

non-nitrogenous—which are largely carbohydrates and fats—are the source of energy, and the portion not consumed is stored as fat. The usual inorganic foods are water and salts, and are removed in secretions and excretions.

Mother's milk is unquestionably the diet of young animals. In the case of sow's milk there is apparently considerable variation in the quantity and quality. The following tabulation shows average analyses and ratio of sow's milk, cow's milk, and skim-milk :—

	Water.	Albumen.	Fat.	Sugar.	Ash.	Ratio.
	%	%	%	%	%	
Sow ..	84.6	6.3	4.8	3.4	0.9	1 : 2.2
Cow ..	87.0	3.7	3.9	4.7	0.7	1 : 3.6
Skim-milk ..	90.0	3.6	0.05	4.9	0.6	1 : 5.6

Sow's milk naturally has much more fat than skim-milk. Young pigs sometimes break down after weaning, and sometimes while still on the mother. The milk of the mother depends upon her diet ; if that is deficient it is probable that her own milk is also deficient.

Skim-milk is one of the best and cheapest protein foods for swine ; buttermilk is of about equal value ; whey has been found to be worth about half as much. To make the ration balanced, however, it is necessary to increase the fat and fat-soluble vitamin content. Fortunately, the green portion of plants such as lucerne, &c., carrots, and sweet potatoes, also beef fat and cod-liver oil, have been found rich in this vitamin. In some parts of the country roots—turnips and mangolds—are grown as bulk food. Potatoes, pumpkins, artichokes, bran, pollard, and linseed-meal, &c., are all used to substitute the dairy by-product food, and are essential to make up the fat-deficiency. When pastured properly for some period of the year pigs should be found free from paralysis due to rickets. Pigs at pasture should be rung to prevent rooting.

Great controversy has frequently arisen as to when is the best stage for feeding skim-milk to pigs. It is the generally accepted rule that it should be fed fresh, but just twelve hours old, allowing enough time for gas to leave it. But a very important point, I think, is that pigs fed on sour milk should always be fed on it, and *vice versa*. Alternating of sour and fresh milk in feeding is likely to set up the greater digestive disturbance.

Probably the chief mineral deficiency is calcium, which can be supplied very cheaply by using finely ground limestone, chalk, or wood-ashes. Phosphates can be replaced by steamed bone-meal.

From the medicinal point of view it is usual to advise the farmer to give a dose of castor-oil with the food, and afterwards, daily, a teaspoonful of bicarbonate of soda to each pig, also in the food.

Great benefit would also be derived by the addition of cod-liver oil to skim-milk—say, two teaspoonfuls per pig—to pigs just weaned, in the morning and evening feed. Moreover, the oil could be used as a preventive in places where the disease has occurred. I understand that best Norwegian cod-liver oil could be supplied at less than 11s. per gallon, so the cost would be immaterial. The application of medicinal agents to pigs other than in food is not the easiest of tasks.

The main course in combating paralysis in pigs is the education of the farmer in correctives—such as hygiene and practical economic feeding—for what is a common but admittedly deficient diet.