

when added to the dietary of hay, oats and water, were fully capable of protecting the animals. It is evident, therefore, that, in a consideration of vegetables as a foodstuff, we must take into account the factor of freshness. In dietetics this difference is intensified by the fact that older vegetables are tougher and therefore require and receive more prolonged cooking, thus further lessening their antiscorbutic value. The water in which the vegetables were cooked possessed little or none of the accessory factor, although 40 c.c. per capita were fed to the guinea-pigs; the animals did not, however, lose weight as rapidly as those receiving tap water.

In a previous communication it was shown that 5 c.c. of canned tomatoes is sufficient to protect a guinea-pig from scurvy. If such tomatoes are boiled for five minutes, their potency is slightly diminished, so that they should not be subjected to cooking when employed as an antiscorbutic for infants. Their efficacy was not diminished by rendering them slightly alkaline to phenolphthalein. Orange juice, which had been made $n/20$ alkaline to NaOH, was found to be just as potent as in the acid state. The tomato as well as the orange juice was given by a pipette one half to three quarters of an hour following alkalization. Neither of these antiscorbutics, however, will retain their power long after they have been rendered alkaline. In judging of the effect of alkalization or of heat, it is highly important to consider the length of time to which the antiscorbutic has been subjected to this influence.

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Studies of saliva in its relation to the teeth.

I. ON THE NORMAL COMPOSITION OF SALIVA.

1. *Does normal saliva contain uric acid (urate)?*

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By the use of a slight modification of the Folin-Benedict method for the determination of uric acid in blood, we definitely established the presence of uric acid (urate) in saliva. The average

quantity of uric acid in saliva from men amounted to 2.10 mg. per 100 c.c. of the secretion; in saliva from women it amounted to 1.11 mg. per 100 c.c. We also succeeded in separating uric acid, in crystalline form, from saliva.

For normal individuals, the proportion of uric acid in saliva was independent of the diet, speaking generally, but was influenced by the rate of secretion as well as by the nature of the stimulant employed to accelerate the flow of the saliva.

Saliva appears to register promptly the variations in the endogenous metabolism of uric acid. We noted an almost immediate rise in the proportion of uric acid in saliva after increased muscular exertion, and after the ingestion of purine-free food following a brief fast. We also observed a definite relationship between the quantity of uric acid excreted in saliva, and the quantity eliminated simultaneously in the urine, in normal people on an ordinary diet.

The details of this study, and those related to it, will be published in the *Journal of Dental Research*.

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The effect of large doses of X-rays on the resistance of monkeys to experimental poliomyelitis.

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After a few passages through monkeys poliomyelitic virus becomes adapted and virulent for these animals. Hence slight variations in the susceptibility of these animals are not usually observed in experimental work. The original strain adapted to monkeys by Flexner and Lewis has been passed through many monkeys and stored in 50 per cent. glycerol in the ice-box, and its power to infect monkeys is very much diminished. This strain offers the opportunity of detecting variations in the susceptibility of the experimental animal to this infection. In two experiments an intracerebral injection of 1 c.c. of a Berkefeld filtrate of a 5 per cent. suspension of poliomyelitic cord containing the attenuated