

Poultry—F. C. Elford, Ottawa; W. R. Graham, Guelph; Wm. McNeill, London. Fruit—R. W. Starr, Wolfville, N.S.

#### THE EVENING LECTURES

An excellent programme of addresses was carried out at the evening meetings, and fully 2,000 people heard them each night.

Prof. C. C. James' talks on "Agricultural Education" and "The New Agriculture" will be long remembered by his hearers.

Dr. James Fletcher, of Ottawa, gave an illustrated address upon insects injurious to cattle, with practical hints for their prevention.

F. W. Hodson, Dominion Live Stock Commissioner, in his address upon the various breeds of sheep and their respective adaptability to varying conditions imparted valuable information.

Other speakers were Alex. McNeill, Chief of the Fruit Division, Ottawa; W. R. Graham, Guelph; J. H. Gristdale, Agriculturist, Experimental Farm, Ottawa, and Prof. M. C. Cummings.

Mr. F. W. Hodson and President Elderkin were both warmly congratulated upon the success of the show.

MACADAM.

#### Labor Economy in Handling Live Stock

I think we are all ready to admit that no factor is so essential to success in any business enterprise than economy in labor. This fact is particularly recognized by large business corporations, and manufacturing enterprises. Competition is now so keen, that small margins must satisfy all legitimate operators, and a large volume of business must be done to assure profitable income. To minimize labor and at the same time increase productive power, inventive genius has been called to aid, with remarkable results evident to any one who will profitably spend some time in visiting any manufacturing establishment or other business concern. In this busy world of busy men, the individual or corporation failing to keep abreast of the times with modern systems and appliances, will soon be far outstripped in the keen race for success in which we all hope to hold a place.

Even on our farms—although we farmers are sometimes looked upon as a set of back number—many and varied are the improved appliances now to be had to enable us to become what we all hope we soon will be, the leaders in all branches of agriculture as we now are in some of its products. More intelligence in the past seems to have been directed towards the perfecting of field machinery and appliances for handling the products of the same. Thousands have been expended in judiciously arranging farm buildings. I will direct attention in this paper to stable arrangements for stock.

In visiting some stables it is rather a difficult matter to determine what the original intention of the builder could have been; one thing, however, is certain, a very considerable amount of pedestrian exercise is assured the attendant compared with what is accomplished in the way of caring for stock. When we consider that a very considerable portion of six months of the year is spent by some person or persons, in the care of stock, it is evident that a great deal of indolence should be avoided. In so arranging the buildings that the very largest amount of work can be done in the most economical way.

None of you, I trust, will associate indolence with the word if for a short time, a description will be attempted

of a building arranged for conveniently handling stock and the attendant work. I will speak exclusively of that part of the building laid out for cattle, sheep and hogs. Said part is ninety-three feet long by thirty-two feet wide; extending down the centre of this, its entire length, is a passage four feet wide, on each side of which the feeding boxes are placed, each of which is three feet long by two feet wide. This allows three feet feeding space for each of the sixty cattle which can be accommodated; the remaining three foot spaces are occupied by watering troughs, the feed is introduced into the troughs by a windmill. To reach the feed in boxes the cattle must pass their heads between two stanchions, one of which is movable; the movable ones are all connected to a scantling at the top and the whole thing manipulated by a lever at one end. In this way the thirty cattle on each side can be fastened in less time than it takes to tie one in the ordinary way. Should conditions not warrant the handling of so many cattle, the spaces can be subdivided and utilized for sheep or hogs. I am at present feeding sixty-four lambs in a part of one of the spaces, the remaining part being used for brood sows. In the other space along with my cattle, I am feeding a bunch of hogs, and I can assure you from my experience, dehorned cattle and hogs get along very nicely together. At one end of the spaces are doors wide enough to admit of a team being driven in and the manure being drawn to the field and spread if conditions are favorable for so doing.

