ride. Respiration was increased when affected. Changes in pulse rate were inconstant. A definite fall in blood pressure was noted in 2 instances when 455 to 520 mgm. were given over a 10-day period.

4833

The Formation of Lactic Acid Following the Administration of Glucose and Fructose.

M. I. ROSE, G. GIRAGOSSINTZ AND E. L. KIRSTEIN.
(Introduced by J. M. D. Olmsted.)

From the Division of Physiology, University of California Medical School, Berkeley, California.

Campbell and Soskin[1] and Campbell and Maltby[2] have shown that the high R. Q.'s following the administration of dihydroxyacetone as reported by Himwich, Rose and Malev[3] could in great part be ascribed to "extra" CO_2 released from bicarbonate by blood lactic acid (blood drawn from arm vein) which parallels the rise in quotient. Campbell and his coworkers found that the increase in lactic acid follows fructose as well as dihydroxyacetone. On the other hand, aldose sugars such as glucose, galactose, etc., produce no such lactic acid changes. Inasmuch as the source of lactic acid arising from ketose substances has not been accounted for, we have undertaken a research in that direction. Simultaneous samples of blood from the portal vein, the hepatic vein, femoral artery, and femoral vein were drawn and analyzed for lactic acid and reducing sugar immediately before and at half hour intervals following the injection into the small intestine of 25 gm. of fructose in 125 cc. water, and in other experiments after 25 gm. of glucose. Amytal anesthesia was used.

At this time we wish to call attention to a rise of between 50% and 100% of lactic acid in the portal blood over and above resting values in all fructose experiments. Glucose brings about little, if any, change in lactic acid in the portal blood. In other words, lactic acid seems to be produced in the region of the abdominal viscera when fructose is given by way of the intestinal tract. The lactic

[1] Campbell, W. R., and Soskin, S., *J. Clin. Invest.*, 1928, vi, 291.

[2] Campbell, W. R., and Maltby, E. J., *J. Clin. Invest.*, 1928, vi, 303.

[3] Himwich, H. E., Rose, M. I., and Malev, M. R., PROC. SOC. EXP. BIOL. AND MED., 1926, xxiv, 238.

acid values of blood drawn from the hepatic vein are considerably lower than the high portal values, indicating removal of the lactate by the liver.

Further work is now in progress to determine whether the lactic acid actually arises in the gut as a breakdown product of fructose.

4834

Relation of Creatinine Excretion in Urine to Plasma Creatinine Concentration.

EATON M. MACKAY.

From the Scripps Metabolic Clinic, La Jolla, San Diego, California.

Following the administration of creatinine to normal rabbits during a copious diuresis, under conditions most apt to lead to full renal activity, the rate of creatinine excretion in the urine has been found to be directly proportional to the plasma creatinine concentra-