

FARM.

Advantages of Underdraining.

The continued wet weather prevailing in some districts during the last few weeks has served to accentuate the importance of underdraining in ensuring against the partial or total failure of crops, owing to an excess of water in the land. In some sections tile draining is recognized as essential to successful farming, and is generally practiced, the conviction being firmly fixed that the whole cost is generally repaid by the increased yield of crops in two or three years, and in some instances in one year. In many other districts in which the nature of the soil, the apparent levels, and the conditions of the crops in some seasons plainly indicate the need of underdraining, little or none has been done, and much loss is resulting to farmers from its neglect. While its advantages are generally acknowledged and admitted, the cost of tile draining is, by the average farmer, a consideration which causes him to hesitate and procrastinate from year to year, though he may be convinced of the need and the probable or practicable certainty that the undertaking would pay for itself in the short time indicated. Thorough drainage, it is true, is an expensive operation, costing, as a rule, an outlay nearly equal to the selling value of the land without it; but if the claim that it will pay for itself in the increased yield of the first two or three crops is a reliable one, the risk is not great, and since the work may be gradually accomplished, a part being done each year, the investment should prove a good dividend-paying one from the start, as we are confident it will, provided the work is reasonably well done.

If a farmer feels that he cannot afford the time or money to drain a whole field in a single year, he may make a commencement by laying the main drain first, providing for a good outlet first, and put in the laterals later, but it is wisdom to have a well-considered system to begin with and a map with measurements marked upon it indicating the place of all drains laid, so that the system may be extended and completed at any future time. While there is little room for doubt that on most farms thorough draining over all its parts would pay for the doing, there are portions of the majority of farms which the owner cannot afford to neglect to drain if he desires a decent return for his labor and the seed sown—low-lying places without an outlet with sufficient fall to carry off surplus surface water, where the crop suffers from excess of water, as shown by its signals of distress in the form of spindly stalks and sickly yellow leaves, yielding half a crop or proving a flat failure. And this on portions, which, if properly drained, would certainly be the most productive of the field. Such places, as a rule, might be relieved of their disability with a comparatively small outlay of time or money, and would probably pay for it twice over in a single crop, to say nothing of the satisfaction of seeing a uniform crop over the whole field. The labor and cost of draining may be greatly lessened by good management, the use of the plow in opening and filling the ditches, and of the most improved tools for laying the tile.

Travelling for Agricultural Knowledge.

Long ago the famous educators, Pestalozzi and Froebel, strove to impress upon the teachers of the world their opinion that the best method of gaining instruction about a great many matters is seeing and doing. Since their day "Learn to do by doing" has become an educational axiom, whose value is being daily proved in school, laboratory, technical institution and manual training hall. It stands to reason that an educative principle found valuable in other lines must also be so in that of agriculture, which is a science as truly to be studied, learned and benefited by, according to the skill and thoroughness to be expended upon it, as any other curricula. Denmark, to the fore, as usual in all things pertaining to agriculture and dairying, has seized upon this fact, and is putting forth every possible effort to provide for the further instruction of her people in these subjects. "Learn to do by doing" has become her slogan to the farming world, and in order that as few obstacles to the best results as possible shall stand in the way, she has hit upon a number of clever expedients.

Among these is that of providing "travelling

aids" to farmers, to enable them to visit the various experimental farms and dairy schools at the lowest possible cost. During these visits they are expected to take actual part in the operations which they have gone to see, and in this way are likely to have facts fixed firmly upon their minds. Briefly, the method is this: Each year the Government sets apart a certain sum of money for this purpose. Each farmer who wishes so to travel sends in his application to one of the offices of the Royal Danish Agricultural Association not later than three weeks before he wishes to set out. He is thereupon supplied with a book of coupons which will serve as certificates at the different places he visits, also with a plan, setting forth exactly where he must go, and at what date he must arrive at and leave each point. This plan he must rigidly adhere to. His coupons, marked at each place on the route and returned at the end of the trip, will show whether he keeps to it or not. If he does so, well and good; if he does not, he forfeits a certain amount for each day wasted. While visiting, as said before, he must take notes and engage in practical work; any neglect in interest, or misconduct in any way, is reported to headquarters, and he must suffer by a deduction of the amount allowed him. In order that there shall always be an opening for these travelling pupils, no private pupil is permitted to stay at any school to which the former are admitted for more than six months at a time.

Owing to the small extent of Denmark and the exceedingly low board rates prevalent there, this plan is found very feasible. In Canada such conditions do not obtain, but many of our farmers and dairymen are very well able to pay their own way on short and frequent trips, and it might be telling a few of them a thing or two were they to take a leaf from the book of the prosperous Danes.



English Leicester Ewes and Early Lambs.

