Part III.—Bibliography and Epitome.*

An attempt is being made to provide as far as possible a complete bibliography compiled from journals dealing with Psychiatry and Neurology (which are really inseparable) and their ancillary subjects, psychology, anatomy of the nervous system, criminology, etc.

If any reader can add the names of journals to the following list, which it is hoped to publish each year in the January number, the addition will be gratefully received and acknowledged.

Those journals which are available in the Library of the Royal Medico-Psychological Association are marked " 1," those available in the Library of the Royal Society of Medicine are marked " 2," those in the Library of the British Psychological Society are marked " 3," and those in the Library of the British Medical Association are marked " 4."

The titles of these journals are mostly in the form given by the Board of Editors of Publications of the American Psychological Association, January, 1939. Contributors are requested to use the exact form given below.

PSYCHIATRIC JOURNALS.

2 *Abh. Neur. Psychiat.*
Abh. Psychother.
2 *Acta Española Neur. y Psiquiat.*
Acta Neurol., Naples.
2, 4 *Acta Neurol. Psychiat. Belg.*
2, 3, 4 *Acta Psychiat. et Neurol., Copenhagen.*
3 *Acta Psychol., Hague.*
Acta Psychol., Keijo.
Alcohol Hyg.
Alg. Neder. Tijdschr. Wijsbegeert. Psychol.
Aliéniste Français.
2 *Allg. Ztschr. f. Psychiat.*
Altersprobleme.
Amer. Imago.
2 *Amer. J. Ment. Def.*
2, 3 *Amer. J. Orthopsychiat.*
1, 2, 3, 4 *Amer. J. Psychiat.*
Amer. J. Psychoanal.
2, 3 *Amer. J. Psychol.*
Amer. J. Psychotherap.
Amer. Psychologist.
An. Bras. Hig. Ment.
An. Istit. Psicol. Univ. B. Aires.
An. Psicotec., Rosario.
Anal. Inst. Neurol., Montevideo.
Analele Psihol. (Rumania).
Anales de psicol., Buenos A.
2, 3 *Année Psychol., Paris.*
2, 3 *Ann. Méd.-Psychol., Paris.*
2 *Ann. Osp. psichiatr., Perugia.*

* A number of extracts in this section are reproduced from *Chemical Abstracts and Psychological Abstracts.* To the Editors of these two Journals we extend our grateful thanks.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Appl. Psychol. Monogr., Washington.
Arb. Psychiat. Inst., Sendai.
Arch. Anthrop. crim.
2 *Arch. Argent. de Neurol.*
Arch. Argent. Psicol. norm. pat.
2 *Arch. Bras. de Neur. e Psiquiat.*
Arch. Brasil Hig. Ment.
Arch. Chilenos de Crim.
Arch. Ital. di Studi Neuropsich.
1, 2 *Arch. Neurobiol.*
Arch. Neurocir., Paraguay.
4 *Arch. Neurol., Paris.*
2 *Arch. de Neurol. de Bucarest.*
1 *Arch. de Neurol.*
2 *Arch. di Antropol. Crim.*
Arch. di Crim. Neuropsiquiat. y Disc. Con., Quito.
Arch. di Sci. Cereb. Psich., Salerno.
2, 4 *Arch. f. Psychiat.*
2, 3 *Arch. ges. Psychol.*
Arch. Internat. de Neurol.
Arch. Ital. Psicol.
Arch. Krim. Anthrop.
1, 2, 3, 4 *Arch. Neurol. Psychiat., Chicago.*
Arch. Neur. Psychiat., Mex.
2, 3 *Arch. Psicol., Neurol., Psichiat. e. Psicoter., Milan.*
2, 3 *Arch. Psychol., Genève.*
2, 3 *Arch. Psychol., N.Y.* (ceased publication 1945).
Arch. Relig. psychol.
Arch. Speech.
Arq. da Assist. a Psicop. de Pernambuco.
Arq. de Neuro-psiquiat., Brasil.
3 *Aust. J. Psychol. Phil., Sydney.*

Behaviour.
Beih. Schweiz. Z. Psychol. Anwend.
Beih. Zbl. Psychother.
Bol. Inst. Psiquiat., Rosario.
Bol. Inst. psicopedag., Lima.
2, 3, 4 *Brain.*
3 *Brit. J. Educ. Psychol.*
2, 4 *Brit. J. Inebriety* (now *Brit. J. Addiction*).
1, 2, 3, 4 *Brit. J. Med. Psychol.*
2, 3, 4 *Brit. J. Psychol.*
2, 3 *Brit. J. Psychol. Monogr. Suppl.*
Bull. Canad. Psychol. Ass.
2, 4 *Bull. de la Soc. de Psychiat. de Bucarest.*
2 *Bull. de la Soc. Roumaine Neur. Psychiat. Psychol. Endocrin.*
Bull. du Group. Franç. d'étud. de neuro-psychopath. infant.
2 *Bull. industr. Psychol., Melbourne.*
2 *Bull. Los Angeles Neurol. Soc.*
2 *Bull. Menninger Clin.*
Bull. Milit. Clin. Psychol.
Bull. Soc. Psihol. med., Sibiu.

Canad. Journ. Occup. Ther.
Canad. J. Psychol., Toronto.
2 *Cervello.*
2, 3 *Character and Per.* (now *J. Personality*).
2 *Child Develpm.*
2 *Child Develpm. Abstr.*
Child Develpm. Monogr.
Child Study.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Chin. J. Educ. Psychol., Chungking.
Chin. J. Psychol.
3 *Comp. Psychol. Monogr.*
2 *Confinia Neurol.*
Contr. del Lab. di Psichol.
Contr. Lab. Psicol., Milan.
Contr. psychol. Theor.
Criança Portuguesa.
Criminalia, Mexico.

2 *Deutsche Ztschr. f. Nervenh.*
Dig. Neurol. Psychiat.
2 *Dis. Nerv. Syst.*

3 *Educ. psychol. Measmt., Washington.*
Egypt. J. Psychol., Cairo.
Electroenceph. Clin. Neurophys., Boston.
1, 2, 3, 4 *L'Encéphale.*
2 *Epilepsia.*
Evolut. Psychiat.

Fiziol. Th. S.S.S.R.
2 *Folia Neuropath. Esthon.*
2 *Folia Psychiat. et Neurol. Jap.*
2 *Fortsch. Neur. Psychiat.*

3 *Genet. Psychol. Monogr.*
Geriat., Minneapolis.
Giorn. di Psich. e di Neuropat.

Hum. Factor.
Hum. Relat., Cambridge, Mass.
2, 3, 4 *Hyg. Ment.*

Illinois Psychiat. J.
2 *Index Neurol. y Psiquiat., Buenos Aires.*
3 *Indian J. Psychol., Calcutta.*
Indiv. Psychol. Bull., Chicago
3 *Industr. Psychol.*
3 *Industr. Psychotech.*
1, 2, 3, 4 *Int. J. Psychoanal., London.*
2, 3 *Int. Z. Psychoanal. u. Imago.*

Jap. J. appl. Psychol.
Jap. J. Exp. Psychol.
Jap. J. Psychol.
1, 2, 3 *J. Abnorm. Soc. Psychol., Washington.*
J. Amer. Soc. Psychic. Res.
3 *J. App. Psychol., Washington.*
2, 4 *J. Belge Neur. Psychiat* (now *Acta Neurol. Psychiat. Belgica*).
J. Child. Psychiat.
J. Clin. Psychol., Burlington.
2 *J. Clin. Psychopath., Montecello, N.Y.*
2 *J. Comp. Neur.*
1, 2, 3 *J. Comp. Physiol. Psychol., Washington.*
J. Consult. Psychol., Washington.
J. Crim. Law and Criminol., Chicago.
2 *J. Crim. Psychopathol.* [now *J. Clin. Psychopath.*].
2 *J. de Psychiat. Infant* [now *Zeit. f. Kinderpsychiatrie*].
3 *J. Educ. Psychol., Baltimore.*
J. Except. Child.
3, 4 *J. Exp. Psychol., Washington.*

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

2 *J. f. Psychol. u. Neurol.*
3 *J. Gen. Psychol., Provincetown, Mass.*
2, 3 *J. Genet. Psychol., Provincetown, Mass.*
2 *J. Geront., St. Louis.*
J. Juvenile Res.
1, 2, 3, 4 *J. Ment. Sci., London.*
1, 2, 3 *J. Nerv. Ment. Dis., New York.*
1, 2, 3, 4 *J. Neurol. Neurosurg. Psychiat., London.*
J. Neuropath. and Psychiat., Leningrad.
1, 2 *J. Neuropath. Ex. Path.*
2, 4 *J. Neurophysiol.*
J. Neuropsychiat. du Pacifique.
2 *J. Neurosurg.*
3 *J. Parapsychol., Durham, D.C.*
2 *J. Personality, Durham, D.C.*
J. of Psychic. Res.
J. Psihoteh.
2 *J. Psycho-Asthen.* [now *Amer. J. Ment. Deficiency*].
1, 2, 3 *J. Psychol.*
J. Psychol., Moscou.
2, 3 *J. Psychol. Neurol., Leipzig.*
2 *J. Psychol. Norm. Path., Paris.*
J. Soc. for Psychic. Res.
3 *J. Soc. Psychol., Provincetown, Mass.*
2 *J. Speech Dis., Danville, Ill.*

Kriminal.
3 *Kwart. Psychol.*

Mag. psychol. Szle.
Menn. Miljφ.
2 *Ment. Health, London.*
Ment. Health Obs.
2 *Ment. Hyg., N.Y.*
Ment. Hyg. Rev.
Ment. Hyg. Bull., Indiana.
3 *Mind, London.*
Monats. Psychiat. Neurol.
Mschr. Krim. Biol.
2 *Mschr. Psychiat. Neurol.*

Ned. Tijdschr. Psychol.
2 *Neopsichiat.*
2 *Nervenarzt.*
Nerv Child, New York.
3 *Neue psychol. Stud.*
2 *Neurbiol., Pernambuco.*
Neur. a Psychiat., Česká.
Nevrasse.
2 *Nevropath. i. Psikhiat.*
2 *Note e Riv. di Psichiat.*
Now. Psychjar.
Nuova Riv. di Clin. ed Assist. Psichiat.

Obshch. Klin. Nevropat.
2, 3 *Occup. Psychol., London.*
2 *Occup. Ther. and Rehabil.*
2 *Onder. Psychiat-Neur. Klin., Utrecht.*
2 *Osped. Psichiat.*

Personnel Psychol.
3 *Person. J.*

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Pisani.
Polsk. Arch. Psychol.
Prace Psychol.
2 *Proc. Amer. Assoc. Stud. Ment. Def.* [now *Amer. J. Ment. Deficiency*].
2 *Proc. A. Res. Nerv. and Ment. Dis.*
3 *Proc. Soc. Psych. Res., London.*
Prog. Neurol., Psychiat.
3 *Psichotec.*
Psicoanalisi, Rome.
Psicoter., Cordoba.
Psyche, Cambs., Mass.
Psychiat. Monogr.
2 *Psychiat. en Neurol. Bl., Utrecht.*
2 *Psychiat. et Neurol. Jap.*
2 *Psychiat. Neurol. Wchnschr.*
2 *Psychiat., Washington.*
1, 2 *Psychiat. Quart., Utica, N.Y.*
2, 3 *Psychoanal. Quart., Albany, N.Y.*
2, 3 *Psychoanal Rev., New York.*
Psychodrama Monogr.
1, 2, 3 *Psychol. Abstr., Washington.*
1, 2, 3 *Psychol. Bull., Washington.*
Psychol. Clin.
Psychol. Exch.
3 *Psychol. Forsch.*
Psychol. Index.
2 *Psychol. Monogr., Washington.*
Psychol. Rec.
3, 4 *Psychol. Rev., Washington.*
3 *Psychol. Rev. Monogr.*
Psychol. Sbornik.
Psychol. Stud. Kbh.
Psychol. Stud. Univ. Bp.
Psychol. wychow.
3 *Psychomet., Chicago.*
Psychometr. Monogr.
2 *Psychosom. Med., New York.*
2 *Psychosom. Med. Monogr., New York.*
Psychotechnick.

Quart. J. Child. Behav., New York.
Quart. J. Speech.
2 *Quart. J. Stud. Alc., New Haven, Conn.*
2 *Quart. Rev. Psychiat. Neur., Washington.*

Rass. Neurol. Veget., Firenze.
Rass. Neuropsichiat. Sci. Aff., Salerno.
Rass. Studi Psichiat.
Rev. Argent. Neurol. Psiquiat.
Rev. de Psicoanal., Argentina.
Rev. di Neur. e Psychiat., S. Paolo.
Rev. di Psiquiat., Chile.
Rev. di Psiquiat. y Crim.
Rev. Espan. de Oto-neuro-oftam. y Neurocir.
3 *Rev. Franç. Psychoanal.*
Rev. Ibero-Amer. de Anal. Biblio. de Neurol. y Psiquiat.
Rev. Mex. Neurol. Psiquiat. y Med. Legal., Mexico.
1, 2, 4 *Rev. Neurol.*
2 *Rev. Neurol. de Buenos-Aires.*
Rev. Neurol. Psychiat., Praha.
2 *Rev. Neuro-Psiquiatr., Lima.*
2 *Rev. Oto-Neur.-Oftal. Cir. Neur. Sud-Am.*

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Rev. Neuropsiquiatr.
Rev. Psicol. Gen. Aplic., Madrid.
Rev. Psicol. Pädag.
Rev. Psicoanal., B. Aires.
3 *Rev. Psihol.*
Rev. Psihol. Icor. Aplic., Sibiu.
2 *Rev. Psiquiat. Crim., B. Aires.*
Rev. Psiquiat., Uruguay.
Rev. Psiquiat. y Disc. Con., Chile.
Rev. Psychol., Montreal.
Rev. Sudam. Psicol. Pedag.
Rev. Tchèque de Neurol. et de Psychiat.
Ric. Psich.
2, 3, 4 *Riv. di Neurol.*
Riv. di Neuro-psiquiat., Peru.
3 *Riv. di Psichol.*
Riv. Ital. di Endocrin. e Neurochir.
2 *Riv. Patol. nerv. ment.*
Riv. Psichol. Norm. Pat., Ferrara.
2, 4 *Riv. Sper. Freniat.*
1 *Rocz. Psychjat.*
2 *Rorschach Res. Exch. J. Prog. Techn., New York.*

Samiksā.
1 *Schizofrenie.*
2 *Schweiz. Arch. Neurol. Psychiat.*
Schweiz. Z. Psychol.
Schweiz. Z. Psychol. Anwend., Bern.
Skand. Arch. Psychol.
Sovet. nervropatol., psichiatri, psichoguoguia.
Sovet. Psichoneurol.
Sovet. Psikhotekh.
Speech Monogr.
2, 3 *Stud. Psychol. Psychiat. Cathol. Univ. Amer.*

Tidskr. Psykol. Pedag.
Tohoku Psychol. Folia.
2 *Tr. Am. Neurol. A.*
Tr. Beritov Inst., Tiflis.
Tr. Kostchenko Ment. Hosp., Moscow.
2 *Trud. fiziol. Lab. Pavlova.*
Trud. tsentral. psikhonevrol. Inst.

Univ. Calif. Publ. Psychol.
Univ. Iowa Stud. Psychol.
Untersuch. Psychol. Phil.

Wien Z. Phil. Psychol. Pädag.

3 *Z. angew. Psychol.*
Z. Arb. Psychol.
Z. Berufs. des Pflegepers.
Z. Individ. Psychol.
2, 4 *Z. ges. Neurol. Psychiat.*
2 *Z. Kinderpsychiat., Basle.*
3 *Z. Pädag. Psychol.*
Z. Parapsychol.
2 *Z. Psych. Hyg.*
Z. Psychiat. Neurol. Klin. Psychol.
Z. Psychoanalyse, Tokyo.
3 *Z. psychoanal. pädag.*
2, 3 *Z. Psychol.*

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Z. Psychother. med. Psychol.
Z. Tierspsychol.
2 *Zbl. Neurochir.*
1, 2 *Zbl. ges. Neurol. Psychiat.*
Zbl. Psychotherap.

ACTAS LUSO-ESPAÑ. NEUR. PSIQUIAT.

VOL. VII. AUGUST, 1948.

The " Thymopathic " Circulation. *Ibor, J. J. L.* 161
False Neurological Symptoms of Localisation in Supra-tentorial Tumours. *Alcalde, S. O.* 183
Psychiatric Foundations in Seville, etc. *Roig, J. D.* 196
The Delusion of Multiple Conjugal Infidelity. *Lloret, B. L., and Ortuno, A. E.* 217

AMER. J. MENT. DEF.

VOL. LII. 1947.

Preventive Medicine and Mongolism. *Aldrich, C. A.* 127
Reformulation of the Problem of Mental Deficiency. *McCulloch, T. L.* . 130
Pseudo-feeblemindedness. *Arthur, G.* 137
The Relationship Between Behavior Disorders in Children and the Syndrome of Mental Deficiency. *Leuer, H.* 143
Continuation School for Boys and Girls over Sixteen Years of Age in the Institution Environment. *Fox, W. W., and Parrotte, I.* 148
Attendant Training in a School for the Mental Deficient. *Edgett, C. D.* . . 153
The Role of the Chaplain in an Institution for the Mentally Deficient. *Burke, J. W.* 162
The Problem of the Pre-school Mentally Deficient Child. *Pense, A. W.* . 168
A National Program for the Cerebral Palsied. *Linck, L. J.* 172
A Mental Health Project in Louisiana. *Rowland, L. W.* 178
Planned Parenthood and Mental Deficiency. *Hathaway, S. R.* 182
Developing and Maintaining Good Relations with Parents of Mentally Deficient Children. *Sampson, A. H.* 187
Pertussis as a Cause of Mental Deficiency. *Levy, S., and Perry, H. A.* . 217
Problems and Trends in Nutrition and Food Service in the Institution for the Mentally Deficient. *Cleaver, M. A., and Wearne, R. G.* 227
A Survey of Experimental Studies of Learning in Individuals who Achieve Subnormal Ratings on Standardized Psychometric Measures. *McPherson, M. W.* 232
Mental Defectives and the Courts. *Stowell, G.* 255
Some Psychiatric Problems of Mental Deficiency. *Hastings, D.* . . . 260
Counseling and Psychotherapy with Mental Defectives. *Thorne, F. C.* . 263
The Education of the Blind Mental Defective. *Langan, W.* 272
State Practices and Procedures in the Licensing of Private Schools for Mental Defectives. *Buchan, D., and Hackbusch, F.* 278
Planning for the Rural Mentally Handicapped Child. *Williams, H. M.* . . 282

AM. J. ORTHOPSYCHIAT.

VOL. XVIII. JULY, 1948.

Trends in Orthopsychiatric Therapy :
General Developments and Trends. *Lowrey, L. G.* 381
Rorschach F Plus and the Ego in Treatment. *Beck, S. J.* . . 395
Play Technique. *Solomon, J. C.* 402
Treatment of the Young Child. *Gerard, M. W.* 414
Character Synthesis. *Gitelson, M.* 422
Physical Factors. *Lurie, L. A.* 432
Treatment of Parent-child Relationships. *Green, R.* 442
Evolution and Trends in Group Psychotherapy. *Shushan, D. A.* . . 447

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Conscience in the Psychopath. *Karpman, B.* 455
The Psychologist in the Clinic Setting. *Round Table* 492
Emotional Problems in " Planned For " Children. *Sloman, S. S.* . . 523
Animal Identification in a Tiqueur. *Rosenheim, F.* 529
Child Guidance Services in Semi-Rural and Neglected Areas. *Cameron, E. S.* 536
Problems of Giving Child Guidance in Neglected Areas. *Sloman, S. S.* . . 541
New Partnerships for Psychiatry. *Binger, C.* 543
Anxiety Neurosis. *Sheplow, S.* 548

AM. J. PATH.

VOL. XXIV. JULY, 1948.

*The Pathology of Gargoylism. *Strauss, L.* 855

The Pathology of Gargoylism.

A case of gargoylism in a 3-year-old girl, with gross and microscopic post-mortem examination, provided an opportunity for comparing the reported findings with those in the present example.

The previously described lesions in the central nervous system, eyes, skeleton, and visceral organs are for the most part confirmed. Emphasis is placed on striking alterations in the connective tissues of the viscera, cardiovascular system, and skeleton, which hitherto had not been observed. These are characterized by the presence of large vacuolated cells, probably fibroblasts for the most part, in association with a proliferation of collagenous fibres and sometimes with an increase of ground substance.

These alterations have a role in producing some of the characteristic clinical manifestations of gargoylism (hydrocephalus, skeletal deformities, cardiac symptoms).

The nature of gargoylism must be considered in its relation to the known diseases of lipid metabolism (amaurotic idiocy, Niemann-Pick's disease, Gaucher's disease). The inclusion of gargoylism in the group of storage diseases is suggested because of the evidence of storage in many cells of the body, and because of the similarity of the changes in the central nervous system with those in amaurotic idiocy; but the chemical nature of the stored substance thus far has not been identified. It appears that there is a widespread disturbance of intracellular metabolism resulting in the accumulation of an abnormal substance in many cells of the body. However, the question whether gargoylism is a form of lipidosis must remain open. (Author's abstr.)

AM. J. PSYCHIAT.

VOL. CIV. MAY, 1948.

Effect of Thyroid Therapy on the Conditioned Reflex Function in Hypothyroidism. *Gantt, W. H., and Fleischmann, W.* 673
Combined Insulin Coma and ECT in Schizophrenia. *Horwitz, W. A., and Kalinowsky, L. B.* 682
*Psychopharmacologic Study of Schizophrenia and Depression: IV. *Gottlieb, J. S., et al.* 686
*C.S.F. Changes in ECT of Psychoses. *Spiegel-Adolf, M., et al.* 697
*The Effect of ECT on Mental Efficiency. *Huston, P. E., and Strother, C. R.* 707
Somatotypes in Relation to Dementia Praecox. *Bellak, L., and Holt, R. R.* . 713
The Frequency of Syphilitic Primary Atrophy in Dementia Paralytica. *Bruetsch, W. L.* 725
The Clinical Significance of the Rorschach Test. *Johnson, C. E., jun., and Sherman, J. E.* 730
The Attitude of the States Towards Collecting Fees. *Wilson, D. C., and Suter, C. G.* 738

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Psychopharmacologic Study of Schizophrenia and Depression. IV. The Influence of Electric Convulsive Therapy on the Sodium Amytal Response of the Electroencephalogram.

1. Nine patients, 4 with depression, 5 with schizophrenia, were studied with respect to changes in the beta activity of the EEG induced by the intravenous injection of sodium amytal mg. 250 (with racemic amphetamine sulfate mg. 20). These changes were measured on five consecutive days prior to a course of electric convulsive therapy. They were again studied in a single session, after this course of treatment.

2. There was observed to be a striking increase in beta activity after the injection. This increase was greatest in the frontal EEG, least in the occipital EEG, forming an anterior-posterior per cent. time gradient, which was an accentuation of the pre-injection gradient.

3. There was no systematic electrocortical tolerance developed in either group to the drug over a 5-day period. The schizophrenic group, however, developed the usual psychological tolerance.

