

is suggested that some secondary influence, probably manganese, is rendering the herbage healthy.

In Table 6 the three staples are arranged according to the localities whence they came, in the order of relative freedom from deficiency disease (iron-starvation), beginning with the least healthy and ending with the most healthy. In order to avoid decimals the results (averages) are stated in parts per million. In the cases both of the white clovers and the cocksfoots there is ample evidence that from artificial manuring with phosphate alone, and with phosphate and iron, the iron content of the plants has been greatly increased.

(To be continued.)

THE FEEDING OF LIVE-STOCK.

J. McLINDEN, M.R.C.V.S., N.D.A., Officer in Charge, Animal Husbandry Branch, Live-stock Division.

II. UTILIZATION OF NUTRIENTS.

A GREAT number of complex processes are involved in the nutrition of stock during the assimilation of the foodstuffs digested by the animal. These processes will be dealt with here under two heads—maintenance and production. By maintenance is meant the keeping of an animal on a constant plane—neither gaining nor losing, but simply replacing tissues which have been used or depleted. By production, on the other hand, is meant work, fattening, growth of frame, milk-yield, wool, and so on. These definitions may not be scientifically accurate, but from the practical standpoint of animal-feeding they define the two heads completely.

FATTENING.

Fattening is an easily recognized process, being merely the conversion of farm food-products into fat. So far as the dairy-farmer is concerned, this process applies more to pigs than to the dairy stock. But the dairy stock should be brought up into good condition before calving. If this is done the cow has every chance of doing well, and if she should be of a deep-milking strain she will utilize her condition and even more, for she will even draw on her body reserves. This is a peculiarity of the dairy cow which cannot be overlooked—the fact that she will produce milk although she is not being fed sufficiently, doing so at the expense of her own body.

Fattening may take place at any age, especially if the foods be of a fattening nature and fed in liberal amounts. It goes on most rapidly after maturity, when there is a greater surplus of food materials available after the maintenance requirements of the body have been met. Fattening, therefore, in the main is determined by the amount of food which the animal can digest in excess of that required for growth and production, such as milk or wool.