

of an adequate general education before proceeding to professional studies; the short time in which a man might become possessed of a diploma, and the little scientific knowledge necessary to get such, all tended to lower the profession in the eyes of a non-discriminating public, who today too often place the holder of a parchment to practice the art and science of veterinary medicine and surgery on a plane with the farrier and cow-leech of a quarter century ago. The low standards permitted in Canada undoubtedly weakened our case when Canadian cattle were scheduled in Great Britain. The up-to-date agriculturist is vitally concerned in the progress of the veterinary profession, and has much to gain from the results of painstaking scientific investigation. The great increase in the money value of live stock necessitates the protection of that stock from the various and numerous contagious diseases with which it may be afflicted. Such being the case, all far-seeing men will rejoice to see that Canadian live-stock interests are being well safeguarded and remunerative trade preserved. Every encouragement, therefore, should be given to the chief officer of the veterinary branch in his efforts to protect Canadian flocks and herds and to raise the standard of the profession. NOMAD.

### Profits in Hog Raising.

There are many opportunities in this country for the man with energy, and not least among them is hog-raising. The present home demand for pork far exceeds the supply, and this condition is daily becoming more intensified. When we consider that pork can be profitably shipped in, and that this cost for freight might all be turned into the pockets of the Manitoba producer, and, further, that hogs can be raised here as cheaply per pound as any place on earth, the question becomes interesting, though self-evident. Where can land be purchased cheaper alongside markets such as we have? Where, we ask, can feed of the very best pork-producing quality (barley) be bought or raised for less money than in Manitoba and the Territories? When judged from the consumers' or pork-packer's standpoint, and that is the tribunal from which we must accept dictation, we find that barley is conceded to be the most perfect of any single grain for hog feed. A fine flavored quality of meat is produced, the consumer tells us, and the packer claims that less "softs" are in evidence wherever this staple cereal has been freely used.

Along with this bacon-producing grain, we have abundance of wheat, and all of its products when ground. We have, also, oats and spelt, so that a mixture of chop fit to suit the special requirements of each class of pigs, under any condition, can be prepared. As regards the pasture question, Brome grass, which is palatable and nutritious, is well suited to withstand dry seasons, and is admirably fitted to meet the requirements which are especially desirable in a pasture grass. Clovers, we know, are still better for swine, and in some sections certain varieties may be grown fairly well. If care be taken to have a wind-break so planted that it will hold the snow on the pig pasture, reasonable hope of carrying it over winter may be entertained. Rape, too, should be used extensively as a green fodder, both for summer and fall use. The sowing can be so regulated that the plants will be at the most desirable stage when required. Vetches are also good and do well in our climate. Some successful hog-raisers sow a quantity of barley or peas, or a plot of each, for the pigs to run in just about harvest time, and report very satisfactory results.

However, it has already been clearly demonstrated that pork of prime quality can be cheaply produced, but the great name which our land so justly deserves as a wheat-producing center has so fixed the ideas of newcomers and others, that a sort of rut has been formed, and in it many continue to travel without any conclusive reason for so doing. The time has truly arrived when greater numbers should break away from a system of farming having only one branch; and few lines at present offer greater encouragement than hog-raising.

### Feeding Steers at Brandon.

An experiment, the results of which should be valuable to every stockman, is being conducted by S. A. Bedford, at the Brandon Experimental Farm, the object being to determine the comparative feeding value of Austrian Brome grass as a rough fodder for cattle and fodder corn when cured outside in stooks and drawn into the barn and run through the cutting-box as required. Ten steers have been purchased and divided into two lots of about the same weight and general appearance; one to receive the grass and the other corn. At present they are both doing well, and the final returns, which will be announced some time next spring, will be awaited with interest.

### Range Stock Wintering Well.

The winter so far has been a fine one for range stock in the Calgary district. The weather has been comparatively mild, with but little snow, so that opportunities for grazing have been good. This is pleasing to the man who makes money out of the increase in weight of his herds; the shorter the period of hard weather the better able will the animals be to fully utilize all possible nutrition from next season's grazing. Every ranchman knows that an animal well-wintered begins early to shape into export condition; the constitution is stronger and the power to assimilate food greater. Consequently, the ability to increase in weight becomes stimulated and developed, so that well-filled pocketbooks go hand in hand with favorable winter conditions on the range.

The heavy rainfall during the growing period of last summer produced an abundant grass crop; then the favorable fall allowed this to be cured nicely, thus insuring ample winter fodder. With a continuance of the favorable conditions with which the year has begun, ranchmen with their thrifty stock will have reason to be satisfied.

### The Protection of Cattle Against Tuberculosis by Vaccination.

Some experiments on the vaccination of cattle against tuberculosis have recently been published by Dr. Leonard Pearson, State Veterinarian of Pennsylvania, and Dr. S. H. Gilliland. These experiments were conducted at the Veterinary School of the University of Pennsylvania, with the support of the State Live Stock Sanitary Board. The work has been in progress more than two years, thus antedating all other work along this line, for the German investigations of Von Behring did not begin until July, 1901. No other investigations of this sort have been reported in any other country than in the United States and Germany. The process used was to inject into the vein of the animal to be protected a small quantity of a suspension of tubercle bacilli non virulent for cattle. This procedure, called vaccination, may be repeated several times with gradually ascending quantities. The immediate effect is to produce a passing fever following each injection, which does not annoy the animal enough to cause it to lose a single meal. The general health is not disturbed by the process of vaccination. When the series of vaccinations is completed, the animal had an astonishingly high degree of immunity to tuberculosis. In the last experiments completed, four young cattle were used. Two of these were vaccinated last March. All four were inoculated in July by injecting into the windpipe a quantity of culture of virulent tubercle bacilli. A large quantity was introduced and each of the four animals received exactly the same treatment. These animals were killed in October. It was found that the cattle that had not been vaccinated were extensively tubercular, showing alterations of this disease in the windpipe, lungs, throat and intestinal glands; while the two vaccinated animals, inoculated the same time, from the same material and in the same way, were free from tubercular infection, and were sound.