4. After a course of electric convulsive therapy there was a decrease in per cent. time beta; the response of beta to sodium amytal was greatly reduced, particularly in the frontal area.

5. These data suggest that the electro-cortical response measured (per cent. time beta) and the psychologic state are reflections of the activity of different neural systems. (Authors' abstr.)

Cerebrospinal Fluid Changes in Electroshock Treatment of Psychoses. (Spectrophotometric and Enzyme Studies.)

1. The cerebrospinal fluid of untreated schizophrenics shows a pronounced selective absorption in ultraviolet a $\lambda = 2650$ Å.

2. Electroshock treatment influences the ultraviolet absorption of the cerebrospinal fluid (initial decrease, followed by increase on repeated application of high A.C.).

3. Enzymatic substances apparently belonging to the groups of nucleases and desaminases increase in the C.S.F. following electroshock convulsions.

4. Lipases are much less affected by electroshock convulsions than are the nucleases. (Authors' abstr.)

The Effect of Electric Shock on Mental Efficiency.

The present study has attempted to determine the effect of electric shock treatment on mental efficiency. The population studied included 75 patients, suffering from depression, hypomania, or psychoneurosis. The mean age was 41·2 years; the mean number of shocks was 7·8. On Babcock tests administered an average of 11 days after shock there was a slight but not significant improvement. On the Shipley test the improvement was probably significant. When the same tests were administered after a follow-up interval averaging 189 days, there was relatively great and statistically significant improvement on both tests. Babcock scores obtained by the patient group about 6 months after shock were not significantly lower than the scores of a normal population of 17 persons of the same age and vocabulary level. It may be concluded that, for the population studied and under the conditions of the present experiment, electric shock treatment does not produce any significant impairment of mental efficiency after an interval of six months. No correlations were found between age and improvement from test period to test period. There was some evidence that patients receiving a greater number of shocks were affected more in mental efficiency than those receiving a lesser number of shocks. (Authors' abstr.)

JUNE.

The Rôle of Motivation in Recovery from Illness. *Hawley, P. R.* . . 753
An Evaluation of "Sexual Behavior in the Human Male." *Hobbs, A. H., and Lambert, R. D.* 758
*Cerebral Blood Flow and Metabolism in Schizophrenia. *Kety, S. S., et al.* . 765
Schizophrenic Syndromes as Frustration Reactions. *Nielsen, J. M., and Thompson, G. N.* 771

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

*C.S.F. Studies in Advanced Dementia Praecox. *Johnson, C. E., jun., and C. L. A.* 778
Follow-up Report on a Series of Post-traumatic Epileptics. *Walker, E. A., and Quadfasel, F. A.* 781
Group Psychotherapy as Adjunct Treatment of Epileptic Patients. *Deutsch, A. L., and Zimmermann, J.* 783
*The Prediction of Huntington's Chorea. *Patterson, R. M., et al.* . . 786
Bromide Psychoses. *Levin, M.* 798
*The Hospital Treatment of Involutional Psychoses. *Hamilton, D. M., and Ward, G. M.* 801

Cerebral Blood Flow and Metabolism in Schizophrenia. The Effects of Barbiturate Semi-Narcosis, Insulin Coma and Electroshock.

Studies by the use of the nitrous oxide technique on 22 schizophrenic patients show no deviation from values obtained in normal young males for cerebral blood flow and oxygen consumption.

A clinically significant change in 8 patients given sodium pentothal or amytal intravenously is not associated with a measurable change in cerebral blood flow or cerebral oxygen consumption.

Insulin hypoglycemia and coma is associated with a progressive decrease in cerebral utilization of oxygen and blood glucose, the cerebral circulation remaining unimpaired. The fall in blood glucose utilization is greater than that of oxygen.

Electroshock is followed by a moderate decrease in metabolism and a marked decrease in cerebral blood flow in the face of a severe acidosis.

Although there were no demonstrable deviations from the normal in this group of schizophrenic patients, the authors' experience with this technique leads them to believe that it is worthy of extensive application in the study of the metabolic derangements in the brain associated with mental disease. It makes possible a new approach to psychiatric disorders, and gives the means of quantitatively determining the utilization or production of any substance capable of accurate analysis in the arterial and internal jugular venous blood. (Authors' abstr.)

Cerebrospinal Fluid Studies in Advanced Dementia Praecox.

After 13 months of intensive investigation of 40 very deteriorated dementia praecox patients, the writers are unable to confirm the conclusions of numerous European and some American authors concerning the postulated etiological relation between M. tuberculosis and dementia praecox. (Authors' abstr.)

The Prediction of Huntington's Chorea. An Electroencephalographic and Genetic Study.

Twenty-six offspring representative of 9 families with Huntington's chorea in the immediate ancestry were subjected to the following studies: Physical, neurological, psychiatric, psychometric, anthropometric, genetic, and electroencephalographic. Of these various procedures but two seemed to offer probable predictive value: namely, the EEG and the blood groupings. Nineteen (73·1 per cent.) of the subjects showed definite electroencephalographic abnormalities, particularly in the motor regions. Bilateral paroxysmal bursts like those observed in epilepsy were found in the resting record of about half (8) of the cases showing abnormal EEGs. According to a composite weight, 12 offspring had the highest electroencephalographic abnormality, and were thought likely to develop the disease as this proportion approximated the genetic probability. No definite intra- or inter-family, or parent-offspring, electroencephalographic resemblances were noted. The study of blood groupings was expanded to include all available cases of Huntington's chorea in addition to the offspring study, and disclosed a disproportionately large number of individuals in Groups A and O. Long-range follow-ups with repeated EEGs on a larger series of offspring are recommended as well as a much more extensive examination of the blood groupings of Huntington's chorea patients and their offspring in order to establish the statistical validity of the two procedures. (Authors' abstr.)

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

The Hospital Treatment of Involutional Psychoses.

In the group of 100 patients who did not have electric shock treatment, 42 per cent. were distinctly benefited after a follow-up period of from 7–16 years. Thirty-two were recovered; 10 were much improved. Twelve had died; 9 were unimproved; 4 were suicides. The average period of hospitalization for those distinctly benefited was over two years.

The results in a group of 69 additional patients with similar histories, personalities, and psychoses who received electric shock therapy besides the usual psychiatric treatment were much better. At the end of a follow-up period of 1–5 years after leaving the hospital, 33 were recovered, 16 much improved. These 49 patients representing almost 75 per cent. of the group were home and functioning in the community. Less than 20 per cent. were unimproved, and of these 3 were suicides. There were no other deaths. The average length of hospitalization was only 8 months for the shock-treated group, in contrast to the 2-year period in the group who did not have electric shock.

Most shock-treated patients had more than one series of electric shock treatment. One patient recovered after five series spaced at monthly intervals. Shock treatment broke into the rut of symptoms and permitted the development of a close personal relationship with these patients. Advantage was taken of this contact to give intensive psychotherapy, and this was believed to be instrumental in their eventual recovery. In spite of the relatively advanced age of these patients and the rigidity of their prepsychotic personality, most who recovered after electric shock treatment displayed a distinct capacity for modification of their previous personality traits, which resulted in a better adjustment to life than that before their mental illness. (Authors' abstr.)

VOL. CV. JULY, 1948.

Presidential Address. *Overholser, W.* 1
Studies in Electronarcosis Therapy. *Bowman, K. M., and Simon, A.* . . . 15
Brief Stimulus Therapy. *Liberson, W. T.* 28
Significance of Changes in EEG which Result from Shock Therapy. *Kennard, M. A., and Willner, M. D.* 40
The Problem Soldier and the Army. *Caldwell, J. M.* 46
Psychosis Occurring Among Psychopathic Personalities in Association with Inelastic Situations Overseas. *Ripley, H. S., and Wolf, S.* 52
The Sterilization of Psychotic Patients Under State Laws. *Gamble, C. J.* . 60
Penicillin Therapy in General Paresis. *Weickhardt, G. D.* 63

AUGUST.

The Selection of Psychiatric Cases for Prefrontal Lobotomy. *Kalinowsky, L. B., and Scarff, J. E.* 81
*Evaluation of Leucotomy Results. *Reitman, F.* 86
Psychiatry in the General Hospital. *Keyes, B. L., et al.* 90
*Presenile Psychosis. *Polatin, P., et al.* 96
*Early Senile Dementia in Mongoloid Idiocy. *Jervis, G. A.* 102
*Psychiatric Observations on Induced Vitamin B Complex Deficiency in Psychotic Patients. *Kreisler, Q., et al.* 107
Graduate Residency Training in Psychoanalytic Medicine. *Rado, S.* . . . 111
The Mutual Dependency of Professional Training in Psychology and Psychiatry. *Miller, J. S.* 116
A Proposed Classification of Psychotic Behavior Reactions. *Wittman, P., and Sheldon, W.* 124
Cerebral Topectomy. *Lewis, N. D. C.* 151

Evaluation of Leucotomy Results.

Investigations of dicharged cases after successful leucotomy resulted in the following findings:

1. The likelihood of a patient being discharged after leucotomy is greater if he is less than middle-aged; it does not depend on the preoperative duration of illness if the personality is preserved.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

2. Discharge is also significantly higher when leucotomy is performed as a low vertical incision.

3. It is demonstrated that personality modifications can be better achieved by the orbital than by the other types of operative incisions. These personality changes are attributable to structural damage of the lower quadrants of the frontal lobes.

4. These postoperative personality changes are superimposed on the pre-existing symptomatology, and it was found that patients showing introversion, lack of initiative, shallowness of affects, etc., are more likely to respond favourably to the low vertical cut.

5. The reintegration between the pre- and postoperative symptomatology is a function of the total personality. Deteriorated patients are incapable of readjustment, and only cases with well-preserved personalities should be operated upon.

(Author's abstr.)

Presenile Psychosis : Report of Two Cases with Brain Biopsy Studies.

Two cases of Pick's disease are presented in which brain biopsy studies were made. The clinical, differential diagnostic, and neuropathological aspects of these cases are discussed.

This long neglected and poorly understood clinical entity—the presenile psychosis—is now receiving the close attention and careful scrutiny of more progressive neuropathologists and biochemists. The emphasis is no longer on changes in morphology, but rather on the alterations occurring in the metabolism of brain tissue. With newer methods and finer techniques we can look forward to a better understanding of previously obscure neuropsychiatric disorders.

(Authors' abstr.)

Early Senile Dementia in Mongoloid Idiocy.

In 3 mongoloid patients, aged respectively 47, 42 and 37 years, personality changes and mental deterioration were observed. Pathologically, evidence of senile changes was obtained consisting of degeneration of neurons, numerous senile plaques, and Alzheimer's neurofibrillary changes.

With the exception of the age of onset, the clinical and pathological manifestations are those of senile dementia.

Since mongoloid patients show a marked tendency to develop this type of reaction, it is suggested that the study of it offers some information which may contribute to a better understanding of the causes of senile dementia.

(Author's abstr.)

Psychiatric Observations on Induced Vitamin B Complex Deficiency in Psychotic Patients.

These studies indicate that vitamin B complex restriction caused severe primary mental changes or aggravation of pre-existing psychotic trends among the psychotic subjects.

The character of the mental changes appeared to depend on speed and severity of the deprivation.

Patients whose B complex intake was so restricted that it contained 400 mcg. of thiamine and correspondingly small intake of other B complex factors showed diminution of psychomotor activity, dulling of affect, loss of interests and ambitions.

In some of the severely depleted patients whose thiamine intake was restricted to 200 mcg. daily, serious emotional disturbances with loss of inhibitory control developed. In others, pre-existing affective trends such as hypomanic and mildly depressive features became markedly exaggerated. The formation of paranoid trends also was observed.

Among the group moderately deprived of vitamin B complex the mental changes developed slowly in the course of three years. However, among the subjects severely deprived of vitamin B complex, mental disturbances manifested themselves explosively, acutely, or subacutely, after only a few months of depletion.

(Authors' abstr.)

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

AM. J. PSYCHOTHER.

VOL. I. 1947.

Hypnosis and Psychoanalytic Therapy. *Wolberg, L. R.* 412
A Class in Hypnotherapy. *Watkins, J. G.* 436
Hypnosis, Hypnoanalysis and Narcoanalysis. *London, L. S.* . . . 443
Occupational Neurosis in a Musician. *Gutheil, E. A.* 448
Occupational Neurosis in a Writer. *Morgenstern, M.* 468
Autobiography (III). *Stekel, W.* 479

VOL. II. 1948.

Mechanisms of Defense in Nazi Concentration Camps. *Bluhm, H. O.* . . 3
Incidental Observations During Psychiatric Surveys on Seven German Prisoners of War. *Eissler, K. R.* 33
Sadomasochistic Obsessions in an Indonesian. *Oesterreicher, W.* . . 64
Psychosis Among South-African Natives. *Sachs, W.* 123

ANN. MÉD.-PSYCHOL.

VOL. CVI. JULY, 1948.

Narcoanalysis: Possibilities and Limits. *Cossa, P.* 129
Arterial Tension and Electric-shock. *Deshaies, G., and Renault, M.* . . 137
A " Mania for Staying in Bed " (La Manie Lectuaire). *Benon, R.* . . . 148

ARCH. NEUR. PSYCHIAT.

VOL. LIX. MARCH, 1948.

*Organic Mental Syndrome with Phenomena of Extinction and Allesthesia. *Bender, M. B., et al.* 273
Pallhyposthesia. *Goldblatt, S.* 292
Psychosis Following Lobotomy in a Case of Sexual Psychopathy. *Friedlander, J. W., and Banay, R. S.* 302
Tensile Strength of Human Nerves. *Lui, C. T., et al.* 322
*Causes of Failure in Treatment with Electric Shock. *Rickles, N. K., and Polan, C. G.* 337
*Penicillin in Treatment of Neurosyphilis. IV. Tabes Dorsalis. *Chesney, L. P., and Reynolds, F. W.* 347
Subdural Hematoma. *Cohn, R.* 360
Distribution of Lesions of the Brain Stem in Poliomyelitis. *Barnhart, M., et al.* 368
Peripheral Neuritis Complicating Multiple Myeloma. *Kurnick, N. B., and Yohalem, S. B.* 378
*Involutional Psychosis: Course when Untreated and when Treated with Electric Shock. *Huston, P. E., and Locher, L. M.* 385
*The EEG in Cerebrovascular Disease. *Strauss, H.* . . . . .

Philadelphia Neurological Society.

Case of Extrapyramidal Disease of Twelve Years' Standing. *Hirschfield, B. A., and Yaskin, J. C.* 432
Post-operative Period of Survival of Twenty-Five Patients with Oligodendrogliomas of the Brain. *Shenkin, H. A., et al.* 434
An Electromyographic Study of Defects of Neuromuscular Transmission in Poliomyelitis. *Hodes, R.* 436
Electromyographic Studies on Cats after Section and Suture of the Sciatic Nerve. *Golseth, J. G., and Fizzell, J. A.* 438

Organic Mental Syndrome with Phenomena of Extinction and Allesthesia.

In a patient with severe mental deterioration, routine neurological examination disclosed minimal signs of a focal lesion in the brain. Special methods, however, such as bilateral simultaneous stimulations, revealed that the patient perceived best on the left side. Although she felt a stimulus applied to her right side, this percept became extinct as soon as another stimulus was applied to the left side of

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

her body (extinction phenomenon). In these circumstances she perceived only the one on the left side. The extinction phenomenon was found to be present when her cutaneous, kinesthetic, visual or auditory perceptions were thus tested. The patient also showed the phenomenon of allesthesia. Not infrequently she localized an object she saw, heard or felt to the left side, even though the stimulus object was applied to the right side of her midline.

Related to the sensory dominance of the left over the right side was the patient's preferred use of the extremities on the left side and her preference to turn toward her left side. Akin to the allesthesia was the finding of a disorientation in her cutaneous visual or auditory space on the right side of her body.

Besides the perceptual and motor disorders, the patient showed pronounced intellectual changes. Most conspicuous was the patient's inability to perform a task unless there was unity of idea or action. If there was more than one salient aspect in a situation, she failed in her task.

Theoretic explanations for the phenomena of extinction, allesthesia and spatial disorientation are offered, and the relation between the systematic perceptual-motor disorders and the systematic intellectual changes is discussed. These alterations in function can be best understood when considered in terms of collective action within the nervous system as a whole. (Authors' abstr.)

Causes of Failure in Treatment with Electric Shock : Analysis of Thirty-Eight Cases.

This report concerns 38 of a series of 200 patients who failed to respond favorably to shock treatment. The course of treatment usually consisted of a series of ten or twelve electroshock treatments. Patients who demonstrated schizophrenic features usually also received twenty-four to forty subcoma insulin shocks. Treatment was considered to have failed if satisfactory improvement was not maintained for at least one year.

The authors have learned to be cautious in drawing pessimistic conclusions at a relatively early phase of the process. The great value of ambulatory treatment after the patient has been discharged from hospital is to be emphasized repeatedly. They have seen patients make unexpected gains in an atmosphere which included understanding relatives. The clinician must learn to be slow in recommending institutional care, especially when the family is willing to assume responsibility in providing adequate home facilities. In cases in which such a provision is economically impossible, it should be the future aim in the treatment of functional psychoses to foster small, homelike state facilities, where a patient will not feel lost and forsaken, and where the sustaining members of the family can continue to visit and give affection and hope.

Shock therapy, in the authors' opinion, is apt to fail if the patient has in the past been a suspicious, socially inadequate person, if there is a long-standing psychoneurotic type of response to life situations and if the patient is in the menopause or postmenopausal period, and has lost a marital partner on whom she has been extremely dependent. The patient who for many years has sought an adjustment through religious identifications often will fail to respond to shock therapy. Their experience has also demonstrated that the manic patient does not respond favorably to electroshock.

The authors are aware of the small number of cases in their series and the lack of statistical proof for their deductions ; however, they have hoped by their report to stimulate others to make similar, comprehensive analyses of the conflicts in patients who have failed to respond to electroshock treatment and of the environmental factors which may have contributed to this failure. When this is done, conclusions may become available which may enable psychiatrists to be more effective and selective in the use of shock therapy in the future.

(Authors' abstr.)

Penicillin Treatment of Neurosyphilis. IV. Tabes Dorsalis.

Fifty-four patients with tabes dorsalis were treated with penicillin : 33 of these received penicillin alone ; 21, penicillin concurrently with therapeutic malaria.

With penicillin therapy alone, the preliminary results from this clinic indicate that the symptoms of 27 per cent. of patients were significantly improved. The effects on the cerebrospinal fluid were favorable in a high percentage of patients, although " inactivity " was not invariably attained. Febrile Herxheimer reactions

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

occurred only in patients with spinal fluids which gave strongly positive reactions for syphilis and were far less frequent than among patients with dementia paralytica.

With malaria and penicillin therapy, 57 per cent. of the authors' patients were adjudged to have shown significant symptomatic improvement. The effects on the cerebrospinal fluid were uniformly favorable.

A comparison of the results with penicillin alone and those with malaria and penicillin indicates clear-cut superiority for the combined therapy.

Penicillin treatment alone appears superior to therapy of the pre-penicillin era (as defined by the Co-operative Clinical Group) only in respect to its convenience and relative lack of toxicity.

Concurrently administered penicillin and therapeutic malaria is the most effective form of therapy for tabes dorsalis presently available. (Authors' abstr.)

Involutional Psychosis: Course When Untreated and When Treated with Electric Shock.

The courses of two groups of patients with involutional psychosis, a control group of 93 and a group of 61 treated by electric shock, are compared. The control group was followed for periods up to fifteen years, with an average of six and one-half years, after discharge; and the shock group, up to four years, with an average of three years.

In the control group, 46 per cent. of the patients recovered spontaneously after a median duration of illness of thirty-one months; 18 per cent. of the patients are still ill; 13 per cent. committed suicide, and 23 per cent. died. About one-half of these deaths were directly attributable to the mental illness. In the shock group, 80 per cent. of the patients were completely recovered or greatly improved for the whole follow-up period. The patients with the paranoid form showed a much poorer response than the patients with melancholia. A few patients who failed to respond to shock therapy did so when a second series was given later. Sixteen patients, or 31 per cent., relapsed after the first series of shock, and 11 of these received additional treatment; 80 per cent. again responded favorably. Shock treatment reduced the residence in hospital from a median of seven months to a median of one and one-half months.

In the control group it was indicated that the following factors had no important relation to the course: a positive family history of psychosis or instability, age of onset of the psychosis, acuteness of onset, sex and typicality of the psychosis. There was evidence that patients with organic factors in the onset died sooner after the onset than did those with mild symptoms.

In the shock group it was indicated that the following factors have little or no influence on the results of treatment: a positive family history of psychosis or instability, age of onset, premorbid personality characteristics, type of onset (endogenous, psychogenic), acuteness of onset, severity of symptoms, duration of illness before treatment, number of shocks and sex.

No factors could be found to characterize the patients who failed to respond to shock or who relapsed after treatment.

It is concluded that electric shock therapy should be applied early to patients with involutional psychoses, and should be repeated if failure or relapse occurs. It is also concluded that the factors analyzed for a possible relation to the results of shock can be neglected, in general, in efforts to understand the mechanism of shock therapy. (Authors' abstr.)

The Electroencephalogram in Cerebrovascular Disease.

An attempt is made to correlate clinical signs, symptoms and duration of illness with the type of electroencephalogram in 95 cases of cerebrovascular accident.

Some correlation was found to exist between the state of consciousness and the type of electroencephalographic abnormality obtained.

No correlation was found to exist between the presence or absence of gross hemispheric lesions and the electroencephalogram other than that an electroencephalographic focus, when present, corresponded to the anatomic site of the lesion as diagnosed from the clinical findings.

In none of the 14 cases in which convulsive seizures, generalized or jacksonian, occurred did an electroencephalographic pattern indicative of convulsive tendency appear.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Whereas no type of electroencephalographic abnormality is found to be associated only with brain tumor or with cerebrovascular disease, there are certain types of electroencephalograms, i.e., records with asymmetry of delta activity and with a focus of abnormal activity, which are seen much more frequently with tumors than with cerebrovascular disease. Also, irrespective of the type of electroencephalographic abnormality, a diminution in the degree of abnormality in repeat records favors the diagnosis of cerebrovascular disease rather than that of cerebral tumor. (Authors' abstr.)

ARCH. PSICOL. NEUROL. PSICHIAT.

VOL. IX. SEPTEMBER, 1948.

The Histopathology of Demyelination of the Nervous System from an Allergic Viewpoint. *Ferraro, A.* 237
The Action of Thiamine Chloride on Nerve. *Cazzullo, C. L., and Lorente de No', R.* 249
Observations on Rhythmic Oscillations of Potential of the Membranes of Nerve-fibres. *Cazzullo, C. L., and Lorente de No', R.* 251
Some Physical Aspects of the Technique of Encephalography. *Sacerdote, G. G.* 253
EEG, Scope, Possibilities and Method. *Marsan, C. A., and Fuortes, G. F.* . 260
An EEG for Clinical Use. *Galli, O.* 288
Does there Exist a Fundamental Psychopathological Attitude ? *Morselli, G.* 297
Contribution to the Study of Perception with Special Reference to Differential Psychology. *Dalla Volla, A.* 307

ARCH. PSYCHOL.

