

given in Productive Swine Husbandry, are to the effect that lot one, which had free access to soft coal, made 100 pounds gain in weight, at a total cost of \$6.15. Lot two had free access to charcoal and 100 pounds gain was made at a cost of \$5.56, \$5.42 of which was for meal and 14c. for charcoal. These pigs made an average daily gain of .738 pound, while the lot fed soft coal gained .695 pound. Lot three was fed one ounce of tonic, made up of wood charcoal 1 pound; sulphur 1 pound; common salt 2 pounds; soda 2 pounds; sodium hyposulphite 2 pounds; sodium sulphate 1 pound; black antimony 1 pound, to every ten pounds of meal. These pigs made the largest gain it being .958 of a pound per day, at a total cost of \$4.85. The fourth lot received nothing but meal and their average daily gain was .614 and the cost for meal alone was \$5.84, for each 100 pounds of gain. The lot fed soft coal made a higher average gain than the pen receiving meal only, but it cost more to produce the meat. The results of this experiment show that correctives may be profitably fed, and that it pays to keep a supply of charcoal or similar material before growing pigs at all times.

Some of the grains which are commonly fed to hogs do not contain sufficient ash to furnish the mineral matter required in the building of bone. This is particularly the case with winter pigs. They are not able to secure ashes, mortar or limestone from the earth, so naturally they do not develop as rapidly as summer pigs which have access to a yard. This can be partially overcome by feeding the materials mentioned in the pen. Some feeders lay in a supply of sod in the fall, to feed the young pigs during the winter; others carry the loose dirt, which is brought in the root house on the roots, to the pigs. Anyone who has watched a bunch work in this dirt or sod, would readily be convinced that material of that nature is required by the hogs. Too many fail to supply these necessities which cost very little, and are therefore forced to feed a larger quantity of high-priced feeds and yet their porkers do not thrive as they would like to see them. Get a little charcoal for the pigs and see what effect it will have upon them.

Some Winners in the Hog-Feeding Competitions.

The Ontario Department of Agriculture, through its District Representatives conducted twenty-six feeding-hogs-for-profit competitions, during 1916. These are open to young men who have taken the four-weeks courses in agriculture, conducted by the District Representatives. The prize is the Short Course in live stock and seed judging at the Ontario Agricultural College, Guelph, January 9 to 20. Transportation, board and lodging are included. Thirty-two young men will take the Short Course at Guelph this month at the expense of the Department.

The hogs were selected when six weeks old and a value of \$4.00 each was placed on them at that age. Contestants were allowed to feed four and select the best three at the end of the competition. They were fed until twenty-two weeks of age and a record was kept of the amount of feed used each week. The feed was valued per ton as follows: ground oats, \$25; ground barley, \$25; ground peas, \$35; ground rye, \$28; ground wheat, \$35; bran \$23; low-grade flour or red dog, \$32; shorts or middlings, \$25; tankage, \$46; green feed, \$2; skim-milk, \$5; buttermilk, \$6; and whey, \$3. Where pasture was a part of the ration, seventy-five cents was charged to each hog. In estimating the profit the value of the hogs, live weight, fed and watered, was taken at 11½ cents per pound. The prize was awarded by taking into consideration both the profit and the type, fifty per cent. being allowed for each.

The hogs showing the greatest profit were Yorkshire and Tamworth, fed by Clarence G. Taylor, of Lennox and Addington. The average cost of production was \$11.11; their average value was \$27.48, and the average profit, \$16.37. Herman F. Hooley, of Durham County, fed a Berkshire and Tamworth cross and realized an average profit of \$16.23. The average value amounted to \$25.51, and the production cost \$9.28. The next highest results came from Lanark County, where Sedley Steen fed Chester White pigs and realized an average profit of \$15.52; \$28.44 was the average value, and \$12.92 the average cost of production. Five winners showed a profit above \$15, and the lowest profit reported was \$9.63.

THE FARM.

Flour From the Lower Grades of Wheat.

