

ing the grass seeds among the clover in front of the sheep, and leaving them to trample in the seeds, and mature the land as they eat off the clover crop. It is important not to sow in the early morning, or at any time when the standing plant is wet, or the seeds will adhere to the clover and be eaten by the sheep, instead of falling to the ground to be trodden in.

Other instances of a similar character may be quoted, but as they only need some modification of the method already explained, it may be enough to say that tolerably successful pastures have been formed on an old Santoin, a worn out alfalfa plant, a three or four years' lea, and even on clear barley and oat stubbles, without plowing or using any other implement than the harrow, the seed harrow and the roller.

W. R. GILBERT.

(To be Continued.)

Humus Necessary

In old countries, where the soil is worn out, the use of fertilizers must be regarded as a necessary expense in the production of crops, but it is even still more essential to see that the soil is supplied with organic matter, producing humus. Fertilizers will not furnish this necessary material; it can only be provided by dressings of farmyard manure, plowing in green crops, and putting on material of a bulky organic character.

Water in Crops

It is interesting to reflect that as it pointed out in an American paper, more water is sold by farmers than any other substance, and brings a higher price in proportion to cost than any other material. A crop of green clover contains 1,600 lbs. of water per ton, and when a ton of dry clover is carted to market as much as 200 lbs. of the load consists of water. Every 100 lbs. of milk contain about 87 lbs. of water, and the farmyard manure which is spread over the fields is more than one-half water. No matter how dry the hay crop may be from the farmer's point of view, there is a considerable quantity of water in it. The farmer sells this water, and the more water he can sell the larger his profit, as the nitrogenous and mineral matter taken from the soil by the plants is a direct loss unless the price at which the crop is sold is sufficiently large to reimburse the farmer for his loss of plant food, as well as afford him a profit.—Mark Lane Express.

The Soil for Sugar Beets

Good yields of beets can only be obtained on land that is in a good state of fertility. Soils that are naturally poor or are worn out by continuous cropping are not adapted to sugar beets; a judicious system of working up such land should be commenced by application of farm manure or commercial fertilizers and by cultivation of crops in regular rotation. Farmyard manure is preferably applied to the crop preceding beets or if applied directly to the beets, always in the fall before the land is plowed, so that the manure may be thoroughly decomposed in the early summer. It will then readily yield up its store of fertilizing ingredients to the beet roots when these are ready to make use thereof. Green manuring by means of leguminous crops is advocated by some writers, for the purpose of increasing the humus and nitrogen content of the soil, but where sufficient live stock is kept to consume most of the rough feed produced on the farm, it is, in general, under ordinary farm conditions in this state, a better plan to feed the crops to farm stock and take good care of the manure produced by the stock.

Correspondence

Favors the Percheron

The Editor THE FARMING WORLD:

In your issue of April 1st there is an editorial whose meaning is apparently that the Clydesdale is a very superior horse to the Percheron for the farmer. Your chief objection to the latter breed seems to be in the methods employed by some "Yankees," "brothers of prize-fighters," etc., in introducing it into the country. Much as we may dislike these methods, it is still open to maintain that they do not necessarily reflect discredit upon the Percheron and that quite apart from any methods there may be room in Canada for both breeds.

I may say that my own experience has been favorable to the Percheron. I have found them to be faster walkers, better travellers, easier keepers and more spirited than the Clyde, and those to whom I have spoken in this neighborhood give expression to the same opinion. The above mentioned qualities seem to me to be very essential ones in a farm horse. I should like to see an expression of opinion from your readers in regard to the comparative merits of the two breeds from the farmer's standpoint, a plain, dispassionate and unprejudiced comparison by those who have used both.

G. M. BALLACHY.

Brantford, Ont.

