eosinopenia in Institutionalized Patients with Mental Deficiency. *Halberg, F., et al.* 462
*Study of Adrenocortical Physiology in Normal and Schizophrenic Men. *Hoagland, H., et al.* 470
Subdural Hematoma Following Subarachnoid Hemorrhage. *Golden, J., et al.* 486
Pain from Dermal, Periosteal and Facial Endings and from Inflammation. *Landau, W., and Bishop, G. H.* 490
*An Extralemniscal Sensory System in the Brain. *French, J. D., et al.* . 505
A Neural Basis of the Anesthetic State. *French, J. D., et al.* . . . 519

Psychotic Reactions in Problem Drinkers Treated with Disulfiram (Antabuse).

1. Ten cases in which psychotic reactions developed during the course of disulfiram treatment are reported in detail.

2. The literature on such cases previously reported is discussed, with particular emphasis on the divergence of opinions concerning the principal etiologic factor.

3. The hypothesis is offered that the primary factor is psychogenic.

4. The importance of such distinction as it affects the treatment of patients who incur psychotic reactions is commented on.

(Authors' abstr.)

Intellectual Functions in Myxedema.

The Rorschach test was administered to three diagnostic groups: neurotic subjects, myxedematous subjects, and subjects with organic brain damage. The subjects had been individually matched in the three groups on the basis of sex, age, formal education, and intelligence quotients. Intergroup statistical comparisons were made of the mean performances on each of the Rorschach test variables. The frequencies with which scores in one group exceeded the matched scores in the other groups were tabulated and the frequency differences tested for statistical significance. The frequencies of Rorschach test "signs" of organic brain damage in the three groups were also compared statistically.

The results give a general indication that intellectual functions, as represented by the Rorschach test, suffer some impairment with myxedema. The performance of myxedematous patients falls between that of neurotic patients and that of patients with organic brain damage. In some respects their scores more closely resemble those for neurotic subjects and in others the scores for brain-damaged subjects. The specific nature of the intellectual dysfunction in myxedema was not thoroughly indicated in the present study. A greater number of subjects and a wider variety of psychological tests should be used in seeking more specific results.

(Author's abstr.)

Endogenous Eosinopenia in Institutionalized Patients with Mental Deficiency.

Eosinophile counts were obtained on institutionalized patients with mental deficiency at specified times during the morning hours on several days of investigation. Differences in numbers of eosinophiles among patients, among days of investigation, and among times of day were shown to be highly significant. It is demonstrated that a desirable experimental design will require testing of the same patients on the same days and at the same time of day. Simplification of analysis of data for changes in number of eosinophiles can be achieved by conversion of absolute counts into relative levels.

The data presented demonstrate the occurrence of endogenous eosinopenia in mentally deficient patients of both sexes. If morning changes in number of eosino-

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

philes indicate changes in the rate of secretion of certain adrenocortical hormones, these findings support the hypothesis of a functioning adrenal cortex in the patients studied.

Endogenous eosinopenia is correlated with the initiation of daily activities in a given population. It seems necessary to adapt the schedule of sampling blood for endogenous-eosinopenia tests to the time when daily activities are routinely initiated by the subjects to be tested. (Authors' abstr.)

Study of Adrenocortical Physiology in Normal and Schizophrenic Men.

Various indices of adrenal cortex function in normal men and schizophrenic men at rest and when subjected to three stress tests (oral dextrose tolerance, pursuit meter and Target Ball Frustration tests) and to the injection of 25-mg. test doses of corticotropin are described.

The normal and psychotic groups were divided into younger (20 to 39 years) and older (40 to 60 years) groups. These four groups were studied statistically as separate populations.

In both the older and the younger groups the schizophrenic patients at rest showed a significantly higher rate of excretion of urinary water, 17-ketosteroids, sodium, and potassium than the normal subjects. They showed lower than normal rates of excretion of corticoids and phosphates and thus displayed at rest evidence both of hyperadrenalism and of hypoadrenalism.

Confirming the authors' earlier work with patients and normal subjects of the younger age group, they found that the older patients showed less adrenal response to the stress tests and to injected corticotropin than the older normal subjects. The total response index of the adrenal cortex was used in these comparisons. As in their earlier studies of the younger groups, it was the urinary 17-ketosteroids, sodium, potassium, uric acid, and inorganic phosphates that reflected these group differences. Percentage changes in eosinophile and lymphocyte levels and percentage changes in corticoid excretion, as they have previously reported, did not differentiate statistically between normal and schizophrenic populations in the four tests used.

The older schizophrenic patients, while about as unresponsive to the authors' three stress tests as the younger schizophrenic patients, were considerably more responsive to corticotropin than were the younger patients.

The experimental findings are discussed in terms of possible underlying mechanisms and in terms of their possible relation to the etiology of schizophrenia. (Authors' abstr.)

An Extralemniscal Sensory System in the Brain.

Contrasting features of afferent conduction in the medial and the lateral corticipetal systems were studied in the brain stem and the cortex of monkeys.

Potentials in the classic lateral sensory pathways displayed rapid conduction, segregation of modality, and discrete cortical projection to primary receiving areas of the cortex.

Medially conducted potentials exhibited slower conduction, common transport for all modalities, and distribution to wide areas of the cortex by way of the diffuse thalamic projection system.

Upon peripheral stimulation, a volley of afferent impulses is conducted simultaneously to the cortex by these two systems.

The lateral system appears to subserve perception and the discriminative sensory functions, while the medial system functions in arousing consciousness or alertness, without which the above-mentioned sensory discrimination and effective response would be impossible. (Authors' abstr.)

MAY.

*Cerebral Vascular Insufficiency. *Corday, E., et al.* 551
Pyretotherapy in Ophthalmoplegic Migraine. *Patrikios, J. S.* 571
*Cutaneous Perception in the Aged. *Green, M. A., and Bender, M. B.* . 577
Cerebral Localization and the Contributions of Psychosurgery and Shock Therapy. *Kalinowsky, L. B.* 582
*Cardiovascular Changes Associated with E.C.T. in Man. *Brown, M. L., et al.* 601

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

*Cardiovascular Changes Associated with Electroconvulsive Shock in Monkeys. *Brown, M. L., et al* 609
*Incidence of Alzheimer's Disease in a Large Mental Hospital. *Neumann M. A., and Cohn, R.* 615

Cerebral Vascular Insufficiency.

It is the purpose of this paper to establish a new entity only vaguely recognized by authors in the past, namely, cerebral vascular insufficiency.

This transient condition has been demonstrated by experiment. Electroencephalograms were taken after the carotid vessels were partially or completely ligated in the monkey. When the blood pressure was lowered by bleeding the animal, focal electroencephalographic changes occurred on the side of the ligation, similar to those found in hemiplegia. When the blood pressure was restored, the electroencephalographic records returned to normal. These changes were proved to be due to a drop in blood pressure, rather than purely to anemia.

Clinically, cerebral vascular insufficiency occurs in hemorrhagic shock, coronary shock, surgical and traumatic shock, hypotension due to sympathetic block, and Smithwick sympathectomy, postural hypotension, carotid sinus stimulation, spinal anesthesia, and cardiac surgery. It also can occur as a result of miscellaneous extracranial factors, such as surgical ligation of the carotid arteries, spontaneous thrombosis of the internal carotid artery (Denny-Brown syndrome), gravitational states, as in flying, and the use of antihypertensive drugs. The changes which occur are transient if the blood pressure is restored to normal within a short period. The electroencephalographic changes and symptoms of cerebral origin, such as hemiplegia and hemianesthesia, will then usually disappear. If the blood pressure is not promptly restored to normal in patients with cerebral arteriosclerosis or congenital anomalies, focal changes will be permanent. As in the heart in which coronary arteriosclerosis has occurred, it is important to maintain the cerebral blood pressure at normal levels, especially in the elderly patient with narrowing of cerebral arteries.
(Authors' abstr.)

Cutaneous Perception in the Aged.

Tests of double simultaneous tactile stimulation, particularly the face-hand test, were performed on 342 normal adults of ages varying from 40 to 96.

Thirty-six per cent. of subjects 40 to 65 years of age made perceptual errors in the initial test, but nearly all these correctly perceived both stimuli during subsequent trials.

The perceptual errors consisted of extinction or displacement of one of the two stimuli. This phenomenon occurred in a pattern in which the face was dominant to the hand and the foot dominant to the thigh.

Of the group 65 to 96 years of age, 96 per cent. showed errors on the initial trial, and 54 per cent. persisted in their errors after 10 trials of tests. The incidence of persistent errors in this group increased with increasing age.

This relation of age to persistent errors in the very old subjects is similar to that demonstrated in normal children under 6 years of age; the younger the child, the greater the incidence of persistent incorrect responses. Perception of double simultaneous stimuli in the normal subject is therefore most faulty at the beginning and the end of the life span, but the causes of the changes in each group must be different.
(Authors' abstr.)

Cardiovascular Changes Associated with Electroconvulsive Therapy in Man.

The arterial blood pressure response to electroconvulsive therapy in man followed a pattern similar to that observed in dogs and monkeys subjected to electroconvulsive shock. Since it was found that the cerebral blood flow pattern duplicated the blood pressure pattern following electroconvulsive shock in animals, it is assumed that unless a different relation between blood flow and blood pressure can be demonstrated in man than exists in these animals, the cerebral blood flow response in man should follow the same pattern as the blood pressure response to electroconvulsive therapy.

The blood-pressure response to electroconvulsive therapy in man exhibited an

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

initial decrease below control levels during the early tonic phase, followed by a marked elevation above the control level during the late tonic and throughout the clonic phase of the convulsion. The blood pressure began to decline while the convulsion and the respiratory arrest continued; a secondary decrease below control pressure was reached shortly after the end of the convulsion, and this was followed by a secondary increase to a peak above the control level within two minutes after shock. The arterial pressure then decreased gradually, returning to the control level, or remaining only slightly above or below that level within 20 to 30 minutes after shock. This general pattern of response was found in 31 treatments evoking a major reaction to electroconvulsive therapy, in 4 treatments administered to fully curarized patients who gave evidence of a major reaction to electroconvulsive therapy, in 28 subconvulsive treatments, and in a subconvulsive shock treatment given one fully curarized patient.

The similarity in the blood-pressure response patterns in the three groups of patients, namely, patients showing major reactions, patients having subconvulsive reactions, and fully curarized patients, indicates that the cardiovascular changes following electroconvulsive therapy are independent of the convulsions and appear to result from the effects of the electroshock stimulus alone.

The marked and prolonged elevation in arterial pressure following the onset of the shock stimulus indicates a marked increase in cerebral blood flow during this time, thus making it improbable that extensive cerebral vasoconstriction occurs.

No correlation was found between the pretreatment level of blood pressure and the height of blood-pressure elevation during electroconvulsive therapy.

During the convulsion, diastolic pressure exhibited a greater percentage increase than did systolic pressure.

It appears that curare (tubocurarine) *per se* does not produce marked changes in blood pressure in man. (Authors' abstr.)

Cardiovascular Changes Associated with Electroconvulsive Shock in Monkeys.

The immediate effects of electroconvulsive shock on the internal carotid blood flow, arterial pressure, and cardiac rate were recorded in experiments on a series of 10 monkeys under light chloralose anesthesia. The shock stimulus, in terms of milliamperage, voltage and duration of current, was also recorded.

Blood flow was measured continuously in the internal carotid artery by the use of an electromagnetic blood-flow meter. By the use of a Statham gage-Offner recorder system, blood pressure was measured directly and continuously at the same site as was blood flow. Changes in cardiac rate were obtained from the pressure records.

The initial response to electroconvulsive shock were convulsions, respiratory arrest, bradycardia, and reduced cerebral blood flow and arterial pressure; the last three responses had a duration of one to three seconds. This initial decrement in blood flow, blood pressure, and cardiac rate was followed by a pronounced increase above control levels, which reached a peak during the clonic phase of the convulsion. Blood flow and arterial pressure reached their highest elevations concomitantly; and then, while the convulsion and respiratory arrest continued, they began to decline. The lowest point of this secondary decline was reached a few seconds after the end of the convulsion. Blood flow and blood pressure then exhibited a secondary rise, which reached peak elevations one minute after shock. Blood flow and blood pressure then began a gradual decline until, 30 minutes after shock, blood flow and arterial pressure in a majority of the 10 animals had returned to control levels. After the initial decrease and increase following electroconvulsive shock, the cardiac rate exhibited a gradual, but erratic, decline toward control levels; control levels were reached by a majority of the animals within 30 minutes after shock. At the cessation of the seizures the monkeys exhibited a prolonged cardiac arrhythmia, of several minutes' duration.

This study on monkeys supports the conclusions drawn in a previous work on dogs that changes in blood flow in the carotid artery appear to be a passive response to marked changes in arterial pressure. Because of the pronounced elevations which occur in blood flow and arterial pressure during the convulsions in monkeys subjected to electric shock, support is also given to a previous contention that cerebral ischemia resulting from cerebral vasoconstriction is not of functional significance in electroconvulsive shocks. (Authors' abstr.)

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Incidence of Alzheimer's Disease in a Large Mental Hospital.

Histologic studies by means of silver techniques were carried out on the brains of 210 patients in an attempt to correlate the recorded clinical changes with the pathologic alterations. As a concomitant of the widespread formation of argyrophilic plaques and neurofibrillary changes, a definite clinical picture emerged from the survey. This semeiotic pattern was remarkably consistent regardless of the age of onset of the mental symptoms. It is characterized by slowly progressive intellectual deterioration. Restless wandering, particularly at night, is characteristic; later, when motor activity becomes restricted, there is aimless picking at objects in the immediate environment. Verbal output decreases, and "aphasia" ensues when primary speech and speech associated areas are involved. Other neurologic signs, such as forced grasping and pseudobulbar paralysis, are late concomitants. The clinical picture may appear at any age; there is no relation between the severity of the pathologic process and the age at which mental signs are first manifested.

Argyrophilic plaques and neurofibrillary changes are not characteristic of old age *per se*.

Since there is no difference in the clinical or pathologic picture in the various age groups, the postulation is made that Alzheimer's disease is a specific entity, and not a "presenile" dementia. (Authors' abstr.)

JUNE.

Roentgenological Findings in Tuberous Sclerosis. *Berland, H. I.* . . 669
*Language Behavior in Psychoneurotic Patients. *Lorenz, M., and Cobb, S.* . 684
Prognosis of Neurologic Illness Following Vaccination against Smallpox. *Miller, H. G.* 695
E.E.G.s of Non-epileptic Psychotic Patients Awake and Asleep. *Lyketsos, G., et al.* 707
*Psychodynamics in the Excessive Drinking of Alcohol. *Higgins, J. W.* . 713
Effect of Mephenesin upon Anxiety. *Block, S. L.* 727
Xanthochromia of the Cerebrospinal Fluid. *Crosby, R. M. N., and Weiland, G. L.* 732
*Thiamylal in E.C.T. and Significance in Analysis of Seizure Mechanisms. *Green, R. S., and Leiser, R.* 737
E.E.G. Findings Associated with Subdural Hematoma. *Rodin, E. A., et al* . 743
Wilson's Disease. *Sullivan, F. L., et al.* 756

Language Behavior in Psychoneurotic Patients.

The focus of this paper is mainly on the study of language as an available objective tool for validation and exploration of psychological traits. The present study suggests that this is possible and that certain characteristics of language behavior point to parallel characteristics in psychological make-up. A descriptive evaluation is given of the language behavior of a subgroup of the psychoneuroses (hysteria) as distinct from that of the "normal" pattern. It appears from the authors' findings that the language pattern of "neurotic" patients shows a significant relative increase in the use of verbs and pronouns and a significant relative decrease in the use of substantives, adjectives, prepositions, conjunctions and articles. In the 10 most frequently used words, "neurotic" language patterns differ from "normal" patterns in the use of the pronouns "it" and "you" and in substitution of "is" for "was." The incidence of the pronoun "I" is significantly higher in "neurotic" language. Significantly fewer different words are used per thousand.

(Authors' abstr.)

Psychodynamics in the Excessive Drinking of Alcohol.

In the present state of knowledge, it would appear that the symptom of excessive drinking of alcohol and addiction to alcohol are the products of various social and biological forces. This paper is concerned predominantly with a scrutiny of the individual psychological factors. For specific reasons the particular framework of the theoretical discussion is that generally outlined by psychoanalytic theory. In the introductory section the most widely applied psychodynamic hypothesis is summarized. In brief, this emphasizes the importance of oral drives in the motivation to drink excessively. The purpose of this paper is to present a revised hypo-

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

thesis which, in essence, suggests that drinking and intoxication can be put in the service of psychic defense mechanisms against various sources of anxiety. The author's case material does not support a generalization that the immediate source of the anxiety is oral conflict. Instead, the anxiety being assuaged by the drinking appears to vary from one person to another. However, as the drinking episodes continue, the " pleasure " obtained from the intoxication can begin to supersede as goal the relief from the original anxiety. Ultimately, the psycho-dynamic conflict specific to the outset of the problem may come to be overshadowed by the " nonspecific " oral narcissistic elements. (Author's abstr.)

Thiamylal in Electroconvulsive Therapy and Significance in Analysis of Seizure Mechanisms.

1. A series of 20 patients receiving both electroshock and thiamylal (surital) sodium preceding the electroconvulsive treatment is reported.

2. Thiamylal changes the seizure by shortening its duration and prolonging the post-seizure apnea.

3. The total period of apnea tends to remain constant in treatment both with and without thiamylal.

4. Thiamylal given prior to electroshock helps in preventing pretreatment apprehension and postconvulsive excitement.

5. Psychiatric improvement of patients receiving thiamylal-electroshock therapy was essentially that expected after treatment with ordinary electroconvulsive therapy.

6. A theory is proposed stating that the peripheral convulsion in electroshock is independent of the respiratory arrest and that these two phases are mediated through different brain centers. Data are presented in support of this theory. (Authors' abstr.)

Vol. 70 JULY. 1953.

Progressive Neuropathic Muscular Atrophy. *Brodal, A., et al.* 1
Studies on Blood-Brain Barrier with Radioactive Phosphorus. *Bakay, L.* . 30
*Clinical Significance of Sclerosis of the Cornu Ammonis. *Sano, K., and Malamud, N.* 40
Agonal Nature of the Cerebral Ring Hemorrhages. *Cammermayer, J.* . . . 54
Neural Toxicity in Tuberculous Patients Treated with Isoniazid. *Gammon, G. D., et al.* 64
Effect of Retrochiasmal Lesion upon Variability of the Absolute Visual Threshold. *Krieger, H. P.* 70
*Effects of Ageing on Cerebral Circulation and Metabolism. *Scheinberg, P., et al.* 77
Central Neurological Complications of Hypoparathyroidism. *Sugar, O.* . . . 86

Clinical Significance of Sclerosis of the Cornu Ammonis.

The brains of 50 institutionalized epileptic patients were examined and their clinical records reviewed, with special emphasis on the presence or absence of ictal " psychic phenomena." The results are summarized as follows :

1. In 29 cases there was sclerosis of the cornu ammonis. These cases were classified as follows : Group A, sclerosis of the cornu ammonis without other remarkable changes, 9 cases ; Group B, frontal or frontotemporal traumatic lesions, in addition to the sclerosis of the cornu ammonis, 9 cases ; Group C, congenitally malformed brains, 11 cases. Sclerosis of the cornu ammonis was unilateral in Groups A and B and bilateral in Group C. In nine cases of Group A and in seven cases of Group B ictal psychic phenomena were exhibited, a prominent feature of which was rage. The incidence of emotional changes between attacks was high in these groups. The cases of malformed brains were not considered in the clinical evaluation because of the severe mental deficiency.

2. In 21 cases there was no sclerosis of the cornu ammonis. These were subdivided as follows : Group A′, no cerebral changes, five cases ; Group B′, temporal or frontotemporal traumatic lesions, nine cases, and Group C′, malformed brains, seven cases. Ictal psychic phenomena and emotional changes were not observed in Group A′ and were seen in only three cases of Group B′. The phenomenon of rage was observed in only one of the latter cases.

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

3. The electroencephalograms, obtained in a few of the cases, showed a spike or sharp-wave focus predominantly in the anterior temporal region on the side of sclerosis of the cornu ammonis.

The possible rôle of the hippocampal formation in psychomotor epilepsy or temporal-lobe automatism is discussed. (Authors' abstr.)

Effects of Aging on Cerebral Circulation and Metabolism.

Cerebral blood flow and metabolism were measured by the nitrous oxide method in 32 normal men between the ages of 38 and 79 years and the data compared with those obtained in previous similar studies on 19 normal subjects between the ages of 18 and 36 years.

There is a close statistical correlation between advancing age and decreasing cerebral blood flow and increasing cerebral vascular resistance. The reduction in cerebral blood flow and increase in cerebral vascular resistance are accelerated after middle age. Cerebral oxygen consumption remains fairly stable until after middle age, when it apparently begins to decrease with advancing age.

The reduction in cerebral blood flow and increase in cerebral vascular resistance are thought to be due to increased cerebral vascular tone and vascular sclerosis. Diminution in cerebral oxygen consumption is thought to result from impaired cellular function resulting from reduced blood flow.

In eight of the subjects inhalation of a mixture of 10 per cent. CO_2 and 90 per cent. O_2 resulted in apparent increases in cerebral blood flow of more than 100 per cent.; indicating that the increased cerebral vascular resistance of the aged is not necessarily fixed. (Authors' abstr.)

ARCH. PATH.

VOL. 55. 1953.

Polycerebrosides in Gaucher's Disease. *Uzman. L. L.* 181

ARCH. PSICOL. NEUR. PSICHIAT.

VOL. 14. 1953.

Perceptive and Motive Transposition in the Age of Development. *Zunini, G.* 343
Asthenia. *Belloni, G. B.* 374
A Contribution to the Study of Constructive Apraxia. *Columella, F., and Papo, I.* 389
Electroshock and Anaphylactic Phenomena. *Camera, A.* 406
The Psychopathological Problem of "Distance." *Cargnello, D.* 435
A Contribution to the Study of Hallucinatory Manifestations of Mid-brain Lesions. *Donati, A., and Sanguineti, I.* 465
A Contribution to the Study of Manual Ability. *Capol, M., and Walther, L.* 489

ARCH. PSYCHIAT. NERVEN.

VOL. 190. 1953.

Exogenic Psychosis of Schizophrenic Type During School Age. *Weber, D., and Klopp, H. W.* 104
Duration of Various Forms of Amyotrophic Lateral Sclerosis. *Hemmer, R.* . 127
Schizophrenia and Schizophrenia-like Psychoses in Patients with Brain Lesions. *Elsässer, G., and Grünewald, H.-W.* 134
Signs of Retrogression in Total Aphasia. *Brobeil, A., and Stallwitz, G.* . 166

ARK. M. S. J.

VOL. 49. 1953.

Group Psychotherapy. *Parsons, E.* 219

ÄRZTL. WO.

VOL. 8. 1953.

Pathogenesis of So-called Fever Convulsions in Early Childhood. *Belke, K., and Gädeke, R.* 295

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

BR. J. DERM.

VOL. 65. 1953.

Psychiatric Observations on Facial Dermatoses. *Macalpine, I.* . . . 177

BR. J. PSYCHOL.

VOL. 44. AUGUST, 1953.

Homoestasis, Needs and Values. *Mace, C. A.* 206
Hypothetical Terms and Relations in Psychological Theorizing. *O'Neil, W. M.* 211
Educational Measurement. *Richmond, W. K.* 221
The Dynamics of Leadership in Adolescent School Groups. *Shears, L. W.* . 232
" Either or " Questions in Series. *George, F. H.* 243
Probit Analysis of Subjective Reactions to Thermal Stimuli. *Chrenko, F. A.* 248
Hunter's Test of the Absolute and Relative Theories of Transposition. *Grice, G. R.* 257

BRAIN.

VOL. 76. 1953.

An Investigation into the Causes of Failure of Certain Supratentorial Mengiomata to Show Tumour Vessels on Angiography. *Monckton, G.* . . . 149
The Clinical Presentation of the Cerebral Angioma. *Mackenzie, I.* . . 184
Megalencephaly Associated with Hyaline Pan-Neuropathy. *Crome, L.* . 215
Electrical Methods in Diagnosis and Prognosis of Peripheral Nerve Injuries and Poliomyelitis. *Wynn Parry, C. B.* 229
Ipsilateral Third Cranial Nerve Palsy as a Presenting Sign in Acute Subdural Haematoma. *Clark, E. S., and Gooddy, W.* 266
The Cerebrospinal Fluid Pressure as an Aetiological Factor in the Development of Lesions Affecting the Central Nervous System. *O'Connell, J. E. A.* 279
Creatine and Guanidoacetic Acid Metabolism in Muscle Disease. *Cumings, J. N.* 299
An Experimental Study of the Central Olfactory Connexions in a Marsupial. *Adey, W. R.* 311

BULL. LOS ANGELES NEUR. SOC.

VOL. 18. JUNE, 1953.

Cerebral Anoxia and Convulsive Disorders. *Courville, C. B., and Nielsen, J. M.* 59
Spontaneous Cerebrospinal Rhinorrhoea. *Rand, R. W.* 74
Complications of Encephalitis of the Von Economo Type. *Nielsen, J. M.* . 84
Acute Pyogenic Spinal Subdural Abscess. *Abbott, K. H.* 91
Relationship of Cranial to Subjacent Cerebral Tumours. *Courville, C. B.* . 103
Long Survival with Hemiplegia Incident to Paranatal Anoxia. *Courville, C. B.* 110

BULL. MENNING. CLIN.

VOL. 17. 1953.

Borderline States. *Knight, R. P.* 1
Chronic Cyclic Schizo-affective Psychoses. *Solow, R. A.* 13
How Common is Schizophrenia ? *Gaw, E. A., et al.* 20

CALIF. MED.

VOL. 78. 1953.

Studies in Cerebral Metabolism. *Gordon, G. S., et al.* 87
Is it Neurosis? *Peters, J.* 274
Delinquency in Women. *McGinnis, J. E.* 299
Auxiliary Treatment of Psychotic Women. *Gordon, G., and Bowman, K. M.* 303
Transorbital Lobotomy. *Bennett, A. E., and Cesarman, F. C.* 453
Rôle of Psychotherapy in Allergy. *Sirmay, E. A.* 456

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

CAN. M. A. J.

VOL. 68. 1953.

Place of Psychiatrist in Community Medical Services. *Jones, R. O.* . . 1
The Aged Mental Hospital Patient. *Forster, W.* 29
Clinical Orientation to Alcoholism. *Bell, R. G.* 33
Problem of Drug Addiction. *Roberts, C. A.* 112
Present-day Trends in Regulations Governing Admission to Psychiatric Hospitals. *MacLean, R. R.* 119
Succinylcholine. *Davenport, H. T., and McDonald, A. W.* 140
Mysoline, a New Anticonvulsant Drug. *Smith, B. H., and McNaughton, F. L.* 464
Mysoline in Treatment of Epileptic and Non-epileptic Psychiatric Patients. *Bonkalo, A., and Arthurs, R. G. S.* 570
Psychiatric Services in General Hospitals in Canada. *Roberts, C. A., et al.* . 578

CERVELLO.

VOL. 29. MAY, 1953.

A Histochemical Investigation into the Region of Metachromatic Substance in the Central Nervous System of the Rabbit. *Villardi, G.* 169
Two Cases of Cutaneous Melanosis with Hydrocephalus. *Viviano, M.* . 184
Some Questions in Deep Psychotherapy. *Petrò, C.* 202
Lumbar-pubic Electro-shock in Psychiatric Hospital Practice. *Marcellini, D.* 213
Information on Some of our Treatments of Mental Pathology. *Del Bo Rossi, L.* 224

JULY.

Critical Reflections on the Value to be Attributed to Liver Function Tests in Mental Illness. *Romerio, C., and Pacifico, G.* 250
The Treatment of Delirium Tremens. *Dogliani, P.* 265
Electro-shock in Hemiplegic Mental Patients. *Taverna, P.* 278
A Practical Note on the Technique of Insulin Therapy. *Marcellini, D.* . 285

CONF. NEUROL.

VOL. 13. 1953.

Retinitis Pigmentosa Combined with other Heredo-degenerative Syndromes and a Paranoic Condition. *Winnik, H. Z., et al.* 137
The Electrical Resistance of the Skin in Poliomyelitis. *Medina, J. M. E.* . 143
Thyroidectomy and the Localization of Marked Thyroxin in the Posterior Lobe of the Pituitary. *Jentzer, A.* 152

CONN. STATE M. J.

VOL. 17. 1953.

Evaluation of Psychosomatic Medicine. *Smolen, E. M.* 3
Psychotherapeutic Approach to Schizophrenia. *Brody, E. B.* 41

DEUT. MED. WO.

VOL. 78. 1953.

Cerebral Lesions after Dystrophy and Exhaustion. *Bronisch, F. W.* . . 89

DEUT. ZEITS. NERVEN.

VOL. 169. 1953.

Total Circulation and Cerebral Blood Perfusion in Intracranial Angiomas and Aneurysms. *Bernsmeier, A., and Siemons, K.* 421
Medicinal Treatment of Myasthenia. *Bauer, H., and Schmid, O* 427
Results of Liver Function Tests in Organic Nervous Diseases. *Faust, C.* . 438
Disturbances of Metabolism and Central Nervous System. *Peters, G.* . . 446

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

DIS. NERV. SYST.

VOL. 14. JULY, 1953.

Sodium Amytal Narcosis, with Delirium as a Therapeutic Method. *Alexander, E. J.* 195
The Neurotic Symptom of " Dripping Hands." *Bergler, E.* 202
Diagnosis, Pathogenesis and Treatment of Mental Disorders. *Katzenelbogen, S.* 204
Carbon Dioxide Inhalation Therapy. *La Verne, A. A., and Herman, M.* . 209
A Cinematographic Analysis of Reactions under CO_2 Treatment. *MacRae, L. D.* 212

E.E.G. CLIN. NEUROPHYSIOL.

VOL. 5. AUGUST, 1953.

