Western New York Section.

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Plasma Lipid Levels in Normal Post-Absorptive Dogs.

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In this study 10 healthy male dogs kept under standard conditions of exercise, maintained at a weight that varied less than 5% and fed a constant diet were bled 15 hours post-absorptive over a period of a month, at intervals of 1-16 days. Analyses for total lipid were carried out on 5 cc. samples of plasma according to the methods outlined by Bloor, using also his technique for the colorimetric determination of cholesterol by the Liebermann-Burchard reaction.[1]

The reliability of the procedures claimed by Bloor was verified, the total lipid method giving a standard deviation of ±1.4% and the cholesterol ±2.6%. Significant changes in lipid levels were taken as average differences of more than twice the standard deviation, or 5.1%. It was found that the method for phospholipid (1929) was reproducible with a standard deviation of ±4.1% on stock alcohol-ether extracts and on purified petroleum ether solutions of phospholipid, but when applied to the plasma extracts from the dogs under study, low values which could not be duplicated were obtained.

The average standard deviation for 4 post-absorptive determinations of cholesterol was ±6%. The values for the individual dogs varied from 68 mg. % to 118 mg. % with a standard deviation of ±28%.

The total fatty acid levels for the individual animal varied by a standard deviation of ±7%, and the means varied from 205 mg. % to 348 mg. %, with a standard deviation of ±13%.

It is evident that the cholesterol and total fatty acid levels in an

[1] Bloor, W. R., *J. Biol. Chem.*, 1928, lxxvii, 53.

individual dog are relatively constant over the period of one month of controlled conditions, and that there may be large differences between one dog and another. The lowest values for cholesterol and total fatty acid were given by young dogs, and the highest values were obtained from an old dog.

If the values are arranged in order of magnitude, the sequence for total fatty acids and cholesterol are roughly the same.

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Accumulation of a Precursor of Lactic Acid in Muscle After Epinephrine Injections.

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It has been found recently[1] that the glycogen content of the rat gastrocnemius diminishes on an average by 101 mg. % 30 minutes after an epinephrine injection, while the lactic acid content of the muscle increases by only 29 mg. %. Part of the lactic acid formed in muscle diffuses into the blood but even if one allows for this on the basis of the increase in blood lactic acid (which amounted to 21 mg. %), one arrives at a total of only 40 mg. % lactic acid. Hence, 61 mg. % of the muscle glycogen which disappears remains to be accounted for.

Three hours after an epinephrine injection, when the blood lactic acid has returned to the original level, a much larger portion of the disappearing muscle glycogen can be accounted for.[2] The liver glycogen formed from blood lactic acid including that part which is mobilized again, makes up for 83% of the glycogen lost from the muscles. The rest is such a small amount that it might have been oxidized without appreciably affecting the R.Q. which was 0.715 for the 3 hour period after the injection. Since most of the muscle glycogen which remains unaccounted for 30 minutes after the injection eventually (within 3 hours) yields liver glycogen by way of blood lactic acid, it seemed desirable to look for a substance, intermediary between glycogen and lactic acid, which might have accumulated in muscle owing to the fact that the conversion of glycogen

[1] *Am. J. Physiol.*, in press.

[2] Cori, C. F., and Cori, G. T., *J. Biol. Chem.*, 1928, lxxix, 309.