Spring Farm Improvements

Editor, THE FARMING WORLD:

Any one who has travelled much, and visited farmers' homes at this season of the year, cannot but be struck by the difference in appearance of their yards and surroundings. You may go to one farm where everything is neat and attractive, suggesting care and thoughtfulness on the part of the owner, and then go to the next door neighbor, only to find his yard filled with all manner of dirt; such as broken boards, and small pieces of logs, broken down fences and half swung gates, his sleighs and wagons standing scattered here and there, when a day or probably less, given at this season would put these things in their proper places, have his fences improved, and all rubbish, which is sure to accumulate during winter months, piled in a heap and burned.

Every public school has a certain day in every year set apart for the purpose of cleaning the school yard and planting flowers and trees, which greatly adds to its appearance. Why should not farmers adopt a similar plan, and take more pride in beautifying their homes. Many a farm home to-day, could be greatly improved by the planting of a few trees, and shrubs which otherwise look neglected and barren.

In almost every town and city prizes are awarded by some horticultural or other society for the best kept and most artistic home and lawn. This stimulates a competitive spirit among the people, and makes them take more pride in their homes, by not allowing their next door neighbor to get ahead of them, and get these prizes. If some such plan were adopted in the country, where, I think, it would work equally as well, we would in a short time have more beautiful country homes in our fair Dominion.

J. H. STARK.

Peterboro Co., Ont.

How Railways Assist Agriculture

Editor THE FARMING WORLD:

Next to the Governments of the country there are probably no corporate interests so much interested in the country's prosperity and development as the transportation companies and especially is this true when these companies hold large land grants.

An investigation of the development policy of over eighty or more important railways reveals the fact that a great deal of quiet and effective work for the encouragement of agriculture and stock raising is being done by most of these great corporations.

Nearly all the roads are active in securing immigration for their territory and in locating industrial enterprises. To this end they either have a special industrial commission or some one of their general officers gives his attention to the subject and when it comes to the encouragement of agriculture the following are the figures:

29 railways give assistance to the marketing of products grown along their lands; 8 railways employ special agricultural agents; 4 railways co-operate with the state colleges and experimental stations in aiding agricultural education; 12 railways encourage seed improvement; 10 railways promote agricultural conventions; 6 railways run special educational trains; 3 railways introduce pure-bred stock; 5 railways own demonstration farms; 9 railways print and distribute bulletins; 2 railways run a pick-up car service; 6 railways give special care to encourage stock raising; 4 railways subscribe for and distribute agricultural papers.

Such is the record of the railways of the United States. Our Canadian railways have, as almost every one knows, done an immense amount of advertising for Canada and some of them have done much to assist in practical agricultural development.

F. W. HOBSON,

Live Stock Commissioner.

Ottawa, Ont.

Soil Bacteria

Most farmers are now pretty well acquainted with the fact that our soils are full of microbes of various kinds, and that their presence is absolutely necessary to prepare the raw mineral or manurial material in the same for the use of the plants. It has often happened that a soil has been failed, fertile, and of a desirable texture, but yet it only grows inferior crops, and the reason given is that it must be deficient in the necessary intermediate bacterial life. The inoculation of the soil with such is therefore now recognized as one of the coming necessary operations of farming, and though we are only emerging now from the experimental stage, yet we are within sight of great developments in our ideas of manuring. The progress of this system of soil inoculation received a serious setback a few years ago from the failure of "nitrogen"—a German preparation of suitable bacteria—but better ways and means are now adopted of sending out the same, and experiments conducted in both Germany and the United States prove that immense benefits are to be derived from its use. The principal trials have been made with leguminous plants, because it has been found that certain nodules on the roots of these are necessary for their nutrition, and that these nodules are the outgrowth from the presence of certain bacteria, which bacteria can now be added artificially when the soil is deficient in the same. It is found that if the seed of beans, peas, clover, lucerne, vetches, etc., is dressed each with its own preparation—costing from 4s. to 6s. per acre—that full crops can be obtained; in the case of clover a good plant remains where formerly the "sickness" wiped it out.—Prof. McConnell in "The Dairy."