

decay in the timber. The circular shape has given the best results, and it should have depth rather than large diameter. One cubic foot is sufficient for an average cow per day, and other food should be fed along with ensilage. When a silo is once opened it is essential that a few inches should be fed off the whole surface each day. While filling, the preponderance of opinion is in favor of tramping solid around the sides and covering with about a foot of cut straw or marsh hay.

Sheep Husbandry.

Much of the land in this division is well adapted for sheep, and their proximity to the American market should make sheep-rearing very profitable, but owing to the present low price the tendency is to abandon sheep-breeding altogether. This does not appear to be a very wise course, as the small amount of capital required and labor necessary for successful management make the sheep industry one of the most profitable in which the farmer can engage.

The Management of Manure

is a live question, and is much neglected in many places. Covered sheds for holding manure are in use, but few are giving good satisfaction. Applying manure as made is much in favor, and is certainly a wise course, but the depth of snow makes it impossible to do so at all times. When not drawn out or put in covered shed, it should be drawn into one heap and thoroughly tramped to prevent fermentation. The manure from the horse-stable should invariably be mixed with that from the pig-pen and cow-stable.

Clover, as a feeding crop and for fertilizing purposes, is much neglected. The soil in many places is well adapted for its growth, but farmers are not fully alive to the benefits to be derived from its cultivation.

Underdraining

is not practiced to any extent. Owing to the stony character of much of the land in Eastern Ontario, draining will not become as universal as it is in the West, but the fact remains that there are many farms in this division that would be immensely benefited by thorough underdraining. Tile are not to be had at prices which the ordinary farmer can afford to pay. There are certainly many openings in this division for an experienced tile-maker, and with tile at reasonable prices, we can certainly look forward with confidence to a great advance in this important work in the near future.

MUNGO McNABB.

Central Farmers' Institute.

The eighth annual meeting of the Central Farmers' Institute was held in Toronto, Feb. 5th to 7th. The delegation, numbering over 150, were from all parts of the Province.

President McEwing's address was a review of the farmer's conditions, together with suggestions as to improving the same. Farmers must conduct their business on more intelligent principles. They must understand as far as possible all the commercial, climatic and local circumstances with which they are surrounded. United action is necessary in these days of national competition. As many farmers as possible should be returned to Parliament. A more economical administration of public affairs is absolutely necessary. It is Mr. McEwing's opinion that the nearer we come to free trade the better for Canada. The speaker was not despondent over the scheduling of our cattle from the English market, as he considers the American plan of shipping dressed meat better in the end. In referring to the cheese trade, the importance of compulsory honest labeling of cheese was emphasized as a matter for the Dominion and Provincial Governments to enforce.

Municipal Economy.—Mr. K. W. McKay, St. Thomas, read a paper on "Municipal Economy." He gave statistics showing the growth of township taxation in Ontario during the last fifteen years, and the increase in the chief items of expenditure in country municipalities. As a large number of those present were, or had been, municipal officers, an intelligent, animated but diversified discussion took place. Electing councils by the whole people instead of by wards was considered by a large number to be a desirable change. It was also recommended that all voters be compelled to cast their ballots for the whole council, instead of plunking for one candidate, as is often done. It was advocated that the old county council, now consisting of fifty-nine men in some counties, be reduced to three or five men, as that number could do all the work necessary at far less expense than is now required. The objections to this change given were that possibly the whole council would be from one district, or, may be, on one side of politics. Some felt that a council should be elected for a term of three years, as school trustees are, on the ground that better men would likely offer themselves to public service. This was objected to on the ground that if a poor man were elected his place would be badly filled for three years, and if a good one, he will be elected year after year any way. It was generally agreed that deputy-reeves were not necessary, as the reeve, if well chosen, is quite capable of doing his own work and that of his deputies. It was deemed wise by some to have expert accountants sent out to audit the public books, and that they be appointed the same as our school inspectors. The assessor should be appointed for three years, with instructions to go over the county in May and June, so that a full valuation may be put upon the land. The tax collector should also be treasurer, with an addition to his salary of not more than one-quarter of

what the treasurer now receives. It was also believed by some that the process of going about collecting the taxes was entirely unnecessary, because if it were made a rule that taxes must be paid in to the treasurer's office by a certain date, they would certainly be paid. This is the plan adopted in many of the United States, and it works well.

