

Draining Land—No. 2.

(See Page 8, January Number.)

WHAT LANDS REQUIRE DRAINAGE?

That question is easily answered. "Wet lands, of course." And many would be satisfied with the answer. But let us consider for a moment, if the underdraining of some dry lands would not benefit them. "O! that's nonsense." Don't decide too quickly, my friend. Suppose you had a cornfield that was suffering from drouth, what would you do? "I would start the cultivator and keep working the land." Well, doesn't that course seem as absurd as my question? You would stir up the soil so that the air could penetrate and the sunlight fall on the freshly turned earth. Wouldn't you think that such a practice would make the soil still dryer? "I would; but it don't." So the underdraining of dry land may seem to you to make the soil still dryer, but it don't. On the contrary, for the same reasons that working your cultivator keeps the soil moist, so does an under-drain keep a soil moist. Just as the moisture in the air condenses on the cold surface of a pitcher, so the moisture in the air condenses in the cool soil when it can penetrate it. The surface of the soil becomes hard in a dry time, and you take your cultivator and break up the soil so that the air may penetrate. Now, if by a system of pipes under ground you admit the air beneath the surface its tendency will be to rise through the soil, parting with its moisture by condensation and keeping the whole soil mellow.

I do not suppose that its effect upon all soils would be alike in degree, because we know that the effect of air and moisture is much greater on some earths than others. A sand heap does not appear to suffer any change, but a hard compact clay exposed to air and moisture will slacken and become very mellow. Then, as the clay settles and the air passes from it, it will become compact again. The effect of admitting air through drain pipes to a clay soil is the same in kind as to throw the clay up to the air. It makes it mellow.

Now, from the above facts, known to every farmer, it appears that even a dry soil may be greatly benefited by underdraining, and that the amount of benefit bears some relation to the amount of clay in the soil. But underdraining not only renders a soil moist and mellow, but it is a means through which the soil is constantly becoming enriched. I turn to my chemistry and I find that clay is a decomposed silicate of ammonia. That the "value of alumina in the soil seems to be in retaining moisture, ammonia and carbonic acid." The presence of this valuable agent not only prevents the valuable parts of the manure from passing through the soil to taint subterranean springs, and holds them for plant food, but it draws from the atmosphere day and night the same elements that make the manure nourishing to the plant. *Moisture, mellowness and enrichment* are the effects of underdraining a dry soil.

ALUMINA.

[Much profit should result from the careful perusal of these articles, as they are to be continued.]

Acquiring Improved Stock.

The Maritime Farmer, in a sketch of a New Brunswick breeding and stock farm, indicates how a farmer may become owner of well-bred stock without incurring heavy expense. In the new departure of feeding beef for the English market, our people will find it advantageous to secure thrifty growers, and those that come to maturity at an early age. Mr. Slipp, of Upper Hampstead, N. B., ten years ago commenced the breeding of Shorthorns, purchasing from the Queen's Central Society one heifer in calf and one bull calf, being part of an importation of stock made by the Society. The heifer has proved a fine breeder, and her descendants are numerous. The record now shows twenty-eight descendants from the heifer "Mary Bell," at the present date, with seven of the cows in calf. He has now 12 cows, 4 yearling heifers, 10 heifer calves, 1 bull, four years old, and 1 bull calf. On Mr. Slipp's farm, which is in splendid cultivation, is 60 head of cattle, 25 of this number being milch cows, 6 horses and 25 sheep. All the grain grown is fed upon the farm, and considerable quantities of beef and pork are fed.

American Horses in England.

The demand for good horses is as brisk as ever in England. Many of the horses imported from Canada have brought good prices and given great satisfaction to buyers. But on this point we need more steady aiming at improvement. English buyers are willing to pay good prices, but they must be for good articles. It will not pay to ship inferior animals or inferior produce of any kind. The English Live-Stock Journal, in the following brief item to horse-breeders of Canada and the United States, speaks to the point as follows:—

"Of late a considerable trade has been done in importing horses from the United States and Canada. The North Metropolitan tramways (this is the name given in England to all horse railroads) imported more than a thousand. They were full of quality, with fair and in some specimens fine action. There were pairs well worth \$750 to a dealer, but they have not weight enough for tram-work, and are being superseded by the French horse of the class so largely used for the last five years by the London Omnibus Company. Unless the recent fall in prices stops the trade, the United States will send us a great many high-class horses—of the sort Yorkshire used to breed. In the States they have plenty of mares of the right stamp for hunters, hacks and harness; they have thoroughbred sires to keep up quality; they have boundless pastures of good grass and maize at a very cheap rate. On the other hand, they have no idea of the proper make, shape and action of a riding horse, or of breaking for saddle. All their horse talent has been directed to producing fast trotting harness horses; these they understand perfectly. But they are the quickest people in the world to learn a new trade if it pays. They will learn to pick out mares and sires with riding shoulders and strong backs, thighs and necks. Their horses have size, quality, good temper and sound constitutions to start with. With these advantages the Americans will soon fill up the blank in horse stock created by the competition of beef and mutton in Yorkshire and in Ireland."

