

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.

for the second period and 166 mgrm. for the third period. The mean value for 26 normal men was 175 mgrm. Both the schizophrenic patients and the controls showed great variability in the cholesterol values, the former having a standard deviation of 20 mgrm. and the latter of 27 mgrm. The authors think that the difference between the first period and the last two is a seasonal one. They found no correlations between the blood cholesterol and the basal metabolic rate or the emotional status.

G. W. T. H. FLEMING.

Plasma Lipoids in Mental Depression. (*Amer. Journ. Psychiat.*, vol. xiii, p. 141, July, 1933.) Slight, D., Long, C. N. H., and Salter, R. W.

A comparison of psychotic depressions of the manic-depressive type with normals shows that in the former (1) the total fatty acids of the plasma are higher in the fasting state. After a fat meal there is a greater rise in the total fatty acids. (2) The cholesterol is at a higher level, both in the fasting state and after a fat meal. (3) The iodine number is lower in the depressives; this may be taken as indicating that, in these cases, there is a greater proportion of saturated plasma lipoids.

M. HAMBLIN SMITH.

Brain Antigens in the Sero-diagnosis of Nervous Types of Syphilis. (*Boll. soc. Ital. biol. sper.*, vol. viii, p. 463, 1933.) Clivo, C., and de Molli, A.

Extracts of human brain used as antigen in lues of the nervous system do not have the superiority claimed by Marchionini in the differential diagnosis between lues cerebri and metaluetic forms.

P. MASUCCI (Chem. Abstr.).

The Chemical Nature of Lipoid Antigens, in Particular those of Brain and Wassermann Antigens. (*Klin. Woch.*, vol. xii, p. 1100, 1933.) Rudy, H.

The purest preparations of organic-specific brain haptene (the component of brain tissue supposed to react specifically with anti-brain sera and with paretic spinal fluid) contain nitrogen, glucose and traces of creatinine. The active constituent seems to resist hot alkaline solutions, and is not precipitated by alcoholic solutions of cadmium chloride. The active principle in Wassermann antigen (alcoholic extracts of beef heart) is, however, precipitated by cadmium chloride, is destroyed by saponification and contains no true glucose, reducing potassium ferricyanide, but not Fehling's solution. A method is described for freeing the active principle in the brain and heart extracts from cholesterol.

HARRY EAGLE (Chem. Abstr.).

The Relation of Brain Extracts in Serological Reactions, with Special Reference to Spinal Fluids. (*Zeits. f. Immunitäts.*, vol. lxxviii, p. 437, 1933.) Prusse, G.

Wassermann-positive spinal fluids, which also react with cholesterolized brain extract, lose this reactivity if they are diluted with Wassermann-negative serum instead of sodium chloride solution. The reaction with cholesterolized heart extract (Wassermann) is little or not at all decreased. There are individual differences among sera in this effect. The reaction of an anti-beef heart extract serum with brain extract can be inhibited with serum in the same way. A comparable phenomenon is the inhibition with normal rabbit serum of a reaction of Forssman anti-serum with a weak Forssman antigen, although the reaction with a strong antigen is unaffected or only slightly so. Brain extract in excess masks the reaction of Wassermann-positive spinal fluids with heart extracts. If serum is added to the spinal fluid, only a small amount of brain extract gives the same degree of masking action. These experiments indicate that in Wassermann-positive spinal fluids brain-specific antibodies are present. The addition of negative serum to these spinal fluids makes their reactivity strongly approach that of Wassermann-positive sera. The difference in the colloidal structure of spinal fluid and serum is probably the cause of the difference in reactivity with brain extract.

JULIAN H. LEWIS (Chem. Abstr.).