Diffuse E.E.G. Reactions to Psycho-sensory Stimulations. *Lairy-Bounes, G. C., and Fischgold, H.* 343
*A Familial Evaluation of the E.E.G. of Patients with Primary Behaviour Disorder and Psychopathic Personality. *Knott, J. R., et al.* . . . 363
*The E.E.G. During Hypoxia and Hyperventilation. *Holmberg, G.* . . . 371
E.E.G. Responses to Peripheral Nerve Stimulation in Man. *Larsson, L.-E.* . 377
*Studies on the Mechanism of the Action of Visual Afferents on Motor Cortex Excitability. *Wall, P. D., et al* 385
*Effect of Malononitrile upon the E.E.G. of the Rabbit. *Goldring, S., et al.* . 395
*On the Physiological Action of Carbon Dioxide on Cortex and Hypothalamus. *Gellhorn, E.* 401
Evoked Single Cortical Unit Activity in the Somatic Sensory Areas. *Amassion, V. E.* 415

A Familial Evaluation of the Electroencephalogram of Patients with Primary Behavior Disorder and Psychopathic Personality.

1. E.E.G.s were recorded from patients diagnosed primary behavior disorder or psychopathic personality (N = 86) and their true parents (N = 172). E.E.G.s were recorded from 9 other patients and both of their foster parents (N = 18). All patients were carefully screened and none, *on the basis of clinical evidence,* had epilepsy, psychoneurosis, functional or organic psychosis, or sequelae of a physical illness or injury. No patient had an I.Q. below 80.

2. Fifty-four per cent. of the patient group exhibited E.E.G.s outside the normal range. Most of the abnormalities fell in the *slow* range.

3. The true parents of the patient group showed a slight decline in the proportion of normal E.E.G.s when compared to Gibbs' normal control group. In the group of true parents, only 69·8 per cent. were normal while 30·2 per cent. were abnormal. These also tend to show a greater percentage of abnormality in the *slow* group.

4. There was a statistically significant trend indicating that the patients with slow E.E.G.s had parents with slow E.E.G.s, and the patients with fast E.E.G.s had parents with fast E.E.G.s.

5. No meaningful relationship appeared between the E.E.G.s of foster-children and foster-parents.

6. It is proposed that (non-diagnostic) E.E.G. abnormalities in primary behavior disorder and psychopathic personality have important genetic determinants.

(Authors' abstr.)

The Electroencephalogram During Hypoxia and Hyperventilation.

1. The frequences in the electroencephalogram were not tangibly altered by inhalation of 6·5 per cent. oxygen in nitrogen when the gas mixture contained 4·5 per cent. carbon dioxide for stabilization of the carbon dioxide content of the blood.

2. Standardized hyperventilation with carbon dioxide free media of varying oxygen content was compared with hyperventilation with room air. Pure oxygen gas diminished the effect to half. Nine per cent. oxygen in the inspired gas increased the effect threefold, and 7·5 per cent. oxygen eightfold.

3. In the tests mentioned in point 2, there was no significant difference in reaction between the patients who had recently undergone electric shock treatment and the epileptic patients. It was shown that the spontaneous spike and wave activity in the resting E.E.G. of epileptic patients can be increased threefold by

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

hyperventilation with oxygen, eightfold by hyperventilation with air, and fifteenfold by hyperventilation with 9 per cent. oxygen.

4. Variations in the pulse rate paralleled on the whole variations in the E.E.G. The more slow activity in the E.E.G. the higher was the pulse rate.

5. The mental activity was frequently considerably impaired during hyperventilation with a low oxygen medium.

6. In all hyperventilation tests age had a significant influence. In subjects below the age of 25 even hyperventilation with air had a pronounced effect, while in those over the age of 40 there was usually no reaction even to hyperventilation with low oxygen mixtures.

7. In the clinical tests it was shown that hyperventilation with oxygen-poor medium can be used as a complement to the usual hyperventilation test. The method provides less risk of the abnormal cases being overlooked, and could probably be used as an additional criterion for normality.

8. The main theories concerning the cerebral mechanisms during hyperventilation and hypoxia are discussed. It is assumed that hypocapnia is probably the essential factor which produces slow waves in the E.E.G. during hyperventilation. Hypoxia gives a strong support but is unable to produce any such effect without co-existing hypocapnia. (Author's abstr.)

Studies on the Mechanism of the Action of Visual Afferents on Motor Cortex Excitability.

1. The growing interest in the effect of sensory stimulation and especially of light stimulation on epileptic and myoclonic phenomena raises two questions of particular importance. The first is whether light stimulation produces its effect on the motor system by affecting the motor cortex or whether the effect is injected into the motor system at lower levels. The second question is by what pathways the visual afferent impulses reach the motor system in order to affect its threshold. A study of these two questions has been carried out on 30 cats under various types of anaesthesia including chloralose and semicarbazide. In order to test the excitability of the motor cortex, bipolar stimulating electrodes were placed on it and recording electrodes were placed in the pyramidal tract at the medullary pontine junction. The height of the response recorded from the pyramidal tract was used as an index of motor cortex excitability.

2. The response recorded from the pyramidal tract after a single stimulus to the motor cortex is a complex one of prolonged duration. The authors' analysis of the pyramidal discharge suggests that it contains two sharply differentiated components. The fast component is probably due to direct stimulation of cells and perhaps fibres which contribute directly to the pyramidal tract (D response). The second slow component (I response) is probably due to stimulation of internuncial cortical cells which fire onto cells whose fibres contribute to the pyramidal tract.

3. The effect of a single light flash in the eye or of lateral geniculate electric stimulation is to produce a prolonged period of facilitation of the motor cortex. In some animals the light flash alone produces a descending volley in the pyramidal tract. It is concluded that the light flash affects both the cortical cells of origin of the pyramidal tract and the cortical interneurons. Some preliminary evidence suggests that other sensory systems may produce a similar phenomenon.

4. It is shown that the effect of visual afferents on the excitability of the motor cortex is unaffected by complete removal of the occipital lobe cortex. It is concluded that neither the primary visual receiving area nor the visual association area need be present for the facilitating effect of visual stimulation to occur in the motor cortex.

5. Complete removal of the cortex of the superior colliculus did not affect the time course or size of the facilitating effect of a visual afferent volley on the excitability of the motor cortex.

6. Lesions placed in the prétectal region abolished the facilitatory effect of visual stimulation.

7. It is therefore concluded that neither of the two main visual projection systems are responsible for the facilitatory effect of visual afferent volleys on the motor cortex. The possible rôle of other visual pathways, especially the ventral division of the lateral geniculate (the pregeniculate system) is discussed.

(Authors' abstr.)

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Effect of Malononitrile upon the Electrocorticogram of the Rabbit.

The effect of malononitrile injection on E.C.G., evoked visual response and steady potential across the cortex was studied in 14 rabbits carried under minimal anesthesia.

1. After injecting 10 to 25 ml. of 1 per cent. malononitrile intravenously the first changes noted in cortical activity included the development of slow waves in E.C.G., loss of the negative phase of the evoked visual response, and exaggeration of its positive after-effect component. Thereafter the steady potential across the cortex underwent a gradual positive shift, the E.C.G. became isoelectric, and the positive phase of the evoked response diminished in amplitude progressively until the animal died 5 to 8 minutes later.

2. Sodium thiosulfate can reverse this process, attributable to cellular anoxia, if its injection is commenced sufficiently early. The injection must be started at the time when slow waves are commencing to appear in E.C.G., the negative phase of evoked response has just disappeared, and the positive after-effect component has become exaggerated. The reversal of effect takes time, and in one or another aspect, further deterioration is to be expected after the injection of sodium thiosulfate is started. Eventually, however (5–8 min.), with injection of about 20 ml. of 5 per cent. sodium thiosulfate, the preinjection state for malononitrile may be completely restored. (Authors' abstr.)

On the Physiological Action of Carbon Dioxide on Cortex and Hypothalamus.

Inhalation of 10 per cent. CO_2 reduces the responsiveness of specific sensory projection areas to optic and acoustic stimuli while it increases the reactivity of the hypothalamic-cortical system. The activation of the latter is evident from the increased asynchrony of potentials in all parts of the cerebral cortex which is associated with similar changes in hypothalamic potentials. In sensitive preparations and/or under the influence of slightly higher concentrations of carbon dioxide neuronal recruitment may occur resulting in a marked increase in the amplitude of the potentials. This effect of carbon dioxide on the hypothalamic-cortical system is similar to that produced by proprioceptive or nociceptive stimuli which evoke arousal reactions in lightly anesthetized animals. It is shown that the action of proprioceptive and nociceptive stimuli is greatly magnified in hypercapnia.

The excitability of the cortex is thought to depend, other conditions being equal, on the hypothalamic-cortical system which influences the cerebral cortex as a whole and afferent impulses whose action is confined to a specific cortical projection area (optic stimulus → visual cortex). A functional separation of these two systems can be achieved by the action of carbon dioxide.

The effect of high concentrations of carbon dioxide (30 to 40 per cent.) administered in oxygen or air is fundamentally different from that of " low " carbon dioxide. The chief actions of " high " carbon dioxide are :

It reduces or eliminates the small, frequent background potentials while the grouped, Dial potentials are relatively unchanged. If high carbon dioxide is administered for longer periods cortical activity may temporarily disappear. Thereafter, Dial potentials reappear and may occur more frequently than prior to the administration of carbon dioxide. Topically induced cortical strychnine spikes undergo a slight reduction in amplitude and a marked diminution in frequency under the influence of high carbon dioxide concentrations.

Potentials recorded from the posterior hypothalamic area show similar changes. The reduction in amplitude and frequency of the potentials suggests neuronal decruitment in cortex and hypothalamus under the influence of anesthetic carbon dioxide concentrations.

The potential changes described in the preceding paragraphs occur in carbon dioxide-air as well as in carbon dioxide-oxygen mixtures. They are reversible on readmission of air. Occasionally, rebound phenomena are observed under these conditions.

Optic and acoustic stimuli still elicit typical responses in their specific cortical projection areas even when the resting potentials of these or other parts of the cortex have vanished. The reduction in amplitude of the acoustic potentials is less than that of the visual cortical responses.

While specific cortical projection areas remain excitable in high carbon dioxide, the generalized response of the whole cerebral cortex to proprio- and nociceptive

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

stimuli is abolished. Since hypothalamic excitation is likewise missing, this result is interpreted as indicating that " high " carbon dioxide eliminates the reactivity of the hypothalamic-cortical system while the responsiveness of specific cortical projection areas is retained.

It is suggested: (*a*) that the selective functional elimination of the hypothalamic-cortical system, which is activated in arousal, is characteristic for the state of loss of awareness and narcosis; (*b*) that the background potentials of the cortex depend primarily on hypothalamic-cortical discharges; (*c*) that functional elimination of the activating hypothalamic-cortical system releases the inhibitory system regulated by intralaminar thalamic nuclei and leads to more frequent dial potentials in the cortex. (Author's abstr.)

ENCÉPH.

VOL. 42. 1953.

Our Knowledge of " Functional " Psychoses. *Vogt, C., and O.* . . . 97
The Trial of a Barrage Test. *Bonnet, D.* 101
The Use of Mental Tests in a Psychiatric Hospital. *Bergeron, M., and Bonnet, D.* 137
Early Radiological and E.E.G. Signs of Unilateral Cerebral Atrophy. *Fischgold, H., et al.* 145
A Case of Sensory Aphasia. *Schenk, V.-W.-D.* 158
A Study of Psychomotor Initiative and Voluntary Effort in Normal and Psycho-pathological Subjects. *Baruk, H., et al.* 193
The Significance of " Oscillation of Function " in Normal and Abnormal Perception. *Bay, E.* 219
A Contribution to the Study of Tumours of the Corpus Callosum. *Donnadieux, A., and Achalle, J.-Y.* 241
Modification of the Blood During Emotion. *Halmosh, A.-F.* . . . 260

EVOLUT. PSYCHIAT.

VOL. 24. 1953.

The Contribution of Animal Experiment to Human Psychopathology. *Cain, J.* 149
The Idea of Schema in Contemporary Neuro-psychiatry. *Badarraco, G.* . 199
The Etiology of Sydenham's Chorea. *Wassef, W.* 217
Problems of Method and Psychosomatic Medicine. *Alexander, F.* . . 333
Psychosomatic Medicine. *Minkowski, E.* 345
The Significance of the Term " Psychogenesis " in Organic Symptoms. *Margolin, S. G.* 371
The Cure by Prolonged Sleep. *Brisset, C., et al.* 387

FLORIDA M. A. J.

VOL. 39. 1953.

Review of Effects of Various Drugs on Human Cerebral Circulation and Metabolism. *Scheinberg, P.* 817

FOL. PSYCHIAT. NEUR. NEUROCHIR. NEERL.

VOL. 56. APRIL, 1953.

Pathogenesis and General Symptomatology of Headache. *Sillevis Smitt, W. G.* 107
Clinical Aspects of Headache. *van der Does de Willebois, J. J. J. M.* . . 131
Pharmacotherapy, and Psychotherapy of Headache. *Krijgers Janzen, E.* . 161
The Electroshock Technique. *Beek, H., and Cohen Stuart, K.* . . . 196
The Cure of Organic Illness by Prayer. *Koster, S.* 210

GAZ. MED. ITAL.

VOL. 112. 1953.

Mephenesin in Treatment of Hemiplegia. *Rigoletti, L., et al.* . . . 117

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

GENET. PSYCHOL. MONOGR.

VOL. 47. MAY, 1953.

Some Child-rearing Antecedents of Aggression and Dependency in Young Children. *Sears, R. R., et al.* 135
Symptom Correlates for Descriptive Diagnosis. *Wittenborn, J. R., et al.* . 235

GEO. M. A. J.

VOL. 42. 1953.

Treatment of the Alcoholic. *Brawner, J. N., jun.* 21

GIORN. PSICHIAT. NEUROPAT.

VOL. 81. 1953.

Cerebral Vascular Sclerosis. *Döring, G.* 191
Correlating the "I. Q." with the Rorschach Test. *Schachter, M., and Cotte, Mlle.* 203
Recent Experience on the Use of Largactil in Psychiatry. *Rigotti, S.* . . . 211
The Treatment of Some Psychoses with Modifications of Artificial Sleep. *Maroncelli, P.* 223
Encephalopathy from X-rays. *Carrieri, G.* 245
Research on Perception of Form and Colour. *De Franco, F.* 259
The Treatment of a Case of Homosexuality by Transorbital Leucotomy. *Motta, E.* 291
Does there Exist an Original Psychopathology? *Poli, C.* 307
The Danger and Complications of the Antabuse Treatment of Chronic Alcoholism. *Andreani, G., and Castelletti, V.* 319
Auxological Research on the Phrenasthenic Group According to the Method of Toni. *Modonesi, C., and Tarchini, T.* 333

ILLINOIS MED. J.

VOL. 103. 1953.

Common Neurosurgical Problems in General Practice. *Voris, H. C.* . . 33
Review of Some Concepts in Psychiatry. *Garner, H. H.* 36
Tolserol as an Adjunct in Treatment of Drug Addiction. *McLaughlin J. J., and Schlan, L. S.* 247

INDUST. MED. SURG.

VOL. 22. 1953.

Industry's Stake in Rehabilitation of Problem Drinkers. *Wilkins, G. F.* . 29

INT. J. PSYCHO-ANAL.

VOL. 34. 1953.

On the Psycho-analytic Theory of Abstracts. *Rapaport, D.* 177
A Note on Transference. *Schmideberg, M.* 199
Trauma and Symptom Formation. *Shern, M. M.* 202
Twin Relationships and Womb Fantasies in a Case of Anxiety Hysteria. *Abraham, H. C.* 219
The Metapsychology of the Hypnotic Dream. *Kanzer, M.* 228
On Street Fear. *Miller, M. L.* 232
Some Observations on a Case of Vertigo. *Rycroft, C.* 241
Psychodynamics and Treatment of *Petit Mal* in Children. *Sperling, M.* . 248
The Scapegoat Motif in Society and its Manifestations in a Therapeutic Group. *Taylor, F. K.* 253
The Boy and the Dike. *Grinstein, A.* 265

INT. J. PSYCHO-ANAL. SUPP.

VOL. 34. 1953.

Behaviour Under Stress. *Russell, R. W.* 1
Psycho-analysis and Biodynamics. *Masserman, J. H.* 13

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

The Death Instinct, Homeostasis and Allied Concepts. *Flugel, J. C.* . . 43
Psycho-analysis and Experimental Science. *Penrose, L. S.* . . . 74
The Biological Aspect of Freudian Psycho-analysis. *Brun, R.* . . . 83

J. AB. SOC. PSYCHOL.

VOL. 48. JULY, 1953.
" Reinstatement " of the Communicator in Delayed Measurement of Opinion Change. *Kelman, H. C., and Hovland, C. I.* 327
" Primary " and " Secondary " Suggestibility. *Benton, A. L., and Bandura, A.* 336
Facial Similarity between Subject and Central Figure in the T.A.T. as an Influence on Projection. *Weisskopf-Joelson, E., and Money, L., jun.* . 341
Intellectual Rigidity and Social Attitudes. *Goodstein, L. D.* . . . 345
Sociometric Status and Individual Adjustment Before and After Play Therapy. *Cox, F. N.* 354
Language Development and Nonverbal I.Q. of Puerto Rican Preschool Children in New York City. *Anastasi, A., and de Jesús, C.* . . . 357
Prediction of Behaviour by Means of the Rorschach Test. *Miller, D. R.* . 367
Ghosts. *Spiro, M. E.* 376
Some Psychodynamic Factors in Compulsive Conformity. *Hoffmann, M. L.* 383
Levels of Perceptual Organization and Cognition. *Krech, D., and Calvin, A.* 394
Coding Noise in a Task-Oriented Group. *Macy, J., et al.* 401
A Psychogalvanometric Test for Neuroticism. *Herr, V. V., and Kobler, F. J.* 410
Nonadaptive Behaviour Resulting from a Series of Defeats in Fighting Mice. *Scott, J. P., and Marston, M. V.* 417
Studies of Group Behaviour. *Gross, N., et al.* 429

J.A.M.A.

VOL. 151. 1953.
Early Management of Patients with Spinal Cord Injury. *Coralt, D. A., et al.* 89
Tension Headache. *Friedman, A. P., et al.* 174
*Five-year Follow-up in One Hundred Cases of Bilateral Prefrontal Lobotomy. *Greenblatt, M. et al.* 200
Voluntary Health Insurance and Nervous and Mental Disease. *Bennett, A. E., et al.* 202
Testicular Biopsy. *Nelson, W. O.* 449
Anomic Aphasia. *Suter, C.* 462
Excessive Surgery in Hysteria. *Cohen, M. E., et al.* 977
Infectious Neuronitis. *Von Hagen, K. O., and Baker, R. N.* 1465

VOL. 152.
*Effects of Ethyl Alcohol on Cerebral Blood Flow and Metabolism. *Battey, L. L.* 6
*Management of Nocturnal Enuresis by Conditioned Response. *Geppert, T. V.* 381
*Methods of Treatment of Delirium Tremens. *Smith, J. A.* 384
*Hazards of Lobotomy. *Freeman, W.* 487
Craniocerebral Injuries. *Lipscomb, W. R.* 590
Mental Retardation in Children. *Levinson, A., and Goldenberg, C.* . . 781
*Significance of *Grand Mal* Seizures Developing in Patients over Thirty-five Years of Age. *Berlin, L.* 794
Clinical Evaluation of Prefrontal Lobotomy. *Kolb, L. C.* 1085
Results of Intensive (Narcosis) and Standard Medical Treatment of Epilepsy. *Putnam, T. J., and Rothenberg, S. F.* 1400
The Rôle of Emotions in Dermatoses. *Frumess, G. M.* 1417
Use of O.M.P.A. in the Treatment of Myasthenia Gravis. *Schulman, S.* . 1707
The Sociopsychological Treatment of Epilepsy. *Lennox, W. G., and Markham, C. H.* 1690

VOL. 153.
Notes on a Series of Brain Tumors. *Grant, F. C.* 22

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Five-year Follow-up in One Hundred Cases of Bilateral Prefrontal Lobotomy.

The first 100 patients treated at the Boston Psychopathic Hospital with bilateral prefrontal lobotomy, or the standard operation as developed by Dr. James L. Poppen, were followed five years after the operation. Forty patients were residing in the community and 45 in hospitals, 12 had died, and 3 could not be traced.

Twenty-nine per cent. of the patients on whom information was available were considered to be making a " good " work adjustment five years after operation; that is, they were earning a salary and their performance apparently satisfied their employers. If engaged as housewives, they were working full time and satisfactorily, as far as their relatives were concerned. In contrast, only 2 per cent. of the patients were considered to have had good work adjustment preoperatively, and 66 per cent. were considered to have had good work adjustment before their illness began.

Comparison of the adjustment five years postoperatively with that shown from 1 to 4 years postoperatively indicated that improvement after surgical treatment was generally maintained over five years. For the average patient, there was no significant deterioration of adjustment. Postoperative improvement generally was not up to the level of adjustment enjoyed by the patient before illness began, although it was considerably higher than the level of adjustment during illness and before operation. The operative mortality was 2 per cent. (Authors' abstr.)

Effects of Ethyl Alcohol on Cerebral Blood Flow and Metabolism.

The cerebral blood flow, cerebral metabolism, and cerebral vascular resistance were measured in 15 subjects before and during intravenous administration of ethyl alcohol and in 12 patients during and after severe self-induced alcoholic intoxication. The administration of ethyl alcohol in doses sufficient to produce facial vasodilatation and the mental changes of mild inebriation produced no changes in cerebral blood flow, cerebral metabolism, or cerebral vascular resistance. During acute severe alcoholic intoxication, there was a pronounced increase in mean cerebral blood flow, an equally significant reduction in cerebral oxygen uptake, and a reduction in cerebral vascular resistance, as compared with the values obtained following recovery. Low concentrations of alcohol in the blood (averaging 68 mgm. per 100 c.c.) had little or no measurable effect on cerebral circulation, while high levels (averaging 320 mgm. per 100 c.c.) produced a pronounced depression in cerebral oxygen consumption, despite an increase in blood flow. There appears to be no rational basis for the use of ethyl alcohol as a vasodilator in patients with cerebral vascular disease. (Author's abstr.)

Management of Nocturnal Enuresis by Conditioned Response.

Treatment of a group of 42 patients with chronic nocturnal enuresis by development of a conditioned response is described. All patients, after examination to rule out organic lesions as a cause, were treated by being awakened immediately after the commencement of nocturnal urination by an automatic electric alarm. The purpose of this procedure was to condition them to awaken instead of urinate in response to bladder tension. All patients had resisted a variety of treatment methods previously. Enuresis was arrested in 38 (90·5 per cent.) of 42 patients, and the majority of these patients eventually learned to sleep through the entire night; five required a second treatment after reversion, and in four the treatment was unsuccessful. Parental co-operation is of primary importance for success in the case of young children, and lack of it is the commonest cause of failure; hence, professional supervision is an important feature of the treatment. Personality difficulties improved considerably in the majority of patients, indicating that such maladjustments may often be the effect, rather than the cause of enuresis. The conditioned response management of enuresis appears to offer a positive method of attack on a common and stubborn affliction and its attendant personality difficulties. (Author's abstr.)

Methods of Treatment of Delirium Tremens.

From the literature only one factor is common to the various methods of treatment of delirium tremens; that is, regardless of the method previously employed, when a physician becomes interested in the syndrome, his results are approximately 50 per cent. better, as measured by morbidity and mortality, than the results

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

obtained in the patients selected for a control series. Piker's excellent work showed that regardless of the presence of hydration or dehydration, spinal drainage or no spinal drainage, and use of digitalis or no use of digitalis, neither the morbidity nor mortality in delirium tremens was significantly affected. Therefore it would seem that, regardless of the approach used, the results of treatment will be enhanced if the patient is closely observed during his state of delirium and if he receives adequate care for his systemic difficulties.

It is advocated that the usually evident systemic dehydration be relieved by the administration of sufficient fluid either orally or parenterally and that the patient's hypochloremia be alleviated by giving sodium chloride. The liver glycogen as a rule is depleted; therefore glucose is needed and alcohol is contraindicated. An adequate dietary intake supplemented by a sufficient amount of vitamins to cover the daily requirement and the deficiency that has occurred as a result of the preceding alcoholic bout should be provided. Restraint should be avoided if possible. The delirium is best controlled by paraldehyde, chloral hydrate, and the long-acting barbiturates in that order of preference. Adrenal cortex extract or corticotropin may be included if the patient has cirrhosis or fails to respond to the routine described.

The following outline of treatment is suggested for uncomplicated delirium tremens or for the delirious states that develop in alcoholics postoperatively, during a systemic illness, or following trauma. 1. To 1,000 c.c. of 5 per cent. glucose in isotonic sodium chloride solution should be added 500 mgm of ascorbic acid, 200 mgm. of thiamine, and 100 mgm of nicotinic acid or some vitamin preparation containing an equivalent amount of vitamins. This solution should be given twice in the first 12 hours; if there is evidence of cardiac embarrassment the diluent for the second infusion should be water rather than isotonic sodium chloride solution. 2. Paraldehyde should be administered, with 10 to 16 c.c. orally as an initial dose, depending on the degree of delirium, followed by 8 to 12 c.c. orally each hour as necessary to control the delirium; this is usually accomplished by the fourth or fifth hour. 3. Chloral hydrate, 2 gm. initially and 1 or 2 gm. every three hours may be substituted if the patient refuses to take paraldehyde. 4. Mephobarbital (mebaral ® 6 grains (0·4 gm.)) initially and 3 gr. (0·2 gm.) four times a day, should be given to supplement the other sedatives; after 48 hours, the mephobarbital alone should suffice for sedation. (Author's abstr.)

Hazards of Lobotomy.

The hazards during operation and undesirable sequelae of prefrontal lobotomy (702 operations) and transorbital lobotomy (1,303 operations) are discussed. While there is slightly higher risk of fatal hemorrhage in transorbital lobotomy, the incidence of other causes of operative fatality are so low that the mortality is only half that for prefrontal lobotomy. Long-term follow-up in the series of patients treated by prefrontal lobotomy by the authors shows a wide distribution of causes of death not linked with operation. There is a preponderance of deaths from heart disease. On the other hand, in the transorbital lobotomy series a larger number of late deaths are attributable to malignant disease. The explanation lies in the fact that transorbital lobotomy is an effective palliative measure for the pain and suffering of the terminal cancer patient, while prefrontal lobotomy is too drastic a measure for this purpose. Physical complications, such as hemiparesis, seizures, and incontinence, are 10 times as prevalent after the major operation as after the minor transorbital operation. Socially undesirable traits also are 10 times as common after prefrontal lobotomy as after transorbital lobotomy. Because of the high incidence of fatalities and complications following prefrontal lobotomy, the use of this procedure has been almost abandoned in the past three years. Transorbital lobotomy, on the other hand, has become the method of choice. The hazard of delay is an important one in lobotomy of any kind. Chronic mental disorder is a serious handicap to social readjustment of the patient who has undergone lobotomy. (Author's abstr.)

Significance of Grand Mal *Seizures Developing in Patients over Thirty-Five Years of Age.*

The records of 125 ambulatory men who had had *grand mal* seizures starting at or after 35 years of age were reviewed. The seizures had been recurring for from

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

6 months to 29 years. These patients had no significant abnormalities in their neurological status, spinal fluid or roentgenograms of their skull at the onset of the seizures. Fifty-three per cent. were observed four or more years after the onset of the seizures without showing evidence of progressive degeneration or destructive lesion of the brain. Only 5 out of 58 patients given psychological tests showed evidence of structural brain disease on these tests. Four other patients showed similar disturbances during the clinical mental status examinations.

Hypertension, severe closed head injuries, and alcoholism contributed to the development of seizures in 32·5 per cent. of these patients. No brain tumors were detected in this group, although 53 pneumoencephalograms and 3 ventriculograms were made. They revealed only four atrophic lesions resulting from head injuries, intractable seizures, and one cerebral thrombosis that occurred 14 years after the onset of seizures.

About 85 per cent. of patients who have had seizures due to brain tumors have had either Jacksonian seizures or other indications of a focal lesion within one year after onset of the seizures Less than 10 per cent. of brain tumors will cause *grand mal* seizures for more than one year without abnormalities in the clinical, spinal fluid, or skull roentgenographic examinations. At that stage in the development of a brain tumor when *grand mal* seizures are the only indication of a tumor, it seems unlikely that the present diagnostic procedures of pneumoencephalography, ventriculography, and arteriography will reveal the tumor. These patients will have to be carefully followed to detect any change in their findings before a space-occupying lesion can be detected. Although patients in whom *grand mal* seizures develop late in life should be carefully investigated and followed to determine the basis of the seizures, it should be recognized that in at least 50 per cent. of patients who have *grand mal* seizures without other abnormal findings, no destructive lesion of the brain will develop, and they will have a long course without cerebral deterioration.

(Author's abstr.)

J. AM. ACAD. GEN. PRACT.

VOL. 7. 1953.

Hormonal Treatment of Alcoholism. *McAllister, R. G.* 41

J. APPL. PHYS.

VOL. 5. 1953.

Changes in Flicker Fusion Frequency Under Stress. *Brozek, J., et al.* . 330
Experimental Production and Control of Abnormality in Acetylcholine Metabolism Present in Epileptogenic Cortex. *Tower, D. B., and Elliott, K. A. C.* 375
Cerebral Metabolism. *Lambertsen, C. J., et al.* 471

J. AVIAT. MED.

VOL. 24. 1953.

Research Program to Develop Psychiatric Selection of Flying Personnel. *Sells, S. B., and Barry, J. R.* . . . . . 29 and 36

J. BRAS. PSIQUIAT.

VOL. 2. 1953.

An International Institute of the Brain. *Pacheco, A. C., and Silvor* . . 5
Modifications of Personality from Prefrontal Leucotomy. *Fernandes, B.* . 15
The Treatment of Chronic Alcholism. *Nobre de Melo, A. L.* . . . 37
Pre-schizophrenic Psychopathology. *Manfredini, J.* 49
Some Aspects of Psychoanalysis in Schizophrenia. *Uchoa, D. M.* . . 113
"Medicine of Labour" in Brazil and the Problem of Human Relations in Industry. *Lippmann, H. L.* 133
War Psychoses. *van der Horst, L.* 147
Intravenous Dilvasene. *de Souza, W., and Fessel, A. E.* 160

J. CLIN. NUTRIT.

VOL. 1. 1953.

Lack of Avitaminosis among Alcoholics. *Figueroa, W. G., et al.* . . . 179

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

J. COMP. NEUR.

VOL. 98. JUNE, 1953.

