

plants from the worst injury. The ground, however, is so full of water that underdrained fields must suffer considerably. I have been interested in noticing how far the outlet of a deep drain will continue unfrozen, even in the coldest weather. The second of January, when the thermometer stood at eight degrees above zero in the morning, I visited one drain whose outlet was only a two-inch tile, where the water was unfrozen three rods below the mouth of the drain. Another larger and deeper drain held its current unfrozen below the mouth at least ten rods. This was of stone, and the water at the outlet was as pure as from a spring, and comparatively warm. This fact shows how much heat is still retained in the subsoil, despite, or rather, perhaps, because of long-continued rains. We have had neither heavy snows nor severe cold to chill the earth in this section as yet, and no large body of water has yet frozen over. So much rain has fallen that it is fair to presume we shall have less than the usual amount of snow, and without snow we cannot have, this side the great lakes, much long-continued cold weather. But these rains are scarcely less injurious to winter grain than severe cold. They saturate the ground, and where there is no underdraining the water must remain around the roots, chilling and rotting them until spring sunshine brings some relief. It is just here that the underdrain does its most efficient work, removing water that would otherwise be stagnant around the roots of the wheat plant.

PLOUGHING UNDER CLOVER.

A New York State correspondent writes to the *Country Gentleman*. "Ploughing clover for wheat is still largely practised in this section, with the difference that now the top is mostly cut off and saved for hay, and only the roots, with what foliage cannot be mowed, turned under. One fact about the recently cut clover hay may not generally be known. It is that so long as the clover is standing the soil will be as hard as a brick, and almost unploughable; but if ploughed within three or four days after the clover has been removed, the soil will turn up with comparative ease. I have noticed two instances of this within the last month, and it is a fact which I have never before seen recorded. That the mass of clover foliage should dry the soil rapidly is not strange. The inexplicable part of it is that after this foliage has been removed, without any rain, the soil should become friable and comparatively moist. It may be that the process of drawing water from the subsoil, which with full foliage is at once evaporated, goes on with little interruption for a time after the foliage is removed. The surface roots will thus be made very sappy, just as the sap exudes from the stumps of vigorous trees cut in spring after the flow of sap has begun. Probably the effect in helping the ploughing by removing the summer foliage, would not be the same with plants not having the long deep roots of clover. The experiments of Voelcker have shown that clover makes the best preparation for wheat after the second crop of hay is removed. The soil is then richer in fertilizing material than at any previous stage of clover growth. It is its beneficial effects on the subsoil that makes clover so good a preparation for wheat. Other forage plants, with roots near the surface, are of little value."

MAKING HEAVY SOILS LIGHT.

The *Country Gentleman* says that the first thing to do in all cases, in rendering heavy soil light, is to tile-drain it thoroughly, and if the drains are laid only a rod apart, the land will dry sooner and become more friable than if two rods

apart. The next thing, the best by far, is to apply coarse sand copiously, if it can be procured, and work it well in by ploughing and harrowing. The sand remains, and does not leach, wash away, or evaporate. We have garden soil, originally clayey and heavy, made comparatively light by adding two inches of sand, and it is as good now as twenty years ago, or after the application of the sand. Coal ashes on many heavy soils has little effect one way or the other; it may improve some soils. For spreading evenly, it should of course be dry enough to work into powder. The quantity of wood ashes which it would be proper to apply would not perceptibly affect the texture of the soil.

THE COMPOST HEAP.

The *Massachusetts Ploughman* among other things talks suggestively about the compost heap, saying that it is a good plan to have one for the benefit of the farm. The compost heap may be made of road scrapings, the scourings of ditches, the cleanings of ponds, clippings from banks and hedgerows, scrapings and sweepings of farm-yards; garden refuse, house refuse, and indeed all sorts of rubbish may be added to a compost heap. Even weeds will decay, and then help to swell the material for enriching the land. The heap should occasionally be covered over with a layer of lime, and a layer of salt now and then is also a good addition. These materials are beneficial in themselves, and keep weeds from seeding on the top of the heap. The compost should be turned over from time to time, and when well mixed, the land may be dressed with it either in spring or autumn.

REDUCING BONES.

