

Tubes 2 and 4 a like quantity of 0.9 per cent. sodium chloride solution is added. All the tubes are again placed in an incubator for two hours and then in the ice chest over night. The result is noted the following morning. In Tube No. 1 hemolysis should always be found (if the serum contains complement). In the second tube there should be no hemolysis, as the red blood cells are in an isotonic salt solution. The result in the third tube will depend on the presence or absence of syphilitic antibody in the blood. If it is present the complement has been bound before the inactivated hemolytic serum was added, and no hemolysis occurs. If absent, the opposite result is obtained. The fourth tube simply serves as a control against any hemolytic action by the liver extract. Subsequently, Tschernogubow will describe the method in greater detail. It has proved trustworthy in his hands in a large number of cases. Its advantages are simplicity, the small amount of blood required, and the rapidity with which it can be carried out.

**Precipitate Reaction with Lecithin, Sodium Glycocholate, and Sodium Taurocholate for the Diagnosis of Syphilis.**—Wm. J. BUTLER and W. T. MEFFORD (*New York Medical Journal*, 1908, lxxxviii, 822). Since the discovery of the serum reaction for syphilis many researches have been carried on to determine the identity of the substances contained in the extract used in the reaction, as well as to simplify the test. These researches have led to the use of other reactions in which, although the principle may vary, yet the result in each instance consists in a precipitate. Butler and Mefford have worked with the serum reaction and have compared the results obtained with it in the same cases, by the precipitate test. The performance of the latter test is comparatively easy and unattended with the many difficulties confronting one in making the complement-deviation test; it is made by mixing equal quantities of the serum to be examined and the precipitate reagent in a test tube and allowing it to stand at room temperature from fifteen to twenty hours. If the reaction is positive a precipitate will have formed and floats at the top of the fluid; on slightly tapping the tube it will descend in flocculi or whitish clouds. A turbidity of the fluid is not diagnostic. The results of these various tests in 74 cases examined may, according to these observations, be summed up as follows: The serum reaction surpasses in the percentage of positive results and in reliability the precipitate reactions for syphilis and parasyphilis. The glycocholate and taurocholate of sodium, especially the former, shows a large percentage of positive results in manifest syphilis, and a remarkably small percentage of positive reactions in control sera. The taurocholate gives the best results in positive reactions with parasyphilitic sera. The lecithin test is very unreliable and is definitely non-specific for syphilis. The results with active and inactivated sera in the control cases were practically alike with the glycocholate and taurocholate, but in the syphilitic and parasyphilitic cases an inactivated serum gave the greatest number of positive results, especially when the glycocholate was used. Butler and Mefford believe that more work will have to be done with these reactions before their real value can be determined, but in their examinations they found the test satisfactory; few positive reactions were obtained with these salts in the controls examined.

**Hemophilia.**—MOROWITZ and LOSSEN (*Deut. Arch. f. klin. Med.*, 1908, lxxxiv, 110) found in a case of hereditary hemophilia the usual prolongation of the coagulation time. From their studies upon a patient's blood they have shown that the delay in the coagulation time is to be attributed to insufficient formation of the fibrin ferment factors, especially the thrombokinase which is derived from blood platelets and leukocytes. That this is the only etiological feature of importance they do not assume. By means of suction applied to the skin of the back they were unable to demonstrate any greater liability to hemorrhage in their patient than in three normal adults examined.

**Diphtheria Bacillus Septicæmia.**—UCKE (*Fortschr. der Med.*, 1908, xxvi, 1005; *Zentralbl. f. Bakt.*, Band lvi) describes a patient with impure heart sounds, frequent pulse, trace of albumin in urine, an area of inflammation without fluctuation in the right gluteal region. The patient had had high fever for two weeks preceding admission to the hospital. An angina with membrane had preceded the inflammation of the gluteal region, and Loeffler's bacillus was found in the throat. Operation on the right gluteal region was without result at first and blood culture was negative. No result followed the injection of 300 units of anti-diphtheritic serum. At a subsequent dressing of the wound, however, large quantities of pus discharged through a fistulous opening. In the pus, diphtheria bacilli were found; their virulence was greatly diminished, as animal experiments showed. A second blood culture gave a pure growth of diphtheria bacilli. Only three similar cases are recorded in the literature.

