

## Very Prevalent.

still coming to hand about the but, particularly in oat fields which had not been treated. to have been ideal for the spread of smut spores this season do their worst work in a and in wet seasons. It is that fields grown from seed with formalin solution are still free from the disease. A subscriber office a few days ago and had been examining photo ated seed and from untreated e found 150 smutted heads in a e crop grown from the untreated e able to find two smutted heads of crop grown from treated bscriber reports that in 56 heads ill in an oat field he found 12 ut. This is a little over one and according to our correspond showed the same prevalence At Weldwood the crop grown with formalin is quite clean, been noticed in it so far. A ent, tried on the place has not ults. Crops this year should y the value of care in treating d growers should not neglect to with this.

## Refrigerator.

ado agricultural authorities are household use an iceless reeding to those familiar with this necessary to purchase a manu- ut with a little work an ordin- y be prepared for the purpose. amework of a cupboard from nd line the inside with wire net- the flies and mice. On the out- ard, and placed so it will not tting, tack burlap. For the top ave the tinsmith make a gal- exactly the size of the cup- d to 6 inches deep. When set om of the tank then makes the rd. This tank is kept full of e burlap is thoroughly wet, and voollen cloths are hung around of the tank. These cloths are water from the tank to the moist. The evaporation of ers the temperature of the re- ps it cool.

## Influence Felt.

Amherst Island, Ontario, re- representative of "The Farmer's as visiting the Island that a f the farmers on the Island "The Farmer's Advocate," and uted in no small degree their in this man's belief its influence cked in the progress of agricul- island 12 miles long and 8½ gratifying to note that effort ed.

## THE DAIRY.

### Products of the Dairy

er's Advocate":

#### 1.—WHEY.

chief dairy by-products, skim- nd whey. The relative feeding order, named, but owing to the cheesemaking we shall treat of uct first and the others in two

ould be made clear at the t dairying is a manufacturing he profits in many lines of manu- a wise use of the by-products. of the Lumber Company which logs at their mill except the lso of the Packing Company f every part of the pig except hich is now negotiating to "can" the Scotchmen for use instead

manufacturers of dairy goods, good use of the by-products as because the farmers have in these as being their property, rer consequently did not "care" ame of the farmer's property. the odor to be found around ilk, and buttermilk tanks of nd creameries. However, the to wake up on this question nding that these receptacles for shall be kept clean in order to value of the contents; and also

on sanitary grounds. A number of our best dairy manufactories take special pride in keeping the whey and buttermilk tanks clean and also in having the surroundings of the tanks clean and sanitary. The pasteurization of these by-products before returning them to the farm is also a wise measure of protection against the spread of disease among live stock. The recent outbreak of "Foot and Mouth Disease" in the United States has caused several of the States to compel pasteurization of dairy by-products, as it was found that these were a common source of infection on farms. No doubt the wisdom of this will be properly estimated and its continuation insisted upon to prevent the spread of other diseases such as tuberculosis. One of the objections raised to pasteurization is the cost. Some factories have discontinued the method because patrons objected to bearing the expense. This is unwise. No farmer can afford to run the risk of getting disease from dairy by-products for the sake of 50 cents to one dollar per ton of cheese, to pay the cost of heating the whey and keeping the tank clean. As the by-product belongs to the farmer and not to the factoryman, unless otherwise understood, it is in the farmer's interests that the feed shall be made safe. As a rule, the farmer cannot properly pasteurize at home in quantity. This can be done much more efficiently and economically at the factory where there is steam heat. But steam costs money for fuel and labor and these should not be expected free from the manufacturer unless this extra cost is included in the making charges and is so agreed.

#### COMPOSITION OF WHEY.

Some people say, "Oh, whey is no better than water—it's not worth hauling home. I've got lots of water at home." Practical hog feeders, however, find it quite an improvement over water. Whey has the following percentage composition as given by Farrington and Woll:

	(Konig)	(Van Slyke)
Water .....	93.38	93.12
Fat .....	.32	.27
Casein and Albumen ..	.86	.81
Milk-sugar .....	4.79	5.80
Ash .....	.65	

Those who are familiar with the composition of milk will see that whey contains all of the constituents found in milk, but in smaller quantity, except the water, which of course, is present in greater volume in whey than in milk. No doubt the "water" of whey has higher feeding value than water from a well, as there is a something about dairy products which eludes the most skillful chemist when it comes to calculating food values.

