

in toads (*Bufo americanus*), in that only homoplastic implants of anterior lobe substance were effective. As many as 2 implants of frog anterior lobes were given daily for 15 days with no result. On the other hand, homoplastic implants readily induced ovulation.

Contrary to the findings of Wolf,¹ it was possible to induce male frogs to fertilize eggs at any time of the year by daily implants of anterior lobe of the pituitary. In most cases only one implant was necessary to induce trilling, croaking, clasping, and discharging of the sperm. However, 2 implants were sometimes required. It was also found that ovulation in the females was hastened by the clasping of the male.

Several other facts of interest were noted. Contrary to the findings in the case of rats by Evans and Simpson,³ the speed of the reaction seemed to be uninfluenced by the sex of the animal from which the anterior lobe substance was taken. When the frog ovulates normally, practically all of the eggs are discharged successively at one laying. The few mature eggs that remain are discharged within a few days. The thousands of ova in the ovaries develop simultaneously, and when all are mature, they are discharged at the same time. Giving 2 anterior lobes at each injection proved more satisfactory both as to the time of the reaction and as to the number of anterior lobes necessary to induce the reaction.

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Avitaminosis. X. Further Studies on the Effect of Vitamin B Deficiency on Lipid Metabolism.*

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Sure and Smith^{1, 2} have reported preliminary results on the influence of vitamin B deficiency on the concentration of lipids in the blood of the albino rat, indicating that lipemia is a symptom complex in this avitaminosis. Further detailed studies from this laboratory,†

³ Evans, H. M., and Simpson, M. E., *Am. J. Phys.*, 1929, **89**, 375.

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¹ Sure, B., and Smith, M. E., *J. Am. Med. Assn.*, 1931, **97**, 301.

² Smith, M. E., and Sure, B., *PROC. SOC. EXP. BIOL. AND MED.*, 1931, **29**, 158.

† All of the biochemical work on blood changes in avitaminosis is being carried out in the laboratory of Agricultural Chemistry.

however, do not substantiate such findings. The reason that led us to subject to a critical analysis the lipemia in polyneuritic nursing young of the albino rat,² interpreted as due to vitamin B deficiency, is the fact that no appreciable changes were found in the concentration of either fatty acids, cholesterol, or phospholipids in weaned rats suffering from vitamin B (B_1) deficiency. Furthermore, an analysis of the data of Sure and Smith on lipid changes in the blood of weaned rats on diets deficient in the vitamin B complex,³ disclosed too many great variations on the same animal from week to week, particularly in the fatty acid determination. It was discovered that carbon dioxide emanating from a close gas burner (which was being used some days during the week) was influencing the fatty acid titer considerably; therefore, all subsequent fatty acid determinations were henceforth carried out in a different room kept as free from the influence of carbon dioxide as possible, a precaution discovered in our laboratory (A. E. C.) before the same disturbing factor was called attention to in a recent paper by Himwich, Friedman, and Spiers.⁴ From then on we ceased obtaining great variations in the weekly determinations of blood fatty acids. The work on the vitamin B complex was, consequently, repeated on adult rats depleted until total collapse, and even during the last stages of the avitaminosis, associated with marked inanition, no significant changes were detected in the concentration of either fatty acids or cholesterol of the blood. Such results prompted us to determine whether any lipemia is encountered in starvation, and surprisingly, no appreciable changes were detected in either fatty acids or cholesterol in full grown rats during a starvation period of 12 to 18 days.

We also repeated the work on lipid metabolism in lactating mothers and nursing young of the albino rat and have taken records of the periods when the young were nursing exclusively and when they began to partake of the maternal diet. Such observations lead us to interpret that the higher concentration of fatty acids in the polyneuritic nurslings (which takes place in certain litters and not regularly) is due to the longer periods of suckling of the pathological young compared with those receiving the maternal diet restricted to the same plane of nutrition fortified with vitamin B. No changes were found in the concentration of cholesterol between the pathological and control groups. The work on the phospholipids was not repeated, since the changes first observed were of a small degree. Since the lactating albino rat produces a milk of a fat content of

³ Sure, B., and Smith, M. E., *Arch. Int. Med.*, 1932, **49**, 397.

⁴ Himwich, H. E., Friedman, H., and Spiers, M. A., *Biochem. J.*, 1931, **25**, 1839.

31.6%,⁵ the character of lipemia encountered in polyneuritic nursing young is most probably of alimentary origin, but not due to vitamin B deficiency.

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Dissimilarities Between Antigenic Properties of Red Blood Cells of Dove Hybrid and Parental Genera.*

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Studies by Landsteiner and Van der Scheer¹ and by Landsteiner² have shown that 2 different species-hybrids may be distinguished from their parental species by the use of sera immunized against the respective blood cells, with subsequent agglutinin-absorptions. The experiments to be presented involve a cross of females of the domesticated Ring dove (*Streptopelia risoria*) with males of an Asiatic genus (*Spilopelia chinensis*), commonly called Pearlneck. Antisera were prepared by injecting rabbits with erythrocytes from individual representatives of each genus and of the hybrid. The agglutinations were performed by adding to 0.1 cc. of the immune serum in its varying dilutions (by halves) one drop of a 2.5% suspension of the red blood cells. For the absorptions, twice the volume of the serum diluted according to its original titre was added to a given volume of washed, packed red blood cells. The mixture was agitated gently at intervals, allowed to stand at room temperature for 2 hours and in the ice box overnight. All absorptions were repeated until complete at a dilution of 1:30. Readings were generally made after 2 hours at room temperature.

Without giving the inter-agglutinations of the parental genera and the hybrid, to be published elsewhere, it may be said that each

⁵ Donaldson, H. H., The Rat, second edition, p. 316. Memoirs of the Wistar Institute of Anatomy and Biology, Philadelphia, 1924, 6.

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¹ Landsteiner, K., and Van der Scheer, J., *J. Immunol.*, 1924, **9**, 213.

² Landsteiner, K., *Proc. Soc. Exp. Biol. and Med.*, 1931, **28**, 981.