

they started from home and gone when they come before the judge in the ring.

All of us doubtless inherit from our superstitious ancestors of old testament times, a fondness for looking after signs. The relics of prehistoric ages cling to us all more or less, "and they must have a sign." We come to believe in signs because we want to. Exceptions to the sign teach us nothing.

Two years ago I went to Nova Scotia on a shooting trip. I called at a settler's shanty. "There," said the housewife, "I told my daughter only yesterday—didn't I, Mary?—that if we didn't get around to it and black that stove on Monday, someone would surely come before the week was out—it's a sure sign. I never knew it to fail."

I knew then why it was I had travelled over a thousand miles by sea and land and had tramped through forty miles of forest to this settler's shanty. It was that the prophecy might be fulfilled and the sign that never failed might come to pass.

I look upon rudimentary, milk vein, escutcheon and color signs as signs and nothing more. They are poor and flimsy things to lean upon in judging the merits of bulls. A scrub may possess them all, and the best bull—the best sire—have none of them.

In my next letter I will call attention to the principal points about a bull that decides me in his favor.

Swine Feeding.

[By J. H. Grisdale, Agriculturist, Experimental Farm, Ottawa. Read at Live Stock Conventions.]

In no class of live stock in Canada during the last five years have such great onward strides been made, if we may judge by numbers, as in swine. As the pork-packing industry develops more and more, swine must be kept, and more and more does it become necessary that we study the conditions which surround us, the methods of feeding and the feeds best fitted to give us good returns for our investments. The feeding problem is with us of very much more importance than with our United States cousins, since ours is a more critical and fastidious class of customers, the great middle class, and aristocratic Englishmen. The quality, finish, flavor and appearance of our product must be just right or he spends his money elsewhere and we are left to console ourselves as best we may. Feeding being our most serious problem, it is eminently fit that we discuss it fully to-day.

Since "swine feeding" may be expected to mean the feeding of breeding and young stock, I shall first say a few words on that part of the question. To insure good healthy litters it is essential that the sow be properly nourished. A plentiful ration of bran, shorts and oats, and roots, is well fitted to sustain both herself and the young she bears. As farrowing time approaches, and for some few days after, the ration should be decreased. Once safely past that critical period, a heavy ration of bran, shorts, crushed oats, and milk, if available, is best suited to supply the milk her offspring demand. The young pigs should be early taught to eat. This may be done by placing a small trough in the enclosure. For a few days a small supply of warm new milk might be placed in the trough; and later, skim milk warmed to blood heat. In two or three weeks, or even less, some shorts or oatmeal might be added to the milk. Great care must be taken to keep the trough scrupulously clean. It should be washed thoroughly every day. If the young are dropped in winter, it is well to give them a few sods to tear up in their pen. The roots and earth appear to serve the important ends of supplying vegetable and mineral matter so necessary to the health and development of young animals. By pursuing this, or some similar method of feeding the young, they will at from seven to nine weeks be weaned. Care should be taken at this time to reduce the sow's ration, especially the bran, shorts, oats, and milk. Much of the trouble experienced in raising pigs arises from the feed and care given the sow. If these are what they should be, no sickness is likely to occur in the young. Do not feed the same mixture for long to either sow or young. Variety in feed aids digestion. Once the pigs are weaned, if we are to hope for much profit, it is essential to get them to a weight of, say 100 lbs., without much expense. If in summer, this can be best done by letting the youngsters run on pasture, feeding them a small amount of bran, shorts or oats to help them along. In winter, excellent gains may be made on a ration consisting almost exclusively of roots. If the pasture has to be on seeded land, a good crop, we have found, is oats and peas equal parts, while rape cannot be surpassed. The great aim during this first period should be to secure a good growth, rather than to put on fat. Any check suffered in growth is likely to bring disaster at a later date.

The practice of finishing pigs off on grass or pasture is one which has not met with great success where quality was the chief aim, but it is most economical.

FEEDING PIGS ON RAPE.

On August 2nd, 1899, two lots of six pigs each were placed on a rape plot of about one-third acre. This rape had been sown in drills on May 20th, but, owing to wet weather, had made rather poor growth, and so was only about 15 inches high at date of turning in the pigs. For some time after their introduction they failed to eat much of the crop, especially the younger lot. Very little grain was given, however, and finally both lots fed

heartily upon the juicy young plants. The growing rape was pretty well eaten down by Oct. 1st, and from that date till Nov. 30th an allowance of 4 lbs. of rape per pig was fed daily from another field. The five remaining after Nov. 30th received as much mangolds as they would eat, about 4 lbs. each daily.

