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EDITORIAL.

Fifty seed fairs are to be held in Saskatchewan this year.

"It's a beautiful day: let's go out and kill something," is the conception many people had of spending Thanksgiving Day.

"The Farmer's Advocate" demonstration orchard this year yielded about fifteen tons of apples to the acre.

Italy, Turkey and China will not do much this season for the conservation movement, or to lower the cost of living by increasing the world's supplies of food.

By allowing mud to go into cold storage on our highways in the fall, we prepare a peck of trouble for the spring, when frost is coming out of the ground, not to mention the unpleasantness of having rough sleigh-bottoms during the winter. Drag the roads.

Coupled with the fact that the Canadian hay crop was light in many sections has arisen an exceptionally strong demand for the Canadian meadow product in the United States and Great Britain, where the crop was seriously deficient. Close observers of the situation doubt whether Canadian supplies are sufficient for home, plus foreign requirements. The fact that fodder and coarse grains are none too plentiful has already headed a lot of low-grade cattle and old cows to the canner's. The high prices prevailing for hay are likely to be sustained.

The Grand Trunk Pacific expects to have its tracks and Western terminals ready for handling the Canadian grain crop of 1915, and is building docks and elevators at Prince Rupert, B. C., in anticipation of the completion of the Panama Canal, via which it is expected wheat will be delivered at Liverpool at the same cost and in about the same time as it now takes to go by the Great Lakes and Atlantic ports. This will relieve the tremendous pressure of a short navigation season on the transportation companies, and allow the grain to be moved more leisurely and to greatest advantage. President Chas. M. Hays predicts that probably half the Western crop will go to the Old World by the new route.

Roughage will not be overplentiful on many farms during the coming winter, and on many of them grain also gave a light yield. This means that feed will be rather scarce and high in price. The live stock must be fed, and fed at a profit. To do this will require a little thought on the part of the feeder. It will be necessary that he carefully consider the feeds at his disposal, and use them to best advantage by feeding a well-balanced ration. The economic feeding of fattening animals and store animals demands a vastly different ration. Much roughage can be used in the maintenance ration that would be a drawback to the fattening ration. Study the various conditions carefully, and feed accordingly.

A Problem of the Farm.

The cold weather necessitates the stabling of the stock, and with stabling comes that problem which does not receive the attention it should on many farms, viz.: "How can the animal excrement and litter be best handled, in order that it may return to the soil the largest possible amount of valuable fertilizing constituents?" No farmer can afford to ignore the importance of this question. Production, to a greater or lesser degree hinges upon the amount and quality of the fertilizer used. Farmyard manure is the one universal fertilizer, and the one upon which the greater number of farmers rely for replenishing the plant food in their soils, yet it is handled in many cases as if it were a cumbersome nuisance, and the more quickly and easily it is gotten out of the way, the better. How foolish.

All must agree that growing plants draw upon the soil for their food, and that as crop after crop is removed from the soil, the plant food in that soil must grow less and less, unless some material containing these substances is returned to the land. It is also a fact that, with mature animals on a maintenance ration, which is the case with much of the live stock during the winter, the quantity of nitrogen and ash material to be found in the animal excrement is nearly the same as that taken into the body in the food consumed. This is made possible because these materials used by the animal are replaced in the excrement by the broken-down tissues. The manure of fattening animals will contain a little less of these materials in proportion to the amount of them in the feed consumed; but as they are fed a richer diet, and as very little of these show in the increase of a mature fattening animal, such manure will be very rich when first voided. A growing animal uses a little more of these constituents to produce bone and muscle, and milk cows use them to supply milk, but the point is this: When the manure is first voided by the animal, it contains a very high proportion of the nitrogen and ash constituents of the food which the animal has been fed. The actual value of farmyard manure depends, then, upon its composition; that is, the amount of nitrogenous matter, phosphates and potash which it contains; upon the condition or form in which these materials are held, and upon the changes which the manure undergoes before it is placed on the land.

The fertilizing constituents of animal excrements are in the best condition, so far as manurial value is concerned, at the time they leave the animal body. This being true, it would appear that the manure from food is of greatest value to the land when the animals are fed on the land. This is impossible in winter, so some means of handling this bulky product must be resorted to.

In the case of the manure, it is necessary to consider the sources of deterioration. Leaching and run-off of soluble compounds of nitrogen and potash are perhaps the greatest of these. Where manure is stored in the open, large quantities of soluble fertilizing material are carried away by the rains. The loss of urine is important, as it contains a large proportion of the nitrogen and potash of the total excrement. Good litter, if available, should be used in large quantity to soak up this material in the stables, not a drop of which should be lost. If the manure is kept under cover in a shed with a cement floor, this liquid manure is held with the litter and solid excrement. Fermentation in the heap is also re-

sponsible for considerable loss. Nitrogen suffers most, being set free and lost in the atmosphere. Organic matter is decomposed by bacterial action. Phosphoric acid and potash are not changed to gaseous products in the course of decay in the pile, and so, if kept under cover, the manure will not suffer much loss of these constituents. Manure stored loosely favors the growth of organisms which live only in the presence of oxygen (aerobic), often causing fire-fanging, the nitrogen being expelled in the free state, or uniting with hydrogen to form ammonia. By compacting the manure, air is excluded, and the growth of organisms which only live in the absence of free oxygen (anaerobic) is produced, which alters the conditions, decomposition proceeds more slowly, and the losses are not so great, because tramping or compacting admits of only a limited supply of oxygen.

Where it is possible, and where the land is not too rolling, there are many advantages to be gained by drawing the manure onto the land as fast as it is made during the winter. As before stated, the manure is of greater value then, and there is also a great saving of labor by following this practice. The work is done in winter, when time is not so valuable as in summer; and, where the manure is taken from the stable to the field, an extra handling is avoided. Where the land is very rolling, there is a danger of some loss by run-off during the spring freshet, and where this kind of land is to be manured, it might be advisable to keep the manure in a tight-bottomed, covered shed. If this is done, the cattle should be allowed to run on it, so as to keep it well tramped and compacted. These are two of the best methods of handling farmyard manure. The main problem is to check the loss. If it is kept at all, some loss results, but, with careful handling this can be brought down very low, and, by feeding the farm crops to live stock, the greater part of the plant food which is drawn from the soil from year to year can be returned to the land for the use of the coming crops.

Highway Improvement.

"It is true of the greater part of Ontario that the township roads are to-day little, if any, better than they were twenty years ago." The foregoing statement, and many others of like nature are made in the annual report of W. A. McLean, Provincial Engineer of Highways, on "Highway Improvement." Township roads are the public highways which lead to the homes of the people, and are, therefore, of the most universal use and benefit. Mr. McLean points out that every refinement has been sought, and vast expenditures have been made on steam and electric railways, ocean and lake steamship lines, harbors and canals; express, postal, telephone, telegraph and cable services, and yet one of the greatest opportunities for material advancement, that of road improvement, and a work which the Highway Improvement Act is substantially encouraging, is not keeping pace with the modern methods of travel transportation and communication. The progress of Ontario in road-building, compared with that of other communities, shows an extremely low standard, and a country drive, which should be one of the greatest pleasures of farm life, is often a hardship, owing to the rough state of the roads. Over \$40,000,000 have been spent by the Ontario township councils during the past twenty years, and still the roads are not improved.

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