The prize essays on "Fattening Stock" and "Keeping Poultry" will appear in next issue.

The Board of Agriculture and Arts have appointed a committee to examine into the charges brought against them by the Chief of Police, and report that they are incorrect.

Land and Home writes:—The corn crop of 1878 for the United States removed in the grain alone 213,785 tons of phosphoric acid. Of this there was exported 13,527 tons of phosphoric acid and 8,116 tons of potash. We export about 6½ per cent. of our crop.

A contributor to the Prairie Farmer says:—"From years of experience, observation and enquiry I find that \$11 an acre is about the average cost of growing and marketing wheat under the present common system of farming, with only the fourteen bushels average of yield."

ORCHARDS.—Cultivate your orchards and do it well. You don't expect corn to grow without work, and you must not expect trees to bear fine fruit without thorough cultivation. Orchards will grow in grass, if manure is given in sufficient quantities each year; but we know of but few farmers who have the manure to spare, therefore give the trees what you can—a thoroughly mellowed soil.

"Ashes," said Marshall P. Wilder, a few years since, "are worth 50 cents per bushel to apply to orchards and are the cheapest manure for that purpose." That ashes have a very beneficial effect in this connection is shown by the fact that on all virgin soils recently burned over we get the fairest fruits and the best vegetables. The same authority cautions the use of salt as a manure for orchards, believing that it has no beneficial effect on land near the ocean, where the atmosphere is constantly saturated with salt.

A Maine farmer gives the following opinion as to the best position to plant an orchard; "Were I to plant an orchard and had two locations, one in a valley surrounded by hills except on the south side, and the other a high elevation exposed to high winds, I would choose the latter in preference to the former. The same holds good in regard to peach orchards. A great object is to keep back the blooming as long as possible, and this can best be done in northern exposures without shelter."

The Apiary.**Practical Hints.**

BY C. F. DODD, NILE, ONT.

During this month bees require comparatively little attention, particularly if they have had the requisite attention bestowed on them in the fall. If they are in a cellar, or other winter repository, and become very uneasy, making a loud noise, it would be well to set them out for a fly about noon on a warm, calm day, when the sun is shining. If it is windy, or the air is chilly, many bees will be lost before they can return to the hive. If there are hives that have not sufficient honey to last them till spring, exchange some empty combs for full ones from those hives that have to spare. Do not feed them liquid food, if it can be avoided, as it is liable to cause disease. After they have had a good fly, return them to their winter quarters. If they have sufficient stores, and remain quiet, do not disturb them.

VENTILATION.

Some beekeepers have advised giving bees upward ventilation, but, instead of being beneficial, it has often proved injurious, as it allows the animal heat from the bees to pass off too rapidly. To retain the animal heat in the hive and allow the moisture from the bees to pass off, and at the same time have sufficient ventilation afforded, is what they require; and this may be accomplished by placing a sheet of duck on the frames, then fill the cover of the hives with straw, and place it on the hive; or, what is still better, make a bag from good factory cotton, or some other strong material, fill it with chaff or dry sawdust, and place it on the frames, then put a sheet of duck under to prevent the bees from cutting the cushion, which should be large enough to cover the frames and about six inches thick, and should be packed down snugly. This may be made and put on now.

Management of Bees.

The great progress of bee management within the past year or two is encouraging to the general introduction of bees on the farm.

It is often more detrimental than one would suppose to allow more open space inside the hive than they can well fill; and it often happens that the honey season is in full blast before some colonies are strong enough to have much room given them.

It is desirable not to change the location of hives, unless it becomes absolutely necessary to do so. After the bees have become familiar with their location, should the hive be moved a few feet, they will not notice it when departing on their daily rounds, and if there are other hives near, they may perish in attempting to enter them or in wandering about seeking for their own home.

Prize Essay.

A \$5 prize is offered for the best essay—the subject to be "Instructions to New Settlers in Manitoba or our Northwest Territory," commencing on turning the first sod. The essay may be made continuous, if desired, and must be in this office by the 15th March.

Sprinkle your plants every day, no matter what the weather may be. Water plentifully. Remember the fire-heat dries the soil more rapidly than sun-heat.

Carrots are used by farmers of South Jersey for cattle during the winter, and much of the print buttersold in the Philadelphia market is made there. The carrots give the golden color so much admired.

H. C. Burleigh, an extensive breeder of Herefords, says a pair of two-year-old steers he once owned gained 14½ inches in girth in six months by feeding them with good, early cut hay, and two quarts of corn, barley and bean meal, equal parts per day.