The following table gives the particulars as to increase and daily rate of gain:

Lot No. 1.	First weight.	Last weight.	Gain.	Days fed.	Daily rate of gain.
No. 81	59	176	117	119	.97
No. 82	69	190	121	119	1.02
No. 83	56	180	124	119	1.04
No. 84	84	190	106	119	.90
No. 85	76	191	115	119	.97
No. 90	59	173	114	119	.96
Total	383	1100	717	119	*1.004
Lot No. 2.	First weight.	Last weight.	Gain.	Days fed.	Daily rate of gain.
No. 86	32	165	133	148	.90
No. 87	32	190	158	148	1.07
No. 88	30	161	131	148	.89
No. 89	38	170	132	148	.90
No. 91	54	202	148	148	1.00
Total	216	923	717	148	*.95

*Average rate of gain.

One pig in lot No. 2 died after being fed for 35 days. The pigs in lot No. 2 appeared to be too young to introduce upon rape, as they did not thrive for about a month after being confined in the lot. The dew or moisture from the plants seemed to affect them, causing their skin to crack. Lot No. 1 was not affected in the same way.

Below is a statement of cost and proceeds of 11 finished hogs:

11 pigs at \$2.00 average	\$22.00
Rent of lot	2.00
3,000 lbs. rape and roots at \$2.00 ton	3.00
4,402 lbs. meal at \$1.00 cwt.	44.02
	\$71.02

Proceeds of 1,988 lbs. pork at \$4.50 cwt. \$89.46

Net profit 18.44

It was, of course, impossible to determine the quantity of rape grown on the lot, so a rental of \$2 is charged for the one-third acre.

Pig No.	Live wght.	Dress wght.	Percent. dress.	Date killed.	Yard Criticism.	Quality of pork.
81	176	128	72.7	Nov. 30	Straight	Poor
82	190	136	71.6	"	"	Fair
83	180	133	73.9	"	"	Very poor
84	190	136	71.6	"	"	Fair
85	191	144	75.4	"	"	Poor
90	173	125	72.2	"	Short	Poor
96	165	125	75.7	Dec. 29	Straight	Good
87	190	137	72.1	"	"	Very good
88	161	118	73.3	"	"	Very good
89	170	121	71.2	"	"	Very good
91	202	147	72.7	"	"	Good

The date of killing is given in each case, since, though all were treated in the same way till Nov. 30th, after that date the remaining pigs were fed roots instead of rape. It will be observed that the lot killed Dec. 29th were all firm in quality, any one of them being superior to the best in lot No. 1, killed Nov. 30th.

PRODUCING HARD PORK.

The problem of producing hard pork is one which is receiving much attention at present. At both Guelph and Ottawa a number of experiments have been conducted, or are in progress at present, to determine, if possible, the causes which go to induce variations in the quality of the pork.

A great amount of data has been secured, but no fixed conclusions can be said to have been reached yet. The individuality of the animal appears to have more to do with the quality of its flesh than the feed put into him, provided, of course, he is fed a fairly balanced ration. The question of hard and soft pork is one which is too often mixed with "thick" and "straight" carcasses. The percentages of softs among "fats" seem in our experience to be less than among "straights" or "selects." From this and other points I have observed, I am at present inclined to think that maturity or ripeness of the pig has a very great deal to do with the quality of the meat.

We have found that the animal that made a good thrifty growth from start to finish has almost invariably proven to be of superior quality; while the animal that was rushed to the required weight, or brought to it too slowly, has in many cases proven soft. We are near the completion of an extensive experiment at Ottawa to ascertain the causes of this defect in our pork, and parts of the flesh of each pig are being analyzed by our chemist, Mr. F. T. Shutt, to determine, if possible, the component parts whose absence or presence go to influence the quality of the meat. There is, however, no doubt that feed is an important factor in the character of the flesh produced, and very marked effects follow on the continued use of certain feeds.

The important point is to feed a good growing ration, strong in protein or flesh-forming materials, as well as rich in bone food.

PREPARATION OF FOOD.

The preparation of the food for swine is a question which is always with us. While varying conditions may somewhat modify the practice best suited for economical pork-production, still most reliable data seem to point in the same direction—that is, the feeding of all grain ground and dry or whole and soaked. This has been found to be the case in a number of experiments at Ottawa, and last spring in an experiment with 12 pigs divided into three lots of four each, we found an advantage

of about five per cent. in favor of ground as compared with whole grain. Another point brought out in the same experiment was the economy of feeding a limited ration rather than an unlimited one, a saving of about eight per cent. being effected by careful feeding.

