and it makes a much finer manure for the land.

In speaking of cutting *hay* I do not mean that the hay and straw that is to be *fed* is the only material that is to be cut. All the bedding should be cut as carefully as the feed.

In feeding grain, whole or chopped, bins to hold a goodly quantity of each kind used, should be provided in a place convenient to the stock, to avoid much running to and fro. These bins should be filled regularly, the grain being brought to them in wagons. The bins should be provided with chutes, into which the grain can be shovelled or emptied from the wagon. Carrying of bags of grain on the shoulders of the men should not be necessary. It is quite possible to arrange the bins so as to avoid this slavery.

Roots should be stored in a good root house opening into the stable. A trap can be made through which to pass the roots from outside in fall. This trap should be covered well to keep out frost in winter. If the root house is built like a cellar, much lower than the floor of the stable, it is difficult to lift the cut roots up. Of course the roots may be cut inside the root house, if so desired, or outside. The labor of carrying the roots up remains the same.

Here is my plan. You have all heard of "dumb waiters" in houses. Apply the same principle to your root house. Have a horizontal door opening downwards, in the side of the root house. The door is on hinges, two or three feet above the floor of the stable. When open it lies down, slanting into a box, wheel barrow, or any receptacle for the roots. Inside the root-house have a frame that moves on pulleys on the same plan as the "dumb waiter." Instead of solid shelves, however, have a well-balanced box or bin, balanced so that when full of roots it will remain upright, after the plan of the sugar bins and flour bins in our kitchen cabinets. Have attached to the front of the bin a rope. Now, standing in the root house, fill your bin with roots. Raise the dumb waiter to the open door. Pull the rope attached to the bin, tipping the roots from the bin onto the slanting door allowing them to slide into the box or wheel barrow. Let down the dumb waiter and continue until a sufficient quantity of roots is lifted up.

The stable should be provided with a smooth floor of some sort. I am not discussing the health of the animals here, but a floor, level and hard, is quite necessary, if the stables are to be cleaned quickly and well. If stanchions are not used, then all ropes, chains, or halters should be provided with rings and snaps, so that no knots need be tied or untied, and no buckles be buckled or unbuckled. Snaps are so much quicker to handle.

Behind each horse there should be substantial harness pegs or hooks, high enough to prevent harness from being knocked down. The harness belonging to each horse should be kept on its own peg, so that no time need be lost hunting for the right collar.

In cleaning stables much time is often lost. The stable should be built long, with a row of animals on each side, back to back. Wide doors should be opened at each end of the stable. A manure spreader should be used. This should be driven into the stable at one end, and the manure placed at once in the spreader. It can then be driven directly to the field and spread at once, thus saving an enormous amount of time.

If a spreader is not at hand, then use a common sleigh or stone-boat, either of which is much to be preferred to a wheelbarrow. I once knew a little lad who cleaned his father's stable by using a large hide. It was an old, hardened hide that had never been tanned. The boy tied a rope to one end of the hide and hitched a pony to the rope. The manure he piled on the hide. When out on the manure pile he turned the pony round, tipping the hide over in that way.

It is easier to go around the stable and arrange the bedding after the last feed is given at night, than it is to clean the cows' udders if they lie down in the dirt. The milking should be done as soon as the cows stand up in the morning, so as to be through with it before the cows lie down again and soil their udders, thus making extra labor.

Sask. B. E. NEVILLE.

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"I have taken THE FARMER'S ADVOCATE for several years and don't know what I should do without it. If I were to quit it, it would seem like a death in the family. It is like a neighbor coming in every week to give me the news."—G. Garroock, Saskatchewan.

FARM

Topics for Discussion

To afford an opportunity for the interchange of ideas, and to provide a place where information may be given and received, we publish each week at head of the Farm department a list of topics, which our readers are invited to discuss. Opposite each topic is the date of publication of contributions on it and readers are reminded that articles contributed on any of the subjects given must be in our hands at least ten days earlier than the subject is scheduled for discussion in our columns.

Readers will understand that this department of the paper is theirs. They are invited to write the editor, freely expressing their opinion of the manner in which it is conducted and to suggest topics. If any reader has in mind a question which he or she may think can be profitably discussed, it will be given a place in the order of subjects if it is deemed of sufficient general interest. Because this notice runs weekly at the head of the Farm department does not mean that farm questions, only, may be taken up. The discussions will be spread over every department of the paper.

For the best article received on each topic we will award a first prize of Three Dollars and for the second best Two Dollars, paying the latter sum for the contributions on the subjects received and published in the same issue.

Articles should not exceed 500 words in length.

January 26. — *What is your opinion as to the comparative feeding values of prairie hay and cultivated grasses or clovers? Discuss the use of each for horses and for cattle.*

February 2. — *What is your opinion of two-rowed barley as a crop for the Canadian West? Is its malting quality of sufficient merit to warrant prairie farmers undertaking the production of this cereal?*

February 9.—*What do you consider the easiest and most thorough method of clearing "scrub" land? Discuss different systems for various tree growths, or particularize for the conditions under which you have had experience.*

February 16.—*What method do you follow in selecting eggs for hatching to ensure getting eggs for this purpose from your best stock? Have you ever used a trap nest? If so, with what results? Do you know of any other method of selection that is just as good and simpler?*

Roller vs. Packer

The contributors in this week's discussion have no disagreement as to which is the more efficient implement for use in conserving soil moisture, the roller or the packer. Of the letters published one advocates sub-surface packing, one surface packing and the other does not state which he practices.

