

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 lipid 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 lipid-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 lipid 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 gm. of the hydrolysed ether extract, 12.28 mgrm. creatine was found by the method of Harding and Eagles. By the method of Folin, 8 gm. 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

spinal fluid from the lumbar region it was .5--.76 mgrm.%. In manic-depressive psychosis the corresponding values were often slightly lower. In 20 diverse pathological cases plasma bromine varied from .11--.98 mgrm.% ; serum bromine was slightly lower, and corpuscle bromine .19--.41, average .27 mgrm.%.

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

*Relation of the Oxygen and Nitrogen Contents of Cerebro-spinal Fluid to Barometric Pressure.* (*Amer. Journ. Physiol.*, vol. cvii, p. 164, 1934.) Cunningham, C. J., Rand, J. H., and Weckesser, E. C.

The oxygen content of the cerebro-spinal fluid is a little more than doubled and the nitrogen content is trebled when the barometric pressure is increased from one to three atmospheres.

J. F. LYMAN (Chem. Abstr.).

*Sugar in Cerebro-spinal Fluid after Ingestion of Carbohydrates.* (*Z. ges. expl. Med.*, vol. lxxxii, p. 128, 1932.) Dobrev, M., and Saprianov, T.

The administration of 100 grm. glucose in 200 c.c. of water to 28 patients with nervous diseases led, in the majority of cases, to an increase in sugar in the spinal fluid. This was nearly always less than that in the blood, but in some cases the rise in the former after the glucose was negligible even when the blood-sugar rise was very marked. The rise is a normal physiological process.

G. G. (Chem. Abstr.).

*The Effect of Activated Ergosterol Administration on the Calcium of the Cerebro-spinal Fluid.* (*Trans. Roy. Soc. Can.*, vol. xxvii, p. 87, 1933.) Johnston, C. R. K., and King, E. J.

Oral administration of activated ergosterol to adult dogs increased serum calcium, the maximum being reached in 48-60 hours. The calcium content of the spinal fluid increased only after the serum calcium had reached the maximum value. Five to eight days after ergosterol administration, a secondary increase in serum and spinal fluid calcium was observed. This was attributed to an observed vacuolization of the cells of the parathyroid gland.

W. G. ROSE (Chem. Abstr.).

*A Note on a "Proteose-like" Substance in Spinal Fluid.* (*Amer. Journ. Psychiat.*, vol. xiii, p. 1083, March, 1934.) Schube, P. G., and Whitehead, R. C.

A new reaction and a hitherto unnoticed substance in the spinal fluid are described. The spinal fluid from 37 unselected cases was studied. The fluids were both normal and pathological. In all of them the ether-alcohol reaction was positive, and a proteose-like substance was isolated, regardless of the quantity of fluid used. The end-product of the reaction is a flocculent material. No relationship could be established between this reaction and the amount of spinal fluid protein or sugar, or between the reaction and the positive or negative Wassermann or gold-sol reactions. The ether-alcohol reaction was present irrespective of whether these chemical substances or reactions were normal or pathological.

M. HAMBLIN SMITH.

*A Study of the Total Protein of the Cerebro-spinal Fluid in Uncomplicated and Untreated Neurosyphilis.* (*Amer. Journ. Psychiat.*, vol. xiii, p. 1085, March, 1934.) Schube, P. G.

The total protein was estimated, in mgrm. per 100 c.c., in 449 cases of uncomplicated and untreated neuro-syphilis. There were 357 cases of general paresis, 48 cases of tabes without psychosis and 44 cases of cerebro-spinal syphilis with psychosis. The average value of the total protein was 75.4 for all cases, and 79.0, 57.9 and 65.68 respectively for the three sub-groups. The middle 50 % of the cases contained protein ranging between 43.70 and 114.30, 37.06 and 78.74, and