Cell Counts in the Primate Cerebral Cortex. *Shariff, G. A.* 381
An Experimental study of the Cells and Connections of the Superior Olivary Complex of the Cat. *Stotler, W. A.* 401
Limit and Organization of the Cortical Projection from the Medial Thalamic Nucleus in Monkey *Pribram, K.H., et al.* 433
Representation of the Extra-ocular Muscles in the Oculomotor Nuclei of the Monkey. *Warwick, R.* 449
An Experimental Study of the Origin of the Cells Forming the Fifth Cranial Ganglion and its Nerves in the Embryo of *Amblystoma punctatum*. *Rebert, R. R.* 505
On the Earliest Developmental Stages of Neurofibrillar Genesis. *Aboulafia, E. D.* 531

J. EXPER. PSYCHOL.

VOL. 46. JULY, 1935.

The Discrimination of Dot Patterns as a Function of Number and Average Separation of Dots. *French, R. S.* 1
Previous Training as a Determinant of Response Dependency at the Threshold. *Verplanck, V. S., et al.* 10
The Psychophysiological Significance of the Galvanic Skin Response. *Mundy-Castle, A. C., and McKiever, B. L.* 15
Physiological Need, Word Frequency and Visual Duration Thresholds. *Wispé, L. G., and Drambarean, N. C.* 25
An Electromyographic Study of Tension in Interrupted and Completed Tasks. *Smith, A. A.* 32
The Effect of Difficulty of Task on Proactive Facilitation and Interference. *Barch, A. A.* 37
Acquisition of Two Lever-positioning Responses Practised over Several Periods of Alternation. *Bilodeau, E. A.* 43
Some Effects of Manifest Anxiety on Mental Set. *Maltzman, I., et al.* . . . 50
Anxiety, Anxiety Reduction and Stress in Learning. *Deese, J., et al.* . . . 55
Negative Transfer in Verbal Learning. *Porter, L. W., and Duncan, C. P.* . 61

JOURN. LANCET.

VOL. 73. 1953.

Diagnosis and Treatment of Acute Cerebrovascular Lesions. *Bailey, A. A.* 83

J. CLIN. INVESTIG.

VOL. 32. 1953.

Changes in Cerebral Vascular Resistance of Man in Experimental Alkalosis and Acidosis. *Schieve, J. F., and Wilson, W. P.* 33
Effects of Intravenous Priscoline on Cerebral Circulation and Metabolism. *Scheinberg, P. et al.* 125
Cerebral Blood-flow and Oxygen Consumption in Hyperthyroidism Before and After Treatment. *Sokoloff, L., et al.* 202
Comparison of Effects of l-Norepinephrine, Synthetic l-epinephrine, etc., upon Cerebral Blood Flow and Metabolism in Man. *Sensenbach, W., et al.* . 226
Effect of ACTH and Cortisone on Cerebral Blood-flow and Metabolism. *Sensenbach, W., et al.* 372

J. CLIN. PATH.

VOL. 6. 1953.

Study of Barbiturate Intoxication by Ultra-violet Spectrophotometric Technique. *Wright, J. T., and Johns, R. G. S.* 78

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

J. LAB. CLIN. MED.

VOL. 41. 1953.

Combined Anticonvulsant Activity and Toxicity of Dilantin and N-Methyl 5-Phenylsuccinamide. *Chen, G., and Ensor, C. R.* 78
C.S.F. Sodium Values in Essential Hypertension. *Johnson, L. L., et al.* . 287
C.S.F. Inorganic Phosphorus in Normal Individuals, etc. *Odessky, L., et al.* 745
Blood C.S.F. Barrier in Multiple Sclerosis during ACTH Administration. *Rowland, V., and Randt, C. T.* 754

J. MED. EDUC.

VOL. 28. 1953.

Psychiatry in Medical Education. *Thompson, G. N.* 24

J. MT. SINAI HOSP.

VOL. 19. 1953.

Experimental Approaches to Psychodynamic Problems. *Massermann, J. H* 639
Epilepsy and E.E.G. *Greenstein, L.* 683

J. NAT. M. A.

VOL. 45. 1953.

Psychomotor Epilepsy. *Youngue, E. L.* 211

J. NERV. MENT. DIS.

VOL. 116. DECEMBER, 1952.

NEUROLOGICAL PROBLEMS IN THE WORLD IN 1953.

A New Interpretation of the Striofugal Connections of the Corpus Striatum. *Ogawa, T.* 555
Segmental and Peripheral Innervation of the Urinary Bladder. *Bors, E.* . 572
Reflex Inhibition and Voluntary Action of Normal Human Muscles. *Hoffmann, P.* 579
Vibration Sensation of the Vertebral Column as a Diagnostic Aid in Spinal Disease. *Jung, R.* 585
A Dynamic Variant of Jackson's Principle of Dissolution. *Dimitrijevic, D. T.* 596
Precipitating and Modifying Agents in Chorea. *Vogt, C. and O.* 601
Histologic Findings in a Special Form of Chorea. *Hopf, A.* 608
Cell-body Changes in the Nucleus Coeruleus in Parkinson Cases. *Beheim-Schwarzbach, D.* 619
Intracellular Lipofuscin and Cerebroside Distribution in Layer V of the Human Area Gigantopyramidalis. *Balthasar, K.* 633
*Cellular Pathology of the Basal Nuclei in Schizophrenia. *von Buttler-Brentano, K.* 646
*Cerebral Injuries Caused by Atomic Bombardment. *Uchimura, Y., and Shiraki, H.* 654
Problems of Demyelinating Encephalomyelitis. *Pette, H.* 673
Cerebral Paragonimiasis. *Mitsuno, T., et al.* 685
Poliomyelitis. VII. Gastro-intestinal Disturbances. *Baker, A. B., et al.* . 715
The Topography of Cerebral Growths. *Ostertag, B.* 726
Fatal Complications from the Use of Diodrast for Cerebral and Thyroid Angiography. *Utterback, R. A., and Haymaker, W.* 739
Remarks on the Treatment of Pituitary Tumors. *Naffziger, H. C.* . . . 760
*Cerebral Pendunculotomy for the Relief of Involuntary Movements. *Walker, A. E.* 766
Brain and Psyche. *Kleist, K.* 776
Secondary Disturbances of Perception. *Halpern, L.* 783
Acrophobia. *Zutt, J.* 789
Agoraphobic Vertigo. *Lopez-Ibor, J. J.* 794
A Case of Subcortical Visual Verbal Agnosia. *Dattner, B., et al.* 808
The Expressive Personality, Profile and Disorders of Speech. *Ottonello, P.* . 812

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Clinical Picture and Morbid Anatomy in a Case of "Pure Word Deafness." *Wohlfart, G., et al.* 818
*Reversible Cortical Blindness Following Occipital E.C.T. *Schildge, E.* . 828
Within the Realm of Epilepsy. *Moore, M. T.* 841
Histamine Headache or Erythroprosopalgia. *Bing, R.* 862
Traumatic Hydrocephalus. *Laubenthal, F.* 874
The 24-hour Encephalogram. *Bronisch, F. W.* 892
Vegetative Disorders of the Postconcussion Syndrome. *Silfverskiold, B. P.* . 897
Trophic Disorders of the Feet in Acquired Lesions of the Cauda Equina. *Barraquer-Ferré, L., and Barraquer-Bordas, L.* 902
The Relief of Intractable Pain. *Aird, R. B., and Seifert, J.* 912
The Discrepancies between Symptoms and Signs in Multiple Sclerosis. *Wilder, J.* 919
Lathyrism. *Singh, M. and G.* 923
*The Tonic Plantar Reflex and its Localizing Significance. *Herman, E.* . 933
Studies of Reflex Activity of the Isolated Cord in Spinal Man. *Guttmann, L.* 957
Pathologic Exteroceptive Reflexes in Man. *Duensing, F.* 973
The Vascular Syndrome of the Basilar and Vertebral Arteries, and their Branches. *Hiller, F.* 988
A Crossed Parabulbar Syndrome of the Lateral Column. *Tolone, S.* . . 1017
Hydatid Disease of the Spinal Column. *Schroeder, A. H., and Medoc, J.* . 1025
Heredopathia Atactica Polyneuritiformis. *Refsum, F.* 1046
Larvate Encephalitis and Psychoneurosis. *Vujic, V.* 1051
Subacute Sclerosing Leukoencephalitis. *van Bogaert, L.* 1065
Benign Recurrent Pleocytic Meningitis. *Mollaret, P.* 1072
Subacute Anterior Poliomyelitis without Muscle Atrophy. *Nistri, M.* . 1081
Subarachnoid Iodine Therapy in Chronic Leptomeningitis. *Buscaino, V. M.* 1091
Diphtherial Paralysis. *Schied, W.* 1095
Central Nervous System Involvement in Relation to Endemic Lues in Anatolia. *Marchionini, A.* 1102
The Tabes Dorsalis of To-day. *Reese, H.* 1109

Cellular Pathology of the Nucleus Basalis in Schizophrenia.

1. The large nerve cells of the nucleus basalis (in the substantia innominata) have been examined in normal adult brains, in 10 brains of very old but otherwise normal people, and in 9 patients diagnosed as schizophrenic.

2. While only senile changes were present in the senile brains, many of the large cells in all of the schizophrenic specimens were found reduced in size. The smallness was interpreted as being of congenital origin and termed "dwarfism."

3. A considerable number of the cells in the schizophrenic group showed various additional changes, such as swelling, shrinkage, disappearing cell bodies, accumulation of lipofuscin, coarse fatty vacuolization, glassy appearance, and liquefaction.

4. These changes were clearly acquired during life, possibly as a result of the congenital dwarfism. The latter may have caused autonomous regression or increased susceptibility to various pathogenic agents.

5. The last four of the cell changes mentioned resembled those observed in the senile brains. As yet it would be unjustified to identify these changes with premature ageing. (Author's abstr.)

Cerebral Injuries Caused by Atomic Bombardment.

Among the casualties of atomic bombing 37 brains were examined. More or less severe changes were found in 32 of them.

Two groups may be distinguished: the first showed changes due to circulatory disturbances comparable to those which have been described as the result of excessive doses of radium and roentgen radiation. The authors' material, however, showed certain deviations from the known forms of radiation damage.

The difficulty of establishing a specific pathogenic pattern in view of the most complex conditions of exposure is emphasized.

The second group showed severe selective changes and even destruction of nerve cells. Their pathogenesis is discussed. (Authors' abstr.)

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Cerebral Pedunculotomy for the Relief of Involuntary Movements. II. Parkinsonian Tremor.

1. The results of approximately a three-year follow-up of 4 cases treated by cerebral pedunculotomy for parkinsonian tremor are presented.

2. The tremor may be abolished temporarily or permanently by the operation, but at the expense of a certain degree of now predictable paralysis.

3. Tremor returning after operation may be more amenable to antispasmodic drugs.

4. The manifestations of the parkinsonian syndrome, other than tremor, are little, if at all, affected by the operation.

5. Patients should be rigidly selected for operation.

(Author's abstr.)

Reversible Cortical Blindness Following Occipital Electric Shock Treatment.

1. Six cases of transient cortical blindness following electric shock are described. Blindness occurred with electrodes in no other position than the occipital. The incidence was 12·5 per cent. (5 out of 40 patients) after abortive seizures, and 2 per cent. (1 out of 50 patients) after full-scale seizures.

2. Blindness ranged from an experience of opaque gray to complete darkness, and usually cleared after one to ten minutes. One patient, however, recovered only after four hours, allowing detailed examination yielding evidence of an optic agnostic disorder.

3. Recovery occurred either gradually, step by step in sudden leaps, or in a labile manner, defective vision alternating with moments of intact visual acuity. These patients showed central scotomata during recovery.

4. The perceptual defects were not part of a generalized postconvulsive disturbance but were restricted to occipital cortical function. Four cases showed a distortion of time experience; this was of the " slow motion " type.

(Author's abstr.)

The Tonic Plantar Reflex and Its Localizing Significance.

1. In eliciting the plantar reflex attention should be given to intensification of the response.

2. The tonic plantar reflex is characterized by a slow contraction of the toes and distal part of the foot induced by stimulation of the sole of the foot. The contraction persists for 1 to 2 minutes, whereupon the toes and distal part of the foot return, equally slowly, to their previous position.

3. The tonic plantar reflex should be distinguished from the exaggerated plantar reflex and from voluntary, persistant flexion of the toes. In the exaggerated plantar reflex, the contraction occurs more rapidly and is brisker than in the tonic plantar reflex.

4. The tonic plantar reflex is not identical with the grasp reflex because it often occurs in the absence of the grasp reflex.

5. The tonic plantar reflex indicates the presence of a lesion of one or both frontal lobes, chiefly in their posterior part. The reflex may be homolateral, contralateral or bilateral with respect to the frontal lesion.

6. The occurrence both of a tonic plantar reflex and a grasp reflex is presumably indicative of a homolateral lesion.

7. In the presence of a bilateral tonic plantar reflex, the side on which it is most intense is presumably homolateral to the lesion.

8. Equal tonic plantar reflexes on the two sides are presumed to indicate a lesion of the corpus callosum.

9. When a unilateral tonic plantar response is accompanied by a contralateral Babinski phenomenon or other pyramidal sign the tonic plantar reflex is homolateral to the lesion.

10. Damage to the frontal extrapyramidal connections, the functions of which are predominantly homolaterally exerted, is presumably the underlying cause of the tonic plantar reflex. (Author's abstr.)

VOL. 117. JANUARY, 1953.

Psychomotor Epilepsy. *Garvin, J. S.* 1
Some Psychosomatic Aspects of Pulmonary Tuberculosis. *Merrill, B. R.* . 9

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Intermediate States of Consciousness in Patients with Generalized Tics. *Heuscher, J. E.* 29
The Mode of Action of Carbon Dioxide Treatment in Human Neurosis. *Meduna, L. J.* 39
Perception of Simultaneous Tactile Stimuli by Mentally Defective Subjects. *Fink, M., et al.* 43
Subconvulsive Metrazol Therapy. *Pacella, B. L., et al.* 50
Social Behavior and Autonomic Physiology in Long-standing Mental Illness. *Bockoven, J. S., et al.* 55
*Response of Serum Citric Acid Levels in Schizophrenics to the Intramuscular Administration of Insulin. *Gottfried, S. P., et al.* 59

Response of Serum Citric Acid Levels in Schizophrenics to the Intramuscular Administration of Insulin.

1. Serial serum glucose and citric acid levels were performed on 12 male adult schizophrenics after the intramuscular administration of 20 units of insulin.

2. Seven of the 12 cases showed an abnormal response to insulin. The hypothesis is advanced that this abnormal response was due to an excessive secretion of epinephrine which neutralized the action of the administered insulin.

3. Serum calcium, glucose and citric acid levels were performed on 26 adult male schizophrenics before and after the administration of 80 to 300 units of insulin.

4. Twenty of the 26 cases showed a lowering in the serum citric acid, while the other 6 cases showed either no change or a rise in the serum citric acid. Here, too, the hypothesis is advanced that the results obtained in the above 6 cases were due to an excessive secretion of epinephrine.

5. Calcium levels remained within normal limits and were essentially unchanged after insulin administration. (Authors' abstr.)

FEBRUARY.

Evaluation of Therapeutic Outcome in Mental Disorders. *Zubin, J.* . . . 95
Present-day Challenge to Psychiatrists. *Rothenberg, S.* 112
Catatonic Syndrome in a Case of Subdural Hematoma. *Micheels, L. J.* . 123
Psychogenic Gastrointestinal Disorders and Cephalalgia with Paradoxical Reactions to Hypnosis. *Schneck, J. M.* 130
Amyotrophic Lateral Sclerosis. *Arnold, A., et al.* 135
Investigations on the Use of Cortical Stimulants with Sodium Amytal for Narcoanalysis. *Keare, K. M., and Kant, F.* 140

MARCH.

Clinical Analysis of Patients with Low Voltage E.E.G. *Pine, I., and H. M.* 191
Proprioceptive Facilitation of Voluntary Motion in Man. *Levine, M. G., and Kabat, H.* 199
Factors in Group Motivation in a Mental Hospital. *Hyde, R. W.* . . . 212
Pharmacotoxic Therapy with Atropine Sulfate. *Forrer, G. R., et al.* . . 226
" Combat Fatigue " or Death Anxiety Neurosis. *Teicher, J. D.* . . . 234
Electroconvulsive Therapy. *Alexander, G. H.* 244
A Case of Amnesic Aphasia of Fifteen Years' Duration. *Madonick, M. J., and Stein, M. D.* 251

J. NEUROPATH. EX. NEUR.

VOL. 12. JULY, 1953.

Primary Carcinoma of the Pituitary. *Feiring, E. H., et al.* . . . 205
Multiple Intracranial Tumors. *Wise, B. L., et al.* 224
An Intrinsic Tumor of the Third Ventricle. *Dubos, E. I., et al.* . . . 232
Meningioma of the Gasserian Ganglion. *Raskin, N.* 244
Selective Neuronal Necrosis and Its Topistic Patterns in Hypoxemia and Oligemia. *Scholz, W.* 249
*Cortical and Subcortical Electrical Activity in Experimental Seizures Induced by Metrazol. *Starzl, T. E., et al.* 262

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

The Effect of Various Convulsive Procedures on the Cranial Vessels of the Dog Angiographically Visualized. *Halpern, L., and Peyser, E.* . . 277
Experimental Hydrocephalus. *Bachs, A., and Walker, E. A.* . . . 283
*Histochemical Studies of Active Carbonyl Groups (Proteolipids) in Brain with Multiple Sclerosis. *Ashbel, R., et al.* 293
Coarctation of the Walls of the Lateral Angles of the Lateral Cerebral Ventricles. *Epstein, J. A.* 302

Cortical and Subcortical Electrical Activity in Experimental Seizures Induced by Metrazol.

An electroencephalographic study has been made of both cortical and subcortical activity occurring in the brain of the cat during seizures produced by convulsive doses of metrazol and by auditory stimuli or direct stimulation of thalamic nuclei in the presence of subthreshold doses. The effect upon this activity of various lesions was also observed.

The seizure induced by threshold doses of metrazol appeared, by every test, to be primary in the cerebral cortex and to radiate from it to deep structures. Prominent activity in the internal capsule, basis pedunculi, subthalamus and midbrain tegmentum appeared to represent discharge descending to motor outflows. The basal ganglia did not display conspicuous seizure activity. The thalamus was prominently involved, its sensory relay nuclei exhibiting the most marked seizure discharge, paralleling that in related cortical areas. Associational thalamic nuclei were next most affected. The nuclei of the diffuse thalamic projection system were implicated later than their neighbors and manifested a markedly different type of activity, resembling giant spindle bursts. The possibility is suggested that this may be associated with loss of consciousness in seizures.

With subconvulsive doses of metrazol, repetitive afferent stimulation led to development of a complex evoked potential in the receiving cortex, to its irradiation to other cortical area and, finally, to seizure induction. This series of events could still be provoked after destruction of the thalamus, except for the relay nucleus of the sensory pathway involved. It could be reproduced by direct stimulation of the thalamic sensory relay nuclei, but not the nuclei of the diffuse thalamic projection system. It was abolished by ablating the sensory receiving area of the cortex. The ascending sensory pathway and the cerebral cortex itself seem to be the only structures essentially involved in such seizure induction.

(Authors' abstr.)

Histochemical Studies of Active Carbonyl Groups (Proteolipids) in Brains with Multiple Sclerosis.

Twenty-two different brains from patients with multiple sclerosis were studied with a new reagent (2-hydroxy-3-naphtoic acid hydrazide coupled with tetrazotized diorthoanisidine) demonstrating the proteolipid (active carbonyl group) component.

The normal myelin as well as the remnants of myelin in the plaques were stained blue with this reagent. The areas of demyelination (plaques) stood out unstained. Also some gitter cells and macrophages showed blue granules (broken myelin). The ketonic carbonyl groups which were stained are probably identical with the proteolipid complexes isolated and crystalized from brain by Folch and Lees.

Destruction of the proteolipid fraction of the myelin sheath is a crucial element of the tissue damage in the lesions of multiple sclerosis. (Authors' abstr.)

J. NEUROPHYSIOL.

VOL. 16. MAY, 1953.

*Effects of Anterior Limbic Stimulation on Somato-motor and Electrocortical Activity. *Sloan, N., and Kaada, B. R.* 203
Similarity in Action Between Curare and Strychnine on Cortical Neurons. *Chang, H.-T.* 221
*Behavioral Changes Following Thalamic Injury in Cat. *Schreiner, L., et al.* 234
An Ontogenetic Study of Motor Deficits Following Dorsal Brachial Rhizotomy. *Lassek, A. M., and Moyer, E. K.* 247

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

*Independence of Diffuse Thalamo-cortical Projection System Shown by Specific Nuclear Destructions. *Hanbery, J., and Jasper, H.* . . . 252
Localization of Stretch Reflex. *Cohen, L. A.* 272
*An Experimental Study of the Transition from Normal to Convulsoid Cortical Activity. *King, R. B., et al.* 286
Autonomic Response Mediated via the Corticospinal Tract. *Landau, W. M.* 299
*Neuronographic Analysis of Medial and Basal Cerebral Cortex. I. Cat. II. Monkey. *MacLean, P. D., and Pribram, K. H.* . . . 312 and 324

Effects of Anterior Limbic Stimulation on Somato-motor and Electrocortical Activity.

1. The profound and immediate influences which—according to previous reports—the anterior limbic cortex can exert on the electrocorticogram (E.C.G.) and on movements induced by area 4 stimulation have been studied with simultaneous recordings of the electrical cortical activity and the motor responses in dialized cats and monkeys.

2. These studies indicate that anterior limbic stimulation can: (i) alter motor cortex induced movements in the direction of facilitation, inhibition, or facilitation reversing to inhibition, without any changes in the E.C.G., including that of the motor point in area 4; and (ii) induce widespread and profound E.C.G. changes, including that of the motor point in area 4, with or without simultaneous changes in the motor cortex induced movements—the most frequent combination, however, was that of the " attenuation " E.C.G. response with motor inhibition.

3. These responses were effected by means of subcortical projections from the anterior limbic cortex directly to subcortical levels of motor regulation and possibly also indirectly by cortico-subcortico-cortical paths to alter the excitability of the motor cortex.

4. Spread of electrical after-discharges from the stimulated anterior limbic cortex into the motor cortex has been demonstrated in cats with evidence of " secondary " facilitation followed by extinction at a cortical level.

5. The agranular anterior limbic cortex is therefore not accurately described as a " suppressor " area, but might perhaps better be termed " regulatory " in regard to its influence upon somato-motor activities.

6. Vocalization was obtained in the lightly anesthetized monkey from a small area restricted to the upper portion of the anterior limbic gyrus and to the banks of the cingulate sulcus.

7. Complex postural synergic movements of the limbs, trunk and neck, predominantly of contraversive type, were elicited in anesthetized cats and monkeys and in unanesthetized cats. These motor effects required a higher stimulus strength than that necessary for obtaining arrest of spontaneous movements, including respiration.

8. " Arrest " reactions with no loss in muscle tone have been elicited by anterior limbic stimulation in the unanesthetized cat. (Authors' abstr.)

Behavioral Changes Following Thalamic Injury in Cat.

Destruction of the thalamic mediodorsal nuclei in cats gives rise to behavioral changes, the outward manifestations of which can be described under the general headings of increased irritability and rage. In addition, such preparations display altered feeding habits, reduced motor activity, and decreased ability to solve problems in learning and discrimination. Conversely, destruction of the thalamic anterior nuclear complex is followed by an elevated threshold for the elicitation of rage, overly solicitous responses to pleasurable stimuli and docility. Combined injury of the thalamic anterior and mediodorsal nuclei occasions the development of labile behavior characterized principally by over-reactivity to both pleasurable and noxious stimuli. Finally, destruction of the thalamic intralaminar nuclei results in alterations of behavior characterized principally by transient lethargy, somnolence, motor disability and reduced reactivity to noxious stimuli.
(Authors' abstr.)

Independence of Diffuse Thalamo-cortical Projection System Shown by Specific Nuclear Destructions.

Cortical responses to local electrical stimulation of the diffuse thalamo-cortical projection system in cats under nembutal anesthesia have been recorded before and

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

after selective destruction by coagulation of each of the specific thalamic nuclei, including lateral and medial geniculate bodies recording responses to visual and auditory cortex respectively, VPL to sensory cortex, VL to motor cortex, MD to frontal cortex, LP to parietal cortex, and the anterior nuclei to the anterior cingulate region.

The diffuse thalamo-cortical projection system may act independently of any of the specific nuclear projections to a given area of cortex. It does not necessarily reach the cortex via specific sensory or association nuclei, though it may provide intrathalamic interconnections between the latter as well.

Stimulation of a large bundle of fibres of the diffuse system in the ventral portion of VA may set up widespread short-latency responses, presumably due to stimulation of a large portion of the final common pathway of the diffuse projection system. More discrete stimuli set up local excitation which spreads by recruitment through a divergent multineuronal chain in the thalamus, producing cortical responses of much longer latency.

A topographical organization within the diffuse thalamo-cortical projection system (the thalamic reticular system) with projection to somato-sensory, visual, auditory, as well as to motor, frontal and parietal and cingulate cortex and to the caudate nucleus, has been confirmed. (Authors' abstr.)

An Experimental Study of the Transition from Normal to Convulsoid Cortical Activity.

The transition from normal to convulsoid activity was studied in 20 rabbits (minimal anesthesia). Paroxysms of slow development were initiated in the visual cortex by 11/sec. or slower repetitive stimuli to the geniculate. Leads which divided the cortex into several strata were used routinely to follow the development of paroxysm.

1. Prior to the appearance of paroxysm a progressive decline often occurred in amplitude of the responses to successive stimuli. This is called the low period. When the stimulus was broken during it, paroxysm usually developed slowly in the cortex.

2. Isolated clonic discharges, surface-positive in polarity, were the first overt evidence of paroxysm. These were followed by a period of fast tonic discharge which preceded build-up to the high-voltage paroxysmal pattern of the rodent. In rapidly developing paroxysm any or all of the above-mentioned phases can be missing.

3. Paroxysm occasioned by stimuli of quite slow frequency may demonstrate increasing prominence of the early negative phase (1) as a prelude to paroxysm. This relates the preparoxysmal status of the preparation to the sequence of events leading to the appearance of spontaneous strychnine spikes in other studies.

4. Most often paroxysm initiated in the cortex by repetitive thalamic stimulation was observed first in middle or superficial cortical fractions.

5. Paroxysms activated by intraperitoneal metrazol, or appearing spontaneously may also commence locally in the middle and superficial cortex as well as by developing simultaneously throughout. (Authors' abstr.)

Neuronographic Analysis of Medial and Basal Cerebral Cortex. I. Cat.

Phylogenetic, ontogenetic and cytoarchitectural studies, together with recent physiological and psychological investigations, suggest that the limbic system represents an early neural development involved in affectively determined processes. The limbic system comprises the cortex contained in the great limbic lobe of Broca and its associated subcortical cell stations. Further analysis of the functions of the limbic system requires a more detailed knowledge about its anatomical relationship with the rest of the nervous system. This investigation was undertaken to show on a comparative basis in the cat and the monkey the interrelationship of the limbic and extralimbic cortex. The method of physiological neuronography was employed for showing this relationship. This first paper reports the findings in the cat.

Eighteen animals were used in this study. The results indicate that five regions of limbic-extralimbic cortex can be differentiated if one allocates to a region all those areas of cortex that are reciprocally connected. Together these regions surround the hilus of the hemisphere. They are named according to their topo-

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

graphical location. Further analysis shows that the total area of cortex fired by all points within a region forms a large cortical segment. The five resulting segments collectively cover the entire cerebral mantle with the exception of parts of the visual, auditory and somatic areas.

In the subsequent paper it will be seen that limbic-extralimbic regions have been found in the monkey which, on a topographical basis, appear to be homologous to those described for the cat. It will also be seen that the large cortical segments associated with these regions follow a similar pattern in the monkey. The relevance of these regions and their associated segments to cortical function is at present being investigated and will be reported in subsequent communications.

(Authors' abstr.)

Neuronographic Analysis of Medial and Basal Cerebral Cortex. II. Monkey.

The method of strychnine neuronography has been used to explore the interconnections between the limbic and extralimbic cortex of the medial and basal aspects of the cerebral hemispheres. Large regional systems can be discerned on the basis of reciprocal connections of all points within such a region. Limits of the region are demarcated by lack of, or unidirectional, connections. The following regional systems have been described.

1. *Frontotemporal.*—The classification of this region is based on a firing pattern common to the strychninization of the posterior orbital, anterior insular, temporal polar and pyriform (periamygdaloid) areas. New findings include the demonstration of the firing pattern of the anterior insula as well as the reciprocal connections of the posterior orbital and insular cortex with the frontal operculum.

2. *Medial occipitotemporal.*—This region is characterized by the firing pattern common to the strychninization of the cortex of the hippocampal gyrus and portions of the fusiform and lingual gyri. New findings are two-way connections relating the limbic areas of the medial temporal cortex to a variable extent of medial occipital and medial temporal extralimbic cortex.

3. *Medial parieto-occipital.*—This region is delineated by the firing pattern common to the strychninization of the limbic cortex of the posterior cingulate and parasplenial gyri and the contiguous extralimbic cortex of the precuneus. Its connections with the hippocampus have been described.

4. *Medial frontoparietal.*—This regional classification is based on the firing pattern common to the strychninization of the rostral cingulate gyrus (limbic cortex) and the superior or frontal area (extralimbic cortex). The extent of firing of the medial cortex from the superior frontal area is surprising and has not been previously reported.

5. *Medial frontal.*—This region is delineated by the firing pattern common to the strychninization of the limbic cortex of the subcallosal and medial orbital areas, and the extralimbic cortex of the ventromedial frontal polar area. The demonstration of interconnections among these areas has not previously been reported.

6. *Hippocampus.*—Although no reciprocal connections between hippocampus and the other regions were established, the unidirectional firing of these regions into Ammon's formation is of interest. The anterior hippocampus is fired by the posterior orbital, anterior insular, and temporal polar and pyriform (periamygdaloid) areas. The posterior hippocampus is fired by the cortex of the hippocampal gyrus and the parasplenial and posterior cingulate areas.

7. The largest extent of cortex fired by strichninization of all points within a region is called a "segment." Cortical segments show considerable overlap at their borders.

8. Comparison of regions and segments in cat and monkey is made.

9. The methods for establishing the relevance of this classification of neuronographic data to problems of cortical function are referred to.

(Authors' abstr.)

JULY.

