

to those of the hyptamines. Physiologically cino-bufoleline, which has one-tenth of the pressor action of adrenaline, is more like a derivative of tryptamine than of hypaphorine. L. F. WISE (Chem. Abstr.).

Pharmacological Action in Experimental Hyperglycæmia. (1) *Drugs of the Central Nervous System.* (Boll. Soc. Ital. Biol. Sper., vol. viii, pp. 1746-8, 1933.) Butturini, Luigi.

Rabbits made hyperglycæmic by the intravenous injection of 3-5 gm. glucose reacted like normal rabbits to various doses of strychnine nitrate, sodium santonate, apomorphine hydrochloride and calcium chloride. The duration and severity of cocaine intoxication were markedly less in the hyperglycæmic than in the normal animals. P. MASUCCI (Chem. Abstr.).

7. Pathology and Biochemistry.

Senile Plaques. (Brain, vol. lvii, p. 128, June, 1934.) Bouman, L.

The author points out that practically every brain from a case of senile dementia shows—

- (a) Local spool-shaped swellings ("torpedoes") on the neurites of some of the Purkinjé cells in the cerebellar cortex.
- (b) Some ganglion cells of the cerebral cortex present Alzheimer's type of fibrillary change.
- (c) Some of the neurites in or in the immediate neighbourhood of a senile plaque show knots, buds, eyes, a simple splitting of their neurofibrils or a pathological increase of argyrophilia.

The torpedoes occur in all patients with senile plaques. In most cases they lie in the superficial zone of the granular layer at a relatively small distance from the Purkinjé cells. Both ends of the torpedo gradually pass into a normally impregnated neurite. In a number of these torpedoes small vacuoles can be found. The author considers these swellings to be identical with the local swellings of neurites found by Cajal in injuries of the cerebellar cortex. Torpedoes also occur in amaurotic idiocy, general paralysis, tuberculous meningitis, etc. The early stage of Alzheimer's fibrillary alteration occurs where lipoid is present, usually at a spot between the nucleus and the origin of the neurite, corresponding to the fibrillogenous zone of Held, where the first fibrils develop in the young neuroblast. The eyes, buds, etc., sometimes occur in the superficial layers of a plaque. Plaques are never found in parts where there is much atrophy of the brain, nor are torpedoes, Alzheimer's fibrillary alteration or branching of the neurofibrils. These various changes found in senile dementia closely resemble what the author has described as hyperdifferentiation, which is seen in the early stages of regeneration of nerve-fibres. He would bring them into this category. If this hyperdifferentiation occurs in a ganglion cell, the Alzheimer type of fibrillary alteration results; if it occurs in the course of a neurite a torpedo is formed; if it occurs in dendrites, dendritic swellings develop; if it is the neurites that are involved in a senile plaque, the eyes, buds, etc., result; and if it occurs in the non-differentiated protoplasmatic ground reticulum of the nervous system, a senile plaque results. The formation of plaques is probably a reaction to trauma of the tissues, a disproportionate attempt of the nervous tissue at regeneration after a primary lesion.

G. W. T. H. FLEMING.

Histopathological Observations in a Case of Dementia Præcox with Waxy Rigidity and Cataleptic Attitudes [Algunas observaciones histopatológicas en una psicosis infantil con rigidez cêrea y actitudes catalépticas]. (La Semana Méd., vol. xli, p. 1897, July 21, 1934.) Dimitri, V., and Victoria, M.

A Jewish boy, æt. 13, of good intelligence, began to exhibit alterations of character and mood, becoming depressed and weeping without cause. Fifteen

days later he had, in one day, repeated attacks of loss of consciousness. Still later he showed intense negativism, refused to speak and eat, and exhibited rigidity and cataleptic attitudes. There was no alteration of tendinous reflexes, no Kernig's sign, no pupillary changes, no symptom of infection. The condition remained unaltered until the patient's death, ten weeks after the initiation of his symptoms. Melancholia with stupor and encephalitis having been ruled out, a diagnosis of catatonia was made. Histological examination of the brain showed marked alterations in the basal nuclei, the red nucleus and the *locus niger*, and, to a lesser degree, in the cortex. These changes are illustrated by micro-photographs. Previous work on the subject is reviewed. Without attempting to settle the anatomical basis of dementia præcox on the findings in a single case, the authors believe that there is a relation between the symptoms and the cerebral lesions described.

M. HAMBLIN SMITH.

Preparation of Intact Total Phosphatide-cerebroside. (*Helv. Chim. Acta*, vol. xvi, pp. 943-58, 1933.) Escher, H. H.

Brain or spinal marrow is coarsely subdivided and dehydrated by successive treatments with ether or acetone. The product is extracted at 37°C. with mixtures of 95% ether and light petroleum, b. 35-70° (1 : 1, 1 : 3 and 1 : 10 successively). By means of water, ether is removed from the extract, which is concentrated at 37° under vacuum and proportioned with acetone. The solid is triturated with successive quantities of acetone, whereby fats, cholesterol and its esters, and lipochromes are removed without considerable loss of total phosphatide-cerebroside, which forms additive compounds with acetone. The material is pressed into thin sheets from which acetone is removed at 37° at 1-2 mm., after which it can be preserved indefinitely in carbon dioxide.

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

A Reducing Substance in the Brain Tissue. (*Nature*, vol. cxxxiii, p. 572, 1934.) Young, F. G., and Mitolo, M.

The alcoholic extracts of brain tissues of mouse, rat, guinea-pig and ox contain a substance which reduces 2-6-dichloroindophenol (used for the estimation of ascorbic acid in tissues), but with other properties differing from those of ascorbic acid. It does not prevent scurvy in guinea-pigs. Estimations of ascorbic acid in brain-tissue by the indophenol titration method are therefore incorrect. Isolation of the reducing substance is difficult, but solutions are somewhat stabilized by addition of cyanide; this suggests that sulphur may be concerned with its activity. A semicarbazone, m. 251-2°, may be a derivative.

JANET E. AUSTIN (Chem. Abstr.).

Pyruvic Acid as an Intermediary Metabolite in the Brain Tissue of Avitaminous and Normal Pigeons. (*Biochem. Journ.*, vol. xxviii, p. 916, 1934.) Peters, R. A., and Thompson, R. H. S.

The authors found that the disappearance of pyruvic acid and bisulphite-binding substances accompanies the extra oxygen uptake induced by the action of crystalline vitamin B₁ in pigeon's brain tissue respiring *in vitro*. Pyruvate also disappears when substituted for lactate. The disappearance of pyruvate is an indirect effect of vitamin action. These results are consistent with the view that pyruvic acid is a normal intermediary in the metabolism of pigeon's brain tissue. In agreement with the Embden-Meyerhof fermentation scheme, it accumulates with respiring normal brain tissue in the presence of iodo-acetate and not of fluoride.

G. W. T. H. FLEMING.

Cerebral Blood-flow Preceding and Accompanying Epileptic Seizures in Man. (*Arch. of Neur. and Psychiat.*, vol. xxxii, p. 257, Aug., 1934.) Gibbs, F. A., Lennox, W. G., and Gibbs, E. L.

By means of a thermo-electric blood-flow recorder inserted into the internal jugular vein of patients subject to epilepsy, the authors ascertained changes in the