VOL. XXXII. 1947.

The Evolution of Length Comparisons from the Child to the Adult. *Würsten, H.* 1
Drawing Tests as Evidence of Mental Development. *Rey, A.* 145

BR. J. MED. PSYCHOL.

VOL. XXI. JULY, 1948.

The Play of a Psychotic Child. *Norman, E.* 155
Psychiatric Problems Amongst Evacuated Children. *Scott, W. C. M.* . . . 171
Children's Hostels in War and Peace. *Winnicott, D. W.* 175
Conclusions from Psychiatric Work with Evacuated Children. *Alcock, T.* . 181
Unconscious Form-creation in Art. *Ehrenzweig, A.* 185
Social Conflict and the Challenge of Psychology. *Money-Kyrle, R.* . . . 215
Some Notes on Suicide. *O'Connor, W. A.* 222

BR. J. PSYCHOL.

VOL. XXXVIII. JUNE, 1948.

" L'Appétit vient en Mangeant." *Flugel, J. C.* 171
Happiness and Unhappiness in the Childhood and Adolescence of a Group of Women Students. *Wall, W. D.* 191
The Use of Archaic Language in Religious Expression. *Welford, A. T.* . 209
Adjustments to Blindness. *Wilson, J. F.* 218
Humphrey's Paradox. *Fraser, D. C.* 227

BULL. LOS ANGELES NEUR. SOC.

VOL. XIII. JUNE, 1948.

The Neurologic Manifestation of Jaundice in the Newborn. *Mann, L. B., and Courville, C. B.* 69
Hyperostosing Osteoma of the Skull. *Courville, C. B., and Crockett, H. E.* . 86
Streptomycin Therapy. *Nielsen, J. M., and Marsh, C.* 99
Polioencephalitis Hemorrhagica Superior. *Miller, V. J.* 104

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

CANAD. J. PSYCHOL.

VOL. I. 1947.

Can Psychological Research be Planned on a National Scale? *MacLeod, R. B.* 177
Psychology from the Standpoint of a Psychiatrist. *Hincks, C. M.* . . 192
Generalization and Central Tendency in the Discrimination of a Series of Stimuli. *Philip, B. R.* 196
Studies in International Morse Code. *Morsh, J. E., and Stannard, A. F. B.* . 205
The Syracuse Case Study Tests. *Smith, D. . E.* 210

DIS. NERV. SYST.

VOL. IX. JUNE, 1948.

Use of Hypnosis in Neuropsychiatric Practice. *Rubinstein, H. S.* . . 167
*Unsuccessful Suicidal Attempts. *Arieff, A. J., et al.* 174
The Hyperventilation Syndrome. *Freeman, W.* 180
Psychogenic Factors in Parental Acceptance of Feebleminded Children. *Waterman, J. H.* 184
Morphine Withdrawal in Addicts by the Method of Prolonged Sleep. *Schlomer, G. M.* 187
*Changes in the EEG in Subjects under Hypnosis. *Ford, W. L., and Yeager, C. L.* 190

Unsuccessful Suicidal Attempts.

1. An unsuccessful suicidal attempt is frequently a serious symptom of a personality disorder.

2. Although unsuccessful, 60 per cent. could have met with death.

3. Pseudo or " fake " attempts are more common in the immature age group under 30 years.

4. The war period decreased both the actual and attempted suicides.

5. Alchoholism is a precipitating or accelerating factor in over 40 per cent. of cases.

6. Suicides cannot be traced to lack of intelligence. The problem is definitely one of the emotions.

7. Inability to work not related to obvious physical cause is an important warning of a personality disorder that may lead to suicidal attempt.

8. Suicidal attempts, serious or otherwise, are indications of mental tension and are not to be taken lightly. Each case justifies further psychiatric exploration.

9. There is no direct relationship between the seriousness of the mental disorder and the method employed in the suicidal attempt.

10. Patients attempting suicide should be sent to secure hospitals rather than to jail cells.

11. The duty of the general practitioner towards a suicidal patient transcends the ordinary practice of giving first aid. Techniques aimed at life saving, such as stomach pumping, antidote giving, and suturing of inflicted wounds are only the rudiments of treatment.

12. It becomes the obligation of the attending physician to set the stage for a proper psychiatric follow-up study of each individual suicidal attempt.

(Authors' abstr.)

Changes in the Electroencephalogram in Subjects under Hypnosis.

1. Hypnosis can be useful in obtaining good electroencephalographic tracings in some individuals where muscle potentials and tension interfere with the obtaining of a good readable record.

2. The electroencephalogram taken during the hypnotic state but otherwise under standard conditions is apt to show no fundamental change from that taken in the waking state.

3. Hypnotic modification of seeing does not change the electrocortical activity.

4. Hypnosis, *per se*, does not affect the cortico electrical physiology as recorded by the electroencephalograph, but changes in the emotional state of some subjects through hypnosis can modify the electrical activity. (Authors' abstr.)

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

JULY.

Pentothal Sleep as an Aid to the Diagnosis and Localization of Seizure Discharges of the Psychomotor Type. *Fuster, B., et al.* . . . 199
The Treatment of Epilepsy. *Hunter, H.* 203
Mental Hygiene in a World Crisis. *Masserman, J. H.* 210
Group Psychotherapy in the State Hospital. *Erseeff, G. S.* . . . 214
Misconceptions Concerning Hazards of Curarization with ECT. *Bennett, A. E.* 219

AUGUST.

*Thyroid Therapy in Some Mental Disorders. *Danziger, L., and Kindwall, J. A.* 231
*Prefrontal Lobotomy. *Gayle, R. F., and Fishburn, G. W.* 242
A Hyperglycemic Factor in the brain of so-called Schizophrenics. *Meduna, L. J., and Vaichulis, J. A.* 248
Causalgia of the Ulnar Nerve. *Gordon, A.* 251
*Incidence of Sensitivity to Mesantoin. *Belinson, L.* 252
Present Status of Electric Shock Therapy. *Hauser, A.* 254

Thyroid Therapy in Some Mental Disorders.

The hypothesis that cerebral anoxia is a necessary and sufficient condition for the development of psychiatric disorder is reviewed in the light of additional experimental and clinical evidence. If the theory is to be entertained, then it should be possible to abolish the psychiatric symptoms by relieving the anoxia. For reasons given, thyroid extract and thyroxin were used to relieve the postulated anoxia in 19 psychotic and 5 psychoneurotic patients. All of the psychotic and 2 of the psychoneurotic patients recovered.

It appears that thyroid replacement therapy, in sufficiently large and sustained doses, improves the prognosis in several types of mental disorder and reduces the number of necessary shock treatments, sometimes to zero. Some diagnostic indications are described, as well as tentative suggestions for a plan of therapy.

It is recognized that thyroid replacement therapy is a crude method of attacking the problem of cerebral anoxia, and that the number of patients described here is small. However, the results appear to be sufficiently promising to encourage further clinical trials. (Authors' abstr.)

Prefrontal Lobotomy.

1. A conservative and unbiased opinion on prefrontal lobotomy has been presented.

2. The history of psychosurgery parallels that of other fields of medicine—crude attempts at therapy based on superstition and ignorance followed by a strictly scientific approach including observation, anatomy and physiology; and, lastly, rational surgical experimentation.

3. The basis of prefrontal lobotomy rests on the premise that the prefrontal regions of the brain are the centers of affect and emotionality.

4. The chief indications for operation are the mental states of long standing accompanied by affective symptoms and over emotionality which have not responded to more conservative types of therapy.

5. Agitated and depressive states and psychasthenias appear to be most benefited. However, certain cases of dementia praecox and of psychoses with organic brain disease, if well selected, may show definite improvement.

6. Even in well selected cases good results are obtained only about fifty per cent. of the time.

7. Operative deaths are unusual and persistent, significant postoperative complications and intellectual defects infrequent.

8. Adequate convalescent care and rehabilitation, including psychotherapy, are essential.

9. Shock therapy or reoperation may be required if symptoms recur.

10. As a rule the operation is to be considered as a last resort.

(Authors' abstr.)

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Incidence of Sensitivity to Mesantoin : Effect of Dosage.

A total of 176 patients were given Mesantoin in varying dosages in order to evaluate the toxic skin manifestations. Epileptic patients were selected, since they were accustomed to taking medication and were more co-operative. There was no significant alteration in the white blood count in any of the author's patients, even the 4 that developed drug eruptions. However, Mesantoin was discontinued as soon as the eruption appeared, which seems to be a safe procedure in institution practice. The very slow, graduated dosage scheme used in Group A, while free of reactions, is definitely impractical. The percentage of patients developing a drug reaction, based on this small group, seems to be about 5 per cent. regardless of the dosage scheme, whether the scale in Group B is followed or the scale in Group D. The fact that the patients had been receiving so much medication previously perhaps explains the fact that only two of them complained of sleepiness on the six grains daily dosage. It appears that Mesantoin is a relatively safe anti-convulsive agent and can be used without any serious complications in 95 per cent. of cases. It appears further evident that the patients, in whom the skin manifestations have developed, may subsequently use this medication without re-appearance of the same type of toxic reaction. (Author's abstr.)

EDUC. PSYCHOL. MEASMT.

VOL. VIII. 1948.

Are Vocational Orientation Courses worth Their Salt *Stone, C. H.*? . . 161
An Optometric Aptitude Test. *Warren, N. D., and Canfield, A. A.* . . 183
Selection and Evaluation of West Point Cadets. *Baier, D. E.* . . . 193
On the Role of Directive and Non-directive Techniques in the Counseling Process. *Butler, J. M.* 201
Counseling—Eclectic or Systematic. *Bixler, R. H.* 211
An Application of Guttman's New Scaling Techniques to an Attitude Questionnaire. *Clark, K. E., and Kriedt, P. H.* 215
Comparisons of Self-Rating, Peer-Ratings, and Expert's Ratings on Personality Adjustment. *Powell, M. G.* 225
A Review of Some Problems Related to the Mail Questionnaire. *Norman, R. D.* 235
Personality Factors in the Psychological Weaning of College Women. *Sherman, A. W., jun.* 249

EGYPT. J. PSYCHOL.

VOL. III. 1948.

Social Problems and Psychology. *El Baroudi, W.* 343
Vocational Guidance Between Family and School. *Ibrahim, Z.* . . 349
Vocational Guidance and the Egyptian System of Education. *Abd El Meguid, A.* 357
Manual Dexterity. *Rageb, E.* 363
Some Reflections on Interviewing and Interviewers. *Smith, M., and Zaki, A.* 381
Psychology and Propaganda, *Green, G. H.* 387
Accidents in Industry. *Guerguers, S.* 393
Social Work in Industry. *El Saati, H.* 405
Psychology of Strikes. *El Rawi, M.* 417
Man and Industrial Trades. *El'Alem, M. A.* 433
Fatigue and Work. *El Châfe'i, A. M.* 461
Factor Analysis Explained. *English, H. B.* 475

INDIV. PSYCHOL. BULL.

VOL. VI. 1947.

The Importance of Alfred Adler for the Present. *Birnbaum, F.* . . . 164
The Basic Discrepancy of the Human Mind. *Gruenberger, F.* . . . 177
The Phenomenon of Overcompensation. *Seidler, R.* 185

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

INTERNAT. J. PSYCHOANALYSIS.

VOL. XXVIII. 1947.

Science and Belief. *Waddington, C. H.* 123
Analysis of a Schizophrenic State with Depersonalization. *Rosenfeld, H.* . 130
On the Intensive Affects Encountered in Treating a Severe Manic-depressive Disorder. *Scott, W. C. M.* 139
Circumcision and Problems of Bisexuality. *Nunberg, H.* 145
A Generalized Hedonic Theory of the Ego. *Baggally, W.* 179
A Note on a Child's Game. *Baggally, W.* 198

J. AB. SOC. PSYCHOL.

VOL. XLIII. JULY, 1948.

Generalized Mental Rigidity as a Factor in Ethnocentrism. *Rokeach, M.* . 259
The Identification of " Racial " Membership. *Carter, L. F.* . . . 279
A Technique for Investigating Interpersonal Relations in a Mental Hospital. *Hyde, R. W., and York, R. H.* 287
Play Therapy and Race Conflict in Young Children. *Axline, V. M.* . . 300
The Effects of War upon the Intelligence of Youth. *de Groot, A. D.* . . 311
Forming Impressions of Personality. *Luchins, A. S.* 318
The " Intuition Questionnaire." *Sherriffs, A. C.* 326
Interpreting Mood and Activity in TAT Stories. *Garfield, S. L., and Eron, L. D.* 338
The Nature of Color Shock. *Wallen, R.* 346

J. ANAT.

VOL. LXXXII. JULY, 1948.

Quantitative Histology of Wallerian Degeneration. *Thomas, G. A.* . . . 135
Changes in Nuclear Population Following Twenty-one Days' Degeneration in a Nerve Consisting of Small Myelinated Fibres. *Joseph, J.* 146
The Connexions of the Spinal Sub-arachnoid Space with the Lymphatic System. *Brierley, J. B., and Field, E. J.* 153

J. CLIN. PSYCHOL.

VOL. IV. APRIL, 1948.

Qualitative Aspects of Psychological Examining. *Carter, J. W., jun., and Bowles, J. W., jun.* 109
The H-T-P Test. *Buck, J. N.* 151
Ocular Activity during Administration of the Rorschach Test. *Blake, R. B.* . 159
A Plan for the Objective Measurement of Character. *Jastak, J.* . . . 170
Directive Psychotherapy. XV: Pressure and Coercion. *Thorne, F. C.* . 178
A Proposed System for Scoring the TAT. *Shorr, J. E.* 189
Test Scores of Psychoneurotic Returnees Before and After Convalescent Furlough. *Klugman, S. K.* 195
A Study of Progress in Psychotherapy. *Wiener, D. N., and Phillips, E. L.* . 201
Visual Aids in Group Psychotherapy for Veterans with Psychosomatic Complaints. *Stein, M. I.* 206
Diagnostic and Prognostic Significance of the Shut-in Personality Type, etc. *Wittman, P.* 211
Parent Education and Group Therapy. *Smith, A. J., et al.* 214

JULY.

Symposium—Critical Evaluation of Nondirective Counseling and Psychotherapy. 225
The Occupational Adjustment of the Psychoneurotic Veteran. *Sprol, S. J.* 264
Experimental Frustration in Human Adults. *Stafford, J. W., and Hsü, E. H.* 269
The Attitude of the Psychopath. *Cason, H.* 276
The Test Performance of the Mind Diseased. *Allen, R. M.* 281
Personality Characteristics of Selected Disability Groups. *Wiener, D. N.* . 285
Directive Psychotherapy. *Thorne, F. C.* 290

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

J. CONS. PSYCHOL.

VOL. XII. 1948.

The Status of Diagnostic Psychological Testing. *Rapaport, D.* . . . 1
On the Objective and Subjective Aspects of Diagnostic Testing. *Schafer, R.* 4
The Use of Projective Methods in Group Testing. *Munroe, R. L.* . . 8
The MMPI: VI. *McKinley, J. C., et al.* 20
*A Preliminary Appraisal of Wechsler-Bellevue Scatter Patterns in Schizophrenia. *Garfield, S. L.* 32
Annotated Bibliography on the Oseretsky Tests of Motor Proficiency. *Lassner, R.* 37
The Validity of Some Abbreviated Individual Intelligence Scores. *Hunt, W. A., et al.* 48
*A Study of the Hunt-Minnesota Test for Organic Brain Damage at the Upper Levels of Vocabulary. *Juckem, H., and Wold, J. A.* . . . 53

A Preliminary Appraisal of Wechsler-Bellevue Scatter Patterns in Schizophrenia.

Subjects used in this study consisted of 67 schizophrenics and 46 non-psychotic patients, all hospitalized in a V.A. Hospital. On the basis of the data presented in this study, it would appear that as yet there are no reliable scatter patterns on the W.-B. Scale for schizophrenic subjects. Possible interpretations are offered for the variation in findings among different investigators.

S. G. DULSKY (Psychol. Abstr.).

A Study of the Hunt-Minnesota Test of Organic Brain Damage at the Upper Levels of Vocabulary.

This study was made to determine the adequacy of the Hunt norms (for determining intellectual deterioration) when testing superior subjects. It is concluded that only negative significance can be attached to results of the Hunt test when administered to persons of superior vocabularies. Predicted deterioration scores for persons with superior vocabularies are far too high. It is suggested that there is little or no relationship between vocabulary score and performance on the deterioration tests for individuals of above average ability.

S. G. DULSKY (Psychol. Abstr.).

Psychotherapy and Counseling. *Sanford, R. N.* 65
On Goals, Methods and Tactics in Psychotherapy. *Hunt, H. F.* . . 68
Concerning the Therapeutic Relationship in the Dynamics of Cure. *Estes, S. G.* 76
The Self-experience of the Psychotherapist. *Wyatt, F.* 82
The Development of Non-directive Therapy. *Raskin, N. J.* . . . 92
Psychological Dynamics in Allergic Patients as Shown in Group and Individual Psychotherapy. *Miller, H., and Baruch, D. W.* . . . 111
The Contingency Technique. *Greco, M. C.* 116
A Note on Diagnosis and Therapy. *Sharp, A. A.* 120

J. EDUC. PSYCHOL.

VOL. XXXIX. 1948.

An Experimental Investigation of Association and Dissociation in Learning. *Dutton, E.* 1
The Rate of Forgetting. *Gilliland, R. E.* 19
A Statistical Index of Participation in Discussion. *Findley, W. G.* . . 47

J. EX. PSYCHOL.

VOL. XXXVIII. AUGUST, 1948.

The Effect of Low Intensities of Hunger on the Behavior Mediated by a Habit of Maximum Strength. *Saltzman, I., and Koch, S.* . . . 347
The Effect of Success and Failure upon the Attractiveness of Activities as a Function of Experience, Expectation and Need. *Gebhard, M. E.* . . 371

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Stimulus Identity as Related to Response Specificity and Response Generalization. *Wickens, D. D.* 389
Measurement of Accommodation and Convergence Time as Part of a Complex Visual Adjustment. *Travis, R. C.* 395
A Behavioral Analysis of Degree of Reinforcement and Ease of Shifting to New Responses in a Weigl-Type Card-sorting Problem. *Grant, D. A., and Berg, E. A.* 404
Spatial Orientation in the White Rat. *Wilcoxon, H. C., and Waters, R. H.* . 412
The Influence of Intensity of Unconditioned Stimulus upon Acquisition of a Conditioned Response. *Passey, G. E.* 420
" Spontaneous Recovery " of Verbal Associations. *Underwood, B. J.* . . 429
*Anxiety-Produced Interference in Serial Rote Learning with Observations on Rote Learning after Partial Frontal Lobectomy. *Malmo, R. B., and Amsel, A.* 440
Studies in Space Orientation: II. *Asch, S. E., and Wilkin, H. A.* . . 455
Patch Characteristics of Short Tones: II. *Doughty, J. M., and Garner, W. R.*. 478

Anxiety-Produced Interference in Serial Rote Learning with Observations on Rote Learning after Partial Frontal Lobectomy.

1. Sixteen psychiatric patients, with severe anxiety as the predominant symptom, and sixteen control Ss learned lists of eight nonsense syllables by the anticipation method with massed practice at a four-second rate of syllable presentation. In addition, six cases of bilateral frontal gyrectomy followed the same procedure.

2. The results obtained in the present experiment were in agreement with the predictions from the following hypothesis: The forgetfulness of the anxious patient is due to anxiety-produced interference between the relevant responses and the irrelevant responses generated out of the patient's anxiety-state. The interference value of the tendencies to irrelevant response may be decreased through voluntary effort on the part of the patient.

3. From the results of the present study it appeared that the method of serial learning affords a means of separating the two effects of anxiety-produced interference and intra-serial interference. The locus of the former appeared confined, primarily, to the anterior portion of the series, whereas, as is well known, the maximum of the latter occurs in the middle, or slightly to the right of center.

4. Continued practice in memorization appeared not to reduce the degree of anxiety-produced interference in patients.

5. The fact that end-decrement appeared in the curve for patients with " clinical anxiety " without appearing in the control curve strongly suggests that the phenomenon was anxiety-produced.

6. The gyrectomy curve, compared with the curves for the " non-organic " groups, has the appearance which would be predicted from the hypothesis that frontal lobe damage increases susceptibility to intra-serial interference. The greatest absolute differences occurred in the central portion of the series. Further research with matched groups is required before definite conclusions may be drawn concerning the effects of frontal lobe removal upon degree of susceptiblity to associative interference. (Authors' abstr.)

J. GEN. PSYCHOL.

VOL. XXXVIII. APRIL, 1948.

The Lockean Error in Modern Psychology. *King, C. Daly* . . . 129
The Relationship Between the Ability to Make a Diagnosis and to Select Appropriate Remedial Procedures. *Horrocks, J. E., and Nagy, G.* . 139
Factor Analysis, Differential Bio-process and Mental Organization. *Hsü, E. H.* 147
An Application of the Multiple Regression Principle to Clinical Prediction. *Klein, G. S.* 159
Relaxation in Therapy. *Gunderson, E. J.* 181
The Effect of Maze Rotation on Learning. *Langhorne, M. C.* . . . 191
The Effect of Negative Incentive in Serial Learning: III. *Stone, G. R.* . 207
The Significance of Weighted and Unweighted Items in Differentiating Between Groups. *Durea, M. A., and Norman, R. D.* 217

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

J. NEUR. NEUROSURG. PSYCHIAT.

VOL. XI. FEBRUARY, 1948.

Cerebellar Abscess. *Pennybacker, J.* 1
Cause and Mechanism of Symptom-Production in Sciatica and Low-Back Pain. *Falconer, M. A., et al.* 13
Neuropathological Aspects of Thrombocytic Acroangiothrombosis. *Adams, R. D., et al.* 27
Primary Cerebral Hydatid Cysts. *Phillips, G.* 44
Clinical Characteristics, Treatment and Rehabilitation of Repatriated Prisoners of War with Neuroses. *Jones, M., and Tanner, J. M.* . . . 53
Psychological Symptoms and Physiological Response to Exercise of Repatriated Prisoners of War with Neurosis. *Tanner, J. M., and Jones, M.* 61

MAY.

Primary Sensory Neuropathy with Muscular Changes Associated with Carcinoma. *Denny-Brown, D.* 73
*Phantom Limbs. *Henderson, W. R., and Smyth, G. E.* 88
Pain in Deep Somatic Structures. *Feindel, W. H., et al.* 113
*Physiological Mechanisms Underlying the Electrical Activity of the Brain. *Brazier, M. A. B.* 118
*Rôle of Acetylcholine in Synaptic Transmission. *Whitteridge, D.* . . . 134

Phantom Limbs.

1. A study of some three hundred cases of amputation showed that a phantom limb is a natural and almost universal sequel to amputation.

2. Three kinds of sensory phenomena may appear; (*a*) Mild tingling, which forms the basic part of the phantom in nearly every case and probably arises in the cerebral cortex; (*b*) stronger pins and needles induced momentarily by touching a neuroma in the stump; (*c*) occasionally, superadded sensations which may be disagreeable and painful and probably have a psychogenic basis. Rarely a syndrome resembling causalgia is seen.

