

Muck and its Constituents and its Treatment.

EDITOR CANADA FARMER:—Observing the correspondence about muck in your columns, I offer the following thereupon. Although aquatic plants—the decaying remains of which mainly constitute marsh muck—are deficient in potash, phosphates, nitrogenous compounds—the necessary constituents of cultivated crops—yet we must bear in mind that in muck we have the excreta and “mortal remains” of aquatic birds, toads, frogs, lizards, fish, shells, infusoria. The chemical resultants of the decay of their animal tissues, of course are valuable as plant food.

The first process in utilizing muck, is to throw it on a firm place to dry, as carting the wet stuff is a great waste. After drying a week or two, it should be carted to some dry situation, laid in heaps, not more than 18 inches in depth, for at least one season, during which period it should be liberally treated to plaster and turned several times.

Muck may also be mixed with barnyard manure and treated in the ordinary way.

Its most marked effects are obtained on very heavy clay, or very light sandy soil.

When well dried and pulverized, its absorptive power makes it valuable as bedding for domestic animals, especially horses and cows, keeping the stall floors dry and sweet.

Muck from the bottom of an old mill pond is, perhaps, more valuable than marsh muck, as in addition to its aquatic animal matters, it contains valuable washings from rich woods and fields, carried down by spring freshets and heavy rains. W. BROMIE.

The Lesson of Post-holes.

I have been favored with a good opportunity for observing the water-line in the soil. Last fall a dozen post-holes were dug on an elevated piece of land. The surface was level, with some slight variations, and the soil (a yellow drift with considerable clay) was considered to be dry, growing tolerably well grain and grass, and, the past season, an excellent corn crop on a field of similar soil adjoining. These post-holes remained open during the entire season, about two-thirds having water, from an inch or two to four and five inches. The rest had dry bottom from spring to fall, there having been no heavy rains during the season, and the slight seepage amounting to nothing. At one end—the lower—where the most water was expected to be, was the least, only one among the first four holes having a little. I accounted for this that here was the most clay, the lower part having received the washings of the upper, making the soil better, also darker, growing annually heavy crops of grass. With the advance of fall the water lessened, and notwithstanding a few rains—one heavy—the post-holes, all but one at the highest point, are without water to-day, October 21.

I learn from this that land apparently dry may be too wet, even in a comparatively dry season like that just past. The post-hole has long been a test with some farmers and its usefulness is here confirmed. Grass will flourish on such a soil; so will grain, and even corn, in a season like the present. There were also excellent potatoes raised, as well as oats and clover. The potatoes, however, were disposed to rot. But as will be seen at a glance, in a wet