#### FEEDING VALUE OF SEPARATED WHEY.

We have been asked a great many times during recent years as to the effect on the feeding value of whey, when the cream or fat has been separated by means of a cream separator. As is well-known, quite a large number of cheese factories have installed separators, where there was no winter buttermaking plant, for the purpose of making whey butter. The patrons in many cases have been somewhat suspicious of the whey butter plant, judging from letters received.

In order to obtain some reliable data on the question, the Dairy and Animal Husbandry Departments of the O. A. College during the years 1908 and 1909 co-operated in a number of tests on the relative feeding values of separated and ordinary whey for feeding hogs. As a result of these tests, the relative feeding values on a percentage basis for the two years were:

	1908	1909
Separated Whey .....	100	100
Ordinary Whey .....	125	133

In a word, the ordinary whey containing the fat, was worth from 25 to 33 per cent. more for feeding hogs than was similar whey which had been run through a cream separator, and had the fat or cream removed.

Expressed in pounds of meal saved, the separated whey in '09 was equal to 9 lbs. meal, and the ordinary whey about 12.5 lbs. At the low value of one cent per pound for meal, it will be seen that the separated whey was worth over 9 cents per 100 lbs. and the ordinary whey about 12½¢ per 100. While it is not likely that the ordinary feeder could obtain these values for whey fed to hogs, yet they indicate the high feeding value for hogs of this by-product from the cheese factory which is sometimes referred to as "water" and "not worth very much for hogs or anything else."

#### HOW TO FEED.

A common mistake in the feeding of whey, where it is plentiful, is giving too much of it and causing what farmers call "pot-bellied" pigs. Not more than 3 or 4 lbs. of whey should be given for each pound of meal fed. Suppose we are feeding middlings and corn or barley chop. To 100 lbs. of each, not more than 600 to 800

lbs. whey should be added for best results. Hogs seem to like their feed in the form of a "slop" but not too thin. One of the most successful hog feeders we ever knew used to keep two coal-oil barrels in the feed-room of the piggery. The meal was mixed with the whey in both barrels to the consistency of thick porridge. When one was emptied it was again filled and feeding took place from the other, so that after the first lot, the feed was always mixed about 24 hours ahead and was slightly fermented. He claimed that much better results were got by this plan than by feeding a fresh mix. He certainly raised and fattened good hogs.

In conclusion we would urge the importance of emptying the whey at once, where it is returned in the milk can which is the common practice, and that the can shall be thoroughly washed, scalded and allowed to remain in the sunshine for several hours before milk is added. This will tend to keep the can sweet and clean and assist the cheesemaker in making fine cheese, which after all is the main object in a cheese section. The whey, while valuable as a food, is a minor product.

O. A. C.

H. H. DEAN.

## Constitution and Capacity in Dairy Cows.

Every good dairyman knows that if he is to build up a herd of heavy-producing cows he must have in his foundation stock cows showing constitution and capacity. Gilbert Gusler in his bulletin "Judging Dairy Cattle" says: "the chest more than any other feature is considered indicative of the vigor and strength of the animal's constitution for it determines greatness of heart and lung capacity. In the broadest sense constitution means the sum total of the strength of all the animal's vital powers but it is conditioned more by the quantity of air the animal can take in and use for the purification of the blood than by any other single factor. If one remembers that the dairy cow, if she is worthy, is a hard worked animal, the importance of the chest is apparent. Although the digestive, circulatory, and secretory systems determine production through any given lactation period, long time performance is apt to depend more on the constitution, and therefore, on the chest. If the latter is small, the ruggedness and stamina of the animal are sacrificed."

"The chest, therefore, should have extreme depth from the top of the shoulders to its floor for through depth most of its capacity is obtained. Ample breadth is provided by well sprung fore ribs and this arch continued down makes the animal full in the fore flanks, wide across the chest floor, and the total girth large. The spare fleshed state results in a rather narrow, sharp brisket only slightly advanced."

"The crops are to be moderately full though not from excess flesh."

"The back of the dairy cow should form a straight true top line indicative of the great development of barrel below. Rather open backbone with large prominent spinal processes are considered desirable by some judges. The size of the backbone is supposed to indicate the size of the spinal cord and nerve and to provide opportunity for the nerves to pass out and down to the organs within the body and the udder below. The back should be lean and spare also. Cows with large middles naturally sag somewhat in the back with age."

"The ribs determine the shape and the size of the barrel and therefore should provide capacity in every way. They should arch boldly away from the backbone. They should be long to make the body deep especially in the rear. They should be broad and spaced rather wide apart. The openness of the ribs and of the vertebrae or frame as a whole, is usually determined by the number of finger breadths between the last two ribs."

