This comparatively rapid passing of the "alkaline tide" was the only change in urine reaction found. The experiment certainly did not show an increased alkalinity of the urine after the administration of adrenalin comparable to that which follows polypnea[4], but further experiments with increased amounts of adrenalin would be necessary to prove definitely that an increased urinary acidity results from the use of the drug. The marked tremor and other disagreeable symptoms experienced during the experiment make the undertaking of such investigations upon human subjects a rather serious matter.

The experiment reported furnishes some evidence that the lowered carbon dioxide combining capacity of the plasma which follows injection of adrenalin chloride does not resemble, in some of its accompanying phenomena, that which is produced by polypnea.

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Ingested fat and body fat as precursors of the acetone bodies.

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An experiment was carried out to determine whether body fat and ingested fat give rise to equal amounts of the acetone bodies. A normal woman took a diet which furnished twenty per cent. more calories than her calculated basal requirement, and which consisted of 45 grams of protein, 45 grams of carbohydrate, and 160 grams of fat. The excretion of aceto-acetic acid, β-hydroxybutyic acid, and nitrogen were determined daily by methods previously described[1]. The amounts of the acetone bodies excreted were ten to twenty times the amounts excreted by the subject when she was on a normal diet, but the total amounts (0.25 grams of acetone from all of the acetone bodies)

[4] Collip and Backus, *Am. J. Physiol.*, 1920, li, 568; Grant and Goldman, *ibid.*, 1920, lii, 209.

[1] Hubbard and Wright, *J. Biol. Chem.*, 1922, l, 361.

were small. The diet used should not have caused any excretion of acetone if Shaffer's formula[2] is applied; the combustion of varying mixtures of ketogenic and antiketogenic compounds in different parts of the organism and at different times during the day will probably give rise to such amounts of acetone as these when the total amount of antiketogenic material is somewhat in excess of the ketogenic.

After six days on the diet described the fat was discontinued for three days, and the same amounts of protein and carbohydrate were fed as before. During this time body fat was presumably burned to replace the fat omitted from the diet. The diet fed at the beginning of the experiment was then resumed for a period of two days. There were no differences in the amounts of acetoaecetic acid, β-hydroxybutyric acid, and nitrogen excreted in the three periods. Samples of blood taken before breakfast before the experiment began, after six days on the high fat diet, and after three days on the low fat diet contained the same amounts of cholesterol (determined by the method of Bloor[3] and of fat (determined by the methods of Bloor[4] and of Gage[5].

From these results it was concluded that body fat and ingested fat (at least when the latter is not present in very great amounts) gives rise to the same amounts of the acetone bodies when metabolism takes place under comparable conditions.

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[2] *J. Biol. Chem.*, 1922, liv, 399.
[3] *J. Biol. Chem.*, 1916, xxiv, 227.
[4] *J. Biol. Chem.*, 1917, xxxi, 375.
[5] *Cornell Veterinarian*, 1920, x, 154.