**Chyluria.**—MAGNUS-LEVY (*Ztschr. f. klin. Med.*, 1908, lxvi, 482) reports his study of a case of chyluria. The patient was a man aged fifty-one years, from Western Prussia. Six years previously he had noted that his urine was white and turbid during the winter, but in the spring and summer, became clear. The condition had recurred regularly each winter since then. The only complaints were pain in the back, especially on the right side, and pain on micturition. At times clots were voided. In January, 1908, the patient complained of thirst, loss of weight, and polyuria. Urinary examination revealed chyluria and diabetes mellitus. The night urine was chylous; the day urine clear. On reclining during the day and sleeping upright in a chair, the urinary finding was reversed. The withdrawal of fat from the diet led to clear urine at night, but the other constituents of chyle, such as albumin and lymphocytes, were still present in the night urine. With increasing quantities of fat in the food, a corresponding increase in milkiness of the urine occurred. Fibrinogen, albumin, and globulin were determined by fractional precipitation with ammonium sulphate. Cystoscopy revealed the fact that the chylous urine came entirely from the right ureter. The urine was collected from the two kidneys by catheterization of the ureters and analyzed separately. By computation Magnus-Levy shows that the proportion of fat, albumin, and sodium chloride in the chylous urine corresponded exactly with the composition of chyle as given by Munk and Rosenstein. No ova or embryos were found in the urine, nor was the blood serum fatty. There are two theories as to the origin of chyluria: (1) That the condition

results from direct addition of chyle to the urine, and (2) that the abnormal constituents are derived from the blood, no communication existing between the urinary and lymph passages. A defective catabolism of the chylous material is assumed. If the latter theory were correct, all cases of chyluria should be bilateral. Furthermore, direct communication has been found in a certain number of cases. In two-thirds of all the cases chyluria disappears either in the reclining or upright posture, and that would be impossible if the blood condition were the cause of the chyluria. The constant finding of lymphocytes in cases in which centrifugalized urine is examined also points to direct admixture of chyle. If one extracts sufficient urine with ether, cholesterol and lecithin are found. Their quantity in the chyle depends largely upon the diet. Again, the absence of glycosuria in chyluria has been urged as an argument against direct admixture of chyle to urine. But, as the author points out, Munk and Rosenstein have shown that chyle contains about 0.1 per cent. sugar on a fat and proteid diet; 0.3 to 0.4 per cent. after a carbohydrate meal. Only in the latter condition would one expect to find a glycosuria. The absence of clotting in some cases is also without significance, for in certain instances lymph and chyle fail to clot. Magnus-Levy assumes that in all cases a direct communication must exist between the lymph vessels and some part of the genito-urinary tract. The absence of chyluria for months and years at a time might be explained by the closure of the opening, the widening of the lymph vessels, or the establishment of collateral channels. The daily intermissions must be explained on purely mechanical grounds. This explanation of chyluria holds good both for parasitic and non-parasitic cases.