3. Special attention has been given to what is termed the " natural phantom," by which is meant the basic sensory tingling, its motor counterpart, the impression of willed movements, and other features. The spontaneous tingling appears in those parts (chiefly thumb, index and great toe) having the largest cortical representation, and the belief that it originates in the sensori-motor cortex is strengthened by its close functional relationship with the motor phenomena. The willed movements also are stereotyped, and are most developed in relation to leading parts of the limb; they are associated with observable contraction of the appropriate muscles in the stump, and their behaviour reflects the fundamental importance of sensation in initiating and controlling voluntary movements. The phantom can be induced and intensified by a variety of reflex factors (for example, micturition) acting centrally.

4. The behaviour and evolution of the " natural phantom " is as if the related cerebral centres were for a time in a state of heightened activity, the later subsidence of which results in telescoping of the phantom and its eventual fading from consciousness, and perhaps also in the disappearance from subconscious levels of its neuronal patterns.

5. Unusual superadded sensations sometimes appear which are peculiar to the patient, and are believed to be psychogenically determined from the highest cerebral level. They may be mild, representing incidents in the patient's past experience, or, rarely, disagreeable—severe spontaneous pain, distorted attitudes, and involuntary spasmodic movements—dominating the phantom. The continuation in the phantom of pre-amputation pain or posture seems to be determined, in many cases at least, by its psychological importance and not by its severity or duration.

6. The phantom cannot, therefore, be considered as a single entity, for its manifestations may be derived from three levels in the nervous system (psychogenic, sensori-motor cortex, and peripheral nerve), and, before operating, it is important to determine to which of these the patient's complaints are most attributable.

7. Peripheral operations on the stump, apart from neurectomy for a sensitive neuroma, usually have no effect on the phantom. Occasionally, in suggestible

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

patients and following a gratifying operation on the stump, the phantom may be suppressed. (Authors' abstr.)

Physiological Mechanisms Underlying the Electrical Activity of the Brain.

The results are reported of continuous automatic frequency analysis of electro-encephalograms recorded from human subjects throughout periods of (1) mild hypoxia without loss of consciousness; (2) mild hypoglycaemia without loss of consciousness; (3) loss of consciousness induced by pentothal anaesthesia; (4) loss of consciousness occurring briefly in one case of fainting.

The data are reviewed in the light of existing hypotheses as to physiological mechanisms, and evidence is presented to show that the observed frequency changes caused by oxygen lack and low blood-sugar level are changes in the same neuronal population rather than a replacement by activity from other cell units. The changes in pentothal anaesthesia are more complex, and are discussed in comparison with those found in loss of consciousness in the absence of the drug.
(Author's abstr.)

Role of Acetylcholine in Synaptic Transmission—Critical Review.

1. The evidence for the mode of action of acetylcholine on nerve and muscle suggests that although it produces depolarization at the nerve muscle junction, it does not do so on nerve or on heart muscle. Its first effect on heart muscle is to reduce the negative after-potential, and to reduce the refractory period.

2. Recent advances in neurophysiology have depended on the analysis of the so-called simple reflex by means of the stimulation of units of uniform function, by recording from as few units as possible and by the accurate analysis of events in time. These methods have as yet hardly been applied to the study of the effects of ACh and anticholinesterases on the central nervous system.

3. The data at present available suggest that the excitation of a motoneurone is due to the cathodal polarizing effect of the synaptic potential set up by the afferent volley. ACh seems to have no effect on this process. The main action of ACh in the central nervous system seems to be the facilitation of repetitive activity, particularly in interneurones. The mode of production of this inter-nuncial facilitation is at present a subject for speculation. (Author's abstr.)

AUGUST.

Treatment of Purulent Pachymeningitis and Subdural Suppuration with Special Reference to Penicillin. *Schiller, F., et al.* 143
Necrosis of the Brain due to Radiation Therapy. *Pennybacker, J., and Russell, D. S.* 183
Hemangiomas Involving the Spinal Epidural Space. *Guthkelch, A. N.* . 199
Laminar Pattern of the Lateral Geniculate Body in the Primates. *Chacko, L. W.* 211

J. NEUROPATH. EXPER. NEUROL.

VOL. VII. JULY, 1948.

Chronic Experimental Allergic Encephalomyelitis in Monkeys. *Ferraro, A., and Cazullo, C. L.* 235
Alterations in the Structure of Nerves Caused by Restricting their Growth with Ligatures. *Duncan, D.* 261
Pyridoxine and Pantothenic Acid Deficiency in Swine. *Swank, R. L., and Adams, R. D.* 274
Granuloblastoma of the Cerebellum. *Saccone, A., and Epstein, J. A.* . . 287
Angioblastic Neoplasms of the Brain. *Corradini, E. W., and Browder, J.* . 299
Experimental Allergic Encephalomyelitis. *Jervis, G. A., and Koprowsky, H.* 309
Post-traumatic Cerebral Swelling Resulting in Cyst Formation. *Scheinker, I. M., and Segerberg, L. H.* 321
Relation of the Changes in the Brain to those in the Skull of Crouzon's and Similar Diseases. *Eshbaugh, D.* 328

J. NEURO-PHYSIOL.

VOL. XI. JULY, 1948.

Effect of Delay of Innervation on Recovery of Muscle after Nerve Lesions. *Gutmann, E.* 279

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Response of Single Ranvier Nodes to Electrical Stimuli. *Tasaki, I., and Mizuguchi, K.* 295
Modification of the Electric Response of a Single Ranvier Node by Narcosis, etc. *Tasaki, I., et al.* 305
Action Currents of Single Nerve Fibres as Modified by Temperature Changes. *Tasaki, I., and Fujita, M.* 311
Production of an Alternating Tremor at Rest in Monkeys. *Ward, A. A., jun., et al.* 317
Effect of Potassium on " Resting " Potential and Respiration of Crab Nerve. *Shanes, A. M., and Hopkins, H. S.* 331
Properties of a Single Synapse in the Stellate Ganglion of Squid. *Bullock, T. H.* 343
An Analysis of Synaptic Excitatory Action. *Brooks, C. M. C., and Eccles, J. C.* 365
*Temporal and Spatial Distribution of Changes During Spontaneous Seizures in Monkey Brain. *Ward, A. A., jun., et al.* 377
Antidromic Potential Recordings from the Bulbar Pyramid of the Cat. *Brookhart, J. M., and Morris, R. E.* 387

Temporal and Spatial Distribution of Changes During Spontaneous Seizures in Monkey Brain.

The cortical scar produced by the application of alumina cream is chemically different from the rest of the cortex, as shown by the random fluctuations of its noble metal potential but not by its pH. Occasionally it exhibits electrical seizures of the general form seen in the cortex during *grand mal* seizures. These disturbances may spread through the felt-work of the cortex to contiguous areas, or provoke similar disturbances in remote regions of the cortex and some deeper structures, but only in those to which the discharging region sends axons or collaterals. Changes in the pH and noble metal potential in a given region are the same, and bear the same relation to the electrical discharge in it during the spontaneous seizure of the chronically convulsant cortex, as during similar induced seizures. Like the scars from which such seizures arise in man, the lesion in the monkey's cortex is characterized by a zone of increased vascularity, gliosis and pathological neurons. (Authors' abstr.)

J. NEUROSURG.

VOL. V. JULY, 1948.

Spontaneous Rupture of the Cerebral Ventricles. *Torkildsen, A.* . . . 327
The Repair of Cranial Defects with Zirconium. *Bates, J. I., and Reiners, C. R.* 340
The Reaction of Cerebral Tissue to Silver, Tantalum and Zirconium. *Bates, J. I., et al.* 349
Vascular Tumors of the Brain and Spinal Cord and their Treatment. *Trupp, M., and Sachs, E.* 354
Surgical Management of Metastatic Brain Abscess. *Rizzoli, H. V., et al.* . 372
Subarachnoid Alcohol Block in Paraplegia. *Sheldon, C. H., and Bors, E.* . 385
The Clinical Use of Fluorescein in Neurosurgery. *Moore, G. E., et al.* . . 392

J. NERV. MENT. DIS.

VOL. CVIII. JULY, 1948.

Psychiatric Aspects of Spontaneous Hypoglycemia. *Bass, M., and Giovacchini, P. L.* 1
The Effort Syndrome and Low-Back Pain. *Moloney, J. C.* 10
*Aldarsone and Bismuth Combined in the Treatment of Neurosyphilis. *Eisenberg, H., and Hershfield, A. S.* 25
Herniated Disc Simulating Cord Tumor. *Kennedy, F., et al.* 32
Clinical Studies of Psychoses in the Navy. *Aldrich, C. K., and Coffin, M.* . 36
Spinal Fluid Sugar in Subarachnoid Hemorrhage. *Madonick, M. J., and Savitsky, N.* 45
Psychotic Reactions Among Soldiers of World War II. *Paster, S.* . . . 54
Painful Hemiplegia. *Gordon, A.* 67

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Aldarsone and Bismuth Combined in the Treatment of Neurosyphilis.

(1) One hundred cases of various types of neurosyphilis received 2,400 injections of aldarsone and bismuth, concurrently, i.e. 1 gm. of aldarsone and 1 c.c. of bismuth salicylate (2 gm., equivalent to 75 mm. metallic bismuth).

(2) Both drugs were given over a period of 24 weeks, once a week, without any interruptions.

(3) There were 41 cases of asymptomatic and 59 cases of symptomatic neurosyphilis.

(4) 43 per cent. improved in cell count; 69 per cent. decreased in mg. per cent. protein; 12 per cent. showed a reversal in Eagle Wassermann in the spinal fluid; 58 per cent. showed reduction in titer of the Eagle Wassermann (70 per cent. of cases, reduction in titer); 15 per cent. showed negative colloidal gold curve and 51 per cent. showed a decrease in the colloidal gold curve (66 per cent. of cases decreased gold curve).

(5) 7 per cent. were completely negative; 5 per cent. increased in all elements; 66 per cent. improvement, which includes the 7 per cent completely negative; 34 per cent. showed no improvement, which includes the 5 per cent increased in all elements, in spite of therapy.

(6) No toxic reactions were noted in any of the cases during or after treatment.

(7) Aldarsone and bismuth treatment, concurrently, is a safe method in the ambulatory treatment of neurosyphilis. (Authors' abstr.)

AUGUST.

*Studies of Finger Capillaries in Schizophrenia and Manic-depressive Psychoses. *Hauptmann, A., and Myerson, A.* 91
Wernicke's Disease and the Vegetative Nervous System. *Hess, L.* . . 109
Neurosurgical Lesions Diagnosed as Multiple Sclerosis. *Rosner, S.* . . 113
*Mesantoin in the Treatment of Epilepsy. *David, N. A., et al.* . . . 118
Obesity Following Cerebral Injury. *Pisetsky, J., and Roswit, B.* . . 129
A Note on Some Basic Concepts of Psychotherapy. *Bellak, L.* . . . 137
Clinical Studies of Psychoses in the Navy. *Aldrich, C. K., and Coffin, M.* . 142
Compulsive Neurotic Criminalism with Hysterical Features Based on Sexual Psychopathy. *Lipton, H. R.* 149

Studies of Finger Capillaries in Schizophrenia and Manic-depressive Psychoses.

(1) Mentally and emotionally "normal" individuals show a normal structure of the capillaries of the finger-nail fold.

(2) Mentally deficient children, whose retardation was not caused by environmental factors, show an immature, arrested picture of their finger capillaries.

(3) It was found in previous investigations that constitutionally neurotic individuals show abnormal features of their capillaries, and that patients with idiopathic epilepsy show an immature picture of their capillaries.

(4) The present investigations show that typical schizophrenics and manic-depressives have a definitely different capillary picture in a high percentage of cases; schizophrenics show a picture similar to that seen in normal children prior to the end state of the capillary development. The picture of manic-depressives is similar to that seen in neurotics.

(5) Schizophrenics with mainly paranoid or hallucinatory symptoms show either a mixture of both features, or normal capillaries, or the picture of the manic-depressive group.

(6) The structure of the capillaries is a constitutional feature, and not influenced by the evolution of the psychosis. It does not change during the remissions, and it is independent of the effect of the electric shock treatment.

(7) The immaturity of the capillary picture of schizophrenics corresponds to the traits of immaturity found in the clinical and characterological picture of many schizophrenics. (Authors' abstr.)

Methyl Hydantoin (Mesantoin) in the Treatment of Epilepsy.

A new anticonvulsant drug, 3-methyl, 5,5,phenylethylhydantoin, called "mesantoin" or methyl hydantoin, was tried for periods as long as eight months in

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

the treatment of 20 patients with epilepsy. Eleven patients were diagnosed as having *grand mal* seizures, 5 as *petit mal* epilepsy, 3 patients had both *grand mal* and *petit mal* attacks, and one had jacksonian epilepsy. In *grand mal*, administration of methyl hydantoin proved more effective than previously used drugs in 7 of 11 patients. The number of *petit mal* attacks was decreased in each of the 16 patients suffering from this condition. Inconclusive results were obtained in the 3 patients with both *grand mal* and *petit mal* due to too brief a period of observation. Dermatitis was caused by the drug in 3 patients, 1 patient complained of gastritis, another experienced an episode of toxic psychosis following administration of only 4 tablets, and 10 patients noted stimulatory effects. Dopiness, gum hyperplasia or depression of the white cell count was not noted by us. In the authors' opinion methyl hydantoin is an effective drug in the treatment of *grand mal* epilepsy, and is especially useful in those cases where phenobarbital causes undue mental depression, or where either phenobarbital or diphenylhydantoin sodium are ineffective. It appears somewhat more effective in the treatment of *petit mal* than diphenylhydantoin, and should be given elinical trial in those cases of either *grand mal* or *petit mal* epilepsy where other drugs are ineffective or not tolerated. (Authors' abstr.)

J. PHYSIOL.

VOL. CVII. JUNE, 1948.

The Influence of Ovarian Hormones on the Transmission of the Activity of the Sympathetic Nerves in the Cat. *Secker, J.* 265
*The Action of Acetylcholine and Adrenaline on Flexor and Extensor Movements Evoked by Stimulation of the Descending Motor Tracts. *Bülbring, E., et al.* 289
*Some Effects of Nicotine-like Substances and their Relation to Sensory Nerve Endings. *Brown, G. L., and Gray, J. A. B.* 306
*The Effect of Diisopropylfluorphosphonate (DFP) on Neuromuscular Transmission in Cats. *Brown, G. L., et al.* 346
*Acetylcholine Synthesis in Different Regions of the C.N.S. *Feldberg, W., and Vogt, M.* 372

The Action of Acetylcholine and Adrenaline on Flexor and Extensor Movements Evoked by Stimulation of the Descending Motor Tracts.

1. The effect of acetylcholine and adrenaline has been studied separately on extensor and flexor responses produced by stimulation of the descending tracts in the medulla. The observations were made in decerebrate cats in which the sensory roots were divided. The substances were injected intra-arterially so as to pass through the spinal arteries to the cord.

2. The effect of acetylcholine was observed as (*a*) a simple increase in extensor responses; (*b*) a simple depression of extensor responses or one which is preceded by a transient phase of facilitation; (*c*) a simple increase of flexor responses or one which is preceded by a transient phase of depression; (*d*) a depression of flexor responses. The effects (*b*) and (*c*) were commonly observed; the effects (*a*) and (*d*) were rare.

3. The effect of a single injection of adrenaline was observed as (*a*) no effect at all, or a simple depression of extensor responses when the effect of acetylcholine was as in 2 (*a*); (*b*) an increase of the extensor responses (corresponding to 2 (*b*)); (*c*) a depression of flexor responses (corresponding to 2 (*c*)); (*d*) an increase of flexor responses or no effect at all (corresponding to 2 (*d*)); (*e*) a restoration of extensor and flexor responses when these had been blocked by acetylcholine.

4. Slow intravenous infusion of adrenaline modified the action of acetylcholine, so that (*a*) facilitation of extensor response was changed to depression of extensor response; (*b*) the same depression of extensor responses was produced by a much smaller dose of acetylcholine; (*c*) a depression of flexor responses by acetylcholine was no longer seen.

5. It is possible to produce flexion by the intra-arterial injection of acetylcholine in the absence of medullary stimulation. This flexion is abolished by adrenaline, which produces extension. (Authors' abstr.)

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Some Effects of Nicotine-like Substances and Their Relation to Sensory Nerve Endings.

1. Arterial injection of nicotine and acetylcholine into the skin or mesentery of cats and dogs causes a centripetal discharge of impulses in the nerves supplying the injected area.

2. The response is not abolished by atropine, and is not elicited by acetyl-β-methylcholine or histamine.

3. Large doses of nicotine and large doses of acetylcholine, after eserine, abolish the sensitivity of the preparation to subsequent doses, but not to mechanical stimuli.

4. The impulses probably arise through the direct chemical stimulation of some part of the terminations of the sensory nerves, although we have failed to obtain them from single Pacinian corpuscles. (Authors' abstr.)

The Effect of Diisopropyl Fluorophosphonate on Neuromuscular Transmission in Cats.

1. In decerebrate cats (2–3 kgm.) the arterial injection of 100–200 μg. of DFP causes an increase of tension response of the tibialis anterior to single maximal motor nerve volleys. This potentiation is due to repetitive contraction of the muscle fibres and is followed by a period of depressed response, during which the contraction is still repetitive. By intravenous injection DFP is effective only in very large doses (10 mgm./kgm.).

2. During and after the DFP potentiation stimulation of the nerve at 50–200/sec. for 5–10 seconds produces a poorly sustained contraction, which is followed by a transient depression of the response to single nerve volleys; a similar but more permanent depression of the response to single nerve volleys is produced by an arterial injection of acetylcholine.

3. The depressant effects observed after DFP result from an action of acetylcholine, which produces neuromuscular block and a condition of inexcitability of the muscle fibre, both when the acetylcholine is injected or released at the nerve endings.

4. On the denervated muscle an arterial injection of even 2 mgm. of DFP has no effect. A subsequent injection of acetylcholine produces a contracture which is greater and more prolonged than that which occurs in the untreated muscle; it is followed by a profound depression of the response of the muscle to direct electrical excitation.

5. The fact that DFP has a greater affinity for pseudo- than for true cholinesterase must be taken into account when the effect of arterial and intravenous injections of DFP on neuromuscular transmission are compared with those of eserine. (Authors' abstr.)

Acetylcholine Synthesis in Different Regions of the Central Nervous System.

1. The distribution of the enzyme or enzyme system which forms acetylcholine in the central nervous system of the dog has been determined by examining over forty separate regions with the use of a very sensitive quantitative method for the estimation of acetylcholine synthesis.

2. An attempt has been made to differentiate between cholinergic and non-cholinergic neurons in the central nervous system.

3. The results indicate that some at least of the motor and sensory pathways consist of chains of neurons which are alternately cholinergic and non-cholinergic in character. (Authors' abstr.)

J. PSYCHOL. NORM. PATH.

VOL. XL. 1947.

The Focusing of Visual Attention and its Disorders. *Tournay, A.* . . 257
The Homing Tendency in *Carausius morosus*. *Chaurin, R.* . . . 281
Some Considerations and Experiences on Vibratory Sensitivity. *Periphou, P.* 293
Sleep and Dreams According to Indian Doctors and Greek Physiologists. *Filliozat, J.* 326
*A Theory on the Identity of Dreams and Disturbed Thinking. *Ey, H.* . 347

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

A Theory on the Identity of Dreams and Disturbed Thinking.

Opposing both mechanistic and psychogenic theories of dreams and psychoneurotic and psychotic symptoms, the author offers a psychiatric theory based on the principles of Hughlings Jackson which would account for these phenomena within a common framework. Immanent in man's consciousness is a substratum of images representing his memories, wishes, etc. (the unconscious). Normally held in check, though utilized in the integrated functioning of the mind, this "sedimentation" may be released in varying degrees depending upon the level of dissolution which affects the field of consciousness. Sleep or the disease process may be regarded as the negative disorder, the resulting dream or symptom representing the positive aspect of the interference with the normal "trajectory of the personality." The dream, neurotic or psychotic symptom is that which is left of the personality when consciousness, the integrating principle, dissolves, and is itself engulfed in the world of images which forms the substratum of the mind.

M. SHEEHAN (Psychol. Abstr.).

J. SOC. PSYCHOL.

VOL. XXVII. MAY, 1948.

The Spiritual Nature of Man. *Rusk, G. Y.* 151
Attitude and Belief in Relation to Occupational Stratification. *Centers, R.* 159
Differential Characteristics of Superior and Unselected Negro College Students. *Jenkins, M. D., and Randall, C. M.* 187
Symbolic Value as an Organizing Factor in Perception. *Bruner, J. S., and Postman, L.* 203
The Effect of Experiences of Contrasted Groups upon the Formation of a New Scale of Judgment. *Tresselt, M.* 209
Applications of the Standard-Score I.Q. to Social Statistics. *Johnson, D. M.* 217
Autocratic *v.* Democratic Beliefs and Practices of Senior Students in Schools of Nursing. *Nahm, H.* 229
Some Psychological Hypotheses on Nazi Germany. III. *Kecskemeti, P., and Leitas, N.* 240

KWART. PSYCHOL.

VOL. XIII. 1947.

On the Learning of Other's Psychical States. *Ingarden, R.* 1
Fiction from between the Two World Wars as a Source of Scientific Material for the Psychologist. *Librachowa, M.* 27
The Maturation of the Will, its Retardation and Acceleration. *Dybowski, M.* 50
The Presentation of Aim and its Relation to Conduct. *Reutt, J.* . . . 59
Acoustic Eidetic Representations. *Zaworski, T.* 156
The Influence of Effort on the Results of Work. *Mielezarska, W.* . . . 204
Psychology in the U.S.S.R. *Tomaszewski, T.* 267

MED. J. AUSTR.

VOL. XXXV (i). 1948.

Some Ideals for a Psychiatric Service. *Maudsley, H. F.* . . . 581
Alcoholics Anonymous. *Minogue, S. J.* 586
Psychoanalysis and Other Forms of Psychotherapy. *Winn, R. C.* . . 593
The Psychiatrist and Society. *Sebire, I.* 791

VOL. XXXV (ii).

Social Health and Psychiatric Service. *Stoller, A.* . . . . . 1 and 29
Intracranial Disorders of the Newborn Associated with Birth. *Campbell, K.* 57
The Pathological Physiology of So-called Pyramidal Syndromes. *Lambre, C. G., and Wyke, B. D.* 85

MENN. MILJØ.

VOL. I. 1946.

*Suicide in Europe and Especially in the Northern Countries. *Verkko, V.* . 215
Old Age and Environment. *Jensen, O.* 296

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Suicide in Europe and Especially in the Northern Countries.

One hundred thousand people commit suicide annually in Europe, which does not include those of Russia, a country where the toll is no doubt also very high. A review is given of attitudes toward suicide, and what induces this. Denmark leads with 255 annually, and Bosnia and Herzegovina are lowest with only 6 each. The 1927–28 figures are given also, in which Austria is high, and Turkey is lowest with 29. These statistics are shown in map form, with 3 divisions, namely, 200 or more, 100 to 199, and less than 100 annually. In Finland the rate has steadily increased each decade from 1751–60 with 12, to 1931–40 with 194. Similar figures are given for other European countries. Denmark leads all countries over a period of 100 years. The psychology back of this tendency is discussed, with suggestions for preventing it, or at least decreasing it.