Dr. Pearson considers that this principle of immunization as applied to vaccination against tuberculosis of cattle is proven, and it now remains only to work out the details of the method. This important work is being continued on a larger scale for the purpose of ascertaining the simplest and shortest practicable method of vaccination.

It is not yet known how long the immunity will last, nor what the ultimate effect upon the animal will be. So far, however, as the few experiments here and in Germany show, no fear need be anticipated of unfavorable results in these particulars. What is needed now is the painstaking use of the method on a few tubercular herds kept under careful and continuous observation. A scrupulously careful trial on a limited scale under proper conditions will do more to furnish the information needed to answer the few remaining questions upon this discovery than any amount of general use under less careful supervision. In the estimation of the investigators, it would be premature to apply this vaccination to herds until such further experiments are completed. An effort will be made to secure State aid for experiments on a scale large enough to solve this most important problem.

### What a Stockman Says.

You are getting out a splendid farm paper, by a long odds the best farm and stock paper in the Province. It deserves the support of every farmer and stockman in the Province. I intend to do all I can for your valuable paper, and trust it will go on as it has been doing, speaking for the rights of the farmer. Yours respectfully,  
Sifton Municipality, THOMAS SPEERS.

### Lessons on Early Maturity.

In these times when early maturity, rapid gains in weight, and profitable production in the feeding of animals is receiving so much attention, the following figures, compiled by the Farmer's Gazette, from the results of the competitions at the late Smithfield Show, will be of interest.

For the purpose of showing at a glance how the representatives of the various breeds stood as regards their rate of increase, we append a table showing the average daily gains of (1) the best of the prizewinning steers under two years old, and (2) the corresponding figures for steers over two years of age:

	Steers under 2 years.	Steers over 2 years.
Devons .....	1.92	1.67
Herefords .....	2.12	1.85
Shorthorns .....	2.39	1.86
Sussex .....	2.53	1.96
Aberdeen-Angus .....	2.35	1.97
Galloways .....	2.14	1.86
Cross-breeds .....	2.43	2.10

The table just given affords an excellent illustration of the advantage of early maturity. It will be seen that while the young steers of all the principal breeds showed increases of well over two pounds per head per day, only one of the animals over two years of age showed a daily gain of two pounds or over—and that was a cross-bred.

The carcass competition also furnished some very interesting results. We append a table which shows at a glance how the various prize-takers in this competition weighed before slaughter, and afterwards dressed on the block:

#### STEERS NOT OVER TWO YEARS OLD.

Breed.	Live weight. lbs.	Carcass weight. lbs.	Proportion of carcass. per cent.
1. Shorthorn-Galloway .....	1,079	693	64
2. Aberdeen-Angus .....	1,022	641	63
3. A.-A.-Shorthorn .....	1,235	769	62

#### STEERS TWO TO THREE YEARS OLD.

1. Welsh .....	1,698	1,091	64
2. Aberdeen-Angus .....	1,230	838	68
3. A.-A.-Shorthorn .....	1,528	994	65

#### HEIFERS NOT OVER THREE YEARS OLD.

1. Aberdeen-Angus .....	1,332	908	68
2. Aberdeen-Angus .....	1,106	710	64
3. A.-A.-Shorthorn .....	1,339	873	65

Among the sheep, as among the cattle, it will be seen that the younger animals had the most satisfactory gains to their credit, one pen of lambs showing a daily increase of three-quarter pounds, while the average daily increase in the case of the older sheep fell under half pound per day. The Suffolks showed up to special advantage in the carcass competition, where they won not only both the first prizes in the classes for short-wooled breeds, but the much coveted honor of the championship as the best pen of sheep in the block test. These sheep, which averaged 163 pounds in weight, gave a carcass averaging 109 pounds, so that their proportion of carcass to live weight was 67 per cent.—certainly a very high figure for sheep. In the table which we subjoin, the carcass percentages of the several prize-winners in the block test can be seen at a glance:

#### LONGWOOL LAMBS, NOT OVER 12 MONTHS OF AGE.

Breed.	Live weight. lbs.	Carcass weight. lbs.	Proportion of carcass. per cent.
1. Suffolk-Cheviot .....	117	73	62
2. Cheviot .....	143	92	64
3. Cheviot .....	129	85	66

#### LONGWOOL WETHERS, 12 TO 24 MONTHS OF AGE.

1. Cheviot .....	143	93	65
2. Suffolk-Cheviot .....	168	104	62
3. Welsh Mountain .....	95	62	65

#### SHORTWOOL LAMBS, NOT OVER 12 MONTHS OF AGE.

1. Suffolk .....	163	109	67
2. Suffolk .....	145	88	61
3. Suffolk .....	163	100	61

#### SHORTWOOL WETHERS, 12 TO 24 MONTHS OF AGE.

1. Suffolk .....	202	125	62
2. Suffolk .....	187	125	67
3. Southdown-Cheviot .....	119	74	62