The cooking of foods has been found to neither improve nor injure foods to any great extent, save potatoes, which we have found to be of very little value unless cooked. It may pay to cook some part of the feed for the sake of the effect upon the animals under certain conditions, as, for instance, feeding warm feed when the weather is very cold.

A ration that we have found economical is composed of oats, peas and barley, equal parts, and as much corn as of the three others. This, when supplemented with skim milk and under favorable conditions for development, has never failed to give us good returns. Skim milk holds a high place as a feed for hogs, and the quality of the meat seems to be uniformly improved by the addition of this by-product of our dairying industry. It is almost essential to the proper development of our young pigs, and is a most valuable adjunct to grain feed in fattening stock. It seems to act as a stimulant as well as a food, for where small amounts were fed daily excellent results were obtained. To give an idea of what I mean, let me quote from a bulletin recently published by the Department of Agriculture at Ottawa, compiled by myself.

These facts are obtained from a large number of experiments:

No. of swine in test.	Skim milk consumed per head per day.	Lbs.	Feed
4	2	1 lb. corn, equal to 1.33 lbs. skim milk.	
31	3	1 lb. mixed grain, equal to 3.25 lbs. skim milk.	
4	5.4	1 lb. mixed grain, equal to 5.35 lbs. skim milk.	
4	13.6	1 lb. frosted wheat, equal to 7.91 lbs. skim milk.	
5	15.7	1 lb. mixed grain, equal to 7.34 lbs. skim milk.	
2	17.1	1 lb. mixed grain, equal to 8.82 lbs. skim milk.	
2	23.7	1 lb. mixed grain, equal to 7.76 lbs. skim milk.	

Generally speaking, skim milk may be said to be worth one-sixth to one-fifth as much as an equal weight of mixed meal.

Cost of the U. S. Dog Plague.

Throughout many sections of Canada the greatest menace to the progress of the sheep industry is the nocturnal-roving canine. The Provincial Legislatures are being urged to enact much more stringent laws that will materially lessen the losses from sheep-worrying and give sheep-raising a degree of security which at the present time it does not enjoy. It is strong evidence to the FARMER'S ADVOCATE of the intrinsic merit of the industry that it flourishes as it does against such discouraging odds, and if freed from this incubus, that it would make astonishing strides in beyond question. Many villagers and other people, who can ill afford to do so, harbor one, two, and sometimes more useless curs, little thinking what the cost of their maintenance amounts to, or perhaps not caring so long as the brutes feast on their neighbors' flocks. The following from a Pennsylvania correspondent of the *Country Gentleman* gives some idea what it costs the country to keep dogs:

What it costs to board a dog for a year is not so hard to ascertain. The lowest price ever paid by sportsmen in the towns for boarding their dogs is 50 cents per week. Allowing that there is a good profit to the kennel keeper, we will call the actual cost of feed 25 cents per week (or about one cent for each meal); the average cost of keeping a dog for one year will amount to \$13. Mr. G. W. Kinney, of Missouri, says: "The amount of food required to support a fair-sized dog will keep a hog in good thriving condition, which at 12 months old will be worth \$12." The writer sold a pig last fall which was only 7 months old for \$13.65. If we call the average cost of feeding dogs only \$10 a year, the cost of feeding 7,000,000 will be \$70,000,000.

The number of sheep killed by dogs, and their value, are known in one or two States. In Ohio, according to the returns of the assessors, the number of sheep killed by dogs during ten years was 357,154, and their value, which was paid by the State, was \$1,029,688. The number injured, but not killed, was 233,745, valued at \$340,509. Total average loss per year, \$137,019. In Iowa, in 1896, the assessors returned a loss of \$82,616 from sheep killed by dogs, the total number of sheep in the State being 1,598,226. The same ratio would make the loss in the United States \$2,080,000, not counting the damage from maiming. The report of the Department of Agriculture for 1898 makes the loss from sheep killed by dogs in the United States every year at \$2,000,000, and from maiming about \$1,000,000.

In making up the final account, we charge the dogs in the United States as follows:

Annual board bill	\$ 70,000,000
Value of sheep killed per annum	2,000,000
Value of sheep maimed	1,000,000
Total cost of dogs	\$ 73,000,000

This takes no account of the cost of hydrophobia, of which they are producers and diffusers. Seventy-three million dollars is the interest, at 6 per cent., on a capital invested in dogs amounting to \$1,216,000,000. Are all the dogs and their owners in the United States worth that much? Are we not "paying too dear for the whistle?"