25 (1607)

The relation of fodder to the antiscorbutic potency and salt content of milk.

By ALFRED F. HESS, L. J. UNGER and G. C. SUPPLEE.

[*From the Department of Health, New York City.*]

Five Holstein cows which had been stall-fed throughout the winter were given for a period of three weeks fodder containing practically no antiscorbutic vitamine. The dietary consisted of 25 pounds of a concentrate mixture composed of one part of bean meal, two parts of pressed flaxseed oil meal, two parts hominy, two of gluten meal and two of bran; each received also 8 pounds of kiln-dried beet pulp, 4 quarts of molasses and 12 pounds of straw. On this diet the milk flow decreased at first 10 pounds and later 5 pounds a day. The milk at the end of this period was dried by Just hot-roller process.

The five cows were then put out to pasture for three weeks, and a day's sample collected and dried in the same way.

Feeding experiments with guinea pigs showed that the "dry fodder" milk was almost devoid of antiscorbutic potency, whereas the "pasture milk" was rich in this factor, although the cows had been on fresh food but three weeks.

The salt content of the two lots of milk also showed marked differences; that secreted on the "antiscorbutic free fodder" was considerably lower in calcium, phosphorus and citric acid, but contained a higher percentage of sulphur (calcium oxide .138 and .165, phosphorus pentoxide .158 and .190, citric acid .08 and .13, sulphur .023 and .014).