O. I. JACOBSEN (Psychol. Abstr.).

VOL. II. 1947.

Child Neuroses Therapy. *Seitz, G.* 30
Vocational Advice in Denmark. *Boolsen, R. W.* 36
Terman's Ball and Field Test as a Basis for Character Diagnosis. *von Fieandt, K.* 48
The Future of Science Organizations, with Special Consideration for Psychiatry. *Smitt, J. W.* 75
Is it Worth While to Operate Special Schools for Weak Pupils ? *Pedersen, M.* 85
Lynching as a Phenomenon of Conformity. *Karlsson, G.* 89
Child Delinquency Problems in Denmark. *Billgren, P.* 103
Sex Criminals and Castration. *Stürup, G. K.* 112

NEVROPAT. PSIKHIAT.

VOL. XV. 1946.

The Problem of Neuroses. *Artem'ev.* 43
Psychopathologic Changes in Traumatic Encephalopathy. *Staritsyn, S. E.* . 65

OCCUP. THER. REHAB.

VOL. XXVII. AUGUST, 1948.

Occupational Therapy in Spain. *Sagarra, J. S.* 251
The Integration of Group Activity and Group Therapy. *Halle, L., and Landy, A.* 286
A Study of an Incentive Pay Roll in the Motivation of Psychotic Patients. *Crawfis, E. H., and Morrow, G.* 299
Effectiveness of Games in a Mental Hospital. *Hyde, R. W., et al.* . . 304

PROC. ROY. SOC.

VOL. XLI. AUGUST, 1948.

Experimental Investigations in the Endocrinology of Schizophrenia. *Hemphill, R. E., and Reiss, M.* 533

PSYCHIATRY.

VOL. XI. MAY, 1948.

Towards a Psychiatry of Peoples. *Sullivan, H. S.* 105
The Dynamics of Group Formation. *Powell, J. W.* 117
Anti-Nazis: Criteria of Differentiation. *Levy, D. M.* 125
The Role of the Parent in Psychotherapy with Children. *Bruch, H.* . . . 169
Maine, McLennan, and Freud. *Levin, A. J.* 177
Toward a Socialized Population Policy. *Meadows, P.* 193

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

PSYCHIAT. QUART.

VOL. XXII. APRIL, 1948.

Psychosomatic and Rorschach Aspects of Stuttering. *Pitrelli, F. R.* . . 175
The Poltergeist—Psychoanalyzed. *Fodor, N.* 195
The Symptomatic Use of ECT for Acute Psychoses of Military Personnel. *Funkhouser, J. B.* 204
The Treatment and Theory of Prolonged Insulin Coma. *Kalichman, N.* . 213
Penthothal Sodium. *Donahue, H. H., et al.* 221
Dissociated Personality. *Lipton, S. D., and Kezur, E.* 252
Bronchial Asthma. *Kris, E. B.* 257
Practical Methods of Group Psychotherapy. *Jacobson, J. R.* . . . 270
Brief Methods of Psychotherapy. *Charen, S.* 287
Preventive Military Psychiatry in the Light of Impending Military Conscription. *Lehrman, S. R.* 302
Regressive ECT in Schizophrenics Refractory to other Shock Therapies. *Kennedy, C. J. C., and Anchel, D.* 317
Psychoanalysis—A Critique. *Johnson, H. K.* 321

PSYCHOL. BULL.

VOL. XLV. JULY, 1948.

Appetite, Palatability and Feeding Habit. *Young, P. T.* 289

PSYCHOL. REV.

VOL. LV. JULY, 1948.

Cognitive Maps in Rats and Men. *Tolman, C.* 189
The Role of Reward in Conditioning Theory. *Kendler, H. H., and Underwood, B. J.* 209
Characteristics of Dispersion Based on the Pooled Momentary Reaction Potentials of a Group. *Yamaguchi, H. G., et al.* 216

PSYCHOMET.

VOL. XIII. 1948.

Approaches to Univocal Factor Scores. *Guilford, J. P., and Michael, W. B.* 1
A Table for Estimating the Significance of the Difference Between Correlated Percentages. *Swineford, F.* 23
Study of Some Factors Related to Intelligence. *Rimoldi, H. J. A.* . . . 27

PSYCHOSOM. MED.

VOL. X. MAY–JUNE, 1948.

The Infantile Personality. *Ruesch, J.* 134
The Effect of Anxiety on Human After-discharges. *Sapirstein, M. R.* . 145
Personality Types in Soldiers with Chronic Non-ulcer Dyspepsia. *Rosen, S. R., et al.* 156
An Experiment with Comprehensive Medicine. *Saslow, G.* 165

REV. NEUROL.

VOL. LXXX. APRIL, 1948.

A New Form of Hereditary Muscular Dystrophy: Familial Myxoedema. *Gallot, H.-M., et al.* 257
A Graphic and Electrophysiological Study of Two Cases of Familial Myxoedema. *Bourguignon, G. and A.* 268
Does the EEG Define the Limits of Epilepsy? *Fischgold, H., et al.* . . 274

REV. OTO-NEURO-OFTAL.

VOL. XXIII. APRIL–JUNE, 1948.

Basedow's Disease. *Fischer, J. T.* 29

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

REV. PSICOL. GEN. APLIC.

VOL. III. 1948.

Negation. *S. Freud* 19
Structure Variations of the Nervous System in Relation to its Behaviour. *Lashley, K. S.* 25
Augustine Theories of Sensation. *Cilleruelo, P. L.* 51
Aspects of American Psychology. *Yela, M.* 87
Structural Analysis of Psychic Disturbances. *Lafora, G. A.* 101

RORS. RES. EXCH.

VOL. XII. 1948.

Suicidal Configuration in Rorschach Records. *Hertz, M. R.* 3
The Individual Child's Development as Reflected by the Rorschach Performance. *Richards, T. W.* 59
A Report of Rorschach and Wechsler-Bellevue Records of a Man After the Removal of Tumor from the Frontal Lobes. *Ostrander, J. M.* . . . 65

TRUD. FIZIOL. LAB. PAVLOVA.

VOL. XII. 1945.

Experimental Phobia. *Petrova, M. K.* 5
Skin Diseases in Experimental Dogs. *Petrova, M. K.* 33

1. Psychiatry, &c.

The Treatment of Schizophrenia with High-vitamin Diet. Schottky, Johannes (Staatlichen Heil- u. Pflegeanstalt Hildburghausen, Ger.). [*Allgem. Z. Psychiat.*, **123**, 90–111 (1944).]

A diet consisting mainly of vegetables and fruits and containing no animal protein was administered to schizophrenics, usually for a period of two weeks, while vitamin C and vitamins of the B group were given in large amounts. The results are said to be good, particularly in acute, excited schizophrenics, but no detailed statistics are given. WARREN M. SPERRY (Chem. Abstr.).

Benzedrine Psychosis: Report of a Case. Schneck, J. M. (U.S. Disciplinary Barracks, Fort Missoula, Mont.). [*Milit. Surg.*, **102**, 60–1 (1948).]

The illicit use of benzedrine as a cerebral stimulant by some inmates of a disciplinary barracks is common knowledge for persons associated with these institutions. Many psychological changes occur with its excessive use—irritability, loquaciousness, and increased psychomotor activity are common. A sample case is described—the patient had consumed 1½ bezedrine inhalers within 36 hours. The subject was restless and confused, believed other inmates intended to kill him, heard verbal accusations and experienced a visual hallucination of a knife on the floor. Speech was muddled and mixed with irrelevant data. Within 48 hours he experienced a clearing of consciousness and within a week all symptoms vanished. There was no amnesia for his earlier anxiety, hallucinations and delusions.

G. W. KNOX (Psychol. Abstr.).

On the Appearance of an Unconscious Psychological Activity in the Course of Subtotal Anoxia. Fabre, R., and Rougier, G. [*C.R. Soc. Biol. Paris*, **141**, 77–8 (1947).]

An experiment is reported in which simple commands and questions were given the subject to execute and to answer in an intermediate phase between the loss of consciousness and complete anoxic coma. The tasks were executed and the questions answered by the subject correctly in this subtotal anoxic state. On return to consciousness there is preserved sometimes a vague memory which does not go as far as a recall of whether or not he executed the orders. The author concludes that in the subtotal anoxic state the subject remains capable of appreciable psychological activity, that everything takes place as if the psychophysiological mechanism had developed itself solely in the domain of the unconsciousness.

E. C. SUMNER (Psychol. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Psychoneurosis Based on Organic Ailment Cured by Electric Shock Therapy. Sears, D. R. [*Calif. Med.*, **68**, 81–2 (1948).]

Four cases of psychoneurosis based on organic ailment are cited from the author's experience as indicating that electric shock treatments are effective not only in overcoming depression and other emotional reaction to a physical illness, but sometimes also in alleviating apparently real physical symptoms. Where psychoneurosis arising from organic illness becomes a barrier to physical treatment, electric shock treatment may be effective in returning a patient to a receptive attitude toward physical treatment. F. C. SUMNER (Psychol. Abstr.).

Psychological Tests in Psychoses in Electric Shock Therapy. Kohlman, Th. (*Psychiatric University Clinic, Vienna, Austria*). [*Wien. klin. Wschr.*, **59**, 140, (1947).]

Thirty female patients (of which 20 schizophrenics were the largest group) were given the Rorschach and Wartegg tests before and after electro-shock therapy. Following the therapy there are (1) increase of perseveration; (2) decrease of intelligence factors; (3) narrowing of Erlebnis type; (4) affectivity greatly decreased; (5) changes in schizophrenia maintained for an average of 6 weeks; (6) depressives tend to return to the pre-shock state; (7) perseveration disappears after 6 weeks, but not the stereotype; (8) Rorschach and Wartegg tests show good correlation. During electro-shock therapy the affectivity of schizophrenics was narrowed, while that of the depressed was broadened. In both intelligence is decreased and symptoms of dementia greatly increased. (Psychol. Abstr.)

The Surgical Treatment of Psychoses. Liebert, E., and Davis, L. [*Illinois med. J.*, **93**, 203–6 (1948).]

Results of prefrontal lobotomy on 38 cases (25 schizophrenics, 6 manic-depressives, and the balance scattered) are described. 25 cases showed improvement (15 schizophrenics, 4 manic depressives, 6 others). Patients selected for operation had been ill for many years and constituted severe behaviour problems in the institution. C. M. LOUTTIT (Psychol. Abstr.).

Further Observations on Orbital Prefrontal Lobotomy in Treatment of Chronic Mental Illness. Smolik, E. A., et al. [*Post.-Grad. Med. J.*, **3**, 179–84 (1948).]

In an effort to minimize further the amount of brain damage in frontal lobotomy the authors have carried out since 1942 at the St. Louis City Sanitarium a modified technic on 85 patients suffering with chronic mental illness. Through burr openings placed laterally in the skull a blunt instrument is introduced into the subcortex after careful measurement, and section is down to the sphenoidal ridge, the extent and plan of the cut being usually checked by X-rays after the introduction of lipiodol. From this procedure have resulted no deaths, no wound infections, no epilepsy. The incidence of urinary incontinence is reduced to 18 per cent. There is typical gain in weight; there is relaxation and loss of tension. Further advantages of the modified method of the orbital leukotomy are: Limitation of surgical procedure within the brain; diminution of post-operative sequelae; facilitation of retraining and rehabilitation; shortening of recovery time and hospitalization. F. C. SUMNER (Psychol. Abstr.).

2. Physiology, Biochemistry, &c.

Hyperglycemic Action and Stimulating Effect of Acetaldehyde in Hypoglycemic Coma. Torres, R. [*Bol. soc. biol. Santiago, Chile*, **4**, 96–8 (1947).]

Patients under insulin shock treatment show return towards normal blood-sugar levels and recovery from shallow or deep coma after intravenous injection of 5–42 ml. 10 per cent. solution of acetaldehyde. Too rapid injection may cause deeper coma. M. L. WILLIAMS (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Action of Phosphate on the Neuromuscular Transmission in the Frog. **Brown, G. L., and Dias, M. Vianna** (*Univ. Brasil*). [*Anais acad. brasil. cienc.*, **19**, 359–70 (1947).]

The sensitivity of the gastrocnemious muscle of *Leptodactylus ocellatus* to arterial injection of acetylcholine is less than that of *Rana esculenta*. Neuromuscular block is produced by repeated injection of 0·5 per cent. NaH_2PO_4 in Ringer's solution; a reversible block by perfusion of the muscle with 0·2 per cent. NaH_2PO_4 in Ringer's solution. Even then the muscle retains its sensitivity to acetylcholine, thus showing that the effect differs from that produced by curarine. The block, said to be due to failure of acetylcholine production at motor nerve-endings, is similar to that caused by Ca deficiency. M. E. W. Torok (Chem. Abstr.).

Some Observations on the Modification of the Spinal Potentials of Rana temporaria *by Strychnine.* **Fessard, Alfred** (*Inst. Marey, Paris*). [*Anais acad. brasil. cienc.*, **19**, 349–57 (1947).]

Simultaneous measurement of the action potentials of the dorsal and ventral roots of the spinal cord of *Rana temporaria* after local application of strychnine sulfate (1 : 10,000 to 1 : 1,000) showed that the potential of the ventral root was prolonged up to more than 10 seconds, its amplitude increased, and repetition brought rapid fatigue. Only a trace of the same effect can be seen in the dorsal root. This unexpected dominance of the motor over the sensory branch may be explained by the hypothesis that spontaneous activity has its origin in the internuncial neuron. Maria E. W. Torok (Chem. Abstr.).

Biochemical Changes in the Brain in Some Organic Diseases and in Alimentary Dystrophy. **Kudryavtseva, N. G.** [*Byull. Eksptl. Biol. Med.*, **24**, No. 1, 76–7 (1947).]

Organic diseases of the central nervous system cause disturbance of the N metabolism and oxidation processes not only in the diseased parts of the brain, but also in the healthy parts. About 700 analyses of healthy and diseased brains were made. The H_2O content was greater in the affected areas. Determination of the total and non-protein N indicated lower total N in diseases of the central nervous system. Other findings were increased activity of catalase, lower content of ascorbic acid and increased H_2O content in alimentary dystrophy. Conclusion: These considerable biochemical changes are caused by quantitatively insufficient nutrition and hypovitaminoses B and C. W. R. Eichler (Chem. Abstr.).

Polarization Changes of the Refractivity of Nerves. **Babskii, E., and Zol'nikova, A. I.** [*Byull. Eksptl. Biol. Med.*, **23**, 271–4 (1947) (*in Russian*).]

The electrotonic changes of the absolute refractivity of nerves are explained by changes in the enzymic hydrolysis of acetylcholine and changes of its concentration in nerve fibers. The lessening of the refractivity at the anode may be explained by an increase in splitting of acetylcholine owing to the activity of cholinesterase. However, if cholinesterase is inhibited by eserine, the d.c. ancde does not show any effect on the activity of cholinesterase, and the effect of the anode on the refractivity is, therefore, weaker or even completely disappears. The effect of the cathode on the refractivity is decreased. Atropine destroys the power of nerve tissue to react with acetylcholine and prevents the development of the effects of the anode and cathode. The results indicate that certain physiological effects arising from the action of d.c. on nerve tissue are caused by changes in the content of, and enzyme splitting of, acetylcholine. It was also found that acetylcholine takes part in the formation of the nerve refractivity. This functional change of the state of the excited tissue in consequence of excitation was considered as dependent, although not completely, on the accumulation of acetylcholine in nerve tissue. The effects of acetylcholine, eserine and atropine on the change of the absolute refractivity of nerve are described.

W. R. Eichler (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Protein and Nucleotide Metabolism in the Nerve Cell Under Different Functional Conditions. Hyden, H. (Karolinska Inst., Stockholm). [*Symposia Soc. Exptl. Biol.*, **1**, *Nucleic Acid*, 152–62 (1947); *cf. C. A.*, **40**, 937[1].]

Initial development of the nerve cell is the same as that of other somatic cells; from the multipolar neuroblast, however, it passes through a period of enormous growth. Cyto-chemical analyses have been carried out on 99 embryos (human, rat, and rabbit) in order to determine the amounts of protein and nucleic acids in the cytoplasm of the embryonal nerve cell at various stages. These determinations were based on complete absorption curves from 2,400 to 3,100 A. At 2,400 A a distinct absorption maximum appears due to the pyrimidine and purine rings in the polynucleotides of the ribose type. At 2,800 A a second maximum is visible, due primarily to tyrosine, tryptophan, and phenylalanine. The ratio of concentration of protein to nucleic acid ranged from 3 : 1 to 5 : 1, using unipolar neuroblasts from rat embryos. Anterior horn cells showed 8 : 1 to 11 : 1. It appears that the total amount of proteins in the nerve-cell cytoplasm increases more than 2,000 times during development. If the axon is included, these values are increased to 30,000 to 200,000 times, depending upon the length of the axon. During the whole period of development the young nerve cell contains a large nucleolus, rich in polynucleotides, as well as cytoplasmic nucleotides. This capacity for protein production remains in the adult stage. Near the nucleolus is a region with high absorption at 2,600 A., which contains proteins rich in basic groups, and small concentrations of ribose nucleotides. Such areas are part of the nucleolus-associated chromatin. Intense muscular activity produces a decrease in protein and nucleic acid of the cytoplasm of anterior horn cells, which is pronounced; during the first 48 hours after such activity the original values are restored, signifying that nerve-cell function is accompanied by metabolic processes involving quantitative changes in protein and nucleotide content. Acoustic stimulation of ganglion cells of guinea-pigs with tones of various frequencies and intensities produces extensive changes. Exposure to a tone of 6,000 cycles/sec. and intensity of 80 decibels for 3 hours caused a cycle of changes within 3 weeks, including decrease in cellular protein and nucleotides, with most pronounced decrease during the second week, the nucleotides disappearing almost entirely and protein concentration dropping from 25–30 per cent. to 2·8 per cent. During the third week these concentrations are restored. Acoustic trauma produces a decrease in protein which is not completely restored after 8 weeks. Following excision of the axon, nucleotide and protein content are reduced, and after 2 weeks the cytoplasm has lost most of these materials. After a month the protein content begins to be restored. It was noted that the administration of malonitrile induces an increase in protein and nucleic acid in nerve cells. When malonitrile was given to 29 human subjects in doses ranging from 3 to 5 mgm./kgm. body weight varying degrees of beneficial psychic stimulation resulted, some psychotics losing catatonic signs and showing evidence of mental stimulation within 48 hours. In 3 cases of acute depression the symptoms ceased within 1 hour after treatment was started. The amount of protein and nucleotides in the nerve cells of manic-depressives and schizophrenics has been found to be low; it would appear that there is a correlation between protein metabolism in the nerve cells and function, including psychic function.

JOHN P. CRISPELL (Chem. Abstr.).

New Data on the Biological Action of Sympatholytic Substances. Minz, Bruno, and Peterfalvi, Michel. [*Compt. rend.*, **224**, 1589–91 (1947).]

Previously it was shown that the addition of choline chloride to rabbit intestines in Tyrode solution causes a small increase in the tone, but that the subsequent addition of 5γ of adrenaline per 60 c.c. produces at first a marked decrease in tone and contractions, followed after a short time by an increase in tone to a higher level than before (*C. A.*, **41**, 5606d). Adrenochrome also increases the tone without the preliminary drop. The transformation of choline to acetylcholine is favored by the presence of cocarboxylase (*C. A.*, **41**, 5606b), which was interpreted to indicate that cocarboxylase furnishes from pyruvic acid the necessary acetyl groups for acetylcholine formation, while the action of adrenochrome was explained as indicating the transformation of lactic to pyruvic acid. If these theories are correct, then the addition of either natural (yohimbine, corynanthine) or synthetic (933F) sympatholytic substances should inhibit the tone-increasing effect of either co-

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

carboxylase or adrenochrome, which was confirmed experimentally. Two interpretations are possible; either a direct inhibition occurs of the enzymic decarboxylation of pyruvic acid in the presence of cocarboxylase, or the esterification mechanism of choline with acetyl radicals is inhibited.

BRUNO VASSEL (Chem. Abstr.).

The Role of the Vegetative Nervous System in the Mechanism of Physiological Regulation of Activity of Carbonic Anhydrase Under Reduced Barometric Pressure. II. Influence of Parasympathicotropic, Sympathicotropic, and Some Other Pharmacological Substances on Carbonic Anhydrase Activity. Khazen, I. M. [*Byull. Eksptl. Biol. Med.*, **23**, 46–8 (1947); *cf. C. A.*, **41**, 2764i.]

The following variations of the activity of carbonic anhydrase (I) of rabbits were observed after administration (subcutaneous) of the following drugs: 1 mgm. atropine, 70–80 per cent. increase; 1 mgm. adrenaline, no substantial change; 1 mgm. morphine, 10–25 per cent. decrease; 1 mgm. strynchnine, no substantial change; injections of equal volumes of distilled water also gave no change. Injection of 70–500γ of histamine gave an increase of 50–300 per cent. When the histamine was given to rabbits which were kept for a month on 100–500γ daily doses of thiouracil, the histamine effect was essentially nullified and the enzyme activity remained within experimental variations. In a second series of experiments the rabbits were injected with either 1–2 c.c. 0·1 per cent. atropine or 0·5–1·0 c.c. 1 : 1,000 adrenaline, and after 10 minutes were placed in a vacuum chamber set to simulate 8,000 m. altitude for one hour. The atropinized rabbits showed no change of (I) activity after evacuation of the chamber, while the control animals showed 100 per cent. increase. The adrenaline-treated animals showed a 70 per cent. increase in (I) activity. Several of the latter animals perished during the experiment. Changes of (I) activity were not connected with changes of erythrocyte count.

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

Note on the Synergism of the Central Nervous-system Stimulants. Ahlquist, Raymond P. (Univ. of Georgia, Augusta). [*J. Am. Pharm. Assoc., Sci. Ed.*, **36**, 414–15 (1947); *cf. Hazleton and Koppanyi, C. A.*, **35**, 6314[8].]

The synergism between the convulsant effects of metrazol with nikethamide and with strychnine in albino rabbits is partially additive, owing to differences in points of action.

H. BERNARD (Chem. Abstr.).

Clinical Experience with the New Method for Titration of Protective Enzymes. Winkler, Walter (Univ.-Nervenklinik, Marburg, Ger.). [*Allgem. Z. Psychiat.*, **123**, 278–312 (1944).]

The method of *C. A.*, **37**, 5097[2], was applied to the determination of protective enzymes in the urine of 60 patients with a variety of diseases, mostly related to endocrine disturbances. In most of these the enzymes were also determined in the blood serum by a similar procedure; precipitation with 15 volumes of Me_2CO and extraction with a trypsin solution as in the urine method Various organs of internal secretion were used as substrates. In most of the patients with definite endocrine disturbances protective enzymes were found in both urine and serum, and usually, though not always, they appeared to be specific for the particular organ or organs involved; for example, an enzyme specific for the pituitary was found in a patient with a tumor of that organ. The method is of diagnostic value.