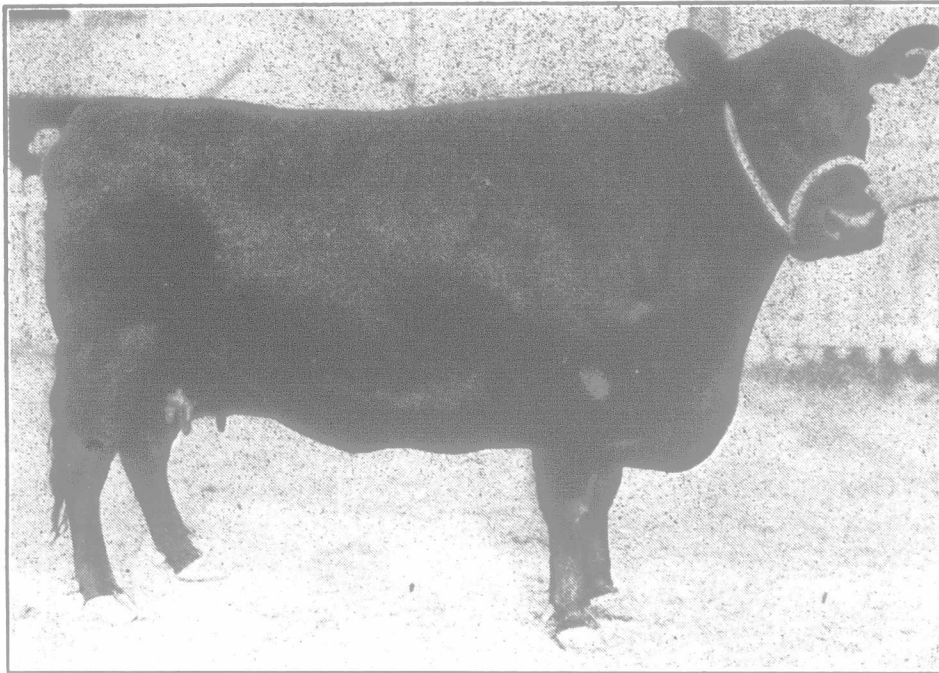
There is a considerable spread in price between the grades of wheat below No. 3 northern. The reason given for this remarkable spread has been that the British Government is buying only the top three grades. However, experiments have been carried out at the Dominion grain research laboratory, Winnipeg, under Dr. F. J. Birchard and authorized by the board of grain commissioners for Canada, which go to show that the spread is altogether too wide. Milling and baking tests of grades No. 3, No. 4, No. 5, No. 4 Special, and No. 5 Special, were made with the following results. These results are not absolute but are relative, showing the comparative milling value of the different grades. Later, absolute tests will be made, but for all comparative purposes the results given are satisfactory.

The table shows the grade and percentages of bran, shorts and flour, and prices on the data tests were made—December 6.

	No. 3	No. 4	Special No. 4	Special No. 5	No. 5
Bran and Cleanings.....	24.5	26	27	27.5	31
Coarse Shorts.....	2.5	2	3	5	2
Fine Shorts.....	3	3.5	3	4.5	4.5
Flour.....	70	68.5	67	63	62.5
Price Dec. 6.....	\$1.76½	1.64½	1.64½	1.33½	1.40½

In the loaves of bread it might be stated that the flour had not been aged, and the loaves had not the appearance that would have been the case if the flour had been stored for some time before baking. There were differences in the appearance of the loaf, but not nearly so much as might be expected.

The establishment of this laboratory should give further data on the relative value of different grades of wheat for milling purposes, and the real injury that is done by certain detrimental factors before it reaches the mill. To date the public have been largely depending upon sight and feel and traditional ideas that have



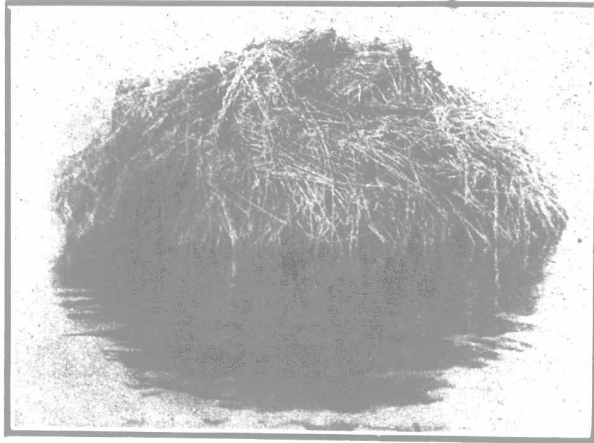
Pride of Glen Rose.

Senior champion Aberdeen-Angus female at Toronto and grand champion at Ottawa for Larkin Farms, Queenston, Ont.

been handed down from generation to generation. Actual knowledge can only be obtained by accurate milling and baking tests.

Muskrats and Their Favorite Haunts.