*Stimulation Studies of Insular Cortex of *Macaca mulatta*. *Hoffman, B. L., and Rasmussen, T.* 343
*Spreading Cortical Convulsions and Depressions. *van Harreveld, A., and Stamm, J. S.* 352

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Responses of Deafferented Spinal Neurones to Corticospinal Impulses. *Teasdale, R. D., and Starvaky, G. W.* 367
*" Jump Reflex " in hypothalamic Cat. *Guzman, F. C., and del Pozo, E. C.* 376
Some Effects of Post-tetanic Potentiation of Monosynaptic Response of Spinal Cord of Cat. *Jefferson, A., and Benson, A.* 381
*Relation of Cerebellum to Upper Brain Stem. *Whiteside, J. A., and Snider, R. S.* 397
*Microelectrode Analysis of Pyramidal System During Transition from Sleep to Wakefulness. *Whitlock, D. G., et al.* 414
Spike Discharges in Pyramidal System during Recruitment Waves. *Arduini, A., and Whitlock, D. G.* 430
Phenomenon of Repetitive Firing on Lateral Geniculate of Cat. *Bishop, P. O., et al.* 437

Stimulation Studies of Insular Cortex of Macaca mulatta.

1. The effects of electrical stumulation of the insula on blood pressure, respiration, and stomach motility and tonus were studied in the monkey (*Macaca mulatta*). The following effects are produced : fall in blood pressure, inhibition of respiration in expiration, decrease in stomach tonus and inhibition of gastric peristalsis.

2. Similar effects were produced by stimulating the posterior orbital surface and the temporal pole, although the effects produced on blood pressure by stimulation of those areas were usually more variable than those produced by stimulation of the insula.

3. After sectioning both vagus nerves, the gastric responses no longer occurred, although the cardiovascular and respiratory responses persisted.

4. Electrical stimulation of the lateral surface of the cerebral hemisphere did not produce inhibition of respiration, fall in blood pressure or alterations of stomach tonus and motility, under the experimental conditions maintained throughout this study.

5. The typical responses to insular stimulation occurred regardless of the anesthetic agents used (dial, nembutal, ether or chloralosane-urethane).

6. Retrogasserian neurectomy, performed in two animals, did not abolish the gastric, respiratory or blood-pressure responses to stimulation of the insula.

7. The type of response obtained by electrical stimulation of the insula was not altered by varying the wave form, pulse duration or frequency of the stimulating current.

8. Square waves, sine, rectified sine and partially rectified sine waves were approximately equally effective in eliciting responses from the insula, but the exponentially falling type of wave required approximately twice the voltage of the other wave forms in order to produce the same affect.

9. Pulse durations of 3·0–10·0 m.sec. were found to be most effective, using the square wave form.

10. Frequencies of 20–100 pulses per sec. were found to be more effective than slower or faster frequencies, using the square wave form. (Authors' abstr.)

Spreading Cortical Convulsions and Depressions.

A transition of Leão's spreading depression into a convulsive pattern, moving at the same low velocity over the cortex, has been produced in a number of ways : (i) Repetition of stimulus eliciting the spreading depression causes spikes and high potential runs during the depression, which on further repetition may develop into a continuous convulsive pattern. (ii) An increase of the systemic blood pressure favors the development of convulsive patterns during the period of the spreading depression. (iii) An acute transition of the spreading depression into a spreading convulsive pattern is caused by the topical application of acetylcholine to the cortex, either in normal preparations or in preparations previously treated with prostigmin. (iv) The application of pilocarpine to the cortex had the same effect (v) Feeding 7–15 per cent. carbon dioxide into the apparatus for artificial respiration also causes the acute transition of a spreading depression into a spreading convulsive pattern. The slow potential change of the cortex, which invariably accompanies the spreading depression, was also found to accompany the spreading convulsive pattern.

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

These findings are discussed in their relation to previous observations which led to the conclusion that the spreading depression is accompanied by a wave of vasoconstriction. It was argued that the transition of the spreading depression into a spreading convulsive pattern is caused by interference with this wave of vasoconstriction, which was accomplished by exhausting the mechanism of vasoconstriction (repetition of the stimulus), by a marked increase of the blood pressure, or by the application of potent vasodilators (acetylcholine, pilocarpine, carbon dioxide).

Since neither adrenergic (yohimbine, ergotamine, dibenamine) nor cholinergic (atropine) blocking agents have been found to produce the acute transition from spreading depression into a spreading convulsive pattern, it was concluded that the mechanism of the postulated wave of vasoconstriction is neither adrenergic nor cholinergic in nature. (Authors' abstr.)

" Jump Reflex " in Hypothalamic Cat.

A jump reaction was observed in hypothalamic cats. The required conditions for provoking that response were analysed. Activation of deep proprioceptors of the neck and hind legs were found to be the principal receptors for the reflex. A particular order of neck and head movements is described as a " trigger " mechanism. Previous hypertonia of extensor muscles was required for the appearance of the phasic responses. Labyrinth and cutaneous receptors of the hind legs did not show participation in the reflex. Several stages of the jump reaction are described. The possible mechanism, integration of the reflex and facilitating influence of the hypothalamus are discussed. (Authors' abstr.)

Relation of Cerebellum to Upper Brain Stem.

Internal structures of the upper brain stem of the cat were systematically explored following electrical stimulation of various areas of the cerebellum.

Evoked potentials were especially prominent in two major systems of the brain stem, i.e., mesencephalic plus diencephalic tegmentum and many of the sensory relay nuclei of the thalamus. More variable responses were recorded from the mammillary bodies, hippocampus, globus pallidus, cerebral peduncle, superior colliculus and centromedial nucleus.

Latency of response ranged within three groups: (i) short, 1 m.sec. or less, categorized as asynaptic ; (ii) medium, between 1 and 3 m.sec. ; and (iii) long, over 3 m.sec. but usually below 12 m.sec.

Localized projections from anterior lobe, paramedian lobule, tuber vermis and ansiform lobule were observed, but our data were not conducive to detailed analysis of these projections.

The possible functional significance of a dual cerebellar projection, i.e., asynaptic and multisynaptic to related centers, is discussed as is a possible cerebellar rôle in the relay of various sensory modalities to the cerebrum. (Authors' abstr.)

Microelectrode Analysis of Pyramidal System During Transition from Sleep to Wakefulness.

1. A new preparation—the "pyramidal" cat—is described. This unanesthetized animal, which retains only the continuity of the cerebral peduncles following mesencephalic transection, exhibits spontaneously the characteristic E.E.G. and behavioral patterns of sleep.

2. Spike potentials have been recorded from the motor cortex of the cerebrum and from its efferent projections in the medulla oblongata through the use of fine wire microelectrodes.

3. The units examined were those which were spontaneously active only during the spindle waves recorded from the surface of the motor cortex. This activity, when present, was intimately correlated with each wave of the spindle complex.

4. Cortical activation, induced either by blowing unfiltered air into the nose or by electrical stimulation of appropriate regions of the thalamus, was paralleled by a complete blockade of the spike potentials. This abolition may be a result of the failure of ephaptic excitation or of an active inhibition of the neurons selected for study.

5. Local application of a dilute solution of strychnine (0·2 per cent.) to the motor cortex produced characteristic high frequency outbursts of activity in the intrinsic cerebral neurons and in the corresponding pyramidal tract. The convulsive dis-

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

charges and the corresponding strychnine waves were completely blocked for short intervals during olfactory or thalamic stimulation. The relation of this phenomenon to the mechanisms involved in the arousal reaction is discussed.

6. More concentrated solutions of strychnine (1 per cent.) augmented the frequency of the spike outbursts and the amplitude of the cortical wave. Stimuli previously effective in blocking the strychnine complex no longer produced a detectable change. (Authors' abstr.)

J. NEUROSURG.

VOL. 10. JULY, 1953.

Intracarotid Injection of Papavarine in Cases of Cerebrovascular Thrombosis. *Cooper, I. S., and Morello, A.* 331
Cytologic Diagnosis of Tumour Cells in the Cerebrospinal Fluid. *Larson, C. P., et al.* 337
*Experimental Cerebral Concussion. *Foltz, E. L., et al.* 342
Intra-arterial Pressures in the Neck and Brain. *Bakay, L., and Sweet, W. H.* 353
Intraspinal neoplasms in the Cervical Region. *Webb, J. H., et al* . . 360
Carotid Angiography with Urokon. *Lin, P., et al.* 367
The Surgical Management of Cerebritis Complicating Penetrating Wounds of the Brain. *Meirowsky, A. M., and Harsh, G. R.* 373
Disorders of Electrolyte and Water Metabolism Following Brain Surgery. *Cooper, I. S.* 389
The Relative Accuracy of E.E.G., Air Studies and Angiography in a Series of Hundred Mass Lesions. *Martin, F. A., et al.* 397
The Treatment of Aneurysms of the Circle of Willis. *Norten, G., and Olivecrona, H.* 404

Experimental Cerebral Concussion.

1. Acceleration concussion was studied in cats and monkeys with continuous recording of the electrical activity of cortex and certain brain stem structures, spinal fluid and blood pressures, and E.K.G. and respirations.

2. The electrical activity of the cortex was reduced in amplitude following concussion with little change in frequency and at times essentially no change was produced.

3. At no time was any massive epileptic-like discharge observed during the first few seconds after the blow. Such a process thus cannot be the mechanism of release of the acetylcholine that appears in the spinal fluid following concussion.

4. Changes in the electrical activity of brain stem structures largely paralleled those in the cortex except for the activity of the medial reticular formation where consistently greater depression of amplitude was seen as compared to cortex. The possible rôle of this phenomenon in the genesis of coma is discussed.

5. No change in spinal fluid pressure greater than 10 mm. of water was recorded during the first 5 hours following pure concussion. (Authors' abstr.)

J. PEDIAT.

VOL. 42. 1953.

Epidemic of Narcotics Use Among School Children in New York City. *Jacobziner, H.* 65
Acute Cerebellar Ataxia in Children. *Goldwyn, A., and Waldman, A. M.* . 75

J. PHARM. EX. THERAP.

VOL. 107. 1953.

Ammonium Ion Content and Electrical Activity of Brain Activity during Preconvulsive and Convulsive Phases Induced by Various Convulsants. *Torda, C.* 197
Effects of Epinephrine and Norepinephrine on Electrically Induced Seizures. *Minz, B., and Domino, E. F.* 204
Analeptic Action of W181 in Mephenesin Paralysis. *Berger, F. M.* . . 250
Comparative Assay of Anti-epileptic Drug by "Psychomotor" Seizure Test and Electroshock Threshold Text. *Brown, W. C., et al.* 273

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Responses to Sympathomimetic Amines after Dibenamine Blockade. *Nickerson, M., and Nomaguchi, G. M.* 284
Distribution and *in vivo* Rate of Metabolism of Thiopental. *Shideman, F. E., et al.* 368
Pharmacology of Hibicon, a New Anticonvulsant. *Harred, B. K., et al.* . 403
Pharmacology of Vinyl Ethynyl Carbinols—New Class of Central Nervous System Depressants. *P'An, S. Y., et al.* 459
Correlation Between Pharmacological Responses to Benzoylcholine, Metacholine and Acetylcholine and Activity of Cholinesterases. *Koppanyi, T., et al.* 482

J. PHYSIOL.

VOL. 120. 1953.
Glycolysis and Cytochemistry of Cerebral Cortex. *Dixon, K. C.* . . 267

J. PROJ. TECH.

VOL. 17. JUNE, 1953.
The Projective Motor Test. *Rapkin, M.* 127
Symposium on Perceptual Structure in Pathology and Development . . 144
Psychosurgery in a Set of Schizophrenic Identical Twins. *Calden, G.* . . 200

SEPTEMBER.

An Exploratory Study of Dynamic Factors in the Content of the Rorschach Content. *Brown, F.* 251
Studies of the Sentence Completion Test. *Hanfmann, E., and Getzels, J. W.* 280

J. PSYCHOL.

VOL. 36. JULY, 1953.
The Reliability of Extreme Position Response Sets in Two Tests. *Berg, I. A.* 3
Questionnaire Validity Through the Opinion-forming Question. *Politz, A.* . 11
An Analysis of Verbal Reports of Solving Spatial Problems as an Aid in Defining Spatial Factors. *Barratt, E. S.* 17
Theory and Treatment of Stuttering as an Approach-avoidance Conflict. *Sheehan, J.* 27
Kinesthetically Guided Movements of Head and Arm. *Edgington, E. S.* . 51
A Study of Medical Students with the M.M.P.I. I. *Schofield, W.* . . . 59
The Effects of Reinforcement on the Occurrence of Clustering in the Recall of Randomly Arranged Associates. *Bousfield, W. A., and Cohen, B. H.* . 67
Correlational Analysis of the Learning and Relearning of Four Different Tasks on the Modified Mashburn Apparatus. *Lewis, D., et al.* 83
Correlational Study of Performance During Successive phases of Practice on the Standard and Reversed Tasks on the S.A.M. Complex Co-ordinator. *Lewis, D., et al.* 111
A Non-parametric Test for the Reliability of the Difference Between Two Proportions. *Gengerilli, J. A., and Michael, J. L.* 127
An Experimental Test of an Hypothesis for Predicting Outcome with Electro-Shock Therapy. *Carpenter, L. G., jun.* 131
A Study of Medical Students with the M.M.P.I. II. *Schofield, W.* . . 137
Studies of Vestibular Function. I. *Hauty, G. T., and Wendt, G. R.* . . 143
Interruption. *Fattu, N. A., and Mech, E. V.* 153
Partial Verbal Reinforcement Related to Distributed Practice in a Classroom Situation. *Auble, D., and Mech, E. V.* 165
The Effects of " Set " on Group Performance under Strong Auditory Stimuli. *Mech, E. V., et al.* 187
A Study of Learning Characteristics of Public Health Nurses in Relation to Mental Health Education. *Cumings, R., and Kline, M. V.* 195
Some Factors in the Production of Gamma Movement. *Bartley, S. H., and Wilkinson, F. R.* 201
Modern Theories of Olfaction. *Jones, F. N., and M. H.* 207

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

English and Americans. *Farber, M. L.* 243
Personality Traits of Psychotic Patients as Revealed in their Spontaneous Paintings. *Foltin, E. M.* 251
Sensory Patterning Versus Central Organization. *Nissen, H. W.* 271
Individual Differences in Subjective Color. *Knehr, C. A.* 289
Shifts in the Values of Opinion Items. *Ayad, J.-M., and Farnsworth, P. R.* . 295
A Further Demonstration of Phi Movement Cerebral Dominance. *Carter, D. B.* 299
Creativity and Culture. *Stein, M. I.* 311
Clinical Diagnosis of Reading Disability. *Harris, A. J., and Roswell, F. G.* . 323
Familiar Size and Subception in Perceived Depth. *Hochberg, C. B., and J. E.* 341
Appearance and Choice Status During Adolescence. *Roff, M., and Brody, D. S.* 347
The Possible Effects of Projective Testing upon Overt Behaviour. *Hammer, E. F.* 357
Response Similarity-Dissimilarity and Differential Motor Transfer Effect. *Hauty, G. T.* 363
An Application of the Engrammatic Concept. *London, I. D.* 379
A Factor Analysis of the 48 Szondi Pictures. *Gordon, L. V.* 387
The Aims of Preventive Psychiatry and " Casuality " as a Personality Pattern. *Levitt, E. E., and Ojemann, R. H.* 393
The Perception of Size or Distance Based on Tactile and Kinesthetic Data. *Bartley, S. H.* 401
Conditions Intended to Manipulate Accommodation as Factors in Performance with a Visual Acuity Target. *Bartley, S. H.* 409
A Preliminary Attempt to Identify the Factors in Student-Instructor Evaluation. *Crannell, C. W.* 417
Season of Birth as Related to Seasonal Preference and Personality Traits. *Middleton, C. E., and Sumner, F. C.* 423
Student Achievement in Introductory Psychology, etc. *Bendig, A. W.* . 427
The Psychophysiological Effects of Tea. *Stanley, W. C., and Schlossberg, H.* 435

PSYCHOSOM. MED.

VOL. 15. 1953.

Psychotic Reactions Induced by ACTH and Cortisone. *Glaser, G. H.* . . 280
Studies on the Physiology of Awareness. *Lovett Doust, J. W., and Leigh, D.* 292
Emotions and Hydrochloric Acid Secretion During Psychoanalytic Hours. *Mahl, G. F., and Karpe, R.* 312
Development of New Symptoms Following Medical and Surgical Treatment for Duodenal Ulcer. *Browning, J. S., and Houseworth, J. H.* . . 328
E.E.G. and Psychological Studies of a Case of Migraine with Severe Preheadache Phenomena. *Engel, G. L., et al* 337

J. SOC. PSYCHOL.

VOL. 37. MAY, 1953.

Toward a System of Socio-psychiatric Invariants. *Henry, J.* 133
An Exploratory Study in the Use of Figure Drawings in a Group Situation. *Feather, D. B.* 163
Social Distance in the Deep South as Measured by a Revised Bogardus Scale. *Prothro, E. T., and Miles, O. K.* 171
The Reliability of Agreement in Content Analysis. *Spiegelman, M., et al.* . 175
The Content of Comics. *Spiegelman, M., et al.* 189
The Interrelationships Among Acceptance-Rejection, Self-other Identity, etc. *Norman, R. D.* 205
Group-centred Behavior. *Smith, M.* 237
Attitudes Toward Old People. *Tuckman, J., and Lorge, I.* 249
Occupational and Physiognomic Stereotypes in the Perception of Photographs. *Secord, P. F., et al.* 261

KLIN. WO.

VOL. 31. 1953.

Fundamentals of Normal E.E.G. During Childhood. *Garsche, R.* . . . 118

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

LANCET.

1953 (i).

Normal and Pathological Physiology of Cerebrospinal Fluid Circulation. *Schaltenbrand, G.* 805
Behaviour in Childhood. *Capon, N. B.* 861
Amine Oxidase, Pressor Amines and Cholesterinesterase in Brain Tumours. *Bülbring, E., et al.* 865
Mysoline in Treatment of Epilepsy. *Butter, A. J. M.* 1024
Nephrotoxic Effects of Drugs Used in Treatment of *Petit Mal*. *Millichap, J. G., and Birman, B. H.* 1074

LAVAL MED.

VOL. 18. 1953.

Contribution to Study of Rotatory Epilepsy. *Gauthier, C.-A., and Bélanger, C.* 12

MAINE M. A. J.

VOL. 44. 1953.

Cases of Probable Suicide in Young Persons without Obvious Motivation. *Stearns, A. W.* 16

MARYLAND S. M. J.

VOL. 2. 1953.

Recent Advances in Surgery of Autonomic Nervous System. *Abbott, O. A.* . . 3
Psychosomatic Medicine in General Practice. *Knotts, E. P.* 89

MED. ANN. DIST. COL.

VOL. 22. 1953.

Acute Hypotension and Cerebral Hemodynamics. *Finnerty, F. A.*, jun., *et al.* 115
Use of Benzotropine Sulfonate in Treatment of Parkinsonism. *O'Doherty, D., and Forster, F. M.* 221
Unorthodox Working Concepts for Psychotherapy. *Cameron, D. E.* . . . 226

MED., BUENOS AIRES.

VOL. 13. 1953.

Precocious Sexual Development in Infant Three Months old due to Tumour of the Third Ventricle. *Diez, L. F., et al.* 116

MED. J. AUSTR.

1953.

Influence of Barbiturate on Sympathetic Nervous System. *Trethewic, E. R.* 100
Temporal Lobe Tumours. *Game, J.* 366
Some Observations on the Use of " Brevidil E," Low Muscular Relaxant in E.C.T., and Comparison with Scoline. *Stephen, V. T.* 372
Present-day Concepts of Epilepsy. *Robertson, E. G.* 465
Structural Basis of Epilepsy. *Cox, L. B.* 468
" Queer Turns "—Lesser-known Manifestations of Epilepsy. *Williams, J. F.* 469
Drug Treatment of Epilepsy. *Selby, G.* 471
Psychological and Social Management of Epileptic Patient. *Springthorpe, G.* 474
Mental Symptoms in Poisoning with Atropine and Its Derivatives. *Listwan, I. A., and Whealy, N. G.* 581

MICH. STATE M. S. J.

VOL. 52. 1953.

Psychosurgery Program of Wayne County General Hospital. *Belisle, J. A., et al.* 429

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

MILIT. SURG.

VOL. 112. 1953.

Diagnosis and Treatment of Post-traumatic Brain Atrophy. *Stowell, A.* . 97

MINNES. MED.

VOL. 36. 1953.

Physical Symptoms of Depression. *Chalgren, W. S.* 148
Herpes Zoster with Motor Paralysis. *Blanchard, T. P.* 152
Neurosyphilis. *Kierland, R. R.* 240
Neurologic and Psychiatric Trends in Minnesota. *Baker, A. B., et al.* . . 384

MISS. MED.

VOL. 50. 1953.

Culpability of the Homosexual. *Blackman, N. J.* 27

NEBR. S. M. J.

VOL. 38. 1953.

Headache from Standpoint of Neurologist and Psychiatrist. *Wigton, R. S.* 179

NEDERL. TIJD. GENEESK.

VOL. 97. 1953.

Disturbances in Circulation of Cerebrospinal Fluid and Their Treatment. *van der Zwan, A.* 865

NERV. CHILD.

VOL. 10. 1953.

Some Observations on the Diagnostic Aspects of Childhood Hysteria. *Starr,* P. H. 214
Cases of Hysteria in Childhood. *Farnham, M. F.* 232
Some Psychological Mechanisms Concerned in the Disorders of Childhood. *Davis, D. R.* 238
Clinical Features of Hysteria in Children. *Robins, E., and O'Neal, P.* . . 246
The Psychoanalysis of a Case of "Grand Hysteria of Charcot" in a Girl of Fifteen. *Dawes, L. G.* 272
The Pediatrician and Hysteria in Childhood. *Brazelton, T. B.* 306
Psychogenic Visual Disturbance in a Four Year Old Girl. *Wolpe, Z. S.* . 314

NEUROL.

VOL. 3. JANUARY, 1953.

Ependymoma of Brain. *Svien, H. J., et al.* 1
Tussive Syncope and its Relation to Epilepsy. *O'Doherty, D. S.* . . . 16
Ultracentrifuge Studies of Lipoproteins in Multiple Sclerosis. *Aird, R. B., et al.* 22
Perception of Simultaneous Tactile Stimuli in Normal Children. *Fink, M., and Bender, M. B.* 27
Clinical, Histologic and Electrical Stimuli in Muscular Dystrophies. *Arieff, A. J., and Kirschbaum, W. R.* 35
Bilateral Anterior Cingulate Gyrus Lesions. *Barris, R. W., and Schuman, H. R.* 44
Potency of Isolated Brachial Dorsal Roots in Controlling Muscular Physiology. *Lassek, A. M.* 53
Barbiturate Intoxication. *Tichy, F. Y.* 58

FEBRUARY.

Occlusion of Superior Cerebellar Artery. *Luhan, J. A., and Pollack, S. L.* . 77
Studies on Cervical Spinal Cord of Man. *Boshes, B., and Padberg, F.* . . 90
Background Illumination and Visual Threshold in Hemianopic Areas. *Binder, M. B., and Krieger, H. P.* 102

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Bodily State in Injuries of Spinal Cord. *Chor, H., et al.* 111
Disorders of Electrolyte Metabolism in Diseases of Central Nervous System. *Cooper, I. S.* 119
Neurologic Complications of Hemorrhagic Diseases. *Chalgren, W. S.* . . 126
Spinal Fluid Findings Following Cerebral Angiography. *Stein, J. M., and Fink, M.* 137

MARCH.

Studies of Spinal Cord. 3. *Yoss, R. E.* 163
Aphasic Difficulties Understanding Spoken Language. *Schuell, H.* . . 176
Studies in Temperature Regulations. I. *Dobin, N. B., et al.* 185
Intellectual Functions in Aphasic and Non-aphasic Brain Injured Subjects. *Reitan, R. M.* 202
Hydrocephalus with Vascular Malformations of Brain. *Askenasy, H. M., et al.* 213
Practical Considerations in Treatment of Epilepsy. *Ives, E. R.* 221

APRIL.

Pathologic Changes in Brain in Coma Following Ether Anesthesia. *Denst, J.* 239
Preliminary Studies of Sludged Blood in Multiple Sclerosis. *Roizin, L., et al.* 250
Role of Pallidum in Genesis of Some Choreic Movements. *Spiegel, E. A., and Wycis, H. T.* 261
Central Nervous System in Thrombotic Thrombocytopenic Purpura. *Ladwig, H. A.* 267
Cerebral Complications of Serum Sickness. *Park, A. M., and Richardson, J. C.* 277
Sensitivity of Myasthenia Gravis Patients to Tubocurarine and Decamethonium. *Pelikan, E. W., et al.* 284
Occurrence of " Continuous Symptoms " in Epilepsy Patients. *Scott, J. S., and Masland, R. L.* 297
Effects of Tensilon in Myasthenia Gravis. *Westerberg, M. R., et al.* . . . 302

MAY.

America's First National Neurologic Institute. *Bailey, P.* 321
Sensory and Motor Loss after Non-neural Injuries. *Kelly, M.* 327
Ammonium Chloride as an Adjuvant to Anti-convulsant Medication in Epilepsy. *Kant, F., et al.* 336
Myelography by Means of I^{131}, the Myeloscintigram. *Bauer, F. K., and Yuhl, E. T.* 341
Muscle Action Potentials in Myopathies, etc. *Pinelli, P., and Buchthal, F.* . 347
Minor and Major Tremor. *Doshay, L. J., et al* 360
Total Protein Content of Cerebrospinal Fluid in Multiple Myeloma. *Mordonick, M. J., and Soloman, S.* 369

NEW ENGL. J. MED.

VOL. 248. 1953.

Brain Abscess. *Ballantine, H. T., jun., and White, J. C.* 14
Psychosurgery. *Greenblatt, M., and Solomon, H. C.* . . . . . 19 and 59
Cross-sensitivity to Diphenylhydantoin Sodium and to Phenobarbital. *Morris, G. E., and Cohen, J. D.* 27
Mongolism—Implications of Dental Anomalies. *Ingalls, T. H., and Butler, R. L.* 511
Contribution of S. Ramon y Cajal to the Knowledge of the Anatomy of the Cerebral Cortex. *Conel, J. L.* 541
Adrenocortical Function in Anorexia Nervosa Before and After Lobotomy. *Altschule, M. D.* 808

NEW JERSEY M. S. J.

VOL. 50. 1953.

Ataxic Cerebral Palsy with Akinetic Seizures. *Keats, S.* 53
Problems of Psychiatric Hospitals. *Gordon, J. B.* 101

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

NEW YORK S. J. MED.

VOL. 53. 1953.

Hemispherectomy for Convulsions in Infantile Hemiplegia. *Mason, T. H., and Shapiro, I.* 449
Self-inflicted Infections in Narcotic Addicts. *Ficarra, B. J.* . . . 452
Psychopathic Personalities. *Liber, B.* 1088
New Nervous Pathway for Menière's Disease. *Rosen, S.* 1095
Report on Death of a Patient with Convulsive Seizures During Treatment of Rheumatoid Arthritis with Cortisone, ACTH, etc. *Bonham, D. T.* . 1114

N.W. MED.

VOL. 52. 1953.

Some Present-day Aspects of Inhibitory Neuropsychiatry. *Marren, J. J.* . 107

NO. CAROL. M. J.

VOL. 14. 1953.

Psychiatric and Psychologic Evaluation of 64 Youthful Offenders. *Wilson, W. P., and Crumpler, A. G.* 26
Alcoholic Rehabilitation. *Forizs, L.* 97
Problem of Addictive Drinking. *Reed, R. E.* 101
Abnormal Conditions Resulting from Uncontrolled Emotions. *Yost, O. R.* . 156
School Psychological Clinics. *Grassi, J. R.* 184

NORD. MED.

VOL. 49. 1953.

Nephrotic Syndrome after Treatment with Iridione. *Steffensen, K. A., and Brandt, S.* 134
Experiments with Small Doses of Succinylcholine Iodide in Electroshock Therapy. *Holmberg, G., et al* 463
Excretion of 17-Ketosteroids in Alcoholism. *Mårtens, S.* 466
Complications During Tridione Treatment of Epilepsy in Children. *Redin, B.* 563

PEDIAT.

VOL. 11. 1953.

Significance of Febrile Convulsions. *Lennox, W. G.* 341
Measles Encephalitis. *Solomons, G., et al.* 473

PENN. M. J.

VOL. 56. 1953.

Cerebrovascular Disorders. *Alpers, B. J.* 365

PISANI.

VOL. 67. 1953.

Some Experiments with Anesthetic Infiltration of the Dorsal Cervical Sympathetic in Parkinsonism and in Catatonia. *Rabboni, F., and Santangelo, F.* 3
The Importance of Anxiety Symptoms from Emotional Trauma in the Pathogenesis of Schizophrenic Syndromes with Catatonic History. *Motta, E.* 23
The Phenomena of Lombard in Psychiatry. *Guarnaccia, E., and Catanzaro, A.* 49
The Importance of Eosinopenia in Agitated Schizophrenics. *Motta, E.* . 73

POLICLIN., ROME.

VOL. 60. 1953.

Syndrome Produced by Use of Electroshock with Electronarcoshock Therapy. *Paladini, P.* 313

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

PR. MED.

VOL. 61. 1953.

Tay-Sachs' Amaurotic Idiocy. *Clement, R., et al.* 253
Prolonged Sleep Treatment in Psychiatry. *Bastié, J., and Fernandez, A.* . 651
Treatment of Cerebral Stroke of Vascular Origin. *Cossa, P.* . . 684

PROC. ROY. SOC. MED.

VOL. 46. 1953.

Chronic Changes in Central Nervous System Following Thorotrast Ventriculography. *Hughes, R.* 191

PROC. SOC. EX. BIOL. MED.

VOL. 81. 1952

Studies on Phenylpyruvic Oligophrenia. *Jervis, G. A.* 715

PROC. STAFF MEET. MAYO CLINIC.

VOL. 28. 1953.

Electrical Rhythms Recorded from Depth of Frontal Lobes During Operations on Psychotic Patients. *Bickford, R. G., et al.* 135
Technic of Depth Electrography. *Dodge, H. W., jun., et al.* 147
Depth Distribution of Normal E.E.G. Rythms. *Sem-Jacobsen, C. W., et al.* 156
Some Effects of Barbiturate Anesthesia on the Depth Electrogram. *Bickford, R. G., et al.* 162
Human Olfactory Responses Recorded by Depth Electrography. *Sem-Jacobsen, C. W., et al.* 166
Depth Electrogram in Schizophrenic Patients. *Petersen, M. C.* 170
Studies on Electrical Structure and Activation of Epileptogenic Focus. *Bickford, R. G., et al.* 175
Observations on Depth Stimulation of Human Brain Through Implanted Electrographic Leads. *Bickford, R. G., et al.* 181
Neurosurgical and Neurologic Application of Depth Electrography. *Dodge, H. W., jun., et al.* 188
Evaluation of New Agent in Treatment of Parkinsonism. *Mulder, D. W.* . 210

PSYCHIAT. QUART.