WARREN M. SPERRY (Chem. Abstr.).

Studies on Choline Acetylase. IV. Effect of Citric Acid. Nachmansohn, David, and Weiss, Michael S. (Columbia Univ.). [*J. Biol. Chem.*, **172**, 677–87 (1948); *cf. C. A.*, **41**, 1721a.]

From the acetone-dried powder of squid head ganglia was prepared a highly active choline acetylase (I) preparation which caused the formation of up to 150 mgm. of acetylcholine per gm. protein per hour. This degree of purity of (I) referred to the protein is 14–15 times as great as previous preparations. The activity of (I) is lost upon dialysis, but can be completely restored by the addition of choline, acetate, K^+, Mg^{++}, coenzyme, adenosinetriphosphate, eserine and cystine. L-

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

glutamic acid and α-ketoglutaric acid have no effect. Acetate is used directly for the acetylation, as shown by the marked increase in the rate of formation of acetylcholine upon the addition of acetate. Citric acid had an inhibitory effect upon both dialyzed and undialyzed (I) possibly through the removal of Mg^{++} necessary for transphosphorylation. This inhibition could not be overcome by increasing the concentration of adenosinetriphosphate or coenzyme. The K salt of 2-methyl-1, 4-napththoquinone-8-sulfonic acid had a strong inhibitory effect. K^+ can be replaced by Rb^+, but not by Na^+ or Li^+.

A. JEROME GANZ (Chem. Abstr.).

Some Actions of Potassium Chloride at the Neuromuscular Junction. Altamirano, M., and Huidobro, F. (Catholic Univ. of Chile, Santiago). [*Am. J. Physiol.*, **152**, 53–65 (1948).]

The action of KCl injected into the terminal portion of the abdominal aorta was studied in the normal quadriceps and in the normal and denervated soleus of the cat. KCl causes contraction of the soleus which has been denervated 6–14 days previously. In the quadriceps or soleus stimulated indirectly KCl produces contraction potentiation or depression of the response of the muscle depending on the frequency of stimulation and the dose. In the soleus denervated 6–14 days previously and stimulated directly by electric shocks, KCl produces the same effects as in the normal soleus stimulated indirectly. In the quadriceps stimulated directly at low frequency KCl may have effects which are synergistic to those produced by a previous injection of prostigmine. KCl has a decurarizing action. In both the denervated and the normal soleus KCl produces either depression or potentiation of the contractions evoked by injections of acetylcholine, depending on the time interval between the two injections. In the normal soleus prostigmine increases the contraction produced by KCl, but this effect is not observed in the soleus denervated 6–14 days previously. A tetanus produced by indirect stimulation increases the response of the normal soleus to KCl. Acetylcholine sensitizes the normal or denervated soleus to a subsequent injection of KCl. The effects of KCl are discussed in relation to the mechanism of action of acetylcholine at the neuromuscular junction. E. D. WALTER (Chem. Abstr.).

Camphor-ether Mixture for Epilepsy Diagnosis. Kalyapin, G. F. (Samarkand Med. Inst.). [*Nevropatol. i Psikhiat.*, **15**, *No.* 6, 72–3 (1946).]

Intravenous injection of 0.6–1·2 c.c. ether-camphor mixture leads to typical seizures only in genuine epileptics. G. M. KOSOLAPOFF (Chem. Abstr.).

Influence of Electro-spasm on the Carbohydrate Metabolism in Schizophrenia. Serezhskii, M. Ya., and Landо. L. I. [*Nevropatol. i Psikhiat.*, **15**, *No.* 6, 19–21 (1946).]

A single electric shock leads to an increase of blood sugar up to 56 per cent. Repeated shocks give similar increases each time in about 50 per cent. of cases, the others give random responses. Lactic acid rises by 200–800 per cent. in single-shock treatments; the effect is gradually lost on repeated treatments.

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

Studies of the Metabolic Exchange of Cerebral Centers with the Aid of Artificial Radioactive Phosphorus (P^{32}). Roeder, Fritz (Kaiser-Wilhelm Inst., Munich, Ger.). [*Z. ges. Neurol. Psychiat.*, **178**, 288–344 (1945).]

Small quantities of inorganic phosphate containing P^{32} were injected intramuscularly into 15 dogs, 31 rabbits and 33 guinea-pigs. After intervals of time (72 hours in some experiments, not stated in others) the animals were killed and the total P and P^{32} concentrations were determined in many areas and structures of the brain, and in other organs, especially liver, muscle and blood, for comparison. In most of the dog experiments from 15 to 30 different tissues were compared. The results are reported as specific activity calculated as the ratio of P^{32} to total P in the tissue. Usually the specific activities of brain tissues were much smaller than those of other organs, but in some dog experiments the specific activities of the globus pallidus were as high as that of the liver. In other experiments the specific activity of the globus pallidus was lower than that of the other structures of the

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

brain. The specific activity of the occipital lobes was high in some experiments but not in others, and there were other similar variations. Some P^{32} was found in lipides, extracted from brain by ether in 3 rabbits which had received P^{32} 24 or 72 hours before they were killed. WARREN M. SPERRY (Chem. Abstr.).

Carbonic Anhydrase in the Pallium of Primates Compared with that of Lower Mammals. Ashby, Winifred (Saint Elizabeth's Hospital, Washington, D.C.). [Proc. Soc. Exptl. Biol. Med., **67**, 17–22 (1948).]

In the dog, cat, hog, horse, sheep, cow and rabbit the brain cortex has a higher carbonic anhydrase activity than the underlying white matter; in man and rhesus monkey the opposite is true. L. E. GILSON (Chem. Abstr.).

Hormone of Rest. Medvedeva, Nina (Inst. Exptl. Biol. Pathol., Kiev, U.S.S.R.). [Acta Med. Scand., **130**, 97–105 (1948).]

Corticalin is a true hormone which is extracted from the adrenal cortex by trituration with acidulated H_2O. The substance is precipitated with Na stearate. On parenteral injection it causes a marked fall in blood pressure and severe hypoglucemia which, unlike insulin hypoglucemia, never leads to convulsions. The preparation is devoid of any type specificity. Its principal function is to increase the synthetic processes of carbohydrate metabolism. Since it does not cause any increase in lactic or keto acid in the blood, it does not apparently affect the glycolysis. But it reduces oxidation (sugar ?), since under its influence the production of CO_2 is markedly decreased. Under its influence the glycogen of tissues in normal animals is increased; in rats the liver and muscle glycogen content was doubled. The resynthesis of glycogen in working muscles is accelerated, and this is found even in adrenalectomized animals in which the muscle is incapable of resynthesizing the used-up glycogen. The phosphagen content of various tissues is increased in treated animals; that of the heart and liver is about doubled, of kidney tripled, of muscle more than quadrupled. Whereas the phosphagen content of muscle or liver decreases during fatigue and barely returns to the resting level after one hour repose, in animals treated with the corticalin the synthesis during the phase of repose is several times higher than in an untreated animal. Similarly the hexose phosphate concentration in heart, muscle and intestine is reduced to about one half or less in adrenalectomized rats, but is increased (25 to 50 per cent.) in rats treated with corticalin. Here, again, the hexose phosphate concentration is greatly decreased during work, but if corticalin is administered before work the concentration in fatigued animals is 3 to 5 times as large as in the fatigued untreated animals. Protein metabolism is practically unaffected by corticalin. Its action differs from that of the cortical steroids in that it has no influence on salt or water metabolism. Its only known function is the synthetic phase of carbohydrate metabolism, and its important role is the reparation during muscle work.
S. MORGULIS (Chem. Abstr.).

Inhibition of Coupled Phosphorylation in Brain Homogenates by Ferrous Sulfate. Racker, E., and Krimsky, I. (New York Univ. Coll. of Med., New York, N.Y.) [J. Biol. Chem., **173**, 519–33 (1948).]

The inhibiting effect of $FeSo_4$ on brain glycolysis is due to an inhibition of the coupled phosphorylation catalyzed by the phosphoglyceraldehyde-oxidizing enzyme. A partial inhibition of this enzyme leads to the inhibition of adenosinetriphosphate synthesis, which is necessary for the formation of fructose 1,6-diphosphate from glucose. The glycolytic activity of a brain homogenate which has been inactivated by the addition of proteolytic enzymes can be restored through the addition of the phosphoglyceraldehyde-oxidizing enzyme prepared from yeast or muscle. If the inactivated brain homogenate is dialyzed against 0·1 M KCN for 5 days the inactivating factor is lost, but reactivation can be established by the addition of $FeSO_4$ and cysteine. GERTRUDE E. PERLMANN (Chem. Abstr.).

Blood-sugar Regulation in Brain Tumours. I. Studies in Patients. Matsuda, Masani (Nippon, Geka Hokan). [Arch. Japan. Chir., **19**, 423–57 (1942).]

The blood sugar in 37 cases of brain tumours varied within the normal range. A particular level did not correlate with a particular location of a tumour. Oral

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

administration, not intravenous injection, of 30 gm. glucose induced greater or less deviations in the blood-sugar curve than normal, particularly in tumours of the posterior fossa. Oncolectomy had a similar effect owing perhaps to surgical trauma. These results support Claude Bernard's assumption that the blood-sugar regulating centre exists in the region of the fourth ventricle. Post traumatic or post encephalitic cerebral atrophy in lesions other than tumours caused abnormal blood-sugar curves more frequently than genuine epilepsy, which is found to be free of atrophy by pneumoencephalography or by surgical exploration.

J. G. YOSHIOKA (Chem. Abstr.).

Vitamin A and Carotene Contents of Blood Serum in Various Nervous Disorders. Huszák, Istvan, and Geréb, Tibor (Univ. Nerven- u. Geisteskrankheiten, Szeged, Hung.). [*Intern. Z. Vitaminforsch*, **19**, 330–5 (1948) (*in German*).]

In funicular myelosis, and to a lesser extent in polyneuritis, there is a lowered vitamin A content of the serum. The vitamin A content is normal in disseminated sclerosis and in syphilis, but falls after fever treatment.

LEOPOLD SCHEFLAN (Chem. Abstr.).

An Evaluation of Curare in Spasticity Due to Spinal Cord Injuries. Kuhn, Robert A., and Bickers, Donald S. (Cushing Veterans Admin. Hosp., Framingham, Mass.). [*New Engl. J. Med.*, **238**, 615–22 (1948).]

No definite relief of spasms in 17 paraplegic or paraparetic patients with traumatic lesions of the spinal cord was obtained from intramuscular injections of 175 mgm. d-tubocurarine chloride in 1 c.c. of oil and white wax every 48 hours for 10 doses. Diplopia and pitting edema of the hands and feet (the latter a complication of curarization not previously reported) were toxic symptoms found in this series, and not in 17 controls given an equal volume of physiol. saline solution. In other groups prostigmine and atropine injections were unsuccessful, local injection of spinal nerves with procaine or related preparations provided a very brief relief, and intramuscular injection of aqueous curare gave transient beneficial effects, nullified by incapacitating toxic symptoms.

MARION HORN PESKIN (Chem. Abstr.).

Changes in the Activity of Some Digestive Organs in Cortical Inhibitory States. Nekachalova, I. Ya. [*Byull. Eksptl. Biol. Med.*, **23**, 310–12 (1947).]

Nekachalova's investigations refute the viewpoint of the supporters of the "peripheral" nature of exhaustion of the salivary glands, and confirm the theory that exhaustion is the result of inhibitory states of the cortex of the brain, in proof of which six series of experiments were carried out: (1) Feeding very small amounts at short intervals for 3 hours did not impair the activity of the salivary glands. (2) Continuous washing of the stomach with warm physiol. NaCl solution caused rather stable exhaustion, and restoration of normal function required 15–18 days instead of the normal 5–6 days. (3) Changing the conditions of the experiment and the nature of the stimulants by feeding different stimulants (milk, sugar, meat, powdered dog biscuit) every 30 mins. for 3½ hours did not bring about symptoms of exhaustion. (4) Feeding small amounts for a few seconds followed by rest for about one minute, during which time a biscuit was placed in front of the animal for natural stimulation, decreased the saliva, and exhaustion of the glands followed, since the solids in saliva sharply decreased as a result of an inhibitory state of the cortex of the brain. (5) Long stimulation by natural means was tried for several days. This caused such an exhaustion that the normal state of saliva was not regained for a year. (6) On the assumption that the change in the function of the salivary glands was due to central inhibitory states, the usual method of restoration by introducing 0·5 per cent. HCl into the mouth was employed. After 2–3 applications normal function was restored. In unstable exhaustion one application was sufficient.

W. R. EICHLER (Chem. Abstr.).

Histochemical Distribution of Peptidase Activity in the Central Nervous System of the Rat. Pope, Alfred, and Anfinsen, Christian B. (Harvard Med. School, Boston). [*J. Biol. Chem.*, **173**, 305–11 (1948).]

Tissue samples (4 mm. in diameter) were punched from the cerebrum, brain stem, and cerebellum of adult rats (also coronal sections of the spinal cord). Micro-

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

tome sections of each sample were taken for histological examination, extraction with 30 per cent. glycerol at pH 7·0, dry weight determination (38–71γ). The extracts, including the tissue, were used as experimental and autolysis control preparations for determining the amount of cleavage of 6·9 c.mm. of a 0·2 M solution of DL-alanylglycine in 0·0343 N NaOH at 38°. Peptidase activity of each tissue as a function of time of hydrolysis is presented graphically. The cerebral and cerebellar tissues have a higher degree of peptidase activity than do those of spinal cord and brain stem. J. P. DANEHY (Chem. Abstr.).

Electrical Transmission at Nerve Endings. Singh, Inderjit, and Singh, Sunita Inderjit. [*Current Sci.* (*India*), **14**, 244–5 (1945).]

The frog gastrocnemius was stimulated alternately through its nerve and by acetylcholine every 5 minutes. Out of 12 gastrocnemii 6 were insensitive to acetylcholine (1 : 10^3), and the other 6 gave feeble responses with 1×10^{-5} M, but they were all hyperexcitable to nerve stimulation or to acetylcholine. In the absence of Ca the muscle first became hyperexcitable to nerve stimulation and acetylcholine; after 15 minutes it became inexcitable to the former, but remained hyperexcitable to the latter. As the Ca concentration was increased the excitability to nerve stimulation increased, and that to acetylcholine decreased, the optimum concentration of Ca for the former being 0·02 M $CaCl_2$. Replacement of the Cl of the saline with Br., NO_3^- and (I) at first increased the excitability to both, but after 10 minutes affected them in opposite directions. B. A. (Chem. Abstr.).

The Effect of Ethyl Alcohol upon Frog Nerve. Gallego, Antonio (*Rockefeller Inst., New York, N.Y.*). [*J. Cellular Comp. Physiol.*, **31**, 97–106 (1948).]

Alcohol is a depolarizing agent. At concentrations of 1–2 M it lowers the membrane potential below the critical excitability level. However, alcohol has no demonstrable direct effect on the excitable mechanism, since the ability of nerve fibers to conduct impulses is restored by raising the membrane potential by means of an externally applied anodal current. The effect of alcohol begins to become irreversible when the demarcation potential between treated and untreated segments exceeds 12·5 mv. There is no recovery if the demarcation potential reaches 20 mv. H. L. MASON (Chem. Abstr.).

Lipoid Fractions in Neurinomas. Muntoni, Ennio (*Univ. Firenze, Italy*). [*Sperimentale*, **98**, 612–18 (1947).]

Histochemical studies indicate that all neurinomas contain phosphatides, cholesterol, neutral fat and fatty acids. Malignant neurinomas are richer in lipoids, especially phosphatides. A. E. MEYER (Chem. Abstr.).

Free and Total Thiamine in the Peripheral Nerves and the Central Nervous System of Several Mammals. Muralt, G. de (*Inst. Physiol., Berne, Switz.*). [*Intern. Z. Vitaminforsch.*, **19**, 74–101 (1947).]

Determination was made of both the free and the total thiamine of peripheral nerves and of the central nervous system of the rat, rabbit, dog and calf. Nerve or cerebral substance was hydrolyzed for 1 hour in N HCl at 98° without decomposition of the vitamin and without its liberation from cocarboxylase. The free thiamine in this tissue extract was determined by the thiochrome reaction. Total thiamine was determined by neutralization of the tissue extract to pH 5, addition to a culture of *Phycomyces*, incubation for 10 days at 17°, collection of the growth, drying for 1 hour at 100°, and weighing. The method was accurate to 1×10^{-9} gm. = 15 per cent. The N content of the tissue extract had no appreciable influence on the growth of the *Phycomyces*. In the rabbit the total thiamine concentration in the nerves, especially in the central nervous system, was considerably less in winter than in spring or summer, while the free thiamine concentration did not change. The rat showed no seasonal variations. In all the animals both free and combined thiamine were present, the free thiamine concentration was approximately the same in the central system and in the peripheral nerves, while the total thiamine concentration was much greater in the central system than in the peripheral nerves. JOSEPH S. HEPBURN (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Correlation Between the Lactose Content of Milk and the Cerebroside and Choline Content of Brain. Sadhu, D. P. (Univ. of Missouri, Columbia). [*J. Dairy Sci.*, **31**, 347–51 (1948).]

Nine species of mammals have been examined for the cerebroside and choline contents of their brains. Brain cerebrosides show a high positive correlation with the lactose percentage of the respective milks. There is a slight positive correlation between choline content of brains and the lactose content of the mothers' milk. It is suggested that sphingosine can reversibly take up galactose or choline-phosphoric acid to form cerebrosides or sphingomyelins, and thus cerebrosides may function as choline sparers. There is an increase of cerebrosides with age and gestation. There is no significant difference in the cerebroside distribution between cortex and medulla of the brains of the species studied.

A. H. JOHNSON (Chem. Abstr.).

Microchemical Studies on the Nervous System. V. The Sulfur Compounds of Nerve During its Degeneration. May, Raoul M. (Sorbonne, Paris). [*Bull. soc. chim. biol.*, **29**, 1035–42 (1947); *cf. C. A.*, **35**, 3301⁹.]

Cut sciatic nerves of dogs and rabbits were analysed at intervals during degeneration. Total S, lipide S, protein S and water-soluble S all showed marked increases, especially during the first 7 days. L. E. GILSON (Chem. Abstr.).

Phenylpyruvic Oligophrenia. The Position of the Metabolic Error. Jervis, George A. (New York State Dept. Mental Hyg., Thiells). [*J. Biol. Chem.*, **169**, 651–6 (1947).]

DL-phenylalanine (I), L-tyrosine (II) or phenylpyruvic acid (III), fed to fasting normal human subjects, rabbits, or cats, led to a significant increase of Millon-reacting substances in the blood. When fed to fasting patients suffering from phenylpyruvic oligophrenia, (I) and (III) caused no increase in Millon-reacting substances, whereas tyrosine did. It is concluded that the biochemical error in phenylpyruvic oligophrenia consists of a block in the normally occurring process of hydroxylation of phenylalanine to tyrosine.

JULIA O. HOLMES (Chem. Abstr.).

Phenylpyruvic Oligophrenia. IV. Method for Determining Phenylpyruvic Acid in Urine. Polonovski, M., Desgrez, P., and Delbarre, F. (Univ. Paris). [*Bull. soc. chim. biol.*, **29**, 1049–54 (1947).]

One c.c. of slightly acid urine (pH 5–6) is diluted to 50 c.c. with distilled water, 1 c.c. saturated $Fe(NH_4)(SO_4)_2$ solution is added, and the green color is measured photometrically, preferably with a red light filter. A correction curve is necessary.

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

Alterations in Metabolism of Some Aromatic Amino Acids in Acute Polyneuritis. Lollis, Cesare De (Univ. Catania, Sicily). [*Boll. soc. ital. biol. sper.*, **23**, 1011–13 (1947).]

The daily urinary elimination of water and ether-soluble Millon-reactive substances was increased in polyneuritic persons with daily values of 180–300 mgm., in contrast to 17–149 mgm. in normal persons.

HELEN LEE GRUEHL (Chem. Abstr.).

Cleavage of Phospholipides by Brain Tissue. Sperry, Warren M. (Columbia Univ.). [*J. Biol. Chem.*, **170**, 675–86 (1947).]

Homogenates of rat-brain tissue in saline-carbonate buffer were incubated at 37·5° with shaking for 4 hours. A consistent decrease averaging 8 per cent. (varying from 3 to 17 per cent.) in the amount of P extractable with lipide solvents took place. Incubation for 24 hours caused a greater decrease in phospholipides. This decrease in extractable P was the result of a cleavage of phospholipides by a mechanism present in brain tissue. IVAN A. WOLFF (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Brain and Muscle Potassium in Relation to Stressful Activities and Adrenal Cortex Function. Hoagland, Hudson, and Stone, David (Worcester Foundation for Exptl. Biol., Shrewsbury, Mass.). [*Am. J. Physiol.*, **152**, 423–35 (1948).]

Small (0·5 mgm. per day) doses of desoxycorticosterone (I) or of Δ ^{5}-pregnenolone (II) did not affect brain K in normal rats; (I), but not (II), reduced the concentration of muscle K by 6·2 per cent. Uncompensated adrenalectomy increased the concentration of brain K by 24·0 per cent., and of muscle K by 37·5 per cent. (II) (0·5 mgm. per day) lessened the increase in concentration of brain K in adrenalectomized rats by 10·0 per cent., and of muscle K concentration by 12·0 per cent. The stress of prolonged swimming reduced the concentration of brain K by 4·4 per cent., and that of muscle by 6·1 per cent. These, together with the foregoing results, were all statistically significant. (II) also tended to prevent the decrease of K concentration in muscles of animals forced to swim. (I) significantly augmented the decrease of concentration of muscle K in swim-stressed animals. The results are discussed in relation to effects of K on tissue excitability and to the antifatigue action of pregnenolone. E. D. WALTER (Chem. Abstr.).

Specific Sympathomimetic Substance in the Brain. Raab, W., Peyser, P., and Gigee, W. (Univ. of Vermont, Burlington). [*Am. J. Physiol.*, **152**, 324–39 (1948).]

A sympathomimetic amine was isolated in relatively large quantities from all parts of the human brain and from animal brains. This substance has some chromogenic and most pharmacodynamic properties in common with adrenaline and with noradrenaline, but it also differs from both of these in some significant respects. It has been designated as encephalin.

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

The Lecithin, Cephalin, and Sphingomyelin Content of Serum. I. As Indicated by the Choline-phosphorus and Nitrogen-phosphorus Ratios. Sinclair, R. G. (Queen's Univ., Kingston, Can.). [*J. Biol. Chem.*, **174**, 343–53 (1948).]

The lipides were isolated from large volumes of serum or plasma, and fractionated into acetone-soluble and acetone-insoluble fractions. The latter was purified by dialysis to remove nonlipide impurities and analysed for choline P and N. The crude acetone-insoluble lipides contained 21–40 per cent. diffusible, non-lipide impurities which were rich in N and included some choline. The choline to P ratio was used as a measure of the percentage of lecithin plus sphingomyelin. The difference between the N : P ratio and 1·0 was assumed to measure the percentage of sphingomyelin. The data of Taurog *et al.* (*C. A.*, **39**, 964^7) are confirmed in that the phospholipides in human and dog plasma are mainly choline-containing, and that cephalin is at most a minor component—3–8 per cent. This is also true for serum phospholipides of beef and pig, but turkey serum contains about 20 per cent. cephalin. Sphingomyelin makes up 15–32 per cent. of the total phospholipides.

