

Content, Partition and Physico-chemical State of the Blood Bromine of Normal and Pathological, but not Insane Cases. (*Compt. Rend. Soc. Biol.*, vol. cxiii, p. 1428, 1933.) *Guillaumin, C. O., and Merejkowski, B.*

In 8 normal persons blood bromine in mgrm. per litre was 7.4–16.0 for the plasma and 3–6 for the corpuscles. In 200 samples of serum or plasma from normal and sane diseased persons, bromine ranged from 2–20 mgrm. per litre, with an average of 10. Ultra-filtration of the same samples showed that 63–88% of the bromine would not pass through the collodion membrane, and hence was in the form of organic compounds of high molecular weight.

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

The Determination of Calcium in Blood-serum and Cerebro-spinal Fluid. (*Biochem. Journ.*, vol. xxvii, No. 2, p. 332, 1933.) *Tingey, A. H.*

The author compared various methods of estimating calcium in non-deproteinized serum and cerebro-spinal fluid. He recommends the Peters and van Slyke modification of Halverson and Bergeim's method, including the method of washing with removal of the mother-liquors by suction, as modified by van Slyke and Sendroy.

G. W. T. H. FLEMING.

Lactic Acid of the Spinal Fluid in Meningitis. (*Amer. Journ. Dis. Child.*, vol. xlvii, p. 239, 1933.) *De Sanctis, A. G., Killian, J. A., and Garcia, T.*

The concentration of lactic acid in the spinal fluid is markedly increased in meningitis. The concentration varies directly with the leucocyte count, and is decreased by serum therapy. It is higher than that of the blood and appears to be independent of it. The increased concentration probably results from the metabolism of leucocytes.

E. R. MAIN (Chem. Abstr.).

A Pigment of the Cerebro-spinal Fluid of a Child with Tuberculous Meningitis. (*Naturwissenschaften*, vol. xxi, p. 405, 1933.) *György, P., and Kuhn, R.*

The cerebro-spinal fluid had a peculiar green fluorescence. The pigment is insoluble in benzene and chloroform; two drops of caustic soda cause the fluorescence to change to a yellow colour. This colour disappears on heating with dilute caustic soda. The authors conclude that the pigment resembles the ovoflavine of egg albumen, the absorption spectra of the two being similar. The amount of pigment in 8.5 c.c. fluid was .4 mgrm.

B. J. C. VAN HOEVEN (Chem. Abstr.).

On the Excretion of Hexamine in the Cerebro-spinal Fluid and its Possible Antiseptic Value. (*Birm. Med. Rev.*, vol. viii, p. 76, June, 1933.) *Summers, W.*

This paper gives an admirable survey of the history of the use of hexamine as an antiseptic, particularly for the nervous system. The dissociation of hexamine is discussed, and experiments described which prove that the liberation of formaldehyde from hexamine is increased by increasing acidity, and diminished by increasing alkalinity, but dissociation of hexamine is proved to occur in alkaline solutions. Investigations were made to see if hexamine was excreted into the cerebro-spinal fluid, and as to whether formaldehyde was liberated there. Certain writers (Crowe, Hanzlik, Collins and Hinman) were satisfied that hexamine is excreted into the cerebro-spinal fluid, whereas other writers (Guthrie and Knott) failed to find the drug in the cerebro-spinal fluid after oral administration. It is noted that the tests used for the detection of hexamine and formaldehyde have not always been reliable, and the author describes and discusses the fallacies of four well-known tests—bromine water, Hehner's, Rimini-Burman's and the phloroglucin test. Reference is made to the satisfactory experiments of Hanzlik and Collins, who investigated ten cases, finding hexamine, but no formaldehyde, in the cerebro-spinal fluid of nine cases, the tenth case showing neither hexamine nor formaldehyde in the

cerebro-spinal fluid. Hinman also examined ten cases with similar results. The present investigator shows that in these experiments satisfactory controls were not used, and he establishes four criteria, which must be satisfied before the assertion can be made that a drug whose detection depends on a chemical test appears in a particular body fluid after the drug has been given to the patient.

Experiments with the tests for formaldehyde and hexamine are described, and the phloroglucin test is found the most sensitive, but not as sensitive as previous experimental evidence would suggest. It is found that the sensitivity of the tests is impaired in the cerebro-spinal fluid.

A comprehensive table is given, showing the results of experiments on the cerebro-spinal fluid of 30 cases, of varying types of neurosis, psychosis, organic and infectious diseases of the nervous system, examined by the author. In each case the cerebro-spinal fluid has been taken before and after the administration of hexamine, either orally or intravenously, and each cerebro-spinal fluid has been examined by every relevant test, including the reaction, some with litmus and some by pH estimation. It is found that hexamine given orally or intravenously appears in the cerebro-spinal fluid 15 to 30 minutes after administration, but no formaldehyde is ever found in the cerebro-spinal fluid. The H-ion concentration of the cerebro-spinal fluid is not such as to favour liberation of formaldehyde from hexamine in the cerebro-spinal fluid, nor yet to prevent entirely the dissociation of hexamine. No marked difference is found between the excretion of hexamine in normal and in abnormal cerebro-spinal fluids. The writer has also investigated the bactericidal action of hexamine, and finds that hexamine itself has no bactericidal action, but any that is developed is due to the liberation of formaldehyde. No change in the antiseptic power of hexamine or formaldehyde is brought about by excess of serum protein in the solutions. The bactericidal power of hexamine remains *nil*, whilst that of formaldehyde is not altered.

Search has been made into the records of all the cases of acute infectious disease of the central nervous system admitted to the Queen's Hospital, Birmingham, during the years 1922-27, with special reference to the administration of hexamine. No real evidence was found in favour of the employment of hexamine as a therapeutic measure.

F. H. HEALEY.

The Distribution of Soluble Phosphorus in the Nervous Centres, with Particular Regard to the Cortical Areas. (*Boll. soc. Ital. biol. sper.*, vol. viii, p. 467, 1933.)
Longo, V.

Soluble phosphorus, either inorganic or total phosphorus, is irregularly distributed in the various parts of the cerebro-spinal axis; it is found most where the grey substance predominates. Among the cortical lobes the richest in phosphorus is the occipital, followed by the sensori-motor, temporal and parietal regions.

P. MASUCCI (Chem. Abstr.).

Diphtheria Toxin and Cerebral Phosphorus-containing Lipoids. (*Boll. soc. Ital. biol. sper.*, vol. viii, p. 137, 1933.) Cocchi, C.

Diphtheria toxin placed in contact with either an alcohol-ether extract of cerebral lipoids, or directly with nerve substance, produces a marked and constant diminution in lipoidal phosphorus, as determined by Whitehorn's method. There is also a noticeable diminution in lipoidal phosphorus in the cerebral lipoids of the guinea-pigs which died of diphtheria and in children who died from post-diphtheric paralysis.

P. MASUCCI (Chem. Abstr.).

The Blood Cholesterol in Schizophrenia. (*Arch. of Neur. and Psychiat.*, vol. xxx, p. 567, Sept., 1933.) Looney, J. M., and Childs, H. M.

The authors found, in a group of 50 male schizophrenics studied over a period of seven months, at intervals of two weeks and of three months, that the mean cholesterol values were 146 mgrm. per 100 c.c. for the first period, 161 mgrm.