venous blood of muscle should demonstrate this, and Lafon[7] reported that the arteriovenous difference in fat content increases during activity of the muscles lifting the upper lip of the horse. The results obtained on frogs in summer indicate that muscle may use its own fat during prolonged activity. Conditions favoring this utilization seem to be a low glycogen content of muscle and possibly an insufficient supply of blood fat.

Summary. The cholesterol, phospholipid and total fatty acid content of the rat gastrocnemius remained unchanged during prolonged and severe muscular work. In frogs in summer the fatigued muscles of one leg contained on an average 19.7% (per dry weight) less fatty acids than the resting muscles of the other leg.

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Failure of Nicotine to Alter the Estrus Cycle in the White Rat.

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Ten white female rats of the Wistar strain were injected twice daily with nicotine hydrochloride in a dose of 2 to 3 mg. per kg. in 1 to 1,000 solution. This amount was sufficient to produce convulsions of varying degree, usually becoming less as the experiment progressed. Injections were begun at the age of 2 to 4 weeks, and an equal number of litter mates were injected with equal volumes of 0.85% NaCl solution as controls. Beginning at the age of 3 months in one set of 7 nicotine and 7 control rats, and at 5 months in a set of 3 nicotine and 3 control rats, vaginal smears were examined daily, between 4:30 P. M. and 6:00 P. M., for a period of approximately 3 months. During the course of the experiment, one of the control group was accidentally killed, and another became pregnant, and could not supply data for the test for the period of pregnancy, and until estrus began again after taking away the young. These accidents account for the discrepancy between the total rat days of nicotine and control groups. Comparison of the 2 groups of rats was made by 2 methods, as follows:

Method I. A value of 2 was assigned to each day of complete cornification of the vaginal epithelium, as indicated by the smear,

[7] Lafon, G., *Compt. rend. Acad. Sc.*, 1913, **156**, 1248.

and a value of 1 to each day upon which the smears contained nucleated epithelium (non-cornified) but no leucocytes. The total value for estrus days for the nicotine group was 659 and for the controls, 635. The total rat days for the nicotine group was 1242, and for the controls, 1118. By dividing the value of the estrus days by the total rat days, the "estrus index" may be obtained. For the nicotine rats, this index was $659 \div 1242 = 0.53$; for the controls, $635 \div 1118 = 0.57$.

Method II. The second method of evaluation considered only the days of cornification of vaginal epithelium, each day of cornification being given a value of 1. There were 250 rat days of cornification among the nicotine group, and 228 among the controls. The "cornification index" for the nicotine group was $250 \div 1242 = 0.202$; for the control group, $228 \div 1118 = 0.204$.

Thus by each method of comparison it was shown that nicotine had no effect on the estrus cycle of the white female rat.

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Fragility of Human Erythrocytes to Certain Salts.*

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Hober[1] determined that the potassium ion had a greater hemolytic effect than the sodium ion by placing red cells in tubes of hypotonic solutions of these salts and noting the time of appearance of hemolysis in the supernatant fluid. Hamburger[2] proved that the sodium and potassium cations could pass in and out of red cells. Ashby[3] incubated mammalian bloods of different species and determined that blood in which the red cells contained excess of potassium showed greater susceptibility to hemolysis by potassium than by sodium salts, and blood in which the red cells contained excess of sodium showed greater susceptibility to hemolysis by sodium than by potassium salts, and attributed these effects to action on the cell

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[1] Hober, R., *Biochem. Z.*, 1908, **14**, 209.

[2] Hamburger, H. J., *Wiener med. Wochschr.*, 1916, **66**, 521, 575.

[3] Ashby, W., *Am. J. Physiol.*, 1924, **68**, 239, 285.