II. As Indicated by the Amino Nitrogen and Non-diffusible Phosphorus Content after Differential Hydrolysis of the Acetone-insoluble Lipides. [*Ibid.*, 355–60.]

The method of Schmidt *et al.* (*C. A.*, **41**, 3158f) was adapted so that after alkaline hydrolysis the H_2O-soluble glycerophosphate, choline, and ethanolamine could be separated from the non-hydrolyzed sphingomyelin by either solvent fractionation or by dialysis. The amino N of the H_2O-soluble or diffusible fraction was taken as a measure of the cephalin, and the P of the H_2O-insoluble or non-diffusible fraction as a measure of the sphingomyelin. The acetone-insoluble lipides, after purification by dialysis, were hydrolyzed with N KOH at 37°. From the water-soluble amino N found it was calculated that cephalin is present to about 3–6 per cent. of the total phospho-lipides in human plasma and pig serum, and 16 per cent. in turkey serum. No cephalin was found in beef or dog serum. The sphingomyelin P was found to make up 15–32 per cent. of the total P. The values for sphingomyelin are in agreement with those calculated from the N : P ratio (*cf.* above). A. DIETZ (Chem. Abstr.).

D-α-Amino Acid Oxidase in the Central Nervous System. Mitolo, Michele (Univ. Bari, Italy). [*Boll. soc. ital. biol. sper.*, **23**, 983–4 (1947).]

The D-α-amino acid oxidase was determined by the production of NH_3 from the D-amino acids alanine and phenylalanine through the action of minced nerves.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

The oxidase was present in some sections of the nervous system (particularly in the cerebral gray matter) of frogs, hens, guinea-pigs, rabbits, rats and roosters, but was absent in other portions. It was not present in the nervous system of greenfinches, ducks or cats. HELEN LEE GRUEHL (Chem. Abstr.).

The Cerebrospinal Fluid in Epileptics and Changes Therein after Spontaneous and Induced Seizures. Boszormányi, Z. (Pázmány Péter Univ., Budapest, Hung.). Confinia Neurol., **5**, 281–97 (1942) (*in French*).]

In 80 of 380 epileptics the protein concentration, colloid precipitation test or both were abnormal in the cerebrospinal fluid. No relation could be established between the findings and the duration of disease, the frequency of attacks, or the proximity of the last seizure. In 39 patients the fluid was examined before and after electric shock; in about 25 per cent. there was an increase in the number of cells, and protein concentration and characteristic changes in the colloid precipitation curve. In 6 of 8 epileptics and 2 of 4 schizophrenics the permeability of the blood-spinal fluid barrier, measured by the NaBr method, was increased after electric shock. WARREN M. SPERRY (Chem. Abstr.).

Ultraspectrographic Studies on Cerebrospinal Fluid. Spiegel-Adolf, Mona (Temple Univ., Philadelphia, Pa.). [*Confinia Neurol.*, **7**, 77–88 (1946) (*in English*); *cf. C. A.*, **41**, 1032f).]

Ultraspectrographic examination of cerebrospinal fluid indicates the presence of abnormal proteins in general paresis, and of nucleic acids in the case of some patients with convulsive disorders, cerebral concussion, or brain tumor. The presence of nucleic acids was shown in the fluid from dogs which had electrically induced convulsions; this finding was confirmed by a chemical test.
W. M. SPERRY (Chem. Abstr.).

Iron Content of Blood Serum and of Cerebrospinal Fluid in Parkinsonism. Ferroni, A. (Univ. Catania, Italy), and Indovina, I. [*Boll. soc. med. chir., Catania*, **13**, 9 pp. (1945); *cf. C. A.*, **42**, 1652h.]

Determined by the method of Heilmeyer and Plottner (*C. A.*, **31**, 5426[3]), Fe in the blood serum in 20 cases of Parkinsonism was nearly normal; in a small majority of cases it was lower than normal. In 8 of 11 cases Fe in the spinal fluid was higher (average 46γ per cent.) than normal. Two hypotheses for such variations are suggested. C. SCANDURA (Chem. Abstr.).

Determination of Iron in the Cerebrospinal Fluid. Buscaino, G. A. (Univ. Catania, Italy). [*Progresso med.*, **2**, 6 pp. (1946).]

As determined by the Heilmeyer method (*C. A.*, **31**, 5426[3]), the average of 45 determinations of Fe in the cerebrospinal fluid was 34γ per cent. In infective diseases of the nervous system and in progressive paralysis the Fe contents were, respectively, 20 and 18γ per cent. In schizophrenia 38–65γ per cent. was found. The cause of these variations is discussed. C. SCANDURA (Chem. Abstr.).

An Investigation of the Protein of Cerebrospinal Fluid by Photoelectric Measurement of the Xanthoproteic Reaction. Duensing, Friedrich (Univ. Gottingen, Ger.). [*Z. ges. Neurol. Psychiat.*, **178**, 218–39 (1945).]

Precipitate the total protein of cerebrospinal fluid in a calibrated centrifuge tube by CCl_3COOH, centrifuge, and dissolve in 0·1 N NaOH. Add concentrated HNO_3 and heat 5 minutes at 100°. Add 33·3 per cent. NaOH to a definite volume, filter, and read the yellow color in either a step photometer or a photoelectric colorimeter. With the latter, protein can be determined in 0·5 ml. of fluid. Determine globulin in the same way except that it is precipitated by saturated $(NH_4)_2SO_4$. Albumin and globulin give different extinction curves because they differ in content of aromatic amino acids. Therefore, the results are calculated from curves determined on serum albumin and globulin. The method for total protein was compared with the direct centrifugation method of Kafka (*C. A.*, **41** 6915g) on 300 cerebrospinal fluids. In 257 the three tests were in qualitative diagnostic agreement. In 134 of these the two methods showed a normal protein concentration

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

and the quantitative agreement was fairly good. The colloid reactions also were normal. In 123 the two methods showed an abnormally high protein concentration, but there was frequently poor quantitative agreement, especially when the protein concentration was abnormally high. The colloid reactions also were abnormal. In the remaining 43 samples the two methods for protein and the colloidal reactions were not in qualitative diagnostic agreement. In most of these the new protein method and the colloid reactions agreed in showing either normal or abnormal fluids, while the centrifugation method gave the opposite result. Some of the discrepancies may be caused by variations in the content of aromatic amino acids in protein. W. M. SPERRY (Chem. Abstr.).

Simple Determination of the Globulin-albumin Ratio in Spinal Fluid. Schwab, Arthur O. (Inst. biol. pesquisas tecnol., Curitiba, Brazil). [*Arquiv. biol. tecnol.*, **1**, 33–8 (1946).]

The turbidity from Nonne's reaction is compared with the turbidity from half the liquor and a supersaturated solution of $(NH_4)_2SO_4$ to determine the ratio. The method is simple and clinically satisfactory. MORRIS SLAVIN (Chem. Abstr.).

The Presence of Specific Protective Proteinases in Cerebrospinal Fluid and Their Preparation in Crystalline Form. Abderhalden, Rudolf, and Elsaesser, Karl Heinz (Martin-Luther-Univ., Halle, Ger.). [*Allgem. Z. Psychiat.*, **123**, 83–9 (1944).]

Crystalline preparations with protective proteinase (I) activity were obtained from cerebrospinal fluid (C.S.F.) by the following procedure: The C.S.F. was dialyzed 48 hours against flowing conditioned water and 14 hours against distilled water, and then centrifuged. The supernatant fluid was concentrated slowly *in vacuo* at 35° to 1/8 to 1/10 of the original volume. (I) crystallized in beautifully formed, large crystals, probably monoclinic, and in small polymorphic crystals. Preparations from healthy and schizophrenic subjects appeared the same, and showed no differences from crystals isolated previously from patients with Huntington's chorea (*Fermentforsch.*, **17**, 213 (1943)). All preparations were colored blue violet by ninhydrin, dissolved with difficulty in water or 0·1 N NaOH, and were fairly soluble in 0·1 N HCl. The crystalline preparations or original C.S.F. from healthy persons gave no activity when tested against various parts of the brain as substrates with trypsin in a concentration of 1 : 30,000 as an activator. Crystalline preparations from schizophrenics under the same conditions gave positive reactions, the reaction with cerebral cortex being strong. It is concluded that the crystalline material is not (I), but that (I), when present, is adsorbed on the crystals. A crystalline preparation with (I) activity was obtained from the urine of a patient with Huntington's chorea as follows: 8 l. of urine was dried, 1 gm. of the powder was eluted at 37° with 40 ml. of water, and from this solution crystals separated in the icebox. The preparation had strong (I) activity even without trypsin activation against various parts of the brain. A crystalline preparation from C.S.F. of the same patient was also active against some but not all of the substrates. The untreated urine and C.S.F. from several hundred patients were tested for (I) activity against various parts of the brain as substrates. The C.S.F. results correlated more closely with the clinical diagnoses than the urine findings.

WARREN M. SPERRY (Chem. Abstr.).

The Effect of Spinal Puncture and of Subarachnoid Introduction of Tri-iodide on Blood Sugar in Man. Pappalardo, Piero (Univ. Catania, Italy). [*Riv. patol. nervosa e Mentale*, **62**, 93–107 (1943).]

The effect on blood-sugar concentration (I) of removal of 8 c.c. of cerebrospinal fluid (C.S.F), with and without the subarachnoid injection of tri-iodide (II) and of (II) without withdrawal of C.S.F. was studied in patients with various neurological and mental diseases. (I) was determined before and at ½, 1, 3, 5 and 7 hours after the experimental procedure. After removal of C.S.F. alone in 15 patients there was an average decrease in (I) of about 20 per cent. at 1 hour with a slow increase toward normal, but the average (I) was still 10 per cent. low at 7 hours. There was a wide variation in degree of change in (I), more or less related to the severity of neurological symptoms. When (II) was injected after removal of C.S.F.

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

in 12 experiments (I) increased in some and decreased in others, so the average (I) did not change significantly. In all of 5 experiments on 3 patients (I) increased after injection of (II) without withdrawal of C.S.F., with the maximum increase (about 30 per cent.) at 1 hour. WARREN M. SPERRY (Chem. Abstr.).

The Effect of Ether and Dial Anesthesia on the Passage of Sulfathiazole into the Cerebrospinal Fluid. Teague, R. S., and Perdue, Mervin (Med. Coll. of Alabama, Birmingham). [*J. Pharmacol. Exptl. Therap.*, **92**, 277–82 (1948).]

Ether anesthesia significantly increased the passage of sulfathiazole from the blood into the cerebrospinal fluid of dogs. The influence of dial anesthesia was relatively slight. The findings are discussed from the standpoint of the influence of changes in the cerebral circulation. L. E. GILSON (Chem. Abstr.).

Hormone Activity of Human Cerebrospinal Fluid. Cavini, Augusto (Neuropathol. Clinic, Milan, Italy). [*Riv. patol. nervosa e mentale*, **62**, 320–60 (1943).]

In most of 55 patients with neurological or mental diseases oxytocin (I) activity was found in the cerebrospinal fluid (CSF) by a modified guinea-pig uterus method, but the amounts were small and bore no relation to the type of disease. The injection of CSF directly into the thorax of guinea-pigs caused a decrease in number of pulsations of the heart and the disappearance of the post-diastolic pause. CSF also caused irregular contractions of the isolated guinea-pig bladder. These results indicate that pitressin was present and active while (I) was inactive. No evidence was found for the presence of CSF of hormones of the middle and anterior lobes of the pituitary. WARREN M. SPERRY (Chem. Abstr.).

Potassium and Calcium in Blood Serum and in Spinal Fluid in Causalgia. Kolotilova, A. I. (Leningrad Univ.). [*Nauch. Byull. Leningrad. Gosudarst. Ordena Lenina Univ.*, *No.* 2, 10–12 (1945).]

The object of the experiments was to evaluate the functional state of the sympathetic nervous system by changes in the contents of K and Ca in blood serum resulting from subcutaneous injection of adrenaline to wounded causalgia patients. The content of K in the blood serum remained within normal limits after the injection of adrenaline in amounts smaller than 1 c.c. of 1 : 1000. Similar results were obtained with respect to Ca in most cases, although in some individual cases the Ca content was slightly higher. The K : Ca blood coefficient in these patients was slightly lower (below 1·5). The contents of K and Ca in the spinal fluid remained normal in all cases. Administration of higher concentrations of adrenaline (1 c.c. of 1 : 1000) decreased the K content in the blood in all cases 45 minutes after injection by approximately 20 per cent., whereas Ca remained unchanged.
W. R. HENN (Chem. Abstr.).

Application of the Weichselbaum Biuret Reagent to the Determination of Spinal Fluid Protein. Ditterbrandt, Marlowe (Clin. Lab., Portland, Ore.). [*Am. J. Clin. Path.*, **18**, 439–41 (1948).]

Mix 1 c.c. of spinal fluid and 1 c.c. of biuret reagent (*C. A.*, **40**, 3789[8]) in a Kahn tube. In a control tube place 1 c.c. of biuret reagent and 1 c.c. of water. Place them in a water bath at 37° for 30 minutes. Read immediately in a spectrophotometer. Calculate the concentration by multiplying the optical density by the factor K. K can be calculated after the preparation of the optical d.-concentration graph from the formula $K = C/D$, where C is the concentration of a known sample and D the optical d. The method is rapid and accurate.
JOHN T. MYERS (Chem. Abstr.).

Methods for Determining Total Proteins and Their Fractions in Spinal Fluid. Baudouin, A., Lewin, J., and Hillion, P. [*Ann. biol. clin.* (*Paris*), **6**, 12–37 (1948).]

Review covering these topics: Qualitative assays; semiquantitative assays; exact quantitative assays; chemical methods; fractionation by ultracentrifugation, ultrafiltration, electrophoresis, and chemical precipitation. Of all the methods,

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

fractionation by $(NH_4)_2SO_4$ seemed particularly to be recommended, for it permits a quantitative separation of fractions even in very dilute solutions, is simple, and needs no special apparatus. DOROTHY A. MEYER (Chem. Abstr.).

Influence on the Vasomotor System of Simultaneous Modifications of the Concentration of Potassium and Calcium Ions in the Liquid of the Cerebral Ventricles. Leusen, I. (Univ. Gand., Belg.). [*Experientia*, **4**, 154–5 (1948) (*in French*).]

In dogs sensitized with morphine-chloralosane, liquid was introduced into a lateral ventricle by needle and allowed to flow out of a needle in the cisterna magna. An excess of K in the ventricles increases the vasomotor tonus and the vasomotor responses produced by faradization of the central end of the vagus in the neck, or by changing pressure in the isolated carotid sinuses. An excess of Ca depresses the tonus of the vasomotor center and its reflex responses. An excess of Ca may be neutralized by an excess of K. Perfusion with a solution containing no Ca increases the tonus and the responses of the vasomotor center, while the absence of K does not seem to have any influence. JOHN T. MYERS (Chem. Abstr.).

Content of Bisulfite-binding Compounds in the Blood and the Spinal Fluid in Acute Neuroinfectional Processes (in Relation to the Content of Vitamin B_1 in the Blood and the Spinal Fluid in Neuroinfections). Kravets, V. S., and Rabinovich, S. M. [*Nevropatol. i Psikhiat.*, **17**, 59–63 (1948).]

In 100 per cent. of spinal fluids studied and 92 per cent. of bloods studied the content of bisulfite-binding substances was sharply increased over normal level in acute stages of various neuroinfections. This indicates a decrease of content or of activity of vitamin B_1 in the organism. The principal bisulfite-binding compound was pyruvic acid, which normally exists in the blood to the extent of only 8–10 mgm. per cent. The method used is not stated. The average increase of blood pyruvic acid was to 35 mgm. per cent. (i.e. 360 per cent. increase), with maximum 1,500 per cent. increase being observed in a grave case of acute infection of the brain and the spinal cord. Disseminated sclerosis gave an average increase of 410 per cent., maximum 580 per cent.; somewhat lower values were found in acute polyneuritis of infectional nature. Increases in the spinal fluid averaged 520 per cent. for polyneuritis and 610 per cent. for encephalomyelopolyneuritis; maximum 900 and 910 per cent. respectively. G. M. KOSOLAPOFF (Chem. Abstr.).

Free Amino Acids with Benzene and Benzopyrrole Nuclei in the Spinal Fluid of Schizophrenics and Depressives. Tinelli, Giuseppe (Univ. Bari, Italy). [*Boll. soc. ital. biol. sper.*, **23**, 981–2 (1947); *cf. C. A.*, **40**, 6629[4].]

In 51 such cases the average titer of the above amino acids (Mitolo semimicro-method (*C. A.*, **41**, 2769h)) was 3·27 mgm./100 c.c.
HELEN LEE GRUEHL (Chem. Abstr.).

Free Amino Acids with Benzene and Benzopyrrole Nuclei in the Spinal Fluid of Phrenasthenics. Tinelli, Giuseppe (Univ. Bari, Italy). [*Boll. soc. ital. biol. sper.*, **23**, 982 (1947); *cf. C. A.*, **40**, 6629[4].]

The average titer of these amino acids was 2·78 mgm./100 c.c. fluid in 52 cases.
HELEN LEE GRUEHL (Chem. Abstr.).

Plasma and Cerebrospinal Fluid Iron Concentration Studies in Syphilitic and Non-syphilitic Patients. Greif, Roger L. (Johns Hopkins Univ., Baltimore, Md.). [*Am. J. Syphilis, Gonorrhea, Venereal Diseases*, **32**, 337–44 (1948).]

Plasma Fe concentrations were measured after oral administration of $FeSO_4$ to patients with syphilis, anemia and chronic infections. No diagnostic or prognostic value could be attached to the tolerance curves in syphilitics, and no correlation was noted between pathological changes and Fe concentrations of the cerebrospinal fluid. The mean Fe concentrations of 4 normal and 4 rabbits with testicular chancres were 261 and 225γ/100 ml. respectively. A. DIETZ (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Action of Acetylcholine and Adrenaline on the Reflex Stimulation of the Isolated Spinal Cord of a Frog. Kirillova, A. A. [*Byull. Eksptl. Biol. Med.*, **24**, *No.* 1, 75 (1947); *cf. C. A.*, **41**, 4576i.]

The object of this investigation was the study of the action of physiologically active substances directly on the nerve centers. Low concentrations of acetylcholine (2×10^{-8} to 5×10^{-8}) strengthen the reflex activity of the central nervous system, and high concentrations (1×10^{-6}) suppress it. Tests showed the presence of sufficient acetylcholine in the central nervous system to cause a change in the physiological action and in the functional state of nerve centers. Also adrenaline (0·1 per cent.) causes stimulation of spinal nerve centers, especially when added to Ringer solution. W. R. EICHLER (Chem. Abstr.).

The Chemical Nature of a Substance in Brain Tissue Sensitizing Muscle to Acetylcholine. Golubtsova, A. V., and Mineav, P. F. [*Byull. Eksptl. Biol. Med.*, **23**, 169–72 (1947).]

Brain emulsion of a frog was prepared. Eleven experiments were carried out to determine the sensitizing action (1) of a plain emulsion, (2) of emulsion boiled for 7 minutes in neutral solution, (3) of the filtrate after precipitation of the proteins, and (4) of the same filtrate after 7 minutes' boiling with an equal volume of 2 N HCl, on stomach muscle of a frog. Exposure to acetylcholine with unboiled, but especially with boiled emulsion caused greater contraction of the muscle than with acetylcholine alone. Emulsion alone did not cause contraction. The sensitizing substance is thermostable in neutral medium. The sensitizing effect is not lost by precipitation of protein from the emulsion with trichloroacetic acid. Boiling protein-free filtrate with HCl causes loss of the sensitizing action and splitting of compounds containing labile phosphate groups present in the brain. Inorganic P in the protein-free filtrate increased with HCl hydrolysis about 22–30 mgm., calculated with respect to 100 gm. brain tissue. It is assumed that the sensitizing substance in brain tissue is a compound containing labile phosphate groups. It is possible that the sensitizing action is caused not only by adenosine-triphosphoric acid and adenosinetriphosphate of brain origin, but also by polyphosphoric compounds in brain tissue, especially diphosphothiamine.

W. R. EICHLER (Chem. Abstr.).

Effect of Acetylcholine, Caffeine and Alkaloids on Activity of Muscle Adenosinetriphosphatase. Torda, Clara, and Wolff, Harold G. (*Cornell Univ. Med. Coll., New York, N.Y.*). [*Am. J. Physiol.*, **152**, 86–92 (1948).]

The effects of acetylcholine, some alkaloids and caffeine on the activity of muscle adenosinetriphosphatase were investigated. Acetylcholine in low concentrations increased the activity of the enzyme. d-Tubocurarine, caffeine and K, in concentrations corresponding to those inducing muscle contracture, decreased the activity of the enzyme. Atropine, ephedrine, morphine, physostigmine, prostigmine, quinine, strychnine, and veratrine, in concentrations not interfering with the P determination, did not modify the activity of the adenosinetriphosphatase. The mechanism of action of acetylcholine on muscle is discussed.

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

The Bathmotropic Effect of Acetylcholine on the Heart. Leonova, E. F. [*Byull. Eksptl. Biol. Med.*, **23**, 278–81 (1947) (*in Russian*).]

Excitability of heart muscle is increased by acetylcholine and rhythm of the sinus node is decreased. A definite relation exists between the decrease in the stimulation of the sinus node caused by acetylcholine and its negative chronotropic action. The clearer the negative chronotropic effect caused by acetylcholine the weaker the stimulation of the sinus node. After atropinization of the heart acetylcholine no longer lessens the stimulation of the sinus node, but the power of acetylcholine of increasing the stimulation of the heart muscle is maintained. This circumstance shows that the increase in the stimulation of the heart muscle by acetylcholine is not caused by the muscarine-like action of acetylcholine. Acetylcholine has the same effect on the heart muscle as on skeletal muscles, increasing the stimu-

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

lation of both. A cardiogram of a frog's heart and a table showing injection of acetylcholine of different concentrations as well as the state of the heart activity are shown. W. R. EICHLER (Chem. Abstr.).

Action of Acetylcholine on the Blood Sugar in Dogs. Onchi, Takeyuki (Tohoku Imp. Univ., Sendai). [Tohoku J. Exptl. Med., **41**, 102–7 (1941) (*in English*).]

A 2·5 per cent. solution of acetylcholine chloride was injected subcutaneously into 3 normal dogs, or 3 doubly splanchnicotomized dogs, at a concentration of 15 mgm. per kgm. body weight. The dogs were not restrained or narcotized. The blood sugar in the normal dogs increased from 96, 75 and 72 to 153, 120 and 87 mgm. per cent. respectively, the maximum value occurring about a half hour after injection. About 1–1½ hours later the blood-sugar levels were again normal. In the splanchnicotomized dogs the blood sugar also increased from 96, 76 and 71 to 140, 126 and 103 mgm. per cent. respectively, 15, 30 and 10 minutes after acetylcholine injections. Intravenous injections of 3 mgm. of acetylcholine chloride per kgm. of body weight also acts to cause hyperglycemia, its intensity depending upon the velocity of injection. However, 0·5 mgm. of acetylcholine chloride per kgm. body weight injected intravenously in 30 seconds decreased the blood-sugar content. Consequently, acetylcholine hyperglycemia does not depend upon the functioning of the splanchnic nerves. BRUNO VASSEL (Chem. Abstr.).