The question, therefore, comes down to the type of implement that is most generally useful. And on this point we believe there is ground for further discussion for which our columns are open at any time.

In the present discussion we have awarded the prizes for best answers in the order in which the letters appear.

Uses a Sub-Surface Packer

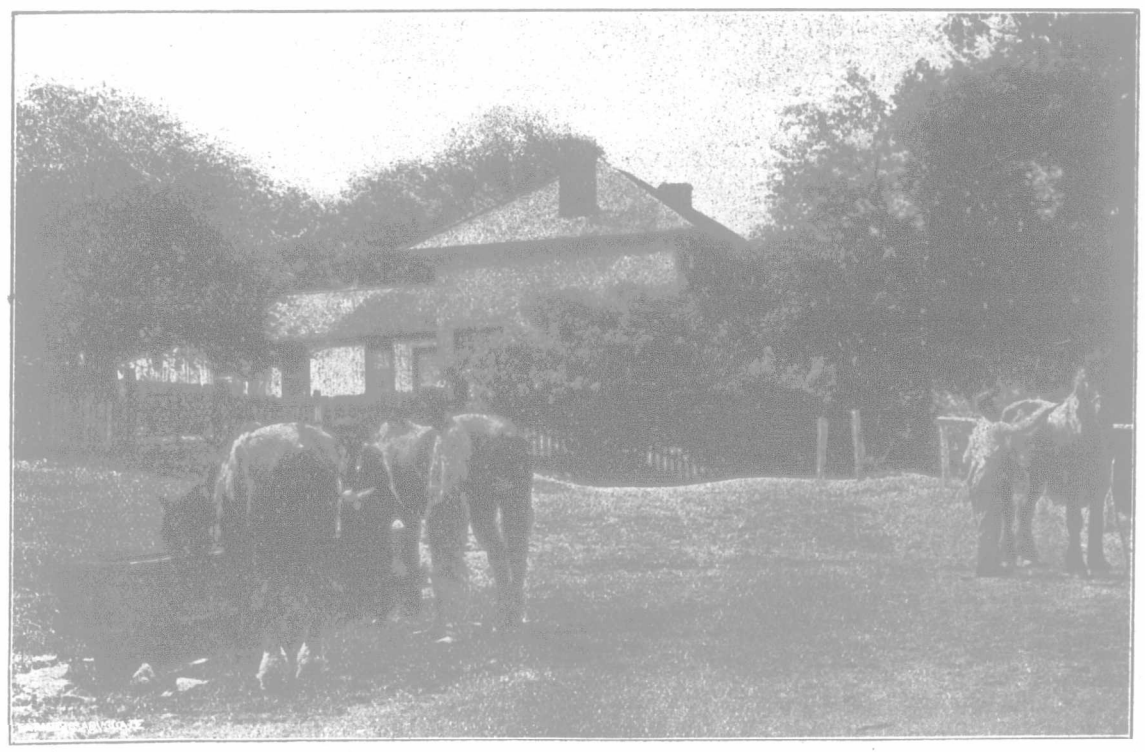
EDITOR FARMER'S ADVOCATE :

If the movement of moisture in the soil under varying conditions is understood a clearer idea would result regarding the use of rolling and packing implements. I believe the use of the roller on plowed land is not advisable and that the practice should be discouraged. The object in using the roller is to firm the soil and draw moisture to the surface for the use of the growing crop. This it will do, but when the extreme surface is rolled the effect is lost, for the moisture is drawn off by evaporation. There is no mulch to break the upward movement of the moisture and the crop is left at the mercy of the wind. I have concluded from many years studying the question of moisture in Manitoba soils, that rolling is a detriment unless the harrow is used freely immediately after the roller. I believe that if the roller were discarded entirely and more use made of the harrow greater benefits would result.

In packers we have the sub-surface and the pulverizer or surface packer. The latter type has been freely used in the West, but with questionable benefit I think, because it is simply an extreme surface pulverizer; more so at any rate than the sub-surface packer. This the average farmer in Western Canada does not want. What he needs is a sub-surface packer, because a sub-surface packer has a wedge shaped packing disc which presses the soil both downward and horizontally. This type of packer has been in use many years in the United States and is now becoming as popular in this country. It has advantages over the surface packer in that it presses the soil right to the bottom of the furrow, making a firmer seed bed and leaving the plant food more evenly distributed for the crop. Then again we have a thicker stratum of packed soil than can be secured by using the surface packer or a roller. This naturally creates greater capillary power, the soil is able to "lift" up more moisture for the use of the crop. To illustrate my argument take the case of a well travelled road. When you find such a road dry I will recede from this position, but not till then.

The fact should not be lost sight of that when the sub-surface packer lifts the moisture it is not lost through evaporation, as the moisture is lost from surface packed soil. It is held beneath the surface mulch, accumulates there and aids the further upward movement of moisture from below. This is important as moisture is saved during the dry hot spells with which most of us are familiar. By using the sub-surface packer we can largely overcome the loss of moisture by hot winds, a loss which is common and serious in many districts. After land is packed with a sub-surface packer it is not pulverized but left in ridges which is a large advantage over surface rolling.

Man. W. N. CROWELL.



COSY HOME AND GOOD HORSES IN OLD ONTARIO