Marketing Canadian Meat.—Mr. J. T. Gould, American agent for a large London (England) firm, delivered a brief address on the meat trade. In referring to the "embargo," Mr. Gould stated that he did not believe the English people are in dread of pleuro-pneumonia from this country, and thought that the move was to hinder Canadian cattle coming into competition with English cattle in the interior markets. Mr. Gould is a little doubtful whether the proposed export of cattle to France would prove a success or not, owing to the present restrictions and high duty. Owing to the strength of the landlord interest in England, the embargo is not likely to be soon removed. The speaker also dealt with the various kinds of sheep imported into England, stating that Canadian mutton has not been of as high quality as that from other countries. Down mutton always meets the greatest demand. In some of the English markets a little patch of the skin is left on the carcass to show to what breed it belongs. He referred to a line of hay trade which may be made profitable: it is that of pressing cut hay into bundles of 60 or 70 lbs. each, to be shipped to English cities, where room for horse fodder is very scarce in many stables.

What means can be adopted to bring the farmer into closer touch with the O. A. C. and Experimental Farm?—Mr. John I. Hobson, Mosborough,

read a thoughtful paper on the above subject. He stated that all who know the College will agree that splendid work is being executed at that institution. Farmers who do not know what is being done there should visit the Farm during the summer months. Its experimental work was summed up in referring to the 1,700 plots, 26 breeds of stock, to say nothing of the poultry, the dairy school, etc. Until a person knows of these things he should not criticize the Ontario Experimental Farm. The speaker recommended among other things that ex-students do all they can to show the benefits of the College, by allowing themselves to be heard at Farmers' Institutes and other meetings of farmers. The lukewarmness of influential farmers to the College, Mr. Hobson considers a great injury to its reputation. It is correct, and now believed pretty generally, that successful farming must be scientific farming, and that is what the College endeavors to fit its students for. The annual sale was referred to as a means of advertising the College. It was recommended that the sale be conducted in different parts of the country in different years, or, to induce buyers to come long distances to Guelph, to pay the railroad expenses of all who purchased stock, and also prepay the transportation rates on the stock. This would not only draw men to see the institution, but would be the means of introducing good stock into many sections where most needed. It would also help the sale. An annual exhibit of College Farm products could profitably be made at all the principal Ontario exhibitions, these to be in charge of persons sufficiently informed to be able to impart any information regarding the institution.

This paper provoked much interesting discussion from men whose sons had attended the College and from graduates themselves. All spoke in the highest terms of the course. The old idea that book-learning unfits a man to be a farmer comes only from the inefficiency of our school system in that direction. Our High Schools tend to educate boys off the farm, while the O. A. C. course has the opposite effect, as over ninety-five per cent. of ex-students return to the farm for a livelihood. Mr. C. A. Zavitz closed the discussion by referring to the origin, growth and popularity of the Experimental Union. We may say just here that the newly-elected President of the Central Farmers' Institute is a graduate of the O. A. C.

Fifth Form in Common Schools was the subject of a paper by the Rev. Dr. Jackson, Galt, in which was recommended more manual education. Men should be educated to use their hands as well as their minds. Mr. Jackson recommended that Fifth Form work be made compulsory, owing to the fact that a very large per cent. of farmers' sons and daughters drop out of school entirely at the end of their Public School course, most of whom would take up Fifth Form work if it were placed at their command. This would raise the educational standard of the masses very materially. It would also demand more qualified teachers, who could command larger salaries than they now receive. The present system tends to separate masses from classes. The proposed change would do much to remove this. The High School Form corresponding to the Fifth Public School Form costs its pupils five times as much yearly as it would in Public Schools. This is an important consideration. This subject is to receive the attention of the Minister of Education. A resolution was adopted in favor of doing away with the High School entrance examination, and to substitute for it the Public School leaving examination, on a Fifth Form basis, or a basis equal to it on ordinary Public School lines.

Agriculture in Public Schools. Mr. John Dearness, I. P. S., London, took up the above subject in a masterly manner. A review was made of the attempts to teach agriculture since 1871, when Dr. Ryerson's First Lessons in Agriculture was published, when the teaching of agriculture was made compulsory in the schools. Since then the

rigidity of the course was relaxed, which, together with the insuitability of the text book, retarded the study of agriculture in the schools in a large degree. The experience of France was referred to, and also a review of the course Manitoba has been taking in this matter. A strong argument was made for the teaching of elementary science, not by the use of books alone, but by observation and experiment, and by tracing the relation of cause to effect in many natural phenomena. Mr. Dearness is of the opinion that much could be done by Farmers' Institutes in this direction.