"The barrel is taken as the chief indication of animal's digestive capacity which means the amount of feed the animal can consume and digest in a given time without injury. The dairy cow gives as much solids in 1 day as a steer would lay on in 3 or 4 days and the barrel must provide the space within which this marvelous work can be performed. The daily ration of Murne Cowan, a recent holder of the World's record for butter-fat production, consisted of 16 pounds of grains and concentrates, 1 1-3 pounds of molasses, 3½ pounds of dried beet pulp, 38 pounds of corn silage, 16 pounds of beets, 4 pounds of sweet corn, 8½ pounds of alfalfa hay, and 5 pounds of green alfalfa. Probably she drank daily from 200 to 300 pounds of water. She was a great machine because of her great boiler capacity. The barrel then must be of maximum size and roominess, wedge-shaped, long, wide, and deep with well developed paunch but firmly held up."

"A cow's production depends not alone on digestive capacity as indicated by the size of the barrel, because animals equal in outward appearance may differ in their efficiency. If two cows are capable of consuming equal amounts, the state of the skin and hair is indicative of the relative

efficiency with which the feed is digested. Under the strain of continued heavy feeding the digestive organs are first to weaken and the skin and hair are the first to make the weakness known."

"The loin should be strong which necessitates that it be level from front to rear and it should be broad and nearly level from the middle to the sides. A narrow, bare, or depressed loin is apt to accompany delicacy or weakness."

"The proper conformation of ribs and barrel will entail depth through the hind flank. Sparseness of make-up also will make the flank thin and arching."

## POULTRY.

### Canning Chicken.

Editor "The Farmer's Advocate":

The chicken business is a side line with us, but it more than pays its way. Just now we are at an important season and one in which we can loose or save just as we run the business.

Early in July, the hot days come and with them the red mites. There is no need to have these little pests but still we are likely to have them. They can be killed but that takes time, and time is money especially where we have to pay 20c an hour for hired help and if the hired man is worth 20c an hour surely the proprietor should be.

For many years I have followed the poultry journals and did as the writers in these all recommended, that is used dropping boards under the roosts, but I never could get them so that in a long house they could be cleaned off readily. I tried a passage way along the house with a door swinging out into the passage and running a wheelbarrow through the passage so as to scrape the boards into the barrow. Then when that proved ineffectual the doors into the pens were all made so that the barrow could go up close to the boards through the pens, but that didn't help much. The trouble was those boards could not be cleaned, and be sure they were well cleaned in the dry weather. So this spring the boards came out. The perches hang by stout hay wire from the roof and do not touch the walls at all. There are no places for the mites to lodge. In fact there is nothing to give rise to the mites. It's those dirty boards, (the cracks which no one can keep clean, in hot weather, without more work than is profitable), that cause the mites. A neighbor of mine has followed the same plan and says it's the only thing. We both keep our pens well supplied with straw, weeds, old hay etc., for scratching litter and since we tore out the boards our hens have come up in their egg production.

The clearing of the mites is one good step at this time of year and the clearing out of the old hens is the next best. Hens that are a year old should get their death warrant now, that is in July and August before molting time. It never pays to keep hens after their pullet year for laying purposes. Give the place they fill to the pullets and they will pay much better. Here is our method:—We kill off a couple a day or more, or when ever we have time, and pack them into glass jars. We fill the jars as full of the meat as possible and pour in hot water, seal and cook for three hours in boiling water. If you leave the bones in a quart jar will accommodate a hen. If you take out the bones two or maybe three hens will find a resting place in a one-quart jar. These may afterwards be taken out and for the sake of a change in flavor may be roasted, fried, broiled or served in many different ways. Jellyed chicken is a fine change and now that the butchers charge some extra for beef, etc., the hens done in this way are still more advisable. It should be done now as the hens are fat, molting will soon be on and they lose tremendously at that time.

Then, too, at this season these hens have a considerable deposit of fat and there is no shortening that can equal it. Pies and tea biscuits made with chicken fat will win the cooking prizes every time. Use it once and other shortenings will only be used because the chicken fat has run out.

In the fall we kill what young cockerels we need after they have grown to full size, as it doesn't pay to keep feeding them on grain at the price it sells at here.

B. C.

WALTER M. WRIGHT.

The world has just completed the bloodiest year in its history, and the great conflict seems far from the end. Has civilization advanced during the last twelvemonth?