Disseminated Demyelinization of the Central Nervous System in Monkeys and Allied Disorders in Man. (*Journ. Neur. and Psychopath., vol. xiv, p. 227, Jan.,* 1934.) *Davison, C.*

The author describes a case of paresis, ataxia and intention tremor in a baboon. Histologically there were numerous small demyelinated plaques, consisting essentially of " gemästete " glia-cells scattered throughout the white matter of the cerebral hemispheres and optic tracts. The relation of these findings to those in multiple sclerosis, diffuse sclerosis, subacute combined degeneration and xanthomatosis is discussed. The author raises the question whether the demyelinated plaques in the baboon are analogous to those found in xanthomatosis, and if this is so he thinks there is some disturbance in lipoid metabolism to blame.

G. W. T. H. FLEMING.

Histological Changes in the Brain in Cases of Fatal Injury to the Head. V : Changes in the Nerve-Fibres. (*Arch. Neur. and Psychiat., vol. xxxi, p.* 527, *March,* 1934.) *Rand, C. W., and Courville, C. B.*

The authors studied the changes in the axis-cylinders in cases of injury to the brain. They found interruption of nerve-fibres with consequent impairment of nervous function a common result of injury. This interruption resulted in the formation of end-bulbs on both the proximal and distal segments. Those on the proximal end of the distal segment generally had a more complex structure. Those on the distal end of the proximal segment, more intensely impregnated with silver and simpler in structure, are capable of maintaining their identity for months or years. These end-bulbs appear on fine fibres within two hours, and shortly thereafter on medium and large fibres. Those on the proximal end of the distal segment begin to be detached within two days and ultimately disappear. The distal segment undergoes granular fragmentary or vacuolar degeneration, ultimately leading to disappearance of the axis-cylinder. G. W. T. H. FLEMING.

Nervous System in Deficiency Diseases. II : Lesions Produced in the Dog by Diets Lacking the Water-soluble Heat-stable Vitamin B_2 (G). (*Journ. Exper. Med., vol. lix, p.* 21, 1933.) *Zimmerman, H. M., and Burack, E.*

Adult dogs, maintained on an artificial balanced ration adequate in all dietary essentials as far as is known, except water-soluble, heat-stable vitamin B_2 (G), developed, after a sufficient time, a slowly progressive disease characterized by loss of weight, persistent vomiting and diarrhœa and marked muscular weakness, which ended fatally in 200–300 days. The clinical picture is quite different from black tongue. C. J. WEST (Chem. Abstr.).

The Cation and Chlorine Content of the Rabbit Brain. (*Jap. Journ. Med. Sci., II, Biochem., vol. ii, p.* 11, 1933.) *Matsumoto, M.*

In the grey matter the composition is : Calcium 7·7%, magnesium 14·6%, potassium 351·7%, sodium 131·9%, chlorine 181·9%, water 81·85% and nitrogen 1·95%. In the white matter the composition is : Calcium 6·6%, magnesium 16·1% potassium 340·1%, sodium 121·7%, chlorine 165·4%, water 69·42% and nitrogen 2·07%. The white matter of full-grown rabbits contains more water than that of young rabbits, while the grey matter is richer in potassium and poorer in calcium.

B. S. LEVINE (Chem. Abstr.).

The Inorganic and Phosphagen Phosphorous Contents of the Brain. (*Jap. Journ. Med. Sci., II, Biochem., vol. ii, p.* 85, 1933.) *Matsumoto, M.*

Rabbits and albino rats were used in the determinations. The inorganic phosphate content is higher in the grey than in the white matter. Phosphagen is contained abundantly in the latter. The proportion of phosphagen phosphorus

to total inorganic phosphate in the grey matter is 9·28. A large part of the creatine exists in the grey matter as creatine-phosphoric acid. Pyrophosphate in minute amounts also was found in the brain substance, as were all other forms of phosphorus found in the muscles. The labile phosphorus appears to be more stable in the brain substance than in muscle tissues. B. S. LEVINE (Chem. Abstr.).

The Lipoid Metabolism in the Central Nervous System. (*Arch. Ital. Biol., vol. lxxxix, p.* 172, 1933.) *Mitolo, M.*

The cerebro-spinal axes from *Bufo* showed the following lipoid content: Free cholesterol 1·7622%, lecithin + myelin 0·3564%, cephalin 0·4887%, galactose of saturated cerebroside 0·027%, sulphatides 0·2978%, and sphingomyelin 0·5593%. All lipoids decrease during rest of the nervous tissue; the decrease is lowest in sulphatides, highest in phosphatides. During reflex activity the sulphatides decrease the most, the phosphatides less, whereas the other lipoids decrease at the same rate as during rest. All lipoids, except sulphatides, increase during narcosis. Excitation caused by convulsive poisons produces a greater loss of all lipoids than occurs during rest. A. E. MEYER (Chem. Abstr.).

Chemical Nature of Brain Antigen. (*Biochem. Zeitschr., vol. cclxvii, p.* 77, 1933.) *Rudy, H.*

By further purification procedures it has been established that the hapten obtained by alcoholic extraction of brain is phosphorus-free and resistant to alkali, and is neither a sterol, cerebroside nor creatine. The hapten is a lipoid-soluble substance, scarcely soluble in water, which on removal of its impurities becomes more or less water-soluble. In the crude extraction the hapten is not dialysable, but in the saponified fraction considerable dialysis takes place. From these results it is concluded that the hapten is adsorbed on lipoid material.

S. MORGULIS (Chem. Abstr.).

Creatine in the Brain. (*Jap. Journ. Med. Sci., II, Biochem., vol. ii, p.* 205, 1933.) *Matsumoto, M.*

Fresh pig brain was extracted first with alcohol and then with ether. The alcoholic extract contained the major portion of the creatine. In 8 grm. of the hydrolysed ether extract, 12·28 mgrm. creatine was found by the method of Harding and Eagles. By the method of Folin, 8 grm. of the ether extractive gave 6·48 mgrm. creatinine. To determine whether this was a correct value, pure creatinine was investigated. It was adsorbed on animal charcoal to the extent of 81% in acid solution and 99% in alkaline solution; on kaolin and adsol the adsorption was more effective in an acid medium. Aluminium hydroxide did not adsorb creatinine. The chromogenic substance in the ether extractive of brain behaved towards adsorbents similarly to creatinine. The chromogenic substance in lecithin and cerebroside from rabbit brain behaved in the same manner. Inositol boiled with sulphuric acid gave a false test for creatinine. The high creatinine content of the brain should therefore probably be ascribed to lipoids or their split products. R. BROWN (Chem. Abstr.).

Comparison of the Creatinine Contents of Blood-serum and Cerebro-spinal Fluid. (*Z. ges. expl. Med., vol. xci, p.* 455, 1933.) *Maydell, R. B.*

In 18 normal human beings the blood creatinine averaged 1·6 mgrm.% and the cerebro-spinal fluid contained 1·18 mgrm.%. In renal disease the cerebro-spinal creatinine rises more slowly than that of the serum. M. LEVY, (Chem. Abstr.).

Bromine of the Cerebro-spinal Fluid and the Blood-Serum, Plasma and Corpuscles. (*Compt. Rend. Soc. Biol., vol. cxv, p.* 312, 1934.) *Urechia, C. I., and Relezeanu, A.*

In a series of sane pathological cases, the bromine content of spinal fluid taken from the suboccipital region was ·58–·89 mgrm.%, or nearly that of the blood; in