It will be noted that the correlation between the total titratable acid and the creatinine content of the urine is the highest, and is relatively independent of concomitant variation with the phosphorus content. This means that, under diverse conditions, there is a marked tendency for these two elements in the urine to be either high or low at the same time. No explanation of this relationship is apparent at the present time. While, on the other hand, it is generally accepted that the acidity of urine depends largely upon the phosphoric acids that it contains, the correlation between acidity and phosphorus content is the lowest of the three and is in large measure dependent upon a concomitant variation in the creatinine of the urine. Moreover, there is a significant relationship between amounts of phosphorus and of creatinine in the urine. This relationship must be considered in the light of the evidence adduced by Fiske and Subbarow[1] that the creatine in voluntary muscle exists in the form of phospho-creatine, the presence of whose metabolic products in urine might in part explain our findings.

[1] Fiske, C. H., and Subbarow, Y., *Science*, 1927, lxv, 401.

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Effect of Diets High in Protein but Inadequate in Calories on Weights of Obese Patients.

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A patient (L. W.), female, weight 277 lbs., height 63.2 in., surface area 2.25 sq. m., age 21, with basal requirement of 2,000 calories was hospitalized and placed on a diet containing 90 gm. of protein and an inadequate number of calories varying between 802 and 1027. Over a period of 7 months, from Nov. 1, 1925, to June 1, 1926, she lost 65 pounds. All of this time the patient was allowed opportunity for daily walks and during a portion of the period she was given routine light work about the hospital. Then a second period followed in which she lived at home, weighed her food daily, but was actively working. At the opening of this period, June 1, 1926, she weighed 212 pounds and at the close, Feb. 10, 1907, 205 pounds. Thus her weight over this period of 8 months was stationary. Her basal metabolic rates were taken at regular intervals during this reducing period and found to be normal. Her nitrogen excretion showed a slight positive balance, indicating at least a nitrogen equilibrium. This patient was always found to be

trustworthy. She was so anxious to lose weight that at times difficulty was experienced in making her eat all the food on her trays. In the hospital the intake did not exceed that shown by the figures. During the eight months when she was not in the hospital she reported at regular intervals and stated that she was following closely the diet. I feel that while she is to be trusted there was more opportunity for error during this period.

A second patient (L. S.), female, weight 292.5 lbs., height 67.5 in., surface area 2.4 sq. m., age 26, basal requirements 2,140 calories, was placed on diets deficient in calories, basal 2,140; basal —30%, 1,500; basal —46%, 1,160; which however contained 120 gm. of protein. She lost weight very slowly from 292.5 lbs. to 260 lbs. over a period of 172 days. At one time her weight remained practically stationary for 50 days on a basal —30% diet (1500 calories).

Her basal metabolic rates also remained normal in the face of this severe undernutrition. She too remained in nitrogen equilibrium and at times appeared to be actively storing nitrogen. This second patient is a well educated young woman, of German extraction, and a teacher in the City Schools of Chicago. She was fully acquainted with the significance of the experiment and the necessity for accuracy. She showed on many occasions her willingness to cooperate when this cooperation involved a distinct sacrifice. I feel that her statements are to be trusted absolutely. This maintenance of nitrogen equilibrium and tendency to store nitrogen has been found present in 3 other female obese patients who were on diets containing 90 gm. of protein and approximately 1000 calories.

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Blood Lactic Acid in Relation to Metabolic Rate.

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The newer physiology of muscle contraction leads one to the hypothesis that, at least in muscle, it is the rate of glycolysis (or anaerobic cleavage of sugar with production of lactic acid) which determines the rate of respiration (oxygen absorption) of the tissue.[1, 2, 3] It would be interesting to know how far one could account for conditions of increased metabolism of the whole organism, other