VOL. 27. JULY, 1953.

The Role of the Psychiatrist in a General Hospital. *Kaufman, M. R.* . . 367
Considerations in the Differential Diagnosis of Schizophrenia. *Bigelow, N.* . 382
Female Transvestism and Homosexuality. *Barahal, H. S.* 390
A Method of Evaluating Progress in Patients Suffering from Chronic Schizophrenia. *Miller, D. H. et al.* 439
Obesity. *Schopbach, R. R., and Angel, J. L.* 452
Simulation of Psychosis. *Wachspress, M., et al.* 463
Samples and Controls in Psychiatric Research. *Kline, N. S.* 474

RASS. STUDI PSICHIAT.

VOL. 42. 1953.

The Behaviour of Intradermal Hormones in Psychiatry. *Sagripanti, P., and Taverna, P.* 241
Alterations in Lipase Content of Plasma in Insulin Coma and Electroshock. *Magherini, G., and Cossio, M.* 255
A Study of Reticence in Narcoanalysis. *Gamma, G., and Villata, E.* . . . 261
The Behaviour of the Reticulo-endothelial System During the Use of Congo red in Schizophrenics Treated with Antireticular Cytotoxic Serum. *Piero, D.* 296
Thorn's Test and Long's Test before and after Treatment with Bogomoletz Serum. *Ronco, P.* 303
Alcoholism in Neuropsychiatry. *Stefanacci, G.* 309
A Contribution to the Study of Colloidal Lability in the Plasma in Senile Psychoses. *Marzi, F.* 331
Psychopathological Reflections on a Case of Schizophrenic Remission after a Fiamberti Leucotomy. *Giorgio, E.* 335

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

REV. CLIN. ESPAN.

VOL. 48. 1953.

Insulin Therapy in Multiple Sclerosis. *Rodriguez-Arias, B.* 228

REV. ESPAN. PEDIAT.

VOL. 8. 1952.

Psychiatric Sequelae of Encephalopathies in Children. *de Moragas, J.* . 607

REV. NEUR.

VOL. 88. 1953.

Electromyographic Diagnosis in Myasthenia Gravis. *Thiébaut, F., et al.* . 3
The Epilepsy of Cerebral Tumours. *Paillas, J.-E., et al.* 18
A Case of Human Neurolymphatosis. *Garein, R., et al.* 81
A Series of Eight Intracranial Angiomas. *Laine, , et al.* . . . 93
The Surgery of Non-Tumour Epilepsy. *Guillaume, J., et al.* . . . 103
The Myasthenia of Erb. *Pages, P., and Passouant, P.* 112
Spinal Surgical Forms of Torulosis. *Alajouanine, T., et al* 153
Fibrillary Chorea of Morvan. *Roger, H., et al.* 164
Three Cases of a Confusional Syndrome with Contractures in Alcoholics. *Schwob, R.-A., et al.* 174
Psychosurgery and Neurosurgery. *Baruk, H., et al.* 191

REV. NEURO-PSIQUIAT.

VOL. 15. 1952.

Symptomatic Psychoses in the Treatment of Leprosy with D.D.S. *Pesce, H., and Montoya, R.* 211
The Effect of Colour in the Psychodiagnostic Test of Rorschach. *Allan, R. M., et al.* 228
The Pathogenesis of Tubercular Lesions of the Nervous System. *Zomora, M. M.* 239
Cervical Radicular-medullary Compression in Ochronotic Arthopathy. *Spota, B. B.* 250
The Beginning of Epilepsy at Different Hours of the Day. *Sal y Rosas, F.* . 260
The Treatment of Tubercular Meningitis with Tuberculin and Streptomycin. *Jeri, R.* 274
Impressions of Psychiatry in Vienna. *Mariano Querol, L.* 283
Alternate Hemiatrophy. *Valdiva, E. R.* 292
Tuberculoma of the Cerebellum in Children. *Roedenbeck, S. D., and Delgado, A.* 317
The Future of Psychiatry. *Mas de Ayala, I.* 343

REV. PSIQUIAT. DISC. CONEX.

VOL. 16. 1951.

Dementia as a Clinical Entity. *Rodriguez, S., et al.* 3
Correlation Between Somatotypes of Sheldon and the Wechsler Test. *Matte, I., et al.* 34
First Impressions of Group Psychotherapy During One Year's Experience. *Ganzarain, R.* 56
Investigation into the Significance of C′ and K in the Rorschach Test. *Matte, I., et al.* 66
A Contribution to the Neuropsychiatric Study of the Chagas Infirmary, Chile. *Whiting, C.* 92
Investigation into the Indications of Intelligence in the Rorschach Test. *Greppi, A.* 108

RIV. PAT. NERV. MENT.

VOL. 73. 1952.

Medico-legal Questions Arising from Psychosurgery. *Giuliani, G.* . . 547
The Practical Question of Spastic Paraplegia in the Light of Neurological Reports. *Piazzesi, W.* 574

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Considerations and Data on the Problem of Pyramidal Hypertonia. *Manganaro, D.* 598
Studies on Glial Nodules. *Nistri, M.* 610
Delayed Traumatic Epilepsy. *Cardona, F.* 617
Cardio-vascular Reactions in Mental Patients with Nor-adrenaline. *Barucci, M.* 630
The Nosological Place of " Neurasthenia " in Psychiatry. *Ferraro, A.* . 645
The Nosological Place of Anxiety Neurosis in Psychiatry. *Ferraro, A.* . 661
An Infantile Aphasic-aparetic Syndrome. *Baronti, M.* 676
Criterion of Indemnification for Cranial Injuries. *Manunza, P.* 693
Statistical Data and Considerations of Recovery in Chronic Alcoholism. *Carrara, E.* 737
A Case of Formaldehyde Polyneuritis. *Buffa, B.* 746
The Culture of Gliomata *in Vitro*. *Maleci, O., and Pessina, G.* 757

VOL. 74. 1953.
The Relation Between Schizophrenia and Tuberculosis when Confronted with a New Antitubercular Chemotherapy. *Verrienti, G., and Belsanti, R.* . 1
Epilepsy and the Rorschach Test. *Massignan, L.* 17
Does there Exist an Hallucinatory Aesthesia ? *Reale, G.* 84
Studies on Glial Nodules. III. *Nistri, M.* 91

SCHW. MED. WO.

VOL. 83. 1953.
Psychiatric-Clinical Studies Concerning Selye's Adaptation Theory. *Binswanger, H., and Meier, L.* 25
Cerebral Circulation in Experimental Controlled Hypotension. *Bernsmeier, A. and Siemons, K.* 210
Lysergic Acid Ethylamide. *Sohns, H.* 356
Hemodynamic Conditions During Cerebral Hemorrhage. *Friede, R.* . . . 424

SEM. HÔP. PARIS.

VOL. 29. 1953.
Pseudoparalytic Myasthenia Gravis. *Roger, H.* 313
Hemispherectomy and Epilepsy. *Feld, M., and Lecasbie, R.* 1104

SO. MED. J.

VOL. 46. 1953.
An Introduction to the Problem of the Alcoholic. *Weil, L. L.* . . . 189
Use of Antabuse in the Alcoholic Problem. *McAndrew, J. J.* . . . 190
Carbon Dioxide Therapy. *Silver, G. A.* 283
The Problem Drinker in Industry. *Masters, H. R.* 413
Two Year Survey of Antabuse Therapy in Chronic Alcoholism. *Stevenson, C. W., and Wallace, A. J.* 422
Management of Intersexuals. *Creadick, R. N.* 455

SO. CAROL. M. A. J.

VOL. 49. 1953.
Psychiatric Component in Organic Disease. *Yost, O. R.* 8

SURGERY.

VOL. 3. 1953.
Spinal Complications Following Lumbar Puncture. *Redo, S. F.* . . . 690

TENN. STATE M. A. J.

VOL. 46. 1953.
Convulsive Disorders in Children. *Crook, W. G.* 1

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

TIDS. NORSKE LAEGE.

VOL. 73. 1953.
Death Due to Therapeutic Doses of Morphine or Morphine-Scopolamine in Persons Affected by Alcohol or Barbituric Acid. *Møller, K. O.* . . 1
Psychiatric Considerations with Regard to Artificial Insemination. *Ancherson, P.* 17

UGESK. LAEGER.

VOL. 114. 1952.
Neuropathy Caused by Lack of Antipernicious Anemic Factor after Resection of Stomach. *Bastrup-Madsen, P.* 1860

VOL. 115.
Motor Symptoms in Herpes Zoster. *Moltke, E.* 82
Succinylcholine Iodide in E.C.T. *Ibson, B., and Paerregaard, G.* . . . 531

U.S. ARM. FORCES M. J.

VOL. 4. 1953.
Management of Acute Head Injury. *Jarman, J. A.* 673
Preventive Psychiatry in Combat Zone. *Glass, A. J.* 683
Subcoma, Coma and Convulsive Carbon Dioxide Therapy. *Wilkinson, W. E.* 719

VIRG. MED. MO.

VOL. 80. 1953.
Transorbital Lobotomy in Refractory Emotional and Mental Disorders. *Palmer, E. J.* 84

WEST VIRG. M. J.

VOL. 49. 1953.
Toxic Psychosis due to Overdose of Isonicotinic Acid Hydrazide. *Chu, J.* . 125

WISC. M. J.

VOL. 52. 1953.
Addison's Disease with Protracted Unusual Mental Changes. *Quandt, V. V., and Rosenthal, S.* 225

1. Biochemistry, Physiology, Pathology, etc.

Effects of Inhibitors of Glutamine Synthesis on the Inhibition of Acetylcholine Synthesis in Brain Slices by Ammonium Ions. Braganca, Beatriz M., et al. [*Biochim. et Biophys. Acta*, **10**, 83 (1953).]

Substances which inhibit glutamine (I) synthesis produce a reduction of the inhibitory effect of NH_4 ions on the synthesis of acetylcholine (II) by rat brain slices. By using the technique of Mann *et al.* (*C. A.*, **33**, 8271[4]) it was shown that inhibitors of (I) synthesis, such as methionine sulfoxide, ethionine sulfoxide, and methionine sulfoximine, decrease the inhibition by NH_4 ions of the rate of formation of bound (II); L-glutamate and DL-methionine do not have this effect. In respiring brain slices the presence of extra NH_4 ions increases the rate of formation of (I), diminishing the available adenosine triphosphate, and thus the rate at which (II) is synthesized. MORTON PADER (Chem. Abstr.).

Excitatory and Anticurare Properties of Acetylcholine and Related Quaternary Ammonium Compounds at the Neuro-muscular Junction. Riker, Walter F., jun. [*Pharmacol. Revs.*, **5**, 1–87.] L. E. GILSON (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Extraction of Acetylcholine from Brain Tissue. Crossland, J., and Merrick, A. J. [*Nature*, **171**, 267 (1953).]

The acetylcholine content of the brains of a series of adult rats, killed by immersion in liquid air, was 2·52γ/gm., while the excised brains of litter mates contained only 1·82γ/gm. For the determination of the absolute acetylcholine content of the brain the use of liquid air is the method of choice.

EDWARD J. VAN LOON (Chem. Abstr.).

Influence of Narcosis on the Amount of Acetylcholine Extractable from Motor Nerves. Kepka, Otto J. [*Z. Vitamin-, Hormon- u. Fermentforsch.*, **5**, 35 (1952) (*in German*).]

The plexus lumbosacralis and nervus ischiadicus of toads were used for these experiments. Reversible narcosis (use of saturated solution of ether for 10 minutes) caused no change in the amount of extractable acetylcholine; irreversible narcosis in the presence of sufficient quantities of eserine to inhibit cholinesterase completely caused a decrease of one-third in the amount of extractable acetylcholine.

ERICH HIRSCHBERG (Chem. Abstr.).

Preparation of a Stable Brain Fraction Containing Acetylcholinesterase. Tauber, Henry. [*J. Am. Chem. Soc.*, **75**, 326–8 (1953).]

A rapid, convenient, and inexpensive method for the preparation of a stable fraction containing dry, soluble acetylcholinesterase (I) from frozen pig brain is described. Washed, frozen pig brain (450 gm.) was ground into a uniform paste with 150 gm. of sand and stirred for 5 minutes into 250 ml. of 0·05 M acetate buffer at pH 5·4 containing 1 ml. of Tween 21 and 15 ml. of toluene. After 24 hours at 37° the mixture was filtered, the filtrate was dialyzed 36 hours *vs.* 101 distilled H_2O containing 5 ml. of toluene, and then the dialyzed solution was treated with bentonite 0·8, $Ca_3(PO_4)_2$ 0·8, and hyflo 0·4 gm. per 100 ml. of solution. The clear yellow solution obtained after filtration or centrifugation upon lyophilization yielded 3 mgm. of enzyme preparation per ml. of filtrate. This (I) preparation hydrolyzed acetylcholine bromide 3 times faster than acetyl-β-methylcholine bromide and did not hydrolyze benzoylcholine chloride. This latter fact indicates the preparation is not contaminated with cholinesterase.

WALTER FRAJOLA (Chem. Abstr.).

Vitamin B_{12} and Acetylcholine Shock. Ogasawara, Kazuo, et al. [*Lancet*, **264**, 598 (1953).]

Mice injected intraperitoneally with 15γ vitamin B_{12} (I) 15–90 minutes before intravenous administration of 1 MLD histamine (II) all survived; mice given (I) 2 hours before (II) were not protected from shock and death. Other mice were injected intraperitoneally with 15γ (I), and acetylcholine (III) (15 mgm./kgm.) was given 15 minutes later. All the animals died of shock. Mice injected intraperitoneally or intravenously with 15γ (I) at the same time as (III) recovered immediately from the slight signs of shock. However, the same amount of (I) simultaneously did not prevent shock when the dose of (III) was increased to 20 mgm./kgm. In rabbits (I) (in intravenous doses of 5–30γ/kgm.) did not modify the effect of (III) on the blood pressure.

BARBARA R. MURRAY (Chem. Abstr.).

Effect of Convulsion-inducing Agents on the Acetylcholine Content and on the Electrical Activity of the Brain. Torda, Clara. [*Am. J. Physiol.*, **173**, 179 (1953).]

During the preconvulsive phase the acetylcholine content of the brain increased from 10 to 150 per cent. after administration of physostigmine salicylate and to about 60 per cent. after administration of pentamethylenetetrazole. The acetylcholine content decreased about 30 per cent. after administration of NH_4Cl. Convulsions were initiated with NH_4Cl only when the acetylcholine content of the brain previously returned within normal limits. Convulsions do not occur with brain acetylcholine content below normal limits. The factor initiating convulsions may or may not be acetylcholine.

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

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Effects of a Single Injection of Corticotropin (ACTH) on Ammonium Ion and Acetylcholine Content of the Brain. Torda, Clara. [*Am. J. Physiol.*, **173**, 176 (1953).]

Administration of corticotropin (ACTH) in a single injection induced in less than 30 seconds an increase of the NH_4 content of the brain. The NH_4 content returned to normal levels within 30 minutes and decreased by 30 per cent. within 1 hour. Administration of ACTH in a single injection induced an increase of the acetylcholine content of the brain in less than 30 seconds. Within a few minutes a peak value was reached, and the acetylcholine content returned to normal levels in less than 30 minutes. E. D. WALTER (Chem. Abstr.).

Acetylcholine Release in the Cat's Superior Cervical Ganglion. Perry, W. L. M. [*J. Physiol.*, **119**, 439 (1953).]

Acetylcholine (I) output from perfused eserinized cat's superior cervical ganglion falls approximately exponentially with time, under preganglionic stimulation, without any appreciable differences in total output for different frequencies of stimuli from 5 to 100/sec. Calculated initial (I) output per volley was about 10^{-11} gm. A second period of stimulation following an initial period yielded a very much reduced (I) output, unless the intervening rest was very long (35 minutes); this was not observed if the initial stimulation period was carried out in the absence of eserine (II) but the second period was carried out with (II). A non-stimulated perfused superior cervical ganglion yielded 100–400 mγ/minutes of choline (III) initially, falling rapidly after about 10 minutes to a steady level of from 20 to 60 mγ/minutes for different experiments. Stimulation increased this resting level of (III) by 20–50 mγ/minutes only for the first 5 minutes, after which no increase was observable in a perfused ganglion. These results confirm the tentative hypothesis that (I) liberated from the ganglion by a single preganglionic volley is a constant fraction of the "available" stock and that the synthesis of "available" (I) is a constant, independent of the rate of stimulation. On this hypothesis (II) acts to prevent hydrolysis and consequently resynthesis of liberated (I); this depletes the "available" stock of (I). In the absence of (II) this stock is little depleted and the amount of (I) liberated per volley remains practically constant.
MORRIS ROCKSTEIN (Chem. Abstr.).

The Role of Acetylcholine in Synaptic Transmission of Parasympathetic Ganglia. Perry, W. L. M., and Talesnik, J. [*J. Physiol.*, **119**, 455 (1953).]

By recording potential changes in response to retrograde injections through the cannulated lingual artery of decerebrate cats, 0·2 to 1 mgm. doses of acetylcholine (I) were observed to depolarize the cells of the ciliary ganglion, to block the ganglion action potential spike partially, and to alter the shape of the action potential resulting from submaximal preganglionic stimulation. 250γ doses of nicotine (II) produced changes similar to those of (I), which were also accompanied by constriction of the pupil. (II) had an effect on the pupil if the ciliary nerve had been severed. Hexamethonium (II) in 250γ doses produced a 30 per cent. block in spike height but without depolarization or change in shape characteristic of (I) and (II) block; it also had no blocking effects on postganglionic transmission to the pupil. Benzoylcholine in large doses (100γ to 3 mgm.) was inactive on the Langendorff preparation of the isolated cat heart when perfused through its coronary vessels. Fifty γ doses of (II) and 100γ doses of tetramethylammonium had the same inhibitory effect on the heart preparation as (I) or vagal stimulation. A large dose (6 mgm.) of (III) produced no direct effect but blocked inhibitory effects of small doses of (I) and (II) on the heart. In small doses (I) is inhibitory through stimulation of the intracardial vagal ganglion cells which can be blocked by (II) and (III); in larger doses its inhibitory effects are peripheral. These data support the hypothesis that transmission at the parasympathetic ganglion synapse is cholinergic. MORRIS ROCKSTEIN (Chem. Abstr.).

Effects of Close Arterial Injections of Acetylcholine on the Activity of the Cervical Spinal Cord of the Cat. Feldberg, W., et al. [*J. Physiol.*, **119**, 428 (1953).]

A special method is described for filling the vascular bed of a region being studied completely and quickly with drugs like acetylcholine (I). Injections of (I) (0·2 ml. of 10^{-4} solution) into the cervical spinal cord through the basilar

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

artery caused an outburst of impulses lasting from 2 to 40 seconds in the first or second cervical nerve. (I) also increased the area of the ipsilateral polysynaptic reflex and decreased its latency; close arterial injection of 80γ of atropine in 0·2 ml. failed to abolish the effect of (I). The changes in area were greater with supramaximal than with supramaximal stimuli. Injection of (I) increased the amplitude of the ventral root potential from ipsilateral stimulation and reduced the interval between stimulus and peak of the root potential by about 20 per cent. It also increased the variability of the level of the root potential at which the first impulse is excited. Eserine and prostigmine (0·2–0·5 ml. of a 10^{-4} solution) alone produced no effects on the untreated spinal cord and prolonged the effects of (I). Evidence from close arterial injections indicate that the predominant effect of (I) is the excitement of some interneurones, either by synaptic depolarization or by excitation of impulses at a nonsynaptic point which would facilitate the interneuronal synapse. MORRIS ROCKSTEIN (Chem. Abstr.).

Electrocorticographic Effects of Acetylcholine in Monkeys and Cats. *Essig, Carl F., et al.* [*Proc. Soc. Exptl. Biol. Med.*, **82**, 551 (1953).]

Tracings and discussion. L. E. GILSON (Chem. Abstr.).

Central Transmission by Afferent Impulses. II. Excitants, Acetylcholine, Adrenaline. *Sterz, H.* [*Naunyn-Schmiedeberg's Arch. exptl. Pathol. Pharmakol.*, **217**, 256 (1953).]

The spinal canal of decerebrate *Rana esculenta* was perfused from the upper end of the spinal column and the liquid collected from an opening at the lower end. The reactivity to electrical stimulation as modified by various chemicals was measured in one leg. Increased contractions were produced by strychnine at 1 : 10.[8] The effect of picrotoxin HCl was similar but considerably weaker. Pervitin-HCl required a still higher concentration. These substances simultaneously augmented the number of reflex responses. Acetylcholine increased only the size, but not the frequency; its effect was enhanced by eserine 9 to 10 times. Adrenaline was without effect. Histamine produced contraction without electrical stimulation and a generally increased tonus, and high concentration caused subsidence of the reflex responses. A. E. MEYER (Chem. Abstr.).

Experimental Production and Control of an Abnormality in Acetylcholine Metabolism Present in Epileptogenic Cortex. *Tower, Donald B., and Elliott, K. A. C.* [*J. Appl. Physiol.*, **5**, 375–91 (1953).]

A defect occurred in bound acetylcholine (I) metabolism in the cerebral cortex from animals with convulsions induced by methionine sulfoximine (II), and in normal cortical tissue when incubated under reduced O tension similar to that which occurred in slices of human focal epileptogenic cerebral cortex incubated *in vitro*. In all 3 conditions the free (I) production was normal during incubation. Treatment of animals with nembutal or avertin or the anticonvulsants dilantin or phenobarbital increased the production of bound (I) by excised cerebral cortex and overcame the depression of bound (I) in tissue from (II)-treated animals or that incubated under reduced O pressure. In contrast, tridione had no effect on the production of bound (I) under high or low O tension. Tridione and dilantin had no effect on (I) production *in vivo*, but phenobarbital reduced, by 50 per cent., the amount of free (I) synthesized at high K concentration. The convulsants, metrazole and picrotoxin, increased the (I) levels both *in vivo* and *in vitro*. The defect in the production of bound (I) in human epileptogenic cortex (III) was not found if the tissue was excised after the administration of general anaesthesia. The effect of the drug was not removed by rinsing the tissue. The presence of glutamine or asparagine, but not of glutamic acid, in the incubation medium restored to normal the production of bound (I) by (III), by cortex from (II)-treated animals, and by normal cortex incubated under reduced O tension; half maximum effect was obtained with millimol of either substance. DL-glutamine, L-glutamine, and L-asparagine were equally effective at equimolar concentrations. When methionine was added to the medium, the defect was reversed in tissue from (II)-treated animals, but not in the other 2 cases. None of these substances had any effect on the (I) metabolism of fully oxygenated normal tissue.

THERESA MCKEE (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Microdetermination of Chlorides in Cerebrospinal Fluid (C.S.F.) and Other Organic Liquids. Gambardella, Alfonso. [*Ann. neurol.*, **58**, 193 (1952).]

Reagents: (A) dissolve 4 gm. Na tungstate in 1,000 c.c. H_2O and add 10 c.c. H_3PO_4 (d. = 1·72); (B) add KIO_3, 41·8 gm. in 1,000 c.c. H_2O to a solution of $AgNO_3$ (34 gm. in 1,000 c.c. H_2O), filter, wash, and store the precipitate; (C) 0·2 gm. pyrogallol in 25 c.c. N H_2SO_4 and diluted to 100 c.c. Pour 2·5 c.c. (A) into a centrifuge tube, add 0·1 c.c. C.S.F., add 50 mg. (B) shake vigorously for 30 seconds and centrifuge. To 1 c.c. of the centrifuged liquid add 6 c.c. (C) and, within 5–20 minutes, read the light absorption with a colorimeter. Make standards with 0·1 N HCl.

C. SCANDURA (Chem. Abstr.).

Determination of Reducing Substances (Sugar) in Cerebrospinal Fluid (C.S.F.). Ragazzini, F. [*Riv. clin. pediat.*, **50**, 608 (1952).]

The following practical suggestions for a rapid (clinically adequate) analysis are given. Deproteinize C.S.F. by mixing 2·5 c.c. 0·9 per cent. $ZnSO_4.7H_2O$, 0·5 c.c. 0·2 N NaOH, and 2 c.c. C.S.F., and heat on a steam bath for 3–5 minutes. Add 0·15 c.c. A and B Fehling solutions to the filtered liquid (I), warm for 1·5–2 minutes, cool and (I) determine the reducing substances by nephelometry (standard curves made by the Hagedorn or Folin-Wu methods), or (II) filter and measure the residual blue color by a colorimeter. Another method: add 0·5 c.c. A and B Fehling solutions to 2·5 c.c. (I), centrifuge, decant, and measure the Cu_2O by dissolving it with 0·2 N H_2SO_4.

C. SCANDURA (Chem. Abstr.).

A Cadmium Sulfate Reaction on Cerebrospinal Fluid (C.S.F.). Brizzi, R. [*Riv. neurol.*, **20**, 179 (1950).]

The amount of 0·01 N HCl needed to dissolve the precipitate formed by mixing 1 c.c. of C.S.F. and 0·1 c.c. saturated solution. $CdSO_4$, was nearly 2·45 c.c. for normal subjects; 2–2·25 in cases of progressive paralysis and meningeal reactions from hemorrhage; 2·25–2·45 in some treated cases of progressive paralysis, in hydrocephalus and polysclerosis; normal in affections of the peripheral nervous system, in some cases of tabes, in inflammatory processes and in a few cases of old progressive paralysis; increased in a case of tuberculous meningitis and in cases of intracranial tumors.

C. SCANDURA (Chem. Abstr.).

The Passage of a Colloid from Cerebrospinal Fluid to Blood and Tissues. Howarth, F. [*Brit. J. Pharmacol.*, **7**, 573–80 (1952).]

A Pd^{109} colloid was prepared by the method of Paal and Amberger (Ber. **37**, 1, 124 (1904). Particle diams. were 54 per cent. 200 Å; 15 per cent. 300 Å; 15 per cent. 100 Å; 11 per cent. 400 Å; and 5 per cent. 500 Å in the supernatant after centrifugation 1 hour at 1,300 gm. After intravenous injection the rate of fall of the concentration of Pd in the blood depended partly on the size of the dose, large doses falling more slowly than small ones. After subarachnoid injection a small and variable concentration of Pd appeared in the blood. Tissue assay after injection by either route showed the lungs held a higher concentration than any other tissue examined except kidney, which after a subarachnoid dose showed a concentration comparable with that in lung. RICHARD F. RILEY (Chem. Abstr.).

Sugar Content of Spinal Fluids. Nakane, Matsuyo. [*Igaku to Seibutsugaku (Med. and Biol.)*, **10**, 246–8 (1947).]

Sugar content of spinal fluids (I), as determined by the $KMnO_4$ method of Shibata and N. (*C. A.*, **45**, 4768*e*; **47**, 1218*f*), were expressed by: normal (I), $Z = 0{\cdot}925\ Z' + 0{\cdot}0137$, and abnormal (I), $Z = 0{\cdot}550\ Z' + 0{\cdot}0364$, Z and Z' were sugar contents (in gm./100 ml.) in Folin-Wu deproteinized filtrates and non-deproteinized filtrates, respectively. The difference $Z–Z'$ was independent of the sugar contents, and no statistically significant correlation was obtained between sugar and protein content of the fluids. The sugar contents of (I) decreased progressively with time on allowing the fluids to stand at room temperature. The decrease in deproteinized and non-deproteinized filtrates was expressed by: $Z = 1{\cdot}00–0{\cdot}07\ t$ and $Z' = 1{\cdot}00–0{\cdot}20\ t$, respectively in which initial sugar contents were taken as 1·00 t was days after sampling, and Z and Z' were sugar contents after standing, respectively.

M. NAKAMURA (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Practical Physiological Aspects of Cerebrospinal Fluid. Kalthoff, Robert J. [*Marquette Med. Rev.*, **13**, 124–31 (1947–48).]

Physiological, pathological and chemical aspects are reviewed. Twenty-three references. The physiological and clinical significance of serum phosphatase.
RICHARD R. BOLIN (Chem. Abstr.).

Practical Physiological Aspects of Cerebrospinal Fluid. Kalthoff, Robert J. [*Marquette Med. Rev.*, **13**, 146–51 (1947–48).]

A review on the physiological and pathological significance of alkaline and acid phosphatase. Eighteen references. W. C. TOBIE (Chem. Abstr.).

Content of Cells and Proteins in the Cerebrospinal Fluid. Neel, A. V. [*Nord. Med.*, **43**, 1022–25 (1950) (*in Danish*); *Excerpta Med.*, Sect. VIII, **4**, 19 (1951).]

A discussion.

The Rest Nitrogen Content of the Cerebrospinal Fluid. Pruckner, Franziska, et al. [*Arch. Psychiat. Nervenkrankh.*, **189**, 503 (1952).]

Total rest N (RN_s) and low molecular rest N (RN_l) were determined in cerebrospinal fluids from 51 normal subjects and from 351 patients with various diseases of the nervous system. The $RN_l : RN_s$ ratio (NQ) varied from 1·3 to 1·7 in normals. NQ was in the normal range in most mental defectives, psychopaths and schizophrenics who had been shock treated, and below normal in most patients with meningitis, encephalitis, poliomyelitis, apoplexy and untreated schizophrenia. Normal and below normal NQs were about equally divided in multiple sclerotics and cerebral sclerotics. NQ was normal in 31 epileptics, definitely below normal in 8, and slightly below normal in 12. W. M. SPERRY (Chem. Abstr.).

The Nitrogen Quotient, a New Quantity for Characterizing the Cerebrospinal Fluid. Pruckner, F. [*Nervenarzt*, **24**, 30 (1953).]
WARREN M. SPERRY (Chem. Abstr.).

Sulfonamide Concentration in the Cerebrospinal Fluid during Inflammatory Reaction of the Fluid Space (Meninges) after Brain Operations. Driesen, Wilhelm. [*Deut. Z. Nervenheilk.*, **169**, 322 (1952).]

