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EDITORIAL

The true conception of agriculture is not that it is a job to be resorted to of necessity, but an occupation to be engaged in of choice.

We are reading in the daily papers at this time of year account after account of electrical storms, and the number of buildings set on fire and destroyed by lightning. The damage is done in country places, mostly. Any farmer may rod his buildings efficiently, using nine strands of No. 9 galvanized wire twisted together for rod, at a total cost for material of two and a half cents per running foot.

We have been often amused to note how, when a man for any reason, whether it be pique or false notions of economy, decides to dispense with a first-class agricultural journal, he generally subscribes to a second or third-rate one, by way of concession to his conscience. It is poor balm, however, much as he tries to be satisfied with it, and one or two years' reading usually serves to convince him that, in the selection of reading matter, quality ranks far above all considerations of prejudice or price.

The United States Senate, led by Nelson W. Aldrich, has thought better of its intention to impose a duty on mechanically ground pulp, unless Canada or some Province thereof should discriminate against the United States unduly by export duty or embargo upon pulp wood, wood pulp or printing paper. Nevertheless, Canada should not hesitate to take effective means, whether by export duty or regulation, to prevent the export of our wood products in crude form. Our supplies are by no means inexhaustible, and to permit the United States to draw upon them freely for manufacture and use in their own country, while saving their forests, would be nothing short of folly.

The broadening of the course at the Ontario Veterinary College is a benefit made possible by the taking over of the school as a Provincial institution, and the lengthening of the course to cover three years, instead of two, as formerly. In order that he may be equipped to diagnose, discover the origin of, and successfully treat the mysterious outbreaks of contagious and other diseases ever liable to occur, the veterinary practitioner should have a broad knowledge beyond the realms of anatomy, pathology and materia medica. For instance, diseases are sometimes the result of animals consuming in their food plants which may be diseased, thus poisoning or causing disease in animals which consume them. Hence, the veterinarian should be something of a botanist, and this, among other subjects, has been added to the O. V. C. curriculum. Again, study of the cause of diseases, with the aid of the infant science of bacteriology, has demonstrated that many maladies result from bacteria or germs, hence veterinary science is intimately concerned in bacteriology, so that lectures and demonstrations on this subject are now being given. To meet the demand for scientific inspection of meat supplies, a special course in meat inspection has been added. The annual report for 1908, containing a full list of subjects taught at the College, may be had on application to the Principal, Dr. E. A. Grange, Toronto, Ont.

Tile Draining.

Not for many years has the attention of Canadian farmers been so pointedly drawn to the wisdom and advantage of having land well drained as during the past seeding season. Work on the soil was begun moderately early, but was stopped week after week by heavy rains, which continued until about the twentieth of May, varied by a heavy snowstorm, which was not any more acceptable. On well-drained farms, although the rain fell just as heavily as on others, it was in many cases possible to sow at least some grain almost every week before the ground was again drenched, some, indeed, getting through seeding in fairly good season; but on the ordinary undrained clay farm there was nothing to do but wait till the rain ceased. As a consequence, very much of the spring crop was not sown till after the 24th of May, some oats as late as June.

For some weeks we have been publishing letters on underdraining from farmers who speak with the authority of experience. These all, without exception, emphasize in the strongest terms the benefits to be derived. Everyone mentions the fact that, as seeding can be commenced earlier, better crops may be expected. The fine appearance of early-sown grain at the present time in this backward season is commented on. Several refer to the grain sown so late this season as likely to give very light yields, not only because of its late start, but also because of the bad condition of the ground, much of the seed being "puddled in." It is pointed out that, in case of succeeding dry weather, this ground will in all probability harden and crack, and the yield be reduced by a half. Attention is drawn to the good effect of drainage in dry weather, the soil, owing to better mechanical condition, remaining moister in a dry time. J. O. Duke, Essex Co., Ont., pointedly emphasizes this when he says: "The benefit of tile in not fully appreciated in the Western Peninsula of Ontario. The soil in these counties is exceptionally rich, and about the only failures are due to drouth or excessive wet, both of which conditions usually occur in the same season, and can be overcome by tile drainage." Another correspondent mentions the fall-wheat crop as one that is specially benefited by being underdrained. Heaving in early spring, which works such havoc in wheat on sticky soil, is almost unknown where the soil is dry. It might be added that the same would apply to new clover, the crop which farmers are so anxious to have come through the winter in good shape, but which is often damaged and sometimes pulled up by the roots with late freezing and thawing.