Trappers claim that muskrats are plentiful this fall, and these claims are substantiated by the large number of muskrat homes seen in the marsh lands and along the streams. These homes, or winter quarters, are elaborate houses of conical or dome-like form, cleverly built of sedges, grasses and similar material, plastered together with mud. The haunts of muskrats are along streams or



Muskrat House.

A common sight this winter.

rivers, and their favorite diet consists of roots, stems and leaves of water plants, or fruits and vegetables which grow near the streams which they haunt. As a rule muskrats are most active at night, and spend their days at home. While these homes are built right in the centre of the stream or pond, as the accompanying illustration clearly shows, the muskrat has it so arranged that he is dry and comfortable. He enters his home through passages which open under the surface of the water. In this way his quarters are protected from many rodents. The sleeping quarters are above the water.

The muskrat is aquatic in habits and is related to the English water rat, although it is of larger size. It is a heavily built, little animal, with a broad head, short limbs and small, alert eyes. The tail is laterally compressed and is scaly. The general color is dark amber

brown, almost black on the back. The fur of this little animal is much in demand, and hunters and trappers eagerly search for it during the open season. In former years muskrats and their homes were wilfully destroyed, a favorite pastime being to spear them at the mouths of their homes. However, at the present time the game and fishery laws make shooting or spearing of muskrats, or the cutting, spearing, or breaking of their houses, at any time, prohibitory, except when necessary in defence or preservation of property. The season for trapping muskrats for that part of the province lying south of the French and Mattawa Rivers is from the first day of March to the 21st day of April, and in that part of the province lying north of these rivers, from the 1st of April to the 21st day of May.

Progress of Farmers in Commerce.

When the Grain Growers' Grain Company concluded its annual meeting recently it meant the consolidation of the farmers' organized interests and business in Alberta and Manitoba, together with what shareholders of the former company there are in Saskatchewan. This union of these interests meant the closer co-operation of the 18,000 shareholders of the Grain Growers' and 12,000 shareholders of the Alberta Farmers' Co-operation Elevator Company under the new name of the United Grain Growers. The new organization will be ready to handle the grain of the 1917 crop. Between now and that time legislation must be granted by the Dominion Government to enable an increase of stock to \$5,000,000, to abolish the use of proxies and to enable the formation of local

units where \$8,000 of capital stock has been subscribed and where it is owned by at least 40 shareholders.

This reorganization and consolidation means that the United Grain Growers will be bigger and stronger and better able to look after shareholders, and in fact all farmers' business, than has been the case in the past under separate organizations.

The Grain Growers' Grain Company last year saw very marked progress in every department of its business. The number of shareholders has been increased to 18,163. The reserve fund has been increased to \$600,000. The usual dividend of 10 per cent. has been declared from the total profits of \$565,542.10. During the year there was handled a total of 48,375,420 bushels. The country elevators handled 14,773,687 bushels, and the terminal elevators at Fort William 28,463,438 bushels. During the year there was also constructed a new, large warehouse in Winnipeg for handling farmers' supplies and machinery. Through this department there was handled \$1,363,511 worth of supplies. Perhaps most important there was established a live-stock commission department at the Union Stock Yards, St. Boniface. Through this department from March to August there was handled 196 cars of stock for individual shippers and associations.

This annual meeting marks a decade in the life of the company established in August of 1906 by a few farmers it has grown to its present proportions which, before the close of the year, will see a farmers' company with a capital of \$5,000,000.

Such has been the record of farmers in business. But after giving the record in detail before the annual meeting, President Crerar stated further as follows:

"What I have just said has to do with the material advancement, or perhaps better the purely commercial aspect of the work. While progress has been made in this direction, equally as great progress has been made in the direction of elevating the whole status generally of the worker on the land, as a factor in the development of the country. The farmers' organizations are to-day regarded by thoughtful men as important factors in the development of our national life. The work of agriculture has taken on a new dignity, and is looked upon in a new light by the well-informed men in other positions of life. There has, unconsciously perhaps, been growing in the minds of farmers generally, a heightened self-respect for the work they are engaged in, and a truer estimate of their position in society and of their importance in national development. The time was when the great majority of farmers (and in a great many communities, the idea still holds), thought that because a man earned his living by manual labor on the land, he therefore occupied an inferior position in society as against the professional man or merchant, and because of his isolation, the incentive to develop his own faculties was largely lacking. His view was that muscle was the chief requisite in his work, and the brain was a part of the human anatomy that he required to use only in a