In 50 patients with aseptic meningitis after brain operations the sulfonamide (aristamide) (I) concentration was determined in blood and cerebrospinal fluid (C.S.F.). The cell count, total protein (II) concentration and Pandy and Nonne reactions (III) of C.S.F. were also determined. The ratio of concentrations of (I) in blood and C.S.F. ranged from 0·1 to 0·5, i.e., there was no increase in diffusion of (I) into the C.S.F. although in the majority of the C.S.F. (II) concentration and (III) were abnormal. WARREN M. SPERRY (Chem. Abstr.).

The Carbohydrate Content of Cerebrospinal Fluid Proteins. Stary, Z., et al. [*Klin. Wochschr.*, **31**, 339 (1953).]

Normal cerebrospinal fluid contains an average of $6{\cdot}75 \pm 2{\cdot}45$ mg. of protein-bound hexoses per l. ERICH HEFTMANN (Chem. Abstr.).

The Cerebrospinal Fluid. Talevalker, N. G. (*Antiseptic*, **50**, 161 (1953).]

A discussion. The importance of protein, chloride and urea contents of cerebrospinal fluid is reviewed. The use of Langes colloidal gold reaction as a diagnostic tool is described. THERESA MCKEE (Chem. Abstr.).

The Cause and Origin of Subacute Combined Degeneration of the Spinal Cord. Netousek, M. [*Neurol. Psychiat. Ceskoslovenska*, **11**, 157 (1948); *Excerpta Med.*, Sect. VIII, **2**, 746 (1949).]

A pathological and biochemical discussion. A lack of hematopoietic substance from the liver is only of secondary importance in producing spinal-cord degeneration in pernicious anemia. A lack of the B group of vitamins is more important.
W. C. TOBIE (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

The Use of Radioisotopes for the Localization of Brain Tumors. Wrenn, Frank R., jun., and Good, Myron L. [*N. Carolina Med. J.*, **13**, 231 (1952).]

The technique of intracranial localization at the time of operation for brain tumor appears to be of limited value as an adjunct to standard neurosurgical procedure. The techniques for the pre-operative localization of brain tumors from without the intact skull have shown real promise of becoming an important diagnostic aid to the neurosurgeon. Of the latter techniques suggested to date, the use of I^{131} and diiodo^{131} fluorescein with the so-called normal method of counting appears to be most satisfactory. There is still need, however, for real improvement in the definition and accuracy of localization.

EDWARD J. VAN LOON (Chem. Abstr.).

The Influence of Female Endocrines on Epilepsy. Frohlich, Mayer. [*Intern. Record of Med.*, **166**, 9–11 (1953).]

Idiopathic epilepsy, if not occurring early in childhood, often appears at the age of puberty; in women, epileptiform seizures nearly always occur at a certain phase of the menstrual cycle, coincident with estrogen excess, either absolute or relative to progesterone deficiency, disturbing electrolyte and water metabolism.

J. DUFRENOY (Chem. Abstr.).

The Salt and Water Balance in Migraine. Campbell, Dorothy Adams, et al. [*Brit. Med. J.*, **11**, 1424–9 (1951).]

In the pre-migraine phase, and more particularly in the early stages of the attack, the blood Na concentration rose to a high level, while blood H_2O rose markedly. Excessive Na and Cl were excreted following inhibition of 1,500 ml. of H_2O. MARSHALL E. DEUTSCH (Chem. Abstr.).

Properties of Nerve Axons. I. Movement of Sodium and Potassium Ions during Nervous Activity. Hodgkin, A. L., and Huxley, A. F. [*Cold Spring Harbor Symposia Quant. Biol.*, **17**, 43 (1952).]

The mode is described in which cephalopod axons use the energy derived from the mixing of Na and K ions to generate and conduct an electric impulse. Tracer measurements show that the electric activity of cephalopod axons is associated with an inward movement of Na and an outward movement of K. Permeability changes underlying these ionic movements were studied by the voltage clamp technique. Depolarization leads to a rapid but transient increase in Na conductance and to a delayed but maintained increase in K conductance. Both effects are graded and can be reversed by repolarizing the membrane. Correct prediction of shape and velocity of the action potential and other related phenomena is possible by calculation. HILDA H. WHEELER (Chem. Abstr.).

The Oxygen Uptake of Active Axons. Brink, Frank, jun., et al. [*Cold Spring Harbor Symposia Quant. Biol.*, **17**, 53 (1952).]

Characteristics of the chain of processes connecting impulse conduction in axons with O uptake from the environment were examined. Some of the phases discussed are: the kinetics of changes in O uptake by axons, the quantity of O per volley of impulses, properties of the time constants, utilization of the increased O metabolism associated with conduction of impulses, relation of the extra O uptake of active axons to that of a resting axon, and possible processes connecting conduction of impulses to rate of oxidation. HILDA H. WHEELER (Chem. Abstr.).

Spinal Cord and Sympathetic Ganglia. Factors that Modify Transmission Through the Spinal Cord. Skoglund, C. R. [*Cold Spring Harbor Symposia Quant. Biol.*, **17**, 233 (1952).]

Differential actions of certain substances on different types of segmental reflexes were studied. Exposure to chemical agents was used to emphasize differences in the properties of various types of peripheral nerve fibers. In addition to studying the effect of chemical agents on transmission through mono- and multi-synaptic flexor and extensor systems, the effect on transmission through sensory synapses was investigated. The action of acetylcholine and anticholinesterases on spinal cord functions, and the action of adrenaline, noradrenaline and antiamine oxidases were recorded. HILDA H. WHEELER (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Metabolic Requirements of Sympathetic Neurons. Larrabee, Martin G., and Bronk, Detley W. [*Cold Spring Harbor Symposia Quant. Biol.*, **17**, 245 (1952).]

The principal points discussed are: (1) the measurement of rates of uptake of O and of glucose and changes in these rates produced by activity and by other modifications of metabolism; (2) the functional effects resulting from lack of O and of glucose, singly and in combination; and (3) the functional effects of other environmental changes which are believed to affect metabolism, including the effects of various metabolic poisons. HILDA H. WHEELER (Chem. Abstr.).

Histochemical Studies of the Glycogen of the Mammalian Brain. Shimizu, Nobuo, and Kumamoto, Tetsuzo. [*Anat. Record*, **114**, 479 (1952).]

Brain glycogen can be preserved when fixed by an adequate procedure, and can be demonstrated by the McManus method or lead tetraacetate method. The hypothalamus and area postrema are well supplied with glycogen.
EDWARD J. VAN LOON (Chem. Abstr.).

Glutamic Acid and Brain Tissue Respiration under Increased Oxygen Pressure. Gershenovich, Z. S., and Krichevskaya, A. A. [*Biokhimiya*, **17**, 684 (1952).]

The toxic effect of O under pressure is of importance in aviation. Glutamic acid, the only amino acid which is capable, like glucose, of maintaining brain-tissue respiration, has a protective effect on the organism during increased O pressure. The racemate was more effective than the L-form. Experiments were conducted on white rats and mice kept in a chamber for definite time intervals under an O pressure of 6 atmosphere. The brain was removed and the tissue respiration was measured manometrically. Increased O tension caused a decrease in tissue respiration, and this produced convulsions. The animals that had received 0·1–1·0 gm. glutamic acid showed a higher tissue respiration, compared to the controls, and the convulsions started much later. Aspartic acid and alanine were entirely ineffective.
H. PRIESTLEY (Chem. Abstr.).

Functional Biochemistry of the Brain. Vladimirov, G. E. [*Fiziol. Zhur. S.S.S.R.*, **39**, 3 (1953).]

A review with new observations is presented. Introduction of camphor into mice increases lactic acid (I) in the brain owing to enhanced glycolysis, and the content of (I) is somewhat lower during pauses between spasms than during spasms. However, strychnine, which causes much stronger spasms and raises the blood level of (I) more significantly, does not cause a rise of brain (I) since (I) is transferred to the brain from the blood very slowly. Hence the rise of (I) in the brain is caused by actual alteration of carbohydrate metabolism in the brain proper. When the normal food supply to the brain is disturbed there is very rapid breakdown of phosphocreatine (II). Similarly, determination of adenosine triphosphate (ATP) in the brain after rapid freezing of the entire animal (rat) shows a much higher content than determined by previous investigators. Under physiological conditions of stimulation there is no decrease of ATP or (II) in the brain. The content of NH_3 found in the brain after quick freezing of an animal is some 0·1 of the values found after methods which allow for post-mortem changes in the tissue. NH_3 can be used as an index of the state of the brain: retarded or excited. Introduction of glutamic acid prior to introduction of NH_4 salts (unstated) serves to minimize or eliminate the toxic properties of the latter. Exchange of inorganic phosphates between blood plasma and brain tissue is very slow, and this transfer is controlled by the membranes which separate the circulatory system from the brain proper. The intracellular concentration of P is much higher than extracellular and if only the former value is taken into account it would explain the rapid restoration of ATP and (II) in the brain. The slowest P exchange is observed among the deoxyribonucleoproteins. The phosphoprotein fraction, which loses inorganic phosphate in N NaOH at 37° over 20 hours and which comprises some 4 mgm. per cent. of the tissue, shows unusually rapid P exchange, comparable to that of ATP and (II). These proteins show a greatly enhanced P exchange (or renewal) after stimulation of the brain tissue, which indicates that they participate in the act of transmission of the stimuli in the nervous-system tissues; an enhanced P exchange under these conditions also occurs in phospholipides and nucleoproteins.
G. M. KOSOLAPOFF (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Metabolic Changes in Coenzymes (I) and (II) by a System from Nervous Tissue. McIlwain, H. [*Intern. Congr. Biochem., Abstrs. of Commns. 1st Congr., Cambridge, Engl.*, 1949, 571.]

The process by which tissue preparations from the central nervous system liberate nicotinamide (I) from cozymase (II) proceeded at rates of 0·4–1·8 micromoles/mg. dry wt./hr.; this was often several times greater than the rate of respiration of the tissue. The reaction approached its maximum velocity at the normal, 5×10^{-4} M, concentration of (II) in brain tissue. (I), 10^{-3} M, reduced the breakdown of 3×10^{-4} M (II) by ½. The process resulted in the formation of one equivalent of acid per molecule (I) liberated. This was apparently caused by the disappearance of the pyridinium ion, and, when the reaction was carried out in $NaHCO_3$, its velocity could be followed manometrically by CO_2 evolution. The optimum pH was 7, and the reaction was almost unaffected by many inorganic salts. The system responsible for the reaction remained associated with tissue debris in isotonic solutions and was fairly stable at O or 37°, but was inactivated rapidly at 70°. It was easily obtained in H_2O solution and was purified. The same preparations also rapidly inactivated coenzyme II; the rate was 70–85 per cent. of that with (II). Inactivation of coenzyme II was also accompanied by the liberation of (I). Competition took place between the 2 coenzymes for the degrading system, thus a common enzyme was responsible in both cases. I derivatives, such as the ribofuranoside and glycosides, and dihydrocoenzyme I and II were not affected by the enzyme system. The system may participate in the control of E_H in equilibria of dehydrogenases, in aerobic phosphorylations, and in the route of carbohydrate metabolism. THERESA MCKEE (Chem. Abstr.).

Changes in the Nerve Membrane and the Role of Cholinesterase in the Conductive Process. Bergmann, Felix, and Shimoni, Arela. [*Biochem. et Biophys. Acta*, **10**, 49 (1953).]

Quaternary ammonium ions (I) inhibit the hydrolysis by acetylcholinesterase (II) of acetylcholine and of neutral esters. The inhibition is competitive. The relation of (I) to the active surface of (II) parallels the behavior of (I) to cation-exchange resins. Therefore, when the enzyme is built into the nerve membrane the membrane acquires the properties of a "permselective" membrane. The conductive process in the nerve membrane may be explained as follows: When the action current flows across the membrane, in the first line a shift of H ions occurs owing to the high mobility of H^+. The concentration and activity of H^+ in the hydrated parts of the membrane are thus changed. Simultaneously, the H-bonded network and selective permeability of the membrane break down. The recovery process is dependent on a chemical change in the membrane itself.

MORTON PADER (Chem. Abstr.).

The Metabolism of Various Brain Tissue Preparations. Elliott, K. A. C., et. al [*Intern. Congr. Biochem., Abstrs. of Commns., 1st Congr., Cambridge, Engl.*, 1949, 603.]

The pretreatment of brain-cortex slices affects aspects of their metabolism. If slices are kept in a glucose-containing medium, aerobic glycolysis occurs actively for a short time, then falls to a low value. Slices which are stored in a humid chamber without moistening, or kept in a glucose-free medium for 30 minutes, show a high and sustained aerobic glycolysis. The respiration of the humid-stored slices is as high as that of the other slices, but they are less stimulated on the addition of 0·1 M KCl to the medium. Homogenous brain suspensions prepared in isotonic media respire or carry on anaerobic glycolysis at 70 per cent. of the rate of slices of the same tissue. The optimum pH for respiration of the suspensions is 7·0–7·5, whereas with slices maximum respiration occurs at pH 9·5. The anaerobic glycolysis of the slices has an optimum at pH 7·0; the addition of pyruvate stimulates the rate and causes it to be maintained at a higher pH. The aerobic glycolysis of the suspensions is lower than that of slices; it increases with pH, and at pH 6·5 acid formation ceases or becomes negative. Bicarbonate or CO_2 does not simulate brain tissue metabolism and slightly inhibits respiration and glycolysis. Water homogenates of brain tissue metabolize at a low rate until various co-factors are added. The metabolism of isotonic suspensions approaches that of slices and respiration and pyruvate-stimulated anaerobic glycolysis are not affected by

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

nicotinamide, diphosphopyridine nucleotide or phosphocreatine. Apparently even though the cells are largely disrupted, essential coenzymes are maintained in an active form in which they are not readily subject to attack by destructive enzymes.
THERESA MCKEE (Chem. Abstr.).

Acid-soluble Phosphates in Monkey Brain as Affected by Certain Central Nervous System Stimulants and Depressants. Shideman, F. E., and Seevers, M. H. [*Proc. Soc. Exptl. Biol. Med.*, **82**, 63 (1953).]

The influence of d-tubocurarine, pentobarbital, chloral hydrate, pentylenetetrazole, and 5-ethyl-5-(1, 3-dimethylbutyl) barbituric acid on the concentrations of inorganic phosphate, phosphocreatine, and adenosine triphosphate in the cerebrum of the *rhesus* monkey was studied. d-Tubocurarine was the only one producing a significant effect; it decreased the phosphocreatine only.
L. E. GILSON (Chem. Abstr.).

Pseudocholinesterase of Brain. Mendel, B., and Myers, D. K. [*Nature*, **170**, 928 (1952).]

Administration of tri-o-tolyl phosphate (I) which is known to be a selective inhibitor of pseudocholinesterase (II) to rats, produced a complete inhibition of (II) in the brain. Histological examination of the brain, spinal cord and sciatic nerves of these animals did not reveal any demyelination or other abnormalities. It is concluded that the activity of (II) has no relation to the integrity of the medullated nerve fiber, and secondly that (II) is not required for the hydrolysis of acetylcholine released by the nervous activity of the brain.
L. WEIL (Chem. Abstr.).

Cerebral Cholinesterase in Experimental Anaphylactic Shock in Guinea-pigs. Poloni, Alfredo. [*Riv. neurol.*, **20**, 251 (1950).]

The cholinesterase activity of the cerebellar cortex of guinea-pigs examined 0·5 hour after death, during the shock, and 2 hours after initiation of shock with and without severe convulsions was, respectively, 67·48, 40 and 12·42 per cent. higher than in controls. C. SCANDURA (Chem. Abstr.).

The Cadmium Reaction in Nervous and Mental Diseases. Benassi, P. [*Riv. neurol.*, **20**, 515 (1950).]

The reaction of Wunderly and Wuhrmann was applied to 555 cases of nervous and mental diseases: no significant positive results were obtained.
C. SCANDURA (Chem. Abstr.).

Phenylpyruvic Oligophrenia. Phenylpyruvic Acid Content of Blood. Jervis, Geo. A. [*Proc. Soc. Exptl. Biol. Med.*, **81**, 715 (1952).]

The method for the determination of blood phenylpyruvic acid is given in detail. Normal persons gave values of 0·014 mgm. per cent., whereas persons affected with phenylpyruvic oligophrenia gave values ranging from 0·31 to 1·78 mgm. per cent. A significant increase in phenylketonemia was observed following ingestion of DL-phenylalanine, the D form causing a considerably greater increase than the L isomer. Feeding of phenylpyruvic acid resulted in a sharp increase of phenylketonemia. EDWARD J. VAN LOON (Chem. Abstr.).

Measurements of Adrenal Cortical Activity in Young Men Subjected to Acute Stress. Kuhl, W. James, jun., et al. [*J. Clin. Endocrinol. and Metabolism*, **12**, 393 (1952).]

Norman subjects were immersed in water at 9·5° for 8 minutes. Changes occurring in the blood immediately or within 4 hours were increases in neutrophils, serum proteins, and free and esterified cholesterol; and decreases in lymphocytes, eosinophils, NaCl, and serum water. The urine showed increases in Na, ascorbic acid and the uric acid/creatinine ratio. Some of these changes are indicative of increased adrenal cortical activity. Serum Na, plasma K, blood sugar, blood ascorbic acid, and urinary K and Cl showed no significant changes.
L. E. GILSON (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Histochemical Localization of Acetylcholinesterase in Nervous Tissue. Ravin, Herbert A., et al. [*J. Pharmacol. Exptl. Therap.*, **107**, 37 (1953).]

A new method based on the acetylesterase function of acetylcholinesterase in fresh frozen tissue was developed. 2-Naphthalene acetate was used as the substrate in conjunction with the dye Fast Blue R.R. Enzymic activity was demonstrated in the cytoplasm and cell membrane of neurocytes. in the neuropile and in myoneural junctions. Cell nuclei were free of enzymic activity.

J. D. TAYLOR (Chem. Abstr.).

Quantitative Changes of Nucleotides in the Diencephalon, Liver, Kidney and Adrenal Glands of White Rats Treated by Electroshock. Gherarducci, Domenico. [*Sistema nervoso*, **3**, 411 (1951).]

Histological observations showed that only one electric stimulation caused slight changes in the ribonucleic acid (I) content of the cells of the above organs; repeated stimulations within 2 hours 6 days caused an increase of the cell function (decrease of (I)) with protein and nucleotide disintegration following and therefore protein and nucleotide decrease. The changes were irreversible only in cases of repeated treatments within a few hours. No changes were observed in the deoxyribonucleic acid.

C. SCANDURA (Chem. Abstr.).

Lead Poisoning as a Cause of the Athetoid Type of Cerebral Palsy. Martin, Robert V., and Shapiro, Allen D. [*Arch. Pediat.*, **70**, 20 (1953).]

This type of cerebral palsy occurred in a 5-year-old child suffering from chronic Pb poisoning. The urine (700 c.c.) contained 0·035 mgm. Pb (0·05 mgm./1) and a trace of albumin. X-ray examination revealed lead lines at the knees, wrists and iliac crest, and the deep bands of increased *d* characteristic of Pb poisoning at the angles of the scapulae and in the sternal ends of the ribs.

JOSEPH S. HEPBURN (Chem. Abstr.).

Residual Neuropathological Effects of Cyanide Poisoning. A Study of the Central Nervous Sytsem of Twenty-three Dogs Exposed to Cyanide Compounds. Haymaker, Webb, et al. [*Military Surgeon*, **3**, 231–46 (1952).]

Dogs were exposed in a single exposure to CNCl and HCN by inhalation and NaCN and CNCl by intravenous injection. In 7 dogs which died within 3 hours, no significant changes were found in the central nervous system. In 15 dogs, gray matter suffered heavily (total necrosis) and almost exclusively. The structures most susceptible in approximate order of decreasing frequency of involvement were cerebral cortex, head of the caudate nucleus, putamen, substantia nigra, globus pallidus, pulvinar of the thalamus, and cerebellar cortex.

J. D. TAYLOR (Chem. Abstr.).

Motor End-plate Difference as a Determining Factor in the Mode of Action of Neuromuscular Blocking Substances. Zaimis, Eleanor J. [*Nature*, **170**, 617 (1952).]

Decamethonium (I) and succinylcholine, neuromuscular blocking agents, produced blocking effects in monkeys, dogs and hares which were at first characteristic of depolarization at the end-plate followed by a transition to a competitive inhibitor type of block. In the cat and human (I) acts only by depolarization. Tridecamethonium, a higher member of the methonium series, showed the same type of blocking action in the cat as did (I) in the dog and monkey.

GORDON W. NEWELL (Chem. Abstr.).

Motor End-plate Differences as a Determining Factor in the Mode of Action of Neuromuscular Blocking Substances. Churchill-Davidson, H. C., and Richardson, A. T. [*Nature*, **170**, 617–18 (1952).]

Decamethonium (I) produces a neuromuscular block typical of competitive inhibition in patients with myasthenia gravis as contrasted with a depolarizing block obtained with the same compound in normal patients. (I) is excreted at the same rate and unchanged in both types of subjects. The condition of myasthenia gravis may cause acetylcholine to function as a competitive inhibitor in neuromuscular transmission at the motor end-plates.

GORDON W. NEWELL (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

The Role of Enzymes in Alcohol Metabolism. Lecoq, Raoul. [*Presse méd.*, **60**, 1662–4 (1952).]

The toxic effect of EtOH is caused by the following metabolites: MeCHO, $MeCOCO_2H$, and " CPF," a derivement of $MeCOCO_2H$, that potentiates the effect of the acid. The most important enzymes involved in the metabolism of EtOH are dehydrases with codehydrases, the latter derived from the nicotinamide-adenine complex. H transmitters like glutathione also are of influence. The potential enzyme mechanism in the liver is discussed. Undernutrition and hormonal unbalance impair alcohol metabolism. A. E. MEYER (Chem. Abstr.).

Judgment of Fresh Brain Concussion by the Fasting Blood Sugar and Simultaneous Osmotherapy with Levulose. Moser, Herbert. [*Arztl. Monatsh.*, **5**, 827–33 (1949–52).]

Severity, healing, and prognosis of concussion were investigated in 552 cases by determination of the fasting blood-sugar curve without tolerance test. Intravenous injections of 20 c.c. 40 per cent. levulose combine the advantage of treatment with diagnosis. Patients under the influence of EtOH awake rapidly with levulose because of transformation of the sugar into $MeCOCO_2H$; unconsciousness due to concussion does not yield to levulose. A. E. MEYER (Chem. Abstr.).

Morphological Alterations in the Brain after Intoxication with Parathion. Siedek, H., and Thaler, H. [*Arch. intern. pharmacodynamie*, **91**, 194–201 (1952).]

Dogs were repeatedly poisoned with parathion and treated with atropine, so that up to 98 mgm./kgm. was given over a period of 22 days. Animals which died had severe hyperemia of the brain and spinal cord. Degeneration of the ganglionic cells is present after 30 hours, and of the myelin sheaths in experiments of long duration. M. L. C. B. (Chem. Abstr.).

The Metabolic Disorder in Hepato-lenticular Degeneration. Matthews, W. B., et al. [*Quart. J. Med.*, **21**, 425–46 (1952).]

Two cases of hepato-lenticular degeneration are described, together with the results of investigations of the metabolism and excretion of amino acids and Cu. Excessive urinary excretion of amino acids was caused by a tubular defect, as shown by determinations of serum and urinary amino N, by paper chromatography, and by determinations of amino N clearances after ingestion of glycine and alanine. Both patients had an abnormally high urinary excretion of Cu, which was further increased by injection of BAL or of a complex organic Cu compound " cuprelone," but similar changes were produced in normal subjects. However there is a specific abnormality of Cu metabolism in acromegaly. It is postulated that there is both an increased tissue reserve of Cu, and a renal defect as regards Cu as well as amino acids. JOHN T. MYERS (Chem. Abstr.).

Comparative Study of the Biochemical Development of the Brain of Some Species of Mammals. Mandel, Paul, and Bieth, Robert. [*Compt. rend.*, **235**, 485–7 (1952).]

Deoxypentose nucleic acid (DNA) is an essential constituent of chromosomes. Therefore the amount of DNA in the brain is related directly to the multiplication of cell nuclei. When DNA reaches a maximum level it is assumed that the number of cells in the brain also arrives at a maximum value. Since the guinea-pig at one day of age has the same amount of DNA in the brain as an adult, it is concluded that the cellular growth of the brain is terminated at birth. In the rat, cellular growth stops after 16 days, in the rabbit and the cat after 1 month, and in the dog after 5 months. With the human it has not been possible to fix the exact time, but according to available data, cellular multiplication ceases at approximately 1 year of age. Other brain constituents, such as proteins, lipides, and especially phosphatides, continue to increase for a variable period of time depending on the species. The amount of pentose nucleic acid (PNA) reaches a maximum at the same time as DNA in the rat, rabbit and the cat, but at a later time in the guinea-pig. In man, at the moment when the increase in the number of cells is terminated, apparently the amount of PNA is much less than that found in the adult brain.
N. R. STEPHENSON (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Respiratory Activity of the Cerebral Cortex in vitro *in Relation to the Concentration of Glucose in the Medium. Maleci, O.* [*Boll. soc. ital. biol. sper.*, **23**, 58–61 (1947); *Excerpta Med.*, Sect. II, **1**, 340 (1948).]

The respiration of rabbit cerebral cortex was measured in a Warburg apparatus in Ringer solution containing various concentrations of glucose. Respiration increased up to a maximum of 0·04 per cent. glucose; higher concentrations caused no increase in respiratory activity. The normal concentration of glucose in cerebrospinal fluid is 0·05–0·06 per cent. W. C. TOBIE (Chem. Abstr.).

The Chemical Origin of Electrical Energy in the Nervous System. Barnes, T. Cunliffe. (*Euclides*, **10**, 118–21 (1950).]

The theory that explains the electrical nerve impulse as a diffusion potential is shown to be untenable on experimental and theoretical grounds. The electrogenic action of acetylcholine and other quadricovalent N compounds can be demonstrated *in vitro* and *in vivo*. The spike produced by an onium salt on non-medullated nerve of *Homarus americanus* is described. It is concluded that the basis of nervous energy resides in the phase-boundary electrical potential generated by compounds in the nervous system containing quadricovalent N.

ELVA G. SHIPLEY (Chem. Abstr.).

The Glycemic Curve after Prefrontal Leukotomy. Pirovano, A., and Confortini, C. [*Minervachir*, **7**, 397–400 (1952).]

In 5 dogs subjected to bilateral leukotomy the glucose content of blood increased from 0·08–0·1 to 0·18–0·2 per cent. 30 minutes after the operation. The initial values were restored within 2 hours. These facts are discussed.

C. SCANDURA (Chem. Abstr.).

Magnesium Molybdate in Psychic Anorexia. Caujolle, F., et al. [*Toulouse med.*, **53**, 341–52 (1952).]

A review on the metabolic effect on Mo and clinical cases.

GEO. SAG (Chem. Abstr.).

Effect of Tetraethyl Lead Poisoning on the Higher Nervous Activity of Animals (White Rats). Gorsheleve, L. S. [*Zhur. Vysshei Nervnoi Deyatel'nosti im. I. P. Pavlova*, **1**, 727–38 (1951).]

Subcutaneous introduction of 0·04 gm./kgm. of Et_4Pb into rats leads to a three-phase serious alteration of activity of the higher nervous system. In the first phase the cortical activity and stimulability are increased with decrease of latent period of conditioned reflexes. In the second phase the blocking process mounts and its course spreads to subcortical layers leading to chaotic motor functions. The last, third, phase is that of restoration of functions, first the unconditioned, then the conditioned reflexes being normalized. Generally animals with weak level of nervous activity suffer more severe symptoms of such intoxication than do animals with a high level of nervous activity, or animals of nervously stable type.

G. M. KOSOLAPOFF (Chem. Abstr.).

Influence of Deoxycorticosterone on Potassium Concentration in the Serum and in the Cerebrospinal Fluid. Bekaert, J., and Demeester, G. [*Arch. intern. physiol.*, **59**, 391–2 (1951) (*in English*).]

Dog cerebrospinal fluid, taken by suboccipital puncture, and arterial blood were examined for K after daily injections of 5–10 mgm. deoxycorticosterone/kgm. for 3–8 days. Spinal fluid K decreased slightly while the serum level dropped from control values of 19–22 to 11–16 mgm. per cent. C. D. J. (Chem. Abstr.).

Influence of the Infusion of Potassium Chloride on the Cerebrospinal Fluid Concentration of Potassium. [*Arch. intern. physiol.*, **59**, 393–4 (1951); *C. A.*, **47**, 2860*e*.]

The intravenous infusion of 150–800 ml. of isotonic KCl into dogs over 2–3 hours' time produced marked increases in serum K, while the spinal fluid K did not change. Within 10–20 minutes after death the K content of the spinal fluid increased from 11 to 19–25 mgm. per cent., however. C. D. J. (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Ammonium Ion Content and Electrical Activity of the Brain during the Preconvulsive and Convulsive Phases Induced by Various Convulsants. Torda, Clara. [*J. Pharmacol. Exptl. Therap.*, **107**, 197–203 (1953).

In rats the brain NH_4 ion content (I) remained within normal limits during the preconvulsive phase induced by physostigmine salicylate and pentylenetetrazole and increased up to 9-fold during the preconvulsive phase induced by NH_4Cl. Convulsions were induced by NH_4Cl only when the (I) exceeded 10 times the control values. (I) increased during convulsions induced by various agents. The changes in the electrical activity of the brain during the preconvulsive and convulsive phases are described. It appears that an accumulation of NH_4 ion in the brain is the result of increased cerebral activity and is not necessarily the factor initiating convulsions. One of the physiological effects of the accumulation of NH_4+ is to contribute to the termination of convulsions. L. E. GILSON (Chem. Abstr.).

The Quick Test in Schizophrenia. Pieper, Josef, and Faber, Rolf. [*Klin. Wochschr.*, **31**, 157–8 (1953).]

Schizophrenic and other mental patients showed a diminished hippuric acid excretion in the Quick test. This is believed due to a glycine deficiency, but not to an accumulation of some toxic material. E. HEFTMANN (Chem. Abstr.).

Aging of Neurofibrils. Sosa, Julio María. [*J. Gerontol.*, **7**, 191–5 (1952).]

A special change of the neurofibrils network occurring in relation to the accumulation of lipochrome pigment (lipofuscin) in the cytoplasm is described and is designated as lipochrome neurofibrillar degeneration or lipofuscin neurofibrillar degeneration. The degeneration begins with a dissociation and agglutination of the neurofibrils and ends with total neurofibrillolysis. Three distinct stages of the degenerative process are described. It is considered that the process is one of aging. THERESA MCKEE (Chem. Abstr.).

