

PROGRESS
OF
MEDICAL SCIENCE
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UNDER THE CHARGE OF

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Research on Pellagra.—G. VOLTINO (*Pathologica*, 1913, v, 174) finds that the intramuscular injection into pellagrins of the aqueous extract of spoiled maize causes fever, nervous and psychic symptoms, vomiting, diarrhea, and tachycardia. The similar injection of extracts of good maize causes none of these symptoms. The active principle of the potent extract is carried down by an alcoholic precipitate, and is active in doses of 1 c.c. of a 0.5 per cent. solution. Such inoculations cause reactions in 90 per cent. of pellagrous subjects, and in about 20 per cent. of the non-pellagrous; the reaction in the latter group, he thinks may be due to eating of maize or other cereals, or it may be an evidence of "latent pellagra." Voltino designates the reagent "pellagrogenina;" it is non-toxic to rabbits fed in the usual manner, but to maize-fed rabbits, 1 c.c. of a 1 per cent. solution is fatal within twenty-four hours. The injections were made intraperitoneally. He also finds that guinea-pigs fed mainly on maize die after being injected with 1 c.c. of the serum of a pellagrin, whereas normally fed pigs are in no way affected. Maize-fed guinea-pigs treated several times with pellagrogenina readily survive the subsequent injection of serum from pellagrous patients. No microorganisms could be demonstrated microscopically or by cultural methods.

Lipoid Chemistry of the Blood.—The discovery that cholesterol may occur in the blood in a free form is not unimportant, in view of the known neutralizing action it exerts upon saponin and cobra venom hemolysis. It may well be that it has a similar effect in the body upon the toxins of various acute infections. Rohmann believes that a relative increase of the free over the bound cholesterol is characteristic

of sera giving a positive Wassermann reaction, while Peritz claims to have found a constant increase of lecithin in the sera of tabetics, and ascribes to this the positive reactions. BÜRGER AND BEUMER (*Berl. klin. Woch.*, 1913, I, 112) have investigated the sera of 21 individuals suffering from a variety of conditions. Serum was dried at 40° C. and extracted for two days with alcohol and chloroform; after weighing, the extracts were redissolved in ether and reprecipitated with acetone. The filtrate was divided into two portions; in one the cholesterol was thrown down with digitonin according to the method of Windaus, while in the other this was effected by saponification with freshly prepared sodium alcoholate. The difference between the two determinations gave the cholesterol made free from esters. Lecithin and phosphoric acid were also estimated. The highest cholesterol values were obtained in cases of diabetes, cholemia, and eclampsia, the lowest in cases of pernicious anemia, chlorosis, and inanition. In general, lecithin runs parallel with cholesterol; free cholesterol tends not to fall lower than 30 per cent. of the total cholesterol content of the blood. Bürger and Beumer were unable to confirm Rohmann's contention; in many cases the Wassermann was negative in sera unusually rich in lecithin, while in 2 cases of tabes and 1 of tertiary lues showing pronounced reactions, there were no cholesterol values obtained and lecithin was decreased. While believing that there is a definite relation between a positive Wassermann reaction and lipoids in the blood, Bürger and Beumer contend that this consists of something more than a mere increase in the two components under discussion. The exact significance of the numerous lipoids will continue to be a matter of speculation so long as we remain in ignorance of their genesis.

Quantitative Estimation of Urates in the Blood.—According to ZIEGLER (*Münch. med. Woch.*, 1913, LX, 1083) there have been two sources of error which may be held accountable for the failure of methods hitherto used to estimate the content of the blood serum in urates: (1) No method of protein removal gets rid of all the nitrogen; the so-called "rest nitrogen" results in uric acid determinations constantly higher than they should be; (2) deproteidization, moreover, removes a not inconsiderable portion of the uric acid present; (3) all methods have required relatively large amounts of blood and considerable time. To meet these defects Ziegler endeavored to discover a way of throwing down the uric acid while leaving the proteins in solution. The method is based upon the fact that copper sulphate forms a compound with uric acid, urates, and purins in general, which is insoluble in water; experiments showed that this compound remains quantitatively insoluble in the presence of a known concentration of NaOH. To perform the test, the following solutions are necessary: (1) NaOH, 4 per cent. solution; (2) NaHCO₃, 5 per cent. solution; (3) Neutral sodium sulphate, 3.5 per cent. solution; (4) CuSO₄, 2.5 per cent. solution; (5) A standardized solution of K₂MnO₄. Into a 200 c.c. Ehrlenmeyer flask containing 10 c.c. of clear serum, one adds 10 c.c. of solution 1, 20 c.c. of solution 2, and 10 c.c. of solution 3, and 20 c.c. of distilled water, in the order given. To the resulting mixture, one adds, while shaking, 10 c.c. of solution