**A New Test for Bile Acids and the Detection of Bile Acids in the Urine.**— Since Pettenkofer's test is not specific for bile acids, giving a red color with albumin, urea, carbohydrates, fatty acids, etc., it is necessary in applying it first to separate the bile acids in the urine. Confusion may also arise in the spectroscopic examination. Therefore, a new test for the detection of these acids is desirable. JOLLES (*Hoppe-Seyler's Zeit. f. physiol. Chemie*, 1908, lvii, 30) has devised a test for bile acids in which the reagents used are 5 per cent. rhannose solution and concentrated hydrochloric acid. If one adds one to two drops of rhannose solution to 2 to 3 c.c. of dilute (0.1 per cent.) solution of taurocholate or glycocholate of sodium and then an equal amount of concentrated hydrochloric acid to the mixture a rose color appears on gently boiling. This color soon disappears; and after standing a short time a beautiful green fluorescence supervenes. If the same experiment be repeated with 1 per cent. solutions of taurocholate and glycocholate, boiling produces a deep red color. On continued boiling the fluid appears reddish brown with transmitted light, malachite green with direct light. Neither glycocholate nor taurin gives this reaction. It is, however, given by cholic acid as shown by the following experiments: When two drops of 5 per cent. rhannose solution and 2 c.c. of concentrated hydrochloric acid are added to 2 c.c. of 0.1 per cent. alcoholic solution of cholic acid (Merck), a white cloud appears from precipitation of the acid. On warming the mixture a red color develops, changing into a beautiful green fluorescence on boiling. A substitution of sulphuric acid for

hydrochloric gives less satisfactory results. From the rhamnose solution Jolles has found that methyl furfural is formed by the action of the hydrochloric acid. A solution of methyl furfural may be substituted for the rhamnose solution without altering the results of the test. But there is no advantage in doing this. In solutions the brilliancy of the fluorescence is dependent upon the concentration of the bile acids and, therefore, with very small quantities of cholic acid the fluorescence is diminished. The minimum amount of cholic acid in 1 c.c. of alcohol which can be detected by adding 1 drop of 0.1 per cent. rhamnose solution and 0.5 c.c. of concentrated hydrochloric acid varies between 0.005 and 0.001 gram. To render the green fluorescence more marked 1 to 2 c.c. of ether may be added after cooling and the contents of the test tube shaken. The fluorescence is then seen in a watery solution. None of the confusing substances with Pettenkofer's test will give a positive reaction with Jolles' test. For the recognition of bile acids in the urine one adds 15 c.c. of 3 per cent. casein solution (3 grams casein in 100 c.c. of water) to 50 c.c. of urine. This is well mixed and 10 per cent. sulphuric acid is added drop by drop (usually 0.6 to 0.8 c.c. is sufficient) until all the casein is precipitated. An excess of sulphuric acid is to be avoided. The contents of the test tube are now filtered and the precipitate is washed into a beaker with 100 c.c. of absolute alcohol and allowed to digest at ordinary temperature for about one hour. This is then filtered and 4 to 5 c.c. of the filtrate are placed in a test tube with one drop of 5 per cent. rhamnose solution and 4 to 5 c.c. of a concentrated hydrochloric acid. The mixture is heated to boiling and the boiling continued for one to two minutes. After cooling the contents of the test tube about 2 c.c. of ether are added and the contents shaken. In the presence of bile acids the characteristic green fluorescence is seen. The test will detect as little as 0.5 per cent. of sodium taurocholate; in concentrated urines and those rich in indican and aromatic oxy acids the test is less delicate.

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**The Presence of Mydriatics in the Urine.**—DIEM (*Deut. Arch. f. klin. Med.*, 1908, lxxxiv, 174) has repeated the work of Pal, testing the urine of nephritics and others for mydriatics on the enucleated eye of a frog. The work of Schur and Weisel seems to point to an increased quantity of adrenalin in the blood of nephritics. Diem has tested the urine in a great many patients and finds that of a little over one-half the nephritics examined produced a marked widening of the pupil in the frog's eye. This phenomenon is not, however, characteristic of nephritis, being observed with almost equal frequency in other diseases. The substance which caused the mydriasis could not be determined, but Diem thinks various factors are concerned; that it is possible that substances are present in many urines which inhibit mydriasis; and that it is highly improbable that the test is specific for adrenalin in the urine.

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**Specific Stimulation of the Intestinal Peristalsis by Intravenous Injection of "Peristaltic Hormone."**—ZUELZER, DOHRN, and MARXER (*Berl. klin. Woch.*, 1908, xlv, 2065) were led to the study of intestinal peristalsis by the work of Starling on the mammary gland and that of Bayliss and Starling on secretion. They suspected that a hormone existed in the