The feed room is placed in the most convenient part of the basement, and directly above it on the barn floor is the cutting box, the windmill supplying power for running this, and the pulper below, which latter is close to the root house door and also near enough to the feed room to allow of the pulped roots being easily shoveled in with the cut feed if so desired. I do not claim the arrangement described as perfect, but maintain that some of its features possess the merit of very largely reducing the labor connected with handling stock—Wm. M. Grant, Victoria Co., Ont.

#### The Cost of Raising Calves

At the New Hampshire Experiment Station exhaustive experiments have recently been conducted to determine the average cost of raising a dairy cow under various methods of feeding. The following is a summary of some of the work done:

For a considerable period records are kept of the food consumed, and the cost of the gains made by thirteen heifer calves from the time they were weaned until sixteen months old. The calves were taken from the cows as soon as the latter's milk was fit for creamery use, and were fed whole milk. This was gradually replaced by skim milk, until by the end of the second week only separator milk, which was almost free from fat, was fed. To replace the fat, ground flaxseed cooked to a jelly in water (one pound of flaxseed to four quarts of water), was added to the milk. Seven to ten quarts of skim milk and one or two quarts of the flaxseed mixture were fed daily per head in two feedings. During part of the time middlings were substituted for flaxseed. As soon as possible the animals were encouraged to eat grain and hay. The amount of these feeding stuffs was increased as the animals increased in size and weight, while the skim milk and flaxseed remained nearly constant until they were discontinued, when the calves were six to eight months old, and were turned out to pasture. Some of the calves were taught to drink from a pail, but most of them were fed

by means of a "calf feeder," which greatly lessened the work of feeding. A careful watch was maintained to note any indigestion. Diarrhoea or scouring was quickly stopped by reducing the amount of food and adding liniment to the milk.

In discussing the cost of the gains made, the different feeding stuffs are rated per hundred pounds, as follows: Milk, \$1; skim milk, twenty cents; flaxseed, \$3.25; middlings, eighty cents; bran, seventy cents; linseed meal, 85 cents; oats, \$1.00; oats, sixty-five cents; mixed grain (middlings, oat feed and linseed meal 2, 2, 1), ninety cents; hay, fifty cents, and green barley fodder, fifteen cents. It is stated that little difficulty was experienced in keeping up a steady growth in size and gain in weight. Differences were always noticeable between individual animals in the rate of growth and the amount of food consumed. Large animals invariably required more food to maintain their individual live weight.

It was found that eight calves under five weeks old made an average weekly gain of 7.6 pounds, at a cost of 40.6 cents; from five to nine weeks the average weekly gain was 8.1 pounds and the cost 36.7 cents. The same number of calves from nine to thirteen weeks old made an average weekly gain of 11.8 pounds, at an average cost of 43.1 cents. Eight calves from thirteen to twenty weeks old gained per week on an average ten pounds, at a cost of 32.9 cents; six calves from four to eight months old made an average weekly gain of 11.1 pounds, at a cost of 63.7 cents; two calves from eight to thirteen months old made an average weekly gain of 9.25 pounds, at a cost of 58.3 cents; four calves from sixteen months old, made an average weekly gain of 6.12 pounds, at a cost of 65.1 cents per week; four of the heifers were maintained on pasture from July 24 to Oct. 26, and the total gain in weight of the four animals was 313 pounds.

#### Cure for Scratches

Equal parts blue stone, white vitriol and verdigris, grind together with as much soft soap and mix with warm water about the consistency of paste. Apply with a swab on the end of a stick about every second or third day. This is especially recommended for mules, as scratches bother them more than anything else.

Scratches, however, should be prevented by feeding plenty of green stuff to keep the blood cool. Scratches are caused by a feverish condition of the system and all outward applications are more in the nature of relief than cures.

#### Territorial Horse Fair

A three day horse fair will be held at Calgary the third week of March, 1905, under the auspices of the Territorial Horse Breeders' Association and the Dominion and Territorial Departments of Agriculture. The object of this fair will be to bring buyer and seller together and in other ways to facilitate the buying and selling of horses.

#### National Live Stock Meeting

The National Live Stock Association of the United States will hold its annual convention at Denver, Colorado, on January 10-14, 1905. Important matters affecting the cattle and sheep industry will be discussed.

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