Dr. Nichols gives the following exact figures of the quantities used in reducing bones with ashes:—Break 100 pounds of bones into small fragments and pack them in a tight cask or box with 100 pounds of good wood ashes, which have been previously mixed with 25 pounds of dry, water-slaked lime, and 12 pounds of powdered sal-soda. Twenty gallons of water will saturate the mass, and more may be added as required. In two or three weeks the bones will be soft enough to turn out on the barn floor and mixed with two bushels of good soil.

It is better to leave the piano behind in starting to the west; take a harvester instead.

Those who use lime as a fertilizer apply from ten to fifty bushels to the acre; ashes may be applied at the same rate, salt at the rate of 200 to 400 pounds, and plaster at the rate of 100 pounds.

A CORRESPONDENT of the *Canadian Horticulturist* reports that he has several black walnut trees, two feet in circumference, whose age is twelve years. From this, the profit of making plantations of this valuable timber tree can be calculated.

THE successful farmer is the reading one in nine cases out of ten. It is only by reading that one can keep up with the times in which we live. It has been aptly said that an agricultural community without books and papers relating to farming is like a ship at sea without rudder or compass.

ECONOMY in general management cannot be attained, and habitually practised, unless a man understands, even to the nail's breadth, the particular departments of his business. This particular knowledge can only be acquired on a farm step by step and day by day as the working of the farm goes on. The ornamental farmer, like the ornamental manager or director in commercial affairs, is a complete failure.

CURRENT NEWS ITEMS.

THE blackbirds are flocking a month earlier than usual this year. This is considered by those familiar with the habits of the birds as a sign of an early fall.

A SUCCESSOR of Benjamin Franklin gives us this. "The idea of teaching every girl to thump a piano, and every boy to be a book-keeper, will make potatoes \$5 a bushel in twenty years."

A CATTLE driver named Doyle was victimized to the tune of \$740 by a confidence man whom he recently met at the Union Station, Toronto. He advanced the above sum on a worthless cheque for \$1,900.

THE Beetroot Sugar Factory at Berthier was sold by auction a few days since for \$60,000, the purchasers being Messrs. A. Q. Prévost, Jacques Grénier, J. O. Lafrenière, S. St. Onge, D. L. Bessette, Louis Tranchemontagne, A. Masson, and Wm. Cowie.

MR. WALTER THOMSON, grain dealer, of Mitchell, has leased from Mr. Joseph Kidd, of Dublin, his grist mill and warehouses, with a view to making Dublin a wheat market. Mr. Thomson is also thinking of re-opening his oatmeal mill in the town of Seaforth.

NOTWITHSTANDING the wet harvest weather, the wheat and other grain in the county of Kent and adjoining counties has been pretty well saved, with a larger than average yield, particularly wheat. The apple crop will be very light in that section this season.

THE *Independent* says that the latest addition to Mr. Boyd's Big Island Stock Farm is a thoroughbred Clydesdale horse, recently imported. It is an exceedingly fine animal, and is just the class of horse for crossing with the stock of the neighbourhood, and raising beasts suitable for the export market.

FINAL arrangements have been made for the transportation and subsequent exhibition of Manitoba products at the Provincial Exhibition at Kingstons. The Canada Pacific Railway Company have given a baggage car for the transport of the exhibits, which will be taken through direct with an express train.

THE *Lindsay Post* is responsible for the following item: "On the farm of Mr. J. McGee, Emily, James Fleming and John McGee bound wheat after a reaper which cut 8½ acres from 1 o'clock p.m. till sundown, and could repeat the same work the next day. One of the binders cradled around the field before the reaper, which was driven by James Mackie. The crop was an average one."

THE citizens of Mitchell, feeling benefited by a healthy competition on their grain market, have formed a joint stock company for the purpose of erecting a warehouse and elevator, with a view to maintaining a third buyer on the market. The preliminary steps have been taken, and the contract for the building let, with every prospect of its completion in time for the fall trade, which promises to be very large this season. A large number of the farmers in the immediate vicinity of the town have been compelled to thrash their early crops to make room for the late ones, while from all sections of the country come most cheering reports of the yield.

A FAMOUS north-country clergyman, whilst preaching a few Sundays since from the text, "He giveth His beloved sleep," stopped in the middle of his discourse, gazed upon his slumbering congregation, and said: "Brethren, it is hard to realize the unbounded love which the Lord appears to have for a large portion of my present auditory!"—*London Life*.