Biochemical Evolution of the Brain in Ontogenesis and Nervous Activity. Kreps, E. M., et al. [*Zhur. Vysshei Nervnoĭ Deyatel'nosti im. I. P. Pavlova*, **2**, 46–57 (1952).]

A review with experiments conducted on rabbit, guinea-pig, hen and grackle at various ages. These experiments indicate that the development of the enzyme systems of the cerebral cortex, the maturation of cell structures, and the maturation of bioelectrical activity are correlated to the development of chemical, structural and functional characteristics. The cortex matures at a later date than do the other parts of the brain, and the level of enzymic activity in the cortex is also higher than that found in other brain tissues.

G. M. KOSOLAPOFF (Chem. Abstr.).

Content of Readily Hydrolyzable Compounds Containing Hexosamine in Human Brain. Kuzin, A. M., and Garzunova, G. A. [*Doklady Akad. Nauk S.S.S.R.*, **87**, 833–35 (1952).]

In an examination of 23 individuals it was determined that the grey matter of the brain contains more hexosamine (450–650 mgm. per cent.) than does the white matter (290–417); the temple regions have the highest level (633) and the back of the head and the forehead regions have the lowest (500–433).

G. M. KOSOLAPOFF (Chem. Abstr.).

Distribution of Bromides in Various Parts of the Central Nervous System of Dogs and Rabbits as Studied with the Aid of Bromine Radioisotope (Br^{82}). Verkhovskaya, I. N. [*Doklady Akad. Nauk S.S.S.R.*, **87**, 681–4 (1952).]

Subcutaneous introduction of $NaBr^{82}$ (60–70 μc. per kgm.) in presence of carrier NaBr (20–40 mgm.) gave results which are shown on bar graphs. In the dog the Br^{82} concentration in the brain tissue is very low (17–22 per cent.), while the blood supply to the brain has 100 per cent. activity and the spinal fluid has 62 per cent. activity. Hypothalamus has 27 per cent. activity, and hypophysis 32 per cent. Gastric mucous membrane has 102 per cent. activity, outer layers of the kidney 90 per cent., urine 72 per cent., liver 56 per cent., thyroid 50 per cent.; in descending order follow lungs, kidney cortex, adrenals, and spleen; the least activity (18 per

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

cent.) was found in the muscle. In rabbits very little activity is found in the brain tissue, although up to 45 per cent. is found in the hypothalamus and 50–60 per cent. in the hypophysis. Thyroid had nearly 100 per cent. activity, while muscle tissue had under 20 per cent. G. M. KOSOLAPOFF (Chem. Abstr.).

Staining of Nerve Fibers with Methylene Blue. Factors Improving the Staining. Nelemans, F. A., and Dogteron, J. [*Stain Technol.*, **28**, 81–5 (1953).]

Important factors in immersion staining of the intestine are: (I) methylene blue solutions, free of Zn, that can be kept for weeks and months at 37°; (2) temperature 15–21° (for mammals); (3) pH about 6·9; (4) isotonic or slightly hypnotic solutions; (5) solutions kept saturated with O (of air); (6) high tonus of the vagus nerve by chloral hydrate as anesthetic and carbaminoylcholine in the staining solution; (7) anesthetics (alcohol urethan, chloral hydrate) added to the staining solution presumably lessening the vitality of the nervous tissue. For other organs, modify the concentration of the anesthetic added to the staining solution and the pH. W. B. ESSELEN (Chem. Abstr.).

Physiopathological Features of Cortical Oxygen. Rémond, A. [*Rev. neurol.*, **80**, 579–88 (1948); *Abstracts World Med.*, **6**, 267 (1949).]

Quantitative determinations were made ot (O) tension in different parts of exposed cortex in cats under nembutal anesthesia. Diffusion of (O) into the cortical tissue occurred on the venous side. During nikethamide convulsions the (O) tension diminished in the venous blood draining from a cortical area, probably as a result of increased utilization of (O) in the cortex during the seizure. W. C. TOBIE (Chem. Abstr.).

Phenylpyruvic Oligophrenia Deficiency of the Phenylalanine Oxidizing System. Jarvis, Geo. A. [*Proc. Soc. Exptl. Biol. Med.*, **82**, 514–15 (1953).]

Extracts of livers of 2 phenylketonuric patients tailed to catalyze the conversion of phenylalanine to tyrosine in the presence of (O_2), phosphopyridine nucleotide and nicotinamide. Similar extracts of livers from patients dying of other diseases readily effected the conversion. L. E. GILSON (Chem. Abstr.).

Periodic Functional Changes in the Hypothalamus as Related to the Gonad Cycle. Gitsch, E. [*Arch. Gynäkol.*, **182**, 52–7 (1952).]

The acetylcholine content of the central hypothalamus was measured in 92 albino rats. During proestrus the total acetylcholine content is $4·24 \pm 0·427$ γ/gm., during estrus $3·99 \pm 0·458$ γ/gm., during metestrus $2·21 \pm 0·08$ γ/gm. During anestrus $1·32 \pm 0·071$ γ/gm., and during the proestrus-estrus stage $4·41 \pm 0·263$ γ/gm. The variations in the acetylcholine content of the frontal lobes is not as distinct as in the hypothalamus. DORIT L. NOETHER (Chem. Abstr.).

Pregnancy and Hypothalamus. Gitsch, E. [*Arch. Gynäkol.*, **182**, 58–60 (1952).]

The total acetylcholine content ot the hypothalamus and the frontal lobes in pregnant albino rats was measured on the 6th, 13th and 20th day of pregnancy. The hypothalamus contains $1·48 \pm 0·106$ γ/gm., $2·07 \pm 0·21$ γ/gm., and $3·76 \pm 0·32$ γ/gm., respectively, while the values for the frontal lobes are $1·404 \pm 0·18$, $1·56 \pm 0·206$, and $2·25 \pm 0·28$ γ/gm. DORIT L. NOETHER (Chem. Abstr.).

Isolation from Mammalian Brain of Coproporphyrin III and a Uro-type Porphyrin. Blanshard, T. Paul. [*Proc. Soc. Exptl. Biol. Med.*, **82**, 512–13 (1953).]

The isolation from beef brain of crystallized coproporphyrin III and of an unidentified uro-type porphyrin is described. The Me ester of the latter m. 273–4°, significantly lower than uroporphyrin (I) Me ester. The Soret absorption band also differed. L. E. GILSON (Chem. Abstr.).

Changes in the Cholinesterase Activity (of Blood) after Infiltration of Ganglionectomy of the Lumbar Sympathetic. Del Bello, P., and Venturini, A. [*Arch. ital. chir.*, **74**, 313 (1951).]

The cholinesterase activity of blood did not change after infiltration of the lumbar sympathetic with alcohol-procaine (10 cases), but increased in 3 of 9 cases after ganglionectomy. C. SCANDURA (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Neurological Hepatic Symptoms in Wilson's Disease. Amyot, R. [*Union med. Canada*, **79**, 372–80 (1950); *Excerpta Med.*, Sect. VIII, **4**, 26 (1951).]

Of 4 cases, 3 showed pathological liver function tests (cephalin, bromosulfalein, hippuric acid), hyperglycemia and glycosuria, 2 of which also showed urobilinuria, hypoprothrombinemia and a positive galactose test.

W. C. TOBIE (Chem. Abstr.).

Vegetative Regulatory Activity in Postencephalitic Conditions. Sturm, A. (*Stadtischen Krankenanstalten, Wuppertal-Barman, Ger.*). [*Med. Klin.* (*Berlin*), **44**, 33–7 (1949); *Excerpta Med.*, Sect. VIII, **3**, 348 (1950).]

The applications of chemical tests (adrenaline, insulin, glucose tolerance, etc.) in the diagnosis of diencephalic vegetative regulation are discussed in relation to pathological changes. W. C. TOBIE (Chem. Abstr.).

Lactic Acid Response to Muscular Exercise in Neurocirculatory Asthenia. Linko, Eino. [*Ann. med. intern. Fenniae*, **39**, 161 (1950).]

Lactic acid (I) was determined in venous blood before the test, during muscular work of 10 or 15 min. (700–900 kgm./min.), and during the rest period of 45 or 50 min. The control series of 37 healthy persons and the experimental series of 30 typical cases of neurocirculatory asthenia (ANC) were each divided into 3 groups according to occupation and degree of training. The resting blood (I) values before the test were normal (3–33 mgm. per cent.) in all the groups. The (I) response showed that the physical fitness of manual workers with (ANC) approximated that of healthy, physically untrained medical students of about the same age. That of chronic cases and the intellectual workers with (ANC) corresponded to that of the healthy, well-trained nurse trainees. The results in the group of control subjects consisting of healthy infantry soldiers show the importance of training in relation to the (I) response. During the rest period the blood (I) values generally underwent a parallel decrease in all the groups. RUTH BERGGREN (Chem. Abstr.).

Influence of the Thyroid on Cerebral Metabolism. Fazekas, Joseph F., et al. Endocrinology, **48**, 169–74 (1951).]

Cerebral cortical (O) consumption was not influenced by hyperthyroidism in young and adult rats nor did hyperthyroidism appear to influence the metabolism of adult rat cortex. An acceleration toward the normal adult metabolic level was observed in hyperthyroid young rats. L. E. GILSON (Chem. Abstr.).

Alcoholism as a Nutritional Problem. Williams, R. J. [*J. Clin. Nutrition*, **1**, 32–6 (1952).]

The conclusion that nutritional deficiency is a basic cause of alcoholism is based on (1) recent findings in the field of biochemical genetics, (2) from direct animal experimentation, and (3) from clinical findings. Experiments on rats showed that their alcoholic consumption increased when fed a marginal diet, low in B vitamins. The alcoholic consumption decreased or vanished completely immediately when the animals were given well-balanced diet. The drinking pattern was maintained as long as the diet furnished all the necessary nutrients. Different strains of animals showed different drinking patterns, some needed substances not supplied by the food, e.g., antibiotics in order to change their drinking pattern.

LILY E. FUCHS (Chem. Abstr.).

Fractions of Brain Substances which Absorb Radiostope Phosphorus^{32}. *Naka, Syuzo, et al.* [*Kyushu Mem. Med. Sci.*, **2**, 63–71 (1951).]

The lecithin and nucleoprotein fraction of brain combined with P^{32} in the form of PO_4 ion at pH 7·6 when incubated at 37° with or without brain homogenate.

J. D. TAYLOR (Chem. Abstr.).

Nerve Stimulation a Resonance Phenomenon? Gäbelein, Klaus. [*Grenzgebiete Med.*, **2**, 521 (1949); *Chem. Zentr.*, **11**, 668 (1950).]

In the theory advanced, the conduction of the nerve impulse is assumed to consist alternately of internodal transport of vitamin B_1 and a transport substance

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

in the transverse nerve membrane. The theory explains such processes as the development of taste, narcosis, and the manner of action of alkaloids and sexual hormones. Taste and the effect of alkaloids are regarded not as chemical processes but rather as physical resonance phenomena. The sensation of taste is determined by the number and location of the π electrons.

M. G. Moore (Chem. Abstr.).

Oxygen Toxicity. Effects in Man of Oxygen Inhalation at 1 and 3·5 Atmospheres upon Blood Gas Transport, Cerebral Circulation and Cerebral Metabolism. Lambertsen, C. J., et al. [*J. Appl. Physiol.*, **5**, 471 (1953).]

At 3·5 atm., O inhalation by normal men produced a 55 per cent. increase in cerebral vascular resistance which resulted in a 25 per cent. reduction in the blood-flow rate through the brain. These changes were approximately twice as great as those associated with O inhalation 1 atm., but the differences were not statistically significant in the experiment. The amount of O physically dissolved in arterial blood at 3·5 atm. averaged 6·5 volume per cent. However, more O was given up to brain tissue than was present in physical solution in the arterial blood because of the slower rate of cerebral circulation and as a result the average internal jugular hemoglobin saturation at 3·5 atm. was 89 per cent. The removal of most of the physically dissolved O produced pO_2 fall of about 2,000 mm. Hg as blood passed through the brain. Partial interference with the normal reduction of oxyhemoglobin rendered the transport of CO_2 by the blood less efficient. This, with the diminished cerebral blood flow, accounted for an 8 mm. increase in the arteriovenous pCO_2 difference across the brain at 3·5 atm. The elevation of internal jugular pCO_2 was limited to 3 mm. by a 5 mm. fall in arterial pCO_2. This is not compatible with the concept of a marked increase in brain tissue pCO_2 as a contributing cause of O toxicity. No alteration in the O-consumption rate or respiratory quotient of the brain occurred at 1 or 3·5 atm. It is proposed that central accumulation CO_2 on O breathing at increased ambient pressure does not contribute to the toxicity of O, but indirectly reduces the exposure of brain tissue to toxic O-tension levels by producing hyperventilation and cerebral vasconstriction.

Theresa McKee (Chem. Abstr.).

Mobilization of Brain Cholesterol. Laszlo, J., et al. [*Acta Morphol. Acad. Sci. Hung.*, **3**, 33 (1953).]

In degenerative diseases of the brain, cholesterol passes from the brain into the general circulation in four ways: through the lipide granules of cells in the brain capillaries and in the sinuses of the dura, chylomicrons, lipides in endothelial cells of capillaries and corpuscula amylacea. The blood cholesterol is thereby increased.

Erich Heftmann (Chem. Abstr.).

17-Ketosteroids in Some Mental Diseases. Benvenuti, M., and Parigi, S. [*Folia Endocrinol.*, **6**, 129 (1953).]

In 46 patients with depression, mania or schizophrenia a normal 17-ketosteroid excretion was observed, with some lower values in the two first diseases.

C. Scandura (Chem. Abstr.).

Amine Oxidase, Pressor Amines and Cholinesterase in Brain Tumors. Bülbring, E., et al. [*Lancet*, **264**, 865 (1953).]

Glia tumors comprised predominantly of glia cells contained as much enzyme activity as normal brain tissue. Amine oxidase activity was about the same order as that in normal brain areas. Cholinesterase activity in 6 of 8 gliomas was greater than that in normal cerebrum due principally to pseudocholinesterase. One glioma (from a 3-year-old child) contained 7·5 γ noradrenaline/gm. (This amount is more than has been found in any area of the normal central nervous system.)

Barbara R. Murray (Chem. Abstr.).

Increased Copper in the Serum of Schizophrenics. Bischoff, A. [*Monatsschr. Psychiat. Neurol.*, **124**, 211 (1952).]

In 90 per cent. of 88 schizophrenics the Cu concentration of the serum was above normal.

Warren M. Sperry (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Relation of Cortical pH to Hyperoxic Convulsions. *Perot, P. L., jun., et al.* [*Am. J. Physiol.*, **173**, 158 (1953).]

Cats curarized with dihydro-β-erythroidine-HBr were subjected to high partial pressures of O_2 up to 6 atm. (75 lb. per sq. in. gage). Beginning 2–3·5 minutes after a pressure of 15 lb./sq. in. gage was reached, changes in H concentration of the brain were noted as a change in cortical pH. This increase in acidity continued until a gage pressure of 75 lb./sq. in. was attained when the pH change was 0·25–0·53 units. Shifts in pH toward the acid always occurred prior to the onset of seizures. Only minor changes in pH were noted after pressure was stabilized at 6 atm. unless the pressure was maintained at this level for an extended period of time.

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

Oxygen Tension of the Brain During Hyperoxic Convulsions. *Sonnenschein, R. R., et al.* [*Am. J. Physiol*, **173**, 161 (1953).]

O tension of the cerebral cortex of cats was determined by the Pt-cathode polarographic method. During a simultaneous increase in both the ambient pressure and the pressure of inspired O from 1 atm. to 6 atm., a rapid rise of 10–50-fold occurred in O tension. After the peak value was reached, a gradual decrease occurred until pO_2 was close to the initial level. Seizures occurred only after the onset of the rapid rise in O tension. E. D. WALTER (Chem. Abstr.).

Effect of the Functional State of the Central Nervous System on the Activity of Proteolytic Enzymes of the Gastrointestinal Canal and Liver in Rats under Conditions of Dietary Deficiency of Protein. *Balba, T. Ya.* [*Voprosy Pitaniya*, **12**. No. 1, 23 (1953).]

The activity of all enzymes of the digestive tract is unchanged by peroral administration of small doses of caffeine, except for the action of pepsin which declines. Subcutaneous injection of larger doses of caffeine leads to a small decline of erepsin activity. Administration of chloral hydrate causes an increase of trypsin activity, and a decline of liver cathepsin. The experiments were performed with rats on a protein-deficient diet. G. M. KOSOLAPOFF (Chem. Abstr.).

Anaerobic Glycolysis in situ *in Rabbit Brain at Different Temperatures.* *Thorn, Werner, and Raczkowskil, H. A.* [*Biochem. Z.*, **323**, 21 (1952).]

The anaerobic glycolysis in rabbit brain was followed at 26, 30, and 38° body temperature by determining the lactic acid (I) of the brain after measured periods of glycolysis. (I) accumulates following an induction period of 4–5 seconds at 38°, 15 seconds at 30°, and 35 seconds at 26°. The curve of (I) formation shows 2 bends, at about 40 mgm. per cent. and, again, at 80–90 mgm. per cent. Between these 2 bends the (I) production follows a linear course like a reaction of the first order, with consistences in the ratio of 2·5–3·0 : 1·35 : 1·0 at the different temperatures. After the second inflection the curve is still linear, but the rate is reduced to about ½ of the previous rate. The Q_{10} of the velocity consistences under the three temperatures is 2·5. S. MORGULIS (Chem. Abstr.).

Metabolism and the Central Nervous System. *Berenshtein, F. Ya.* [*Uspekhi Sovremennoi Biol.*, **34**, 367 (1952).]

A review with 103 references. JULIAN F. SMITH (Chem. Abstr.).

Histochemical Studies of the Brain. *Shiko, Takeya.* [*Acta Pathol. Japonica*, **1**, 30 (1951).]

In sections of brain, chiefly pallidum, a compound pseudolime, a conglomerate easily stained with hematoxylin, was found to be different from other tissues by the use of various reactions. By taking advantage of different dissolving abilities of various organic solvents, the medullary sheaths of the brain were found to consist of one substance stained by Sudan (III) and a fatty envelope characterized by positive Sugamo staining. Another substance, brain lipofuscin, was also studied.

J. D. TAYLOR (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Pyruvate Oxidase System in Brain Tissue. Peter, R. A., and Wakelin, R. W. [*J. Physiol.*, **119**, 421 (1953).]

Pigeon brain homogenates, prepared by the method of Banga *et al.*, showed decreased O_2 uptake in the presence of fluorocitrate (I), the selective inhibitor for aconitase, with simultaneous large accumulations of citrate (II). Brei preparations showed only a small accumulation of (II) induced by (I), with no measurable O_2 uptake. *In vivo* injections in doses as small as 20γ, but usually 150–200γ, into the subarachnoid space of the right cerebral hemisphere in pigeons of about 300–350 gm. body weight, resulted in death following opisthotonus and convulsions, accompanied by a large accumulation of (II). Larger doses of fluoroacetate (III) or injections of similar doses of (II) produced neither convulsion nor (II) accumulation. This emphasized the significance of (I) in (III) poisoning. All data presented indicate (1) the lethal nature of enzymic synthesis in (III) poisoning; (2) that citric acid is on the direct path of pyruvate oxidation in the brain, *in vivo*; and (3) that the brain pyruvate oxidase system studied comprises the pyruvate dehydrogenase plus the enzymes of the tricarboxylic acid cycle.

MORRIS ROCKSTEIN (Chem. Abstr.).

The Cathepsic Activity of the Central Nervous System. Calabi, V. [*Riv. patol. nervosa e mentale*, **69**, 104 (1948); *Excerpta Med.*, Sect. VIII, **2**, 803 (1949).]

Cathepsin-like proteolytic enzymes in the central nervous system were studied by determining the autoproteolytic activity of brain tissue from various animals by calculating the N content of the trichloroacetic acid ppt. from the glycerin extract before and after incubation at pH 4·2 at 37°. The N decreased about 25 per cent., indicating active proteolysis similar to that observed in liver tissue. The enzyme action was not activated by ascorbic acid or cysteine.

W. C. TOBIE (Chem. Abstr.).

The Penetration of Phosphorus^{32} into the Nervous Tissues of the Rabbit. Brierley, J. B. [*J. Physiol.*, **116**, 24P (1952).]

Injection of histamine resulted in increased penetration of $P^{32}O_4^{-3}$ into the extracellular fluid of the spinal ganglia, sciatic nerve, spinal cord, medulla, hypothalamus, hippocampus and cortex, probably by increasing the capillary permeability to PO_4^{-3} ions.

MORRIS ROCKSTEIN (Chem. Abstr.).

The Role of Urea in Brain Swelling. Ambo, Hisashi. [*Acta Pathol. Japonica*, **1**, 205 (1951).]

Urea, demonstrated by the xanthydrol method, was present in the brains of patients with signs of brain pressure, but not in brains of normal patients. In rabbits with brain swelling produced by chronic administration of hepatoxic agents in small doses urea was also present.

J. D. TAYLOR (Chem. Abstr.).

Further Studies on the Neurolytic Properties of the Spinal Fluid in Health and Disease. Kovacs, Ernest. [*Can. J. Med. Sci.*, **31**, 109 (1953).]

With bovine brain-cord pulp as substrate buffered at pH 8·5 or pH 5·5 and incubated at 37° for 24 hours, neurolytic enzymes in cerebrospinal fluid (I) were shown to split the substrate to form acid-solution phosphate and reducing substances. Three main groups of cases were distinguished: normal patients with negative laboratory findings in (I)—no neurolytic activity; patients with inflammatory processes in the central nervous system with pathological changes in (I)—highly neurolytic activity; patients with generative and proliferative processes, moderate changes in (I)—high neurolytic activity.

J. D. TAYLOR (Chem. Abstr.).

Nature of Specific Sensitivity to Oxygen Deficiency in the Brain. Shapot, V. S. [*Uspekhi Sovremenoĭ Biol.*, **34**, 244 (1952).]

Effects of hypoxia and anoxia in brain tissue are reviewed with respect to reactions of amino N, phosphate P, adenosine phosphates, and lactic acid.

JULIAN F. SMITH (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Cerebral Hemodynamics in Cerebral Arteriosclerosis. Fazekas, Joseph F., et al. [*J. Gerontol.*, **8**, 137 (1953).]

Cerebral hemodynamics and O consumption of persons 50 years or older having cerebral arteriosclerosis with or without hypertension were studied before and during inhalation of 5 per cent. CO_2 or intravenous administration of aminophylline during hyperventilation. The changes in cerebral blood flow, O delivery, and cerebral vascular resistance were similar, but less marked than those in younger subjects, and the response was the same in both normotensive and hypertensive subjects. THERESA MCKEE (Chem. Abstr.).

Anatomical Changes in the Brain in Schizophrenia. Vogt, C., and Vogt, O. [*Artzl. Forsch.*, **3**, 121 (1949); *Excerpta Med.*, Sect. VIII, **2**, 806 (1949).]

Mainly pathological and histological. There may be an increase in Feulgen-negative nucleoproteins provoked by a decrease of Nissl substance in the nerve cells, accompanied by an enlargement of the nucleolus which is composed of the same nucleoproteins. This is a sign of repair of pathological conditions.
W. C. TOBIE (Chem. Abstr.).

Experimental Swelling of the Brain and its Bound Water Content. Ambo, Hisashi. [*Acta Pathol. Japonica*, **1**, 63 (1951).]

Typical cerebral swelling as well as cerebral edema was produced in rabbits with time by ligation of the jugular vein, vena cava inferior and ureters, and by poisoning with $HgCl_2$, $K_2Cr_2O_7$, $CHCl_3$, $CHCl_4$, and yellow P. The bound and free H_2O (I) were determined by the $CoCl_2$ method of Hatschek (*C. A.*, **30**, 5096[8]). Normal rabbit brain contained 7·0–7·5 per cent bound and 68–69 per cent. free (I). In cases of cerebral swelling the bound (I) increased to 8·2–9·6 per cent. with a lessening of free and total (I). In cerebral edema bound (I) did not increase, but free (I) increased to 70–72 per cent.
J. D. TAYLOR (Chem. Abstr.).

Effects of d-Amphetamine on the Electroencephalogram of the Dog. Schallek, Wm., and Walz, Donald. [*Proc. Soc. Exptl. Biol. Med.*, **82**, 715 (1953).]

Tracings and discussion. L. E. GILSON (Chem. Abstr.).

Effect of Antihistamine Substances on Brain Respiration. Domonkos, J., and Huszak, I. [*Acta Physiol. Acad. Sci. Hung.*, **4**, 25 (1953).]

Antihistamines (pyribenzamine, neoantergan, or antistine) inhibit the reduction of cytochromes. W. H. FISHMAN (Chem. Abstr.).

Anaerobic Reactions of Phospholipins in Brain Suspensions. Sloane-Stanley, G. H. [*Biochem. J.*, **53**, 613 (1953).]

Suspensions of guinea-pig brain were incubated under N_2 with lipide rich in phosphatidylserine at pH 5–9. The evidence for decarboxylation of the phosphatidylserine to phosphatidylethanolamine is not conclusive, and this reaction could not occur at a greater rate than 2·4 micromoles per gm. wet wt. per hour. None of the nitrogenous lipides was rapidly hydrolyzed, but there was evidence for the existence of an active enzyme system in brain capable of hydrolyzing the diphosphoinositide fraction of the brain cephalins, and that the system involves at least 2 enzymes. Brain lipide samples were incubated under a mixture of 95 per cent. N_2, 5 per cent. CO_2 (vol./vol.) with suspensions of guinea-pig brain in a $NaHCO_3$ solution of about pH 7·4. The evolution of CO_2, in excess of that from brain homogenates alone, suggests that free acid was formed from the hydrolyzed lipides. It was found that the "inositol phosphatide" fraction, containing about 40 per cent. of the diphosphoinositide, reacted nearly 10 times as rapidly as any other lipide fraction (66 micromoles per gm. wet wt. per hour). The main reaction seems to have been a partial hydrolysis of diphosphoinositide.
S. MORGULIS (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Hypothalamic Involvement in the Pituitary-adrenocortical Response to Stress Stimuli. Porter, R. W. [*Am. J. Physiol.*, **172**, 515 (1953).]

Eosinopenic response to adrenaline, formalin and histamine was measured before and after making hypothalamic lesions in cats. Anterior lesions were without effect; posterior lesions prevented the eosinopenic response. In other experiments, exploration stimulation of the hypothalamus was undertaken and the level of circulating eosinophils determined. Eosinopenia resulted from excitation of tuberal and mammillary areas; surrounding regions did not induce this response. Results support participation of the central nervous system in the pituitary-adrenal response. E. D. WALTER (Chem. Abstr.).

Effect of the Higher Nervous Activity on Development of Experiment Tumors. Kozhevnikova, E. P. [*Arkh. Patol.*, **15**, No. 1, 22 (1953).]

Mice under conditions of nervous strain (noise stimuli) treated cutaneously with methylcholanthrene show some 3-fold increase in the incidence of tumors over the control animals. Hence hypertension of the higher nervous system is conducive to development of malignant growths. G. M. KOSOLAPOFF (Chem. Abstr.).

Degenerative Changes in the Central Nervous Fibers in the Production of Hypercholesterolemia. Shumova, N. T. [*Arkh. Patol.*, **10**, No. 6, 28 (1948); *Abstracts World Med.*, **6**, 229 (1949).]

Hypercholesterolemia (I) can be produced in dogs by injury to the central nervous system. Degeneration in myelinated nerve fibers containing cholesterol (II) is associated with increased (II) in the circulation. Similar changes occur in humans with lipide-storage diseases, neurosyphilis and lipide nephrosis. In decerebrate dogs, after removal of both cerebral hemispheres, no (I) can be produced, but blood (II) can be made to rise steeply if one hemisphere is intact. After partial cortical extirpation, (I) occurred in 5 of 6 dogs. The rise in (II) was greatest in blood from veins draining the brain and was proportional to the amount of demyelination. Regeneration of nerve fibers often proceeds at the same as degeneration and may account for the increased (II) in the brain found by some workers.
W. C. TOBIE (Chem. Abstr.).

Electrophoretic and Chemical Serum-protein Fractions in Multiple Sclerosis. Saifer, A., et al. [*Am. J. Med. Sci.*, **225**, 287 (1953).]

About 90 per cent. of 23 patients with multiple sclerosis showed the following typical electrophoretic serum-protein pattern: significantly decreased albumin and albumin/globulin ratio, increased α_2- and β-globulin fractions, slightly elevated or normal γ-globulin, and normal α_1-globulin. In the remaining 10 per cent. of patients, most but not all of these characteristics were present. Various tests for serum-protein fractions that may have value in diagnosis of multiple sclerosis are discussed.
MARION HORN PESKIN (Chem. Abstr.).

The Pathology of Disseminated Sclerosis. Huszàk, I., and Szák, J. [*Orvosi Hetilap*, **90**, 201 (1949); *Excerpta Med.*, Sect. VIII, **2**, 805 (1949).]

Previous work by H. is reviewed. Cytochrome oxidase is the O-activator of the grey matter; cuproprotein has the same function in the white matter of the central nervous system. Human and horse brains contain a dialyzable substance which increases the coagulation time of plasma; more is found in the grey than in the white substance. Differences in coagulation time probably result from differences in the amount of heparin, not kinase. The frequency of thromboses in the white matter is attributed to greater amounts of heparin.
W. C. TOBIE (Chem. Abstr.).

New Researches on Multiple Sclerosis. Gokay, F. K. [*Bull. fac. med. Istanbul*, **11**, 109 (1948); *Excerpta Med., Sect.* VIII, **2**, 753 (1949).]

Based upon the theory that multiple sclerosis is caused by a neurotropic virus, the main pharmacological agents used in treatment are Na salicylate and $Hg(CN)_2$. Good results are claimed. W. C. TOBIE (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Dihydroergotamine (D.H.E. 45) in Ophthalmic Migraine and Glaucoma. Persichetti, C. [*Boll. oculist.*, **29**, 234 (1950); *Am. J. Ophthalmol.*, **34**, 132 (1951).]

Intramuscular injections of dihydroergotamine (I) in 7 normal controls caused no changes in retinal arterial or intraocular pressure, but in 5 cases there was a slight drop in the brachial arterial pressure. Taken orally 3 times a day for 4–5 days, (I) had little effect on arterial pressures. Results (which are described) in ophthalmic migraine and glaucoma varied widely. There was no correlation between arterial pressures and good therapeutic results.