"Dairy Farming in Ontario," by Prof. Robertson, Dominion Dairy Commissioner, varied little from his dealing with that subject at the Ontario Creamery and Dairy Associations, which have already been reported in our columns. The Professor stated that in a short time the Dominion Government would be prepared to pay twenty cents per pound for choice creamery butter to ship to the Old Country for the purpose of developing a trade in that direction. By resolution his project was approved.

Clover Growing.—Mr. David McCrae's paper on this subject, which is attracting so much attention at the present day, was full of practical suggestions. Discussion went on throughout the reading of the paper, which brought out some good points. Clover may be sown in the autumn with fall wheat where a constant covering of snow can be depended upon. The fertility furnished the land by growing clover is of more value than the seed costs. Alsike seed comes from first crop. It does best in a dry soil. Lucerne is good to sow in a mixture, as it keeps green when others are dry. When grown alone it must have good subsoil, and should be sown in the early spring, on clean land, in drills.

Clovers and Legumes.—Mr. C. A. Zavitz, Experimentalist, Guelph, dealt with this subject from a scientific standpoint, showing the value of growing the crops that answer the feeder's purpose and at the same time enrich the soil. Legumes are nitrogen gatherers, while all other farm crops are nitrogen users. The essential elements of plant foods were dealt with in a masterly manner. Peas, beans, vetches, cow-peas, soy beans, lupines, lucerne, and other clovers, including the new and much-talked-of Crimson clover, were each taken up and discussed at considerable length.

"Meat Production."—The contributor of a paper on meat production was Mr. John McMillan, M. P., who is well known to be one of the most successful beef raisers in Canada. Mr. McMillan said our meat has to compete with that which can be cheaply produced in other countries. Cattle are annually increasing in the United States, while their sheep flocks are becoming less. South America has become a great cattle-shipping country, and are conducting their business with intelligence. To be successful in feeding cattle a good stable is essential, frost proof, and supplied with water inside. Proper ventilation is very important. The cattle should belong to one of the early-maturing, beefing breeds, and of superior quality. In breeding, nothing but a pure-bred male should be used. He should be from a beefing family. Shorthorns are best because good milkers, so that a revenue may be received in butter as well as plenty of milk to raise the calves upon. Mr. McMillan has Shorthorn cows that give 50 lbs. of milk each day, or 14 lbs. of butter per week. He allows the calves new milk for a couple of weeks, which is gradually changed to skim by adding flax-meal porridge. Feed dry meal as soon as the calves will eat. Keep them fairly fat all the time, as it is in youth they acquire the habit of putting on flesh. Wean gradually so that they will not miss the milk, and fail. All cattle should be housed as cold weather approaches. Changes of food should be made gradually. A good feeding ration consists of ensilage, straw, and meal. Keep salt before them all the time. Feeding cattle do best loose, which saves a great deal of labor and manure. The horns should be taken off in the fall when first housed. Never buy poorly-kept cattle to feed, or disappointment will result. Young heaves fatten much more profitably than older ones, as then the demand upon food for support is at the minimum. Never feed a scrub, as he eats as much as a good beast and returns much less. As a daily feeding ration, Mr. McMillan has found 17 lbs. of straw, 14 of ensilage, and 2½ of mixed meal, costing five and five-eighths cents, very satisfactory. In handling cattle, be kind, wise and quiet.

Mutton.—Mr. McMillan considers the United States our best market if "Free Trade" could be obtained. Breeding ewes should be roomy, round, and on short legs. The ram should be equally good, and thoroughbred. Lambs should be castrated and docked when about three weeks old. They should be fed grain and clover hay in creep pens as soon as they are able to eat. Rape was recommended as a fall feed.

Hogs.—Repeated experiments have proved that young pigs put on flesh much more profitably than older ones. A 300-lb. hog requires six pounds of food daily to sustain the animal. The gain must come from what is eaten over that amount. In the summer season grass should form a considerable portion of the growing pig's diet. Raw food gives better results than cooked. Winter quarters should be dry and warm. Profitable results may be obtained from feeding mixed food; mangolds, clover hay and meal is highly relished. Wood or coal ashes should be thrown to them occasionally. To get best results we must have good pigs, well-balanced ration and a judicious feeder. Breed from mature stock to get best results.