The proper depth of drains is given as from 2½ to 3½ feet. Where level, impervious hard-pan underlies a field, as in one case mentioned, at a depth of 2½ feet, there is no use in going deeper, except to secure a grade. On the other hand, if the subsoil is porous, the deeper the drain, the farther it will draw. The old style of putting a drain to a depth of only 1½ to 2 feet is altogether out of date.

How much does it cost to drain a field thoroughly? This is variously estimated at $25 to $40 per acre, but in cases where very large leading drains are required, it may even reach $60. One's breath is almost taken away. That is nearly the price of the land—in fact, a good deal more than the value of many an acre of undrained land. The practical question is, Will it pay? Our correspondents—men who evidently know the value of a dollar—all coolly and confidently assert that it will. "Underdraining pays for itself in three years," is repeated by several, one only allowing as long a period as five years, while some aver that the increased crop for the first season alone will occasionally cover all the cost. Even if we extend the period of three years, which is almost unanimously given as the time in which the cost of draining is repaid, and call it five years, making allowance for enthusiasm, can we afford to neglect underdraining? Prof. Wm. H. Day estimates that 20 per cent. of the arable land of Ontario is in need of it. "Make a beginning in the places most needing draining, and, seeing the benefit, you will extend operations," is the wise advice of one.

One farmer, who has a chance for outlets in a good road ditch, prefers many small-tile drains, each with its own outlet to a main drain with laterals, as being cheaper and just as good, but the balance of opinion is against him. Even if the cost be greater, a main center drain in a field is generally preferred, one outlet being more easily looked after than several. Open ditches through a field, cutting it into sections, are, wherever possible, to be avoided. Side drains should not enter a main at right angles, but at a considerable slant in the same direction, and at a level an inch or two above. Nothing less than three-inch tiles should be used, even in side drains, is the judgment of our correspondents. Smaller ones block easily. As to the size of tile required for main drains, that depends on the area drained and the amount of fall obtainable. A 6-inch main for a 12-acre field, as one puts it, is pretty safe. The article and table by Prof. Day, indicating the proper size of tile for various grades and areas drained, should be preserved for reference. Scarcely any tile made will stand, without crumbling, the freezing and thawing to which they are subjected where exposed at an outlet, and these end tile are very liable to become misplaced, and a box made of oak or cedar planks, about six feet long, or a log with hole bored lengthwise through it the size of the tile, is recommended, instead. It is well, also, to have some kind of grating placed over open end to exclude vermin.

A fall of two inches to 100 feet is sufficient to flush the sand out of a 3-inch tile, but if more fall can be got, so much faster will the drains empty. Some, who judge from their own and others' experience, are emphatic in saying that drains may safely be put in on the dead level, though in such case larger tile are needed. More stress is rightly laid upon an even, smooth bottom than upon a very great fall, as a tile below level will fill up to the level with silt, though a good current may be passing through. There are not many farms where it is necessary to put in drains on the dead-level, however, and, with a good fall and even grade, smaller tile will answer the purpose. The Ontario Agricultural College staff survey fields for draining and give all needful instructions, anywhere in Ontario, without cost, except railway fare, at a cent a mile, and board.

Silt basins are recommended by some, but do not seem to be used except by the few. There is no doubt that, where drains are very long and level, they would serve a good purpose.

Ordinary spade and shovel are necessary implements for almost any kind of digging, but a ditching spade and scoop for the bottom work increase the efficiency of the laborer very much. In the past, ditching machines do not seem to have given much satisfaction, though they have been tried by several. However, a traction ditcher has been now introduced which seems to be proving a success. An ordinary subsoil plow or a homemade article made from an old plow has been used by some drainers, who speak highly of it.

The time to drain is whenever one has a few spare days. It would pay many a farmer to hire a