About Silos.

Below is the summary of Bulletin 101, entitled "Crops for the Silo; Cost and Filling," issued by the Illinois Experiment Station at Urbana:

Corn silage is, as a rule, the most economical succulent food that can be obtained for dairy cows at a season when pasture is not available. Although not a balanced ration in itself, it tends to heavy milk production, and economical milk can be made by feeding corn silage and a legume hay without the use of much grain.

By helping the pasture out during dry periods with partial soiling, more stock can be carried on a given area than by pasturing alone. No crop will furnish more feed to the acre than corn, and with the silo this can be utilized for soiling.

When corn is fully tasseled it contains less than one-fourth as much dry matter as when the ears are fully glazed. From this stage to maturity the increase is but slight.

That silage may keep well, the corn should not be cut until most of the kernels are glazed and hard; if too ripe, the silage will not settle well, and the air will not be sufficiently excluded to prevent spoiling.

The corn is most easily handled by cutting with a corn binder, and using a silage cutter of large enough capacity to avoid the necessity of cutting bands.

If silage is to keep well, the leaves and heavier parts must be kept thoroughly mixed, evenly distributed in the silo, and well tramped next the wall. After filling, the top six inches should be wet once, and the whole surface tramped every day for a week, to obtain a thin, compact layer of well-rotted silage which will exclude the air.

Records of the cost of silo-filling were kept by the experiment station on 19 different farms in various parts of the State, and the cost was found to range from 40 cents to 76 cents a ton, the average being 56 cents.

Tumble-weed (*Amarantus albus*).

This is a weed about which comparatively little has yet been written in Ontario publications, and which few farmers appear able to recognize. It can scarcely be classed with our noxious weeds, neither has it become very common; yet, I have seen fields in which it has proven its ability to become troublesome when not closely watched. Where only occasional plants could be found a couple of years ago it is now almost as abundant as the well-known pigweed, to which it is allied. The principal danger from this plant lies in its free-seeding habits, which, while it is so little known, and consequently unnoticed and unhindered, gives it the opportunity to establish itself rapidly.

Tumble-weed is an annual, considerably resembling the notorious Russian thistle in its low-branching, bushy habit of growth. It varies much in size, but often attains a height of over two feet in ordinarily fertile soil, with a diameter usually equal, thus giving it a globular shape. The stem branches from close to the ground right up to the top, the lower branches spreading horizontally to give the characteristic shape. The leaves are usually small, although, when in rich soil, or growing among other vegetation, they are rather larger, and the plant is more erect. The flowers, which are small, greenish and inconspicuous, are borne along the branchlets. They are followed by seeds concealed in a bristly chaff, somewhat like that of pigweed, but not gathered so closely into spikes. When ripe the seeds can be readily shaken or rubbed out of their enclosures. They are quite small, jet black and shiny, nearly circular and compressed, with convex faces.

For the dispersal of its seeds this plant exhibits a novel form of natural adaptation. Its globular form is for a purpose. When the seeds ripen and the plant

dies, in early fall, the branches become very light, dry and pithy, and the whole plant is easily broken off at the ground by the wind. Then it is blown over and over, scattering its seeds wherever it goes. The fences bounding the field become the lodging places, until a wind from another quarter drives many of the plants again across the field.

The work of combating tumble-weed should not be particularly difficult, as it is an annual, dying naturally each year; and so far as I have observed, it has not any very resistant properties. Measures against it must be directed towards preventing seeding, by cultivating out the plants early in their growth. This is practica-

ble, because it seems to occur most abundantly in such cultivable crops as corn and roots. It is also a simple matter to collect the plants from the fences, or, better still, from the field before they have been broken from their moorings, and burn them. As the seeds are frequently found in grass seed, this is doubtless the commonest agency in introducing the weed to new neighborhoods, and the farmer who is careful about his seed will keep his farm clean longest. H. G.

Don't Kill Birds.

Boys who rob birds' nests, or boys or men who kill birds, should be taught by vigorous means, if necessary, that we have law against the destruction of these insectivorous friends of the farmer, and that if it were not for their presence, farming, and especially horticulture would soon become a profitless business and the country destroyed by pests. We hear that gangs of foreign laborers in some parts of the country have been ruthlessly destroying birds for food and for amusement. They should be instructed as to our laws, and if they will not then desist, prosecutions in the courts should follow.

Better Than the Bunch.

I take pleasure in enclosing \$1.50 for the "Farmer's Advocate and Home Magazine" for 1905. I receive about a dozen different publications through the mails every week, and consider the "Farmer's Advocate" of more practical value than all the others combined. No farmer can really expect to do business successfully without its assistance.

Brant Co., Ont.

ROBT. BODWELL.