Comparative Study of the Acetylcholine Content and the System Histidine Decarboxylase-histaminase in Nerves During Stimulation. Rybkina, D. E. [Byull. Eksptl. Biol. Med., **24**, *No.* 1, 53–7 (1947).]

The sciatic, phrenic and vagus nerves of several animals were stimulated by means of an induction coil. The acetylcholine content in nerve fibres increases at the threshold stimulation, but decreases or entirely disappears with stronger stimulation. Threshold stimulation of nerves for one minute causes liberation of histamine and activation of histidine decarboxylase. Strong stimulation increases histamine liberation from the nerves. W. R. EICHLER (Chem. Abstr.).

Interaction Between Acetylcholine and Adenosinetriphosphate in Normal, Curarized, and Denervated Muscle. Buchthal, Fritz, and Folkow, Bjorn (Univ. Copenhagen, Denmark). [Acta Physiol. Scand., **15**, 150–60 (1948).]

Adenosinetriphosphate (ATP) applied to muscle increases its sensitivity towards intra-arterially injected acetylcholine 4–10 fold. Inorganic triphosphate has a similar effect. The effect is not on the neuromuscular transmission, but on the muscular substance, since it is elicited also in a curarized muscle. However, the electrically induced increase is restricted to the period of contraction. In denervated muscle intra-arterial injection of acetylcholine makes the muscle insensitive to the application of ATP. The blocking action of acetylcholine on subsequent intra-arterial injection of ATP into denervated or curarized muscles occurs in two stages, according to the amount injected. Why small amounts of acetylcholine prevent ATP administered through the artery from producing a response is not clear. Large amounts also inhibit the release of contraction by intramuscularly applied ATP. Since, however, the electric excitability is retained, it must be assumed that acetylcholine somehow prevents a contact between ATP and the contractile muscle elements. The threshold for intra-arterially injected acetylcholine was found to be 10 times higher in winter frogs than in summer frogs. In winter frogs acetylcholine produces a contracture-like response, and a previous ATP application changes it to a contraction of short duration. Twitches produced by electric stimulation during acetylcholine response are of smaller height in winter frogs and of greater height in summer frogs. The decreased electric excitability and the changes in the strength duration curve of muscle persists for a considerable time after the intra-arterial injection of acetylcholine, especially in denervated muscles. Denervated muscle manifests considerably higher electric excitability than curarized muscle, but the strength-duration curve of denervated muscles is unaffected by curarization, and previous application of ATP does not influence the strength-duration curve of a muscle. S. MORGULIS (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Inhibitory Action of Antergan on Acetylcholine and Histamine. Danielopolu, D., Popesco, M., and Mezincesco, E. [*J. physiol. et path. gen.*, **38**, 316–27 (1941–1945).]

The substance 933F prevents the action of adrenaline in small concentrations, of acetylcholine in much higher concentrations, and of histamine only in very high concentrations. Antergan (2399RP) has no action on adrenaline, but inhibits acetylcholine and histamine action on the intestine and pregnant uterus of the guinea-pig. It has a hypotensive effect itself, and does not prevent the action of acetylcholine and histamine on the blood pressure and circulation, but does so in conjunction with atropine. Therapeutically in anaphylactic shock both should be given, since, after atropine, acetylcholine and histamine cause adrenaline secretion from the adrenals. B. A. (Chem. Abstr.).

Blood-pressure Changes in Response to Electrical and Chemical (Acetyl-β-methylcholine) Stimulation of the Cerebral Cortex in Dogs. Kremer, William F. (Univ. of Virginia, Charlottesville). [*Am. J. Physiol.*, **152**, 314–23 (1948).]

Acetyl-β-methylcholine evoked a clear response from two circumscribed cortical areas in dogs, one in the motor cortex, the other in the anterior ectosylvian gyrus. Simultaneous application of prostigmine prolonged the effect considerably. The use of Na amytal as a general anesthetic, instead of dial, affected only the stimulability of the cortex, but did not change the character of the blood-pressure response. Acetyl-β-methylcholine is considered a useful cortical stimulant, since it probably approaches the ideal physiological stimulus more than does electric faradic stimulation. E. D. WALTER (Chem. Abstr.).

Local Anesthetics and Cholinesterase. Ferrari, William (Univ. Modena, Italy). [*Boll. soc. med. chir. Modena*, **45**, 422–7 (1945).]

Experiments *in vitro* with human (and horse) blood serum and brain extracts showed that some local anesthetics as novocaine, percaine, cocaine and tutocaine inhibit the cholinesterase of blood and not that of the nervous tissue. This explains why local anesthetics do not act on the whole organism as does eserine.
C. SCANDURA (Chem. Abstr.).

A Study of the Cholinesterase of the Blood and of the Cerebrospinal Fluid in Different Psychiatric Syndromes. Mutrux, S., and Glasson, B. (Bel-Air, Geneva, Switz.). [*Monatsschr. Psychiat. Neurol.*, **114**, 20–35 (1947) (*in French*).]

In 100 patients with various types of psychiatric disorder there was a 10-fold variation in serum pseudocholinesterase and a 3-fold variation in red-cell cholinesterase; there was no correlation between the amounts of these enzymes. Very small and variable amounts of cholinesterase, pseudocholinesterase and aliesterase were found in the cerebrospinal fluid. There was no correlation between any of the variables determined and any psychiatric disorder.
WARREN M. SPERRY (Chem. Abstr.).

The Cholinesterase of Human Cerebrospinal Fluid. Ferrari, William (Univ. Modena, Italy). [*Boll. soc. med. chir. Modena*, **46**, 2 pp. (1946).]

In a preceding study (*cf.* preceding abstract) the cholinesterase of brain extracts is different from that of blood. Now it is stated that in cerebrospinal fluid both types of cholinesterase are represented, as eucupine inhibits only partly (60 per cent.) the activity of cholinesterase. C. SCANDURA (Chem. Abstr.).

Eucupine Action on Cholinesterase. Zamboni, P. (Univ. Modena, Italy), and Ferrari, W. [*Boll. soc. med. chir. Modena*, **45**, 435–45 (1945).]

The action of eucupine on the cholinesterase of horse serum and human serum and on the cholinesterase of horse-brain extracts was investigated and compared with that of eserine. Eucupine is found to be more active than eserine in horse serum, active enough in human serum, but inactive in horse-brain extracts. The cholinesterase of brain extracts is different from that of blood.
C. SCANDURA (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

Cholinesterase. V. Kinetics of the Enzyme Inhibition. Nachmansohn, David, Rothenberg, Mortimer A., and Feld, Emily A. (Columbia Univ., New York, N.Y.). [*J. Biol. Chem.*, **174**, 247–56 (1948); *cf. C. A.*, **42**, 2025f.]

Cholinesterase (I) was prepared by $(NH_4)_2SO_4$ precipitation. Lyophilization and storage for several months in the icebox had no effect on the activity of (I). It was purified by ultracentrifugation. In the (I) solution obtained 1 mgm. of protein split about 60 gm. of acetylcholine per hour. About 50 per cent. of (I) was inactivated by di-isopropyl fluorphosphate (II) after 150 minutes' incubation. There was little difference in the rates of inactivation between 10° and 23°. With increased (II) concentration the inactivation of (I) increased proportionally, which suggests a reaction on a stoichiometric basis. The greater the dilution of (I) the higher the excess of (II) required. The main difference of the inhibition of (I) by (II) as compared with that of prostigmine and eserine is the irreversibility of (II). Incubation up to 150 minutes did not affect the inhibitory action of the alkaloids. In lower concentration the alkaloids have a stronger effect than (II), but in higher concentration (II) is more effective and rapidly approaches completion. The toxicity of (II) must be attributed solely to the inactivation of (I), and the great variety of toxic symptoms is due to the great number of variables influencing the course of this single reaction. H. O. SINGHER (Chem. Abstr.).

The True Cholinesterase and Pseudocholinesterase. Their Differentiation by Action of a Local Anesthetic. Ferrari, W. (Univ. Modène, Italy). [*Schweiz. med. Wochschr.*, **78**, 282–4 (1948); *cf. C. A.*, **42**, 3446f.]

Caffeine inhibits cholinesterase activity of brain extracts and of extracts of the sciatic nerve. It has no effect on the activity of the cholinesterase of human serum and of horse serum. A differentiation of the two types of enzymes by the inhibitory action of caffeine is not possible. Ferrari suggests the use of eucupine.
GERTRUDE E. PERLMANN (Chem. Abstr.).

Cholinesterase: A Study in Comparative Enzymology. Augustinsson, Klas Bertil (Roy. Veterinary Coll., Stockholm). [*Acta Physiol. Scand.*, **15**, *Suppl.* **52**, 182 pp. (1948); *cf. C. A.*, **41**, 4841b.]

The unfertilized sea urchin egg is free from cholinesterase activity, but 20 hours after fertilization this activity suddenly increases progressively to a high value at 48 hours. The unfertilized eggs hydrolyze tributyrin, acetylsalicylic acid or acetylsalicylcholine by ordinary esterase action. The cholinesterase, when it appears, acts on both acetylcholine or acetyl-β-methylcholine. Bee venom inhibits cholinesterase (horse serum), but has no cholinesterase activity. The kinetics of the reaction and the relation of activity to substrate concentration are discussed. Physostigmine is a strong inhibitor of cholinesterase at all substrate concentrations, and its effect on other esters is also discussed. KCl has only slight inhibiting action. Clupeine inhibits competitively. Choline likewise inhibits competitively in certain instances. Methylene blue inhibits strongly all cholinesterase activity; caffeine and neurine exert a differential inhibition. The cholinesterases are regarded as a family of related enzymes, but of widely divergent properties, which at optimum conditions hydrolyze acetylcholine at the highest rate. Group 1 embraces the enzymes, whose activity is inhibited by a high acetylcholine concentration (optimum substrate concentration 3×10^{-3} M), while Group II contains those with maximum activity at infinite substrate concentration, but in neither group is the specificity for choline esters absolute. S. MORGULIS (Chem. Abstr.).

Influence of Central Nervous System Stimulants on Cholinesterase. Myazdrikova, A. A. (Med. Inst. I Order of Lenin, Moscow). [*Farmakol. i Toksikol.*, **10**, *No.* 3, 3–6 (1947).]

Solutions of caffeine-NaOBz (I) 200, strychnine nitrate (II) 20, 100, and 250, and phenamine sulfate (III) 100 p.p.m. do not contract leech muscle (IV) nor affect the activity of acetylcholine (V) or eserine (VI) toward (IV); but (III) contracts (IV) at 1,000 p.p.m. The effect of mixed (V) and (VI) on (IV) is accelerated by (I). Metrazole contracts eserinized (IV) at 1,000, cordiamine is less active at 1,000 and 2,000 p.p.m. Subsequent doses of (V) or (VI) (at 1 p.p.m.) affect (IV) more than

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

does the initial dose. The ternary mixture (I), (V), (VI) was active; blends of (V) and (VI) were very active, blends of (I) and (VI) inert to (IV).

JULIAN F. SMITH (Chem. Abstr.).

Influence of Parenteral Treatment on Cholinesterase in Gastric Ulcer. Demole, M., Aron, E., and Pequet, J. (Univ. Geneva, Switz.) [*Gastroenterologia*, **71**, 273–82 (1946).]

Injections of histidine plus vitamin C caused an increase of serum cholinesterase; injection of histidine alone, or of sex hormones, caused a decrease of serum cholinesterase. M. H. POWER (Chem. Abstr.).

Selective Inhibition of Cholinesterases. Adams, D. H., and Thompson, R. H. S. (Dept. Biochem. Oxford, Eng.). [*Biochem. J.*, **42**, 170–5 (1948).]

"True" cholinesterases hydrolyze readily acetyl-β-methylcholine, but not benzoylcholine, while the reverse holds for the pseudo enzyme. A selective inhibitor of the pseudo enzyme has been demonstrated in certain curare preparations. An inhibitor which is specific for true cholinesterase but is relatively ineffective for the pseudo enzyme is apparently not yet known, though caffeine comes near being one (6 mM is required to cause 40 per cent. inhibition of splitting of 6·6 mM acetylcholine). The following three types of inhibitors have been described: (A) Selective inhibitors of true cholinesterase (N-methylamine-2,2'-dichlorodiethyl (DDM) (I) and caffeine; (B) selective inhibitors for pseudocholinesterase (alkyl fluophosphates, Nu 683, curare (unauthenticated samples), percaine and pyrazolone derivatives); (C) inhibitors of both cholinesterases (eserine, tri-o-cresyl phosphate and morphine). These studies indicate that (I) fulfils the role of a selective inhibitor of the true cholinesterases. It is less potent than either di-isopropyl, fluo-phosphate or eserine, but DDM may not necessarily be the most potent representative of the N mustard group. However, $2{\cdot}5$ to $8{\cdot}7 \times 10^{-5}$ M causes 50 per cent. inhibition, whereas 10–30 times as high a concentration is required to inhibit to the same extent the pseudo enzymes. S. MORGULIS (Chem. Abstr.).

Cholesterase and Lecithinase of Blood Plasma. Breton, Elaine Le, and Pantaléon, Jean (Sorbonne, Paris). [*Arch. sci. physiol.*, **1**, 199–217 (1947) (*in French*); *cf. C. A.*, **39**, 3796[8, 9]; **42**, 2296e, 2659d.]

The ratio free cholesterol/-esterified cholesterol in the serum or plasma of mammals is constant. The constancy of the ratio is due to two associated enzymes, a β-lecithinase and Sperry's cholesterase. The esterification takes place in the following two steps; lecithin + $2H_2O$ $\xrightarrow{\beta\text{-lecithinase}}$ 2 fatty acids + glycerophosphate of choline; 2 fatty acids + 2 cholesterol $\xrightleftharpoons{\text{cholesterase}}$ 2 cholesterolesters + 2 H_2O. Phlorizin, which inhibits the lecithinase reaction, also inhibits the formation of cholesterol esters. W. T. SMITH, jun. (Chem. Abstr.).

3. Pharmacology and Treatment.

Dangers and Advantages of Insulin Therapy. Neri, Antonio (Univ. Milan, Italy). [*Riv. patol. nervosa e mentale*, **61**, 137–251 (1943).]

Review concerned mainly with chemical and physiological studies of perspiration, saliva, gastric secretion, bile, liver and kidney function, and internal secretions (thyroid, parathyroid, pituitary, adrenal, pancreas, gonads) following insulin treatment. WARREN M. SPERRY (Chem. Abstr.).

Studies on the Mechanism of the Central Action of Hexachlorocyclohexane and of Dibenzylmethylamine on the Higher Animals. Dallemagne, M. J., Philippot, E., and Gernay, J. M. (Univ. Liége, Belg.). [*Experientia*, **4**, 155 (1948) (*in French*).]

Experimental results show that the γ-isomers of hexachlorocyclohexane injected intravenously into dogs produce severe convulsions, but that the α-, β- and δ-

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

isomers do not have this effect. The action of the γ-isomers seems to involve the activity of cholinesterase. Similar results were obtained with dibenzylmethylamine, which produces hypermotor activity and is a powerful inhibitor of pseudocholinesterase activity *in vitro*. This is not the case with the γ-isomer of hexachlorocyclohexane. JOHN T. MYERS (Chem. Abstr.).

Anticonvulsant Action of Isopropyl Alcohol. Chu, Nai, Driver, R. L., and Hanzlik, P. J. (Stanford Univ. Med. School, San Francisco, Calif.). [*J. Pharmacol. Exptl. Therap.*, **92**, 291–302 (1948).]

Isopropyl alcohol (I) given gastrically to rabbits, cats and rats was found to be anticonvulsant against clonic (epileptiform) convulsions produced electrically. It compared favorably with diphenylhydantoin (II), and was less objectionable than phenobarbital and superior to tridione. High anticonvulsant efficiency was preserved, without motor depression and ataxia, when (I) was given with (II), but not when given with phenobarbital or tridione. (I) alone or with (II) was comparatively safe in the single optimum doses used (1,250 mgm./kgm.); all the animals recovered uneventfully and survived indefinitely. Higher doses were toxic. (I) caused a definite acetonemia which is believed to be largely responsible for, or intimately related to, its anticonvulsant action, although the average peak changes in blood acetone and cortical thresholds did not coincide. Maximum cortical depression occurred about one hour after administration of (I) and maximum blood acetone in 2–4 hours. The anticonvulsant efficiency of (I), as a ketogen, is consistent with the well-known ketogenic principle in therapy of epilepsy. Thus far (I) has been found to be the most efficient and least objectionable of a considerable number of ketogenic compounds tested. L. E. GILSON (Chem. Abstr.).

Studies of Analeptics. II. Metrazole. Whitehead, R. W., and Draper, W. B. [*Surg. Gynecol. Obstet.*, **74**, 1020–4 (1942); *cf. C. A.*, **37**, 4477[6].]

In dogs metrazole (5 mgm. per kgm.) slightly increased the amounts of ether or divinyl ether, but not of $CHCl_3$, needed to produce respiratory arrest. Failures to resuscitate dogs from overdoses of ether, divinyl ether or $CHCl_3$ by means of artificial respiration and O were 1·4, 3·7 and 9·7 per cent. respectively. There were no failures when metrazole was injected as well. B. A. (Chem. Abstr.).

The Reaction Between Thiobarbituric Acid and the Oxidation Products of Certain Lipides. Bernheim, Frederick, Bernheim, Mary L. C., and Wilbur, Karl M. (Duke Univ. School of Med., Durham, N.C.). [*J. Biol. Chem.*, **174**, 257–64 (1948); *cf. C. A.*, **42**, 3008i.]

After incubation with ascorbic acid, egg lecithin, the fatty acids isolated from it, brain lecithin, fatty acids from linseed oil, cephalin, methyl linolenate, and a brain protein-lecithin complex give color reactions with either thiobarbituric (I) or p-aminobenzoic acid (II). The absorption spectra of these colors are identical with those described by Kohn and Liversedge (*C. A.*, **39**, 1208[3]) for the condensation products of (I) and (II) with aerobically incubated tissues. The same colors are produced after autoxidation. Thus ascorbic acid is acting as a catalyst. Crystallized hemoglobin acts catalytically for all lipides except cephalin. Incubation with H_2O_2 gives negative results. Lysolecithin, sphingomyelin and sphingosine do not give the reaction. The addition of iodine before incubation, semicarbazide, or phenylhydrazine after incubation reduces the amount of color. The color compound was isolated, analyzed and found to contain atom fragments resulting from the oxidation of a double bond in linolenic and similar unsaturated acids, which may be formed in oxidative metabolism. A. DIETZ (Chem. Abstr.).

Respiratory, Electroencephalographic and Blood Gas Changes in Progressive Barbiturate Narcosis in Dogs. Swank, Roy L., and Foley, Joseph M. (Harvard Med. School, Boston). [*J. Pharmacol. Exptl. Therap.*, **92**, 381–96 (1948).]

Experimental data on the action of Na amytal are presented as graphs. Consistent correlations were observed which indicated the relative depth of narcosis with fair accuracy. The maintenance of normal O tension in the arterial blood

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press

appears to lessen the depression of neuronal activity by Na amytal. The effects of analeptics (picrotoxin, metrazole, caffeine, aminophyllin and benzedrine) were determined at different depths of narcosis. L. E. GILSON (Chem. Abstr.).

Determination of Barbiturates in Urine. Lovero, Giacomo (Univ. Naples). [*Folia Med. (Naples)*, **31**, 106–14 (1948).]

Mix 20 c.c. of the urine with 50 gm. anhydrated Na_2SO_4, and put into an extinguishing tube provided at the bottom with a layer of 1 gm. active charcoal and 1 gm. MgO. Percolate with Et_2O and collect the passing liquid in a test-tube heated with steam to evaporate the Et_2O as it passes. Identify barbiturates in the residue of the Et_2O with $Co(NO_3)_2$ (20 drops 0·3 per cent. in EtOH) and 10 drops of 50 per cent. NH_3 in EtOH. A blue color indicates barbiturate. The reaction is sensitive to 0·1 mgm. A. E. MEYER (Chem. Abstr.).

The Analgesic and Hypnotic Actions of Barbiturates. Hart, E. Ross, and Weaver, O. M., jun. (Jefferson Med. Coll., Philadelphia, Pa.) [*Anesthesiology*, **9**, 276–80 (1948).]

The ability of various doses of four representative barbiturates (Na phenobarbital, Na pentobarbital (nembutal), Na seconal, Na thiopental (Na pentothal)) to produce analgesia and hypnosis was studied in rats. These drugs produce their depressant effects (hypnosis) without altering the pain threshold at least as often as they produce a significant rise in pain threshold (analgesia). The incidence of analgesia following administration of barbiturates does not seem to be related to dosage, nor does there appear to be any real difference between the various members of the group in this respect. Barbiturates cannot be relied upon to reduce sensitivity to pain. RUTH BERGGREN (Chem. Abstr.).

Study of the Mechanism of Narcosis by Non-specific Narcotics. Dode, M., Gavaudan, P., and Poussel, H. [*Mem. services chim. etat. (Paris)*, **32**, 388–409 (1945).]

A narcotic is defined as a substance capable of inhibiting a certain activity of a living cell which is essential to proper functioning. Chromosomic contraction is probably a result of modification of the cellular medium, or an irregularity of the chronology of various phenomena which is contrary to the theory of Ostergren (*Hereditas*, **30**, 439–467 (1944), that it is a case of the bending of the protein chain under direct action of a narcotic. The narcosis produced by non-specific narcotics is due to a precipitation of a part of the lipoids found associated with the lipophilic chains of the proteins and the lipoprotein synapses. The lipophilic formation of droplets of oil, which resemble the separation of two phases and which is induced by a number of non-specific narcotics used in elevated and toxic doses, is due to the cytoplasmic action of these substances. The theory is based on the hypothesis that the lipoids of the lipoprotein synapses can be considered to be dissolved in the lipophilic chains of the protein molecule. It is possible that this representation does not agree exactly with reality, and that the lipoids might be adsorbed on the lipophilic chain of the proteins. Thermodynamically the two are difficult to distinguish. It is easily possible that the narcotic produces a displacement of the adsorbed lipoid, which then leads to a mixed lipoidal narcotic precipitate. Since the precipitate formed has a constant composition, it follows that all the non-specific narcotics should be adsorbed by the lipophilic chains of the proteins in order to obtain a similar thermodynamic activity. The two theories of adsorption and of lipoid solubility which have heretofore been considered opposed have been found to have a common basis. The narcosis produced in both cases at the moment of precipitation of cellular lipoids dissolved or adsorbed on the lipoprotein synapses attains a limiting critical value. H. O. S. (Chem. Abstr.).

https://doi.org/10.1192/bjp.95.398.209 Published online by Cambridge University Press