W. C. TOBIE (Chem. Abstr.).

The Effect of "Agene-induced" Convulsions on Adrenal Steroid Excretion in Normal and Castrate Dogs. Costa, P. J., and Bonnycastle, D. D. [*J. Endocrinol.*, **9**, 76 (1953).]

Daily oral feeding of 0·6 gm. of agenized zein (40 gm. NCl_3/50 kgm. zein.) per kgm. body weight to 18 male dogs for 2 days caused convulsions in all within 48 hours (the pre-fit period). About half of the dogs died. During the normal, pre-fit, and fit periods, respectively, average urinary 17-ketosteroid excretions per 24 hours were 1·91, 1·44, and 0·91 mgm. During the normal period, first and second pre-fit days, and the fit period, reducing corticoids averaged 0·89, 1·19, 0·37, and 0·28 mgm./day, respectively. Castrate dogs showed similar reaction patterns. The expected increase in steroid excretion following stress was not seen in these studies. Convulsions following metrazole or insulin administration did, however, produce significant increases in steroid excretion.

KATHRYN KNOWLTON (Chem. Abstr.).

2. Pharmacology and Treatment.

Curare and Shock. Imperati, L., et al. [*J. Intern. Coll. Surgeons*, **13**, 54 (1950) (*in English*).]

Previous work is reviewed. Experiments on animals are outlined. Moderate repeated doses of curare prevent shock, probably by altering the acetylcholinesterase system. Curare raises the blood pressure in animals in serious shock.

W. C. TOBIE (Chem. Abstr.).

Effect of Depressants on the Metabolism of Stimulated Cerebral Tissues. McIlwain, H. [*Biochem. J.*, **53**, 403, (1953).]

Depression of activity of the central nervous system by barbiturates involves a fall in respiration, lactic acid, and inorganic phosphate and a rise in phosphocreatine. Phenobarbital, butethal, allobarbital, and chloral have practically no effect on the respiration of sections of rat or guinea-pig cerebral tissue in concentrations less than 10^{-3} M but do so when the tissue is electrically stimulated, and the inhibition is reversed when the drug is removed. Likewise, stimulation by K salts or 2,4-dinitrophenol increases the sensitivity of respiration of the cerebral cortex to depressants. Atropine affects selectively electrically stimulated tissues. Depressants also decrease the lactic acid formed from glucose by electrically stimulated cerebral tissues.

S. MORGULIS (Chem. Abstr.).

Comparative Action of E.C.T. (Electric Convulsion Therapy) and Pituitary Anterior Lobe Hormones on Thyroid Function. Reiss, M., et al. [*Brit. Med. J.*, ii, 634, (1951.]

Thyroid activity was studied with I^{131}. E.C.T. increased the activity of hypoactive thyroids, reduced the activity of hyperactive thyroids, and usually lowered the activity of normal thyroids. Treatment with thyrotropic hormone brought subnormally active thyroids within the normal range. Thyroid activity was reduced by treatment with adrenocorticotropic hormone or with testosterone, estrone, or both.

MARSHALL E. DEUTSCH (Chem. Abstr.).

Relaxant of Very Brief Action. Scurr, C. F. [*Brit. Med. J.*, **11**, 831 (1951).]

After rapid injection of 50–75 mgm. di-(β-ethyldimethylammoniummethyl) succinate diiodide into an adult, paralysis ensues for not more than 2½ minutes.

MARSHALL E. DEUTSCH (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Standardization of Potency and Toxicity of Anticonvulsants. III. Frommel, Ed., et al. [*Arch. intern. pharmacodynamie*, **92**, 44 (1952).]

A comparison of the effectiveness of drugs against coramine, strychnine or metrazole convulsions in several species of animal, as judged by their therapeutic index (amount causing 5 per cent. deaths/amount giving 95 per cent. protection) showed that a mixture (M 551) of 5 parts (ethylphenylacetyl) urea (S 46) with 1 part of phenylacetylurea, and S 46 are much better than phenobarbital or the hydantoins, but the action of phenobarbital is longer. In the mouse after strychnine the index was M 551, 16·7; S 46, 10·3; dimethyldithohydantoin 7·9; phenobarbital 6·3; methylethylphenylhydantoin 4·7; trimethyloxazolidinedione 4·6; and phenylacetylurea 4·5. S 46 in the rabbit does not counteract the hyperglycemia of metrazole shock, but phenobarbital does; the latter, and M-551, prevent the rise of blood Ca or inorganic P, and the fall in the alkali reserve of the blood. The formed elements are not much affected. M. L. C. BERNHEIM (Chem. Abstr.).

Pentamethylenetetrazole (Metrazole). Radouco, C., et al. [*Arch. intern. pharmacodynamie*, **92**, 13–38 (1952).]

In the rabbit, metrazole shock increases the blood levels of sugar, Ca, and inorganic P, and decreases the alkali reserve. It causes changes in the hematocrit and the formed elements. There are neurovegetative changes as well as pyramidal and extrapyramidal excitation. The nerve changes are of much shorter duration than the metabolic effects. M. L. C. BERNHEIM (Chem. Abstr.).

Action of Synthetic Curare-like Substances on Convulsions Produced by Cardiazole. Verga, G. [*Boll. soc. ital. biol. sper.*, **24**, 197 (1948).]

The 2 synthetic curare-like substances studied were 1,2-dihydroxy-3-o-tolyloxypropane and 1,2-dihydroxy-3-o-anisyloxypropane; both exert a protective action against convulsions induced in rabbits by cardiazole. B. A. (Chem. Abstr.).

The Effects of High Oxygen Atmospheres on Drug-induced Convulsions. Cotten, M. de V., and Walton, R. P. [*Anesthesiology*, **12**, 491 (1951).]

In each experiment 10 animals which received injections of drugs were observed in a high O atmosphere, and 10 animals similarly injected were studied simultaneously in ordinary room air; 36 such experiments were conducted with rats and mice. Metrazole was used in 15 experiments, strychnine sulfate in 12, and NaCN in 12. In addition two similar experiments with metrazole and two with strychnine were conducted in which the effects of 15 per cent. O atmosphere were contrasted with those of ordinary air. High O atmospheres, as compared with ordinary room air, prolonged the survival time but with continuance of convulsions. These time periods were somewhat more than doubled as calculated from an over-all average with the three drugs. Survival rates were not considered statistically different in the two types of atmospheres. Pulmonary hemorrhage was consistently observed and was more prominent in those animals maintained in high O atmospheres with corresponding longer intervals of convulsions. Results in 15 per cent. O atmospheres did not differ significantly from those in ordinary air, except possibly for a shorter survival interval in the 15 per cent. O atmosphere. Experiments with dogs receiving large intravenous doses of strychnine failed to show that antifibrillatory drugs have any particular indication in these conditions. These experiments, insofar as their implications can be transferred to clinical conditions, indicate a definite but limited advantage in the administration of O by mask during intervals between critical recurrent convulsions.

RUTH BERGGREN (Chem. Abstr.).

Blood Flow and Oxygen Consumption of the Human Brain During Anesthesia Produced by Thiopental. Wechsler, R. L., et al. [*Anesthesiology*, **12**, 308 (1951).]

The effects of the intravenous administration of Na thiopental (I) in anesthetic doses were studied on blood gases, blood pH, cerebral blood flow, cerebral O_2 consumption, and cerebrovascular resistance. (I) significantly depressed cerebral utilization of O_2 in spite of the maintenance of an adequate blood flow. No

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

statistically significant difference was noted in the values obtained from the right or left internal jugular veins under anesthesia. Thus, there is adequate mixing of cerebral venous blood from cortical and subcortical areas before it enters the jugular veins. RUTH BERGGREN (Chem. Abstr.).

Cholinesterase of Blood and of the Nervous Tissue after Shock Treatments, in Humans and Animals. De Caro, Diego. [*Riv. neurol.*, **20**, 23 (1950).]

In 53 patients (blood) and in 34 rabbits (blood and cerebral tissue) no significant changes of the cholinesterase activity were observed after shock treatments.
C. SCANDURA (Chem. Abstr.).

Experimental Convulsions and Antiepileptic Drugs. Cheymol. J. [*Actualitiés pharmacol.*, **2**, 1–55 (1950).]

The pathological and physiological aspects of experimental and other convulsions in man and animals are discussed. The pharmacology of antiepileptic and anticonvulsive drugs is reviewed with respect to chemical composition and mode of action. W. C. TOBIE (Chem. Abstr.).

Synergic Effect on the Respiratory Function and Antagonistic Effect on the Central Nervous System of Caffeine associated with Barbiturates. Tiffeneau, Robert. [*Thérapie*, **4**, 141–5 (1949).]

The intensity of acetylcholine induced bronchospasms of guinea pigs was decreased more by the simultaneous injection of 20 mgm./kgm. of butylethylmalonylurea and 80 mgm./kgm. of caffeine than by the injection of either alone.
G. SAG (Chem. Abstr.).

Effects of Frontal Leucotomy on the Anorexia Produced by Benzedrine. Di Ferrante, N., and Longo, V. G. [*Farmaco, Ed. sci.* (*Pavia*), **8**, 16 (1953).]

The anorexic action of benzedrine (I) is pronounced in the dog, less so in the rat, and insignificant in the chick, which shows that the development of the forebrain is a deciding factor in this response. Morphine, strychnine, atropine, phenergan, and hydergin did not modify the effect of (I). In dogs subjected to frontal leucotomy benzedrine, given at ordinary doses, did not interfere with the appetite, but higher doses were still effective. A. E. MEYER (Chem. Abstr.).

The Effects of Priscoline on Cerebral Circulation and Metabolism. Scheinberg, P., et al. [*J. Clin. Invest.*, **32**, 125 (1953).]

Intravenous priscoline, in doses of 50–100 mgm., administered in 15 to 20 minutes, results in an apparent though not statistically significant decrease in cerebral blood flow, an increase in cerebral venous O difference and venous glucose difference, a slight difference in mean arterial pressure, a decrease in arterial CO_2 content and arterial pCO_2, a rise in arterial pH, with no alteration in cerebral O consumption, cerebral glucose consumption, cerebral vascular resistance, arterial O saturation, arterial pO_2, and cerebral venous pO_2. It is postulated that priscoline produces mild cerebral vasoconstriction and slight hypoxia of brain tissue, though its effects are variable. This study does not explain the reported beneficial clinical effects of priscoline in cerebral vascular disease.
JOHN T. MYERS (Chem. Abstr.).

Poisoning by Methylparafynol (Dormison). Fatal Suicidal Overdose of 3 methyl 1-pentyn-3-ol, a New Hypnotic. Cares, Rueben M., et al. [*Am. J. Clin. Pathol.*, **23**, 129 (1953).]

JOHN T. MYERS (Chem. Abstr.).

The Mechanism of the Effect of Apomorphine and of Nicotinamide-adenine in the Treatment of Chronic Alcoholics. Lecoq, Raoul. [*Thérapie*, **7**, 327–36 (1952).]

Na pyruvate (I) was prepared (Howard and Fraser, *C. A.*, **20**, 45) but insufficiently washed with EtOH. Rabbits weighing 1·8–2·0 kgm. were intoxicated by ingestion of 0·5 gm. of tetraethylthiuram disulfide (II) followed in one hour by an

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

intravenous injection of 20 ml. of isotonic glucose solution containing 25 per cent. EtOH or 0·25 gm. of (I). Death followed in both cases in 2–3 minutes. Apomorphine-HCl (III), 0·1 gm., protected the rabbits against EtOH but was ineffective against (I). In the same conditions, injection of nicotinamide, 15 mgm., and of adenine, 25 mgm., prevented any fatal poisonings, probably by favoring biosynthesis of coenzymes (I) and (II). AcH and pyruvic acid were determined in rabbits by the Stotz (*C. A.*, **37**, 5751[8]) and by the Friedmann-Haugen (*C. A.*, **37**, 2401[4]) methods, respectively. The blood of control animals contained 1–2 mg./l. of AcH and 5–10 mgm./l. of pyruvic acid. Corresponding values, 15 minutes after application of (II) and EtOH were 3·5 and 15·4; 45 minutes later 3·7 and 21·1 mgm./l. In animals protected with (III) 15 mintues after EtOH injection the blood contained AcH 3·6 and pyruvic acid 4·2 mgm./l.; after 1 hour these values were 4·1 and 7·7 mgm./l. When the prevention was performed with adenine, the 15-minutes AcH and pyruvic acid levels were 6·5 and 8·4 mgm./l., and the 1 hour levels 7·3 and 14·3 mgm./l. The impure (I), 0·2 mgm., had a lethal effect on rabbits in 5–20 minutes, while compound pyruvic acid was inoffensive even in doses of 0·6 gm., given either alone or after (II) and EtOH. If the EtOH used for washing (I) was evaporated and the residue (in a physiological solution), was injected into a rabbit, a temporary epileptiform crisis resulted in 2–3 minutes. If the animal received after this treatment 0·25 gm. of pure (I), death followed in a few minutes. The formation of an unknown " complementary pyruvic factor " is admitted during oxidation of tartaric acid. Malonic acid had a similar potentiating effect on pyruvic acid, but to a lesser degree. G. Sag (Chem. Abstr.).

Antiepileptic Drugs. I. Kaufman, Charles, and Isenberg, Sydney. [*Med. Clinics N. Am.*, **36**, 1381–92 (1952).]

Hydantoins, oxazolidine-2,4-diones, barbiturates, and acetylureas are discussed with reference to pharmacological action, therapeutic indication and mode of application. Erich Heftmann (Chem. Abstr.).

The Hypnotic Action of Antihistaminics. Tanake, Kiyoshi. [*Folia Pharmacol. Japon.*, **47**, No. 2, 30–2 (1951).]

Benadryl hardly shows hypnotic action in rabbits, mice and children; this suggests a close relation with brain development. In rabbits a hypnotic action appears when applied directly to the sleeping centre or its vicinity in the brain. By ordinary injections the other parts of the brain appear to be excited simultaneously so that other excitations suppress that of the sleeping center. Injections after administration of urethan produce further hypnosis in rabbits.

S. Kitoaka (Chem. Abstr.).

Secondary Circulatory Shock in Rats with Severe Barbituric Acid poisoning. Kirkegaard, Aage. [*Acta Pharmacol. Toxicol.*, **8**, 315–28 (1952).]

If rats given 6–7 times the lethal dose of allylisopropylbarbituric acid were subjected to artificial respiration their survival time was lengthened by about three hours and the rats gradually developed a secondary circulatory shock with hemoconcentration. Injection of rat blood or serum prolonged their survival still more.

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

The Antabuse Effect of Some Compounds Related to Antabuse and Cyanamide. Hald, Jens, et al. [*Acta Pharmacol. Toxicol.*, **8**, 329–37 (1952).],

The compounds (given orally) were tested for ability to induce accumulation of MeCHO in rabbits after intake of EtOH. A marked and prolonged effect was found after tetramethyl- and tetraethylthiuram disulfide and tetramethyl- and tetraethylthiuram monosulfide. Some effect was seen after cyanamide. Thiuram disulfide and tetrapropyl- and tetrabutylthiuram disulfide showed only a slight effect or none. No effect was seen with dicyanodiamide and dixanthogen. Diethylcyanamide was too toxic to be tested satisfactorily.

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

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Antabuse Treatment and Ether Anesthesia. Hald, Jens, and Larsen, Valdemar. [*Acta Pharmacol. Toxicol.*, **8**, 338–42 (1952).]

Rabbits were pretreated with antabuse and made to breathe air containing 6 per cent. by volume of Et_2O vapor. There was no significant rise in the blood MeCHO level and no MeCHO in the expired air.

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

Depressant Action of Inert Gases on the Central Nervous System in Mice. Carpenter, Frank G. [*Am. J. Physiol.*, **172**, 471–4 (1953).]

The depressant actions of N, A, SF_6 and N_2O were measured by the partial pressures of the gases which abolished the response following supramaximal electroshock in mice. The partial pressures that protected 50 per cent. of the mice studied were 265 lb./sq. in. of N, 185 lb./sq. in. of A, 27·5 lb./sq. in of SF_6, and 8·6 lb./sq. in. of N_2O. E. D. WALTER (Chem. Abstr.).

Anticurare Action of 3-hydroxyphenyldimethylethylamonium Bromide. Garcia-Valdescasas, F., et al. [*Arch. inst. farmacol. exptl.* (*Madrid*), **4**, 67–80 (1952).]

The potentiating action of the compound (I) towards acetylcholine parallels its anticurare action toward tubocurarine (II) when tested on the rectus muscle of the frog. The anticholinesterase action of (I) is considerably inferior to that of neostigmine but their antagonism to (II) is equal. The effect cannot be explained by an antiesterase action. It is efficacious to counteract the effects of (II) decamethonium and flaxedil, has no muscarine-like action, is of quick action, low toxicity and rapid excretion. A. E. MEYER (Chem. Abstr.).

A New Hypnotic: Dormison. Gialdroni, G., and Crassi, C. [*Atti soc. lombarda sci. med. e biol.*, **7**, 90–7 (1952).]

The therapeutic coefficiency of this drug is favorable. It does not modify the respiration nor influence the cardiovascular system. It effect is counteracted by caffeine and benzedrine but not by strychnine or cardiazole. Experiments *in vitro* show a muscle-relaxing effect. A. E. MEYER (Chem. Abstr.).

Mechanism of the Prevention of Nicotine Convulsions by Hexamethonium and by Adrenaline-blocking Agents. Laurence, D. R., and Stacey, R. S. [*Brit. J. Pharmacol.*, **8**, 62–5 (1953); *cf. C. A.*, **46**, 6271*f*.]

Hexamethonium, dibenamine, SKF 688 A, yohimbine, ergotamine, and dihydroergotamine protected mice and rats against nicotine (I) convulsions. Tolazoline, diparcol and artane had a similar weaker action. These substances did not prevent leptazol convulsions. Adrenalectomized rats were protected less effectively than were normals. The simultaneous administration of adrenaline or noradrenaline increased the convulsant action of (I) and leptazol; pitressin increased the action of leptazol; it increased that of (I) preceded by hexamethonium. Conclusion: The action of (I) on the brain is intensified by the sympathetic discharge it causes. Sympathetic blockade reduces its convulsant action. The central mechanism is discussed and it is concluded that the vascular changes produced are of major importance. In comparing the potency of drugs action on the central nervous system, the condition of the cerebral circulation should be comparable.

RICHARD F. RILEY (Chem. Abstr.).

Pharmacology of Succinylcholine. Somers, G. F. [*Brit. J. Pharmacol.*, **8**, 19–21 (1953).]

In the cat, succinylcholine (I) like decamethonium first increased then briefly paralyzed the indirectly excited maximal twitch response of the anterior soleus and tibialis muscles. Neostigmine increased and prolonged the paralyzing action of (I). (I) showed only the nicotinic actions and not the muscarinic actions of acetylcholine. RICHARD F. RILEY (Chem. Abstr.)

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Effects of Adrenaline and Noradrenaline on Electrically Induced Seizures. Minz, Bruno, and Domino, E. F. [*J. Pharmacol. Exptl. Therap.*, **107**, 204–18 (1953).]

The effects of adrenaline, noradrenaline, amphetamine, neosynephrine, pitressin, acetylcholine, nicotine, histamine, glucose, adrenocorticotropin and cortisone on electrically induced seizures were investigated in cats by simultaneous recording of the blood pressure and the electronencephalogram. The results are discussed.

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

Analeptics with Antagonistic Effect on Barbituric Acid Derivatives. Kantemir, I. [*Turk Ijien Tecrübi Biol. Dergisi* (*Turk. Bull. Hyg. Exptl. Biol.*), **12**, 56 (1952).]

The literature about the application of analeptics in poisoning with barbituric acid derivatives is reviewed. Metrazole has a rapid but short effect, while coramine shows a slower but lasting action. Combined administration of strychnine and ephedrine can also be useful in intoxications with barbituric acid derivatives.

Z. STARY (Chem. Abstr.).

Antiepileptics. Werner, G. [*Scientia pharm.*, **20**, 156–63 (1952).]

Review with 27 references on the types of epilepsy and the agents used in treating them.

JOHN HOWE SCOTT (Chem. Abstr.).

Present State of Research in Migraine and its Chemotherapy. Hinterstoisser, F. [*Osterr. Apoth.-Ztg.*, **6**, 678–82 (1952).]

A review.

EDWARD H. SHEERS (Chem. Abstr.).

The Possibilities of Diminishing the Toxicity of Disulfirum (*Tetraethylthiuram Disulfide*). *Lecoq, Raoul.* [*Thérapie*, **7**, No. 1, 17–20 (1952).]

A review with 27 references.

G. SAG (Chem. Abstr.).

The Possible Use of Nissl Substance in the Treatment of Schizophrenia and Neuroses (*a Physiocytological Approach*). *Kubanek, Joseph L.* [*Intern. Record of Med.*, **165**, 479–83 (1952).]

Schizophrenic patients are less able to utilize O_2 probably because of the deficient nucleoprotein embodied in the Nissl bodies of the brain and of sympathetic ganglion cells. Treatment with malononitrile enhances O_2 metabolism and favours restoration of nucleoproteins in central nervous system.

J. DUFRENOY (Chem. Abstr.).

Action of Electroconvulsive Therapy on Oxidation-reduction Processes. Mule, F. [*Clin. nuova* (*Rome*), **8**, 482–90 (1949) ; *Excerpta Med.*, Sec. VIII, **3**, 8 (1950).]

Comparisons of the mental condition (in 30 cases) with oxidation-reduction potential, and values for oxidized glutathione indicate that low rH corresponds to the comatose postconvulsive state.

W. C. TOBIE (Chem. Abstr.).

Influence of Barbiturate on the Sympathetic Nervous System. Trethewie, E. R. [*Med. J. Australia*, **1**, 100 (1953).]

Stimulation of the splanchnic nerve of adrenalectomized cats under chloralose anesthesia caused peripheral vasoconstriction and increased blood pressure. This response was inhibited by Na pentobarbitone (I). Peripheral stimulation of the cut nerve under similar conditions also produced an increase in blood pressure, abolished by (I). If the adrenal glands were removed, the vasopressor response to splanchnic nerve stimulation was greatly impaired by (I). In human subjects the administration of (I) or more particularly of phenobarbital reduced the basal metabolic rate and caused peripheral vascular dilatation.

W. DONALD GRAHAM (Chem. Abstr.).

Effects of Coumarin and Benzoxazolones on the Central Nervous System. Mercier, J., et al. [*Ann. pharm. franç.*, **11**, 169 (1953).]

Benzoxazolone and its derivatives have hypnotic, analgesic and hypothermic actions. Oral doses of coumarin (I), 4-methylcoumarin (II), and 7-methylcoumarin

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

(III) cause in rats in decreasing order elevation of the threshold for electroshock and for metrazole convulsions. In the same order the dose required to produce somnolence, muscular incoordination and paralysis of the hind legs, the doses being 0·05 to 0·5 gm. per kgm., increases. The hypothermic effect also decreases from (I) to (II) to (III). (I) produces in the dog in chloralose anesthesia after oral medication, a progressive fall in blood pressure (0·3 to 0·6 gm. per kgm.), mild bradycardia and considerable respiratory depression. (I) exerts on the gastrocnemius muscle of the dog, stimulated by faradic current, a depressant effect similar to that of myanesin. A. E. MEYER (Chem. Abstr.).

Narcotics and Biological Acetylations. Johnson, W. J., and Quastel, J. H. Nature, **171**, 602 (1953).]

It is shown that inhibition of respiration brought about by a narcotic is accompanied by a decreased rate of acetylation, and that the addition of adenosine triphosphate (I) to an aerobic system alleviates the narcotic effect on acetylation. The effect of added (I) indicates that the narcotic inhibition of acetylation is the result of a suppression of the oxidative synthesis of this ester. It is apparent that narcotics at high concentrations affect neither the acetylating enzymes *per se*, nor the pyruvate dismutation system, nor the glycolytic sequence in beef-brain extract. Thus the narcotics do not inhibit the utilization of (I) in these metabolic processes.
W. J. PETERSON (Chem. Abstr.).

The Effects of Muscle Relaxants on the Respiratory Center. Frey, R., et al. [*Der Anasthesist*, **1**, 33 (1952).]

The effects of d-tubocurarine, dimethyl-d-tubocurarine, flaxedil, deoxydauricin, decamethonium, succinylcholine and guaiacol glycerol ether on the respiratory center of artificially respirated dogs were studied by observing simultaneously the action potentials of the phrenic nerve, diaphragm and heart and the respiratory pattern. Circulatory status and alveolar CO_2 were held constant. In addition to the peripheral effects the muscle relaxants showed central effects characterized by a very short stimulatory phase followed by central depression, the duration of which varied with the particular drug and became significant only with abnormally high dosage. KARL F. URBACH (Chem. Abstr.).

Effect of Pentobarbital and Ether on the Spreading Cortical Adpression. Van Harreveld, A., and Stamm, J. S. [*Am. J. Physiol.*, **173**, 164 (1953).]

A spreading depression of cortical activity is elicited in the rabbit by weak faradic stimulations of the cerebral cortex. The effects of ether and of pentobarbital on the slow potential change accompanying the spreading depression are parallel to the effects of these narcotics on depolarization potentials which can be led off from the spinal cord during asphyxiation.
E. D. WALTER (Chem. Abstr.).

Cerebral Asphyxiation and Spreading Cortical Depression. Van Harreveld, A., and Stamm, J. S. [*Am. J. Physiol.*, **173**, 171–5 (1953).]

Experimental support was found that the cortical asphyxiation potential of long latency and the slow potential change accompanying the spreading cortical depression are based on identical processes. E. D. WALTER (Chem. Abstr.).

Spectophotometric Diagnosis of Barbiturate Poisoning. Simonin, Métais, and Weil, [*Ann. méd. légale, criminol., police sci., méd. sociale, at toxicol.*, **32**, 372 (1952).]

Blood is treated with tungstic acid and the filtrate is extracted with $CHCl_3$. The difference in optical d. at 239 mμ of an aliquot adjusted to pH 10 and to pH 2 is proportional to the amount of barbiturate in the extraction.
ERICH HIRSCHBERG (Chem. Abstr.).

Equilibrium of Body Fluids in the Treatment of Chronic Alcoholism with Apomorphine. Feldmann, H. [*Rev. med. Suisse romande*, **72**, 205 (1952).]

Changes in biochemical compound of body fluids during apomorphine treatment are reviewed. New data on 50 cases are presented. Abnormal values became normal after apomorphine treatment. W. C. TOBIE (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press

Action of Strychnine on Spinal Mechanisms. Bernhard, Carl Gustaf. [*Anales inst. farmacol. españ.* (*Madrid*), **1**, 9–20 (1952).]

The effect of strychnine (I) on multisynaptic (II) and monosynaptic (III) reflexes varies with the degree of integrity of the central nervous system. Thus, low spinal preparations show augmentations of (II) and (III) by (I) at 0·14 mgm./kgm. High spinal preparations treated with 0·0012 mgm./kgm. of (I) show reductions in (III) but not (II). Large doses of (I) result in abolition of (III) and enhancement of (II) in high spinal preparations (I) augments both (II) and (III) in high spinal preparations which have been curarized. These data and the observed cord potentials are interpreted to indicate that (I) facilitates (II) and also stimulates higher spinal structures which inhibit (III). LEO SAPIRSTEIN (Chem. Abstr.).

The Hypnotic Action of p-Hydroxycamphor. Ogawa, Kazue. [*Folia Pharmacol. Japon.*, **48**, No. 4, 252 (1952).]

Of several central-nerve-stimulating camphor derivatives examined, p-hydroxycamphor was found to have a temporal hypnotic action by both subcutaneous and oral administration. This is probably not derived from its paralytic action but from a stimulating action on the sleeping center. Simultaneous administration of p-hydroxycamphor and evipan or cyclopentenylethyl-1-methylbarbituric acid showed a synergism, the latter diminishing the central-nerve-stimulating action of the former so that a natural sleep is produced. It is suggested that natural sleep is controlled by an antagonism between the sleeping and awakening centers.
S. KITAOKA (Chem. Abstr.).

Pharmacology of Vinylethynylcarbinols, a New Class of Central Nervous System Depressants. P'an, S. Y., et al. [*J. Pharmacol. Exptl. Therap.*, **107**, 459 (1953).]

3-Methylpent-1-yn-3-ol (methylparafynol), 3-methylpent-4-ene-1-yn-3-ol (I) (an intermediate in the compound synthesis of vitamin A), and 3-ethylpent-4-ene-1-yn-3-ol (II) are effective orally and parenterally as hypnotics in experimental animals. They act more rapidly than phenobarbital. (I) and (II) possess anticonvulsant activity against pentylenetetrazole seizures in mice, with protective indexes of 2·2 and 1·1 respectively. Their toxicity is low. Repeated daily doses in rats and dogs caused no ill effects. L. E. GILSON (Chem. Abstr.).

Pharmacological Properties of Benzazoles. II. Sites of Action in the Central Nervous System. Funderburk, W. H., et al. [*J. Pharmacol. Exptl. Therap.*, **107**, 356 (1953).]

2-Aminobenzothiazole (I) and its 4-methyl-, 4-chloro-, 6-methyl-, 6-chloro-, and 7-chloro-derivatives were studied in cats for their sites of action in the cerebrospinal axis from the brain stem to the lumbrosacral level of the spinal cord. Like bensimidazole, all of the compounds have a depressant effect on spinal interneurons. (I) showed a potency equal to that of mephenesin; substitution at position 6 doubled the potency, and substitution at position 4 or 7 tripled it.
L. E. GILSON (Chem. Abstr.).

Influence of Substances Acting on the Autonomic System on the Threshold for Electroshock and Metrazole Convulsions. Wienke, H. [*Naunyn-Schmiedebergs Arch. exptl. Pathol. Pharmakol.* **217**,, 312 (1953).]

The threshold for electroshock by application of current for 0·1 and 1 seconds in rats and guinea-pigs and that to cardiazole are markedly lowered by adrenaline. Gynergen, doryl and nicotine had no significant influence on electroshock but lowered the threshold to cardiazole. Any lowering of the electroshock threshold was more evident in the tests with longer action of the current. Physostigmine, atropine, and pendiomid had no influence on either form of convulsions.
A. E. MEYER (Chem. Abstr.).

https://doi.org/10.1192/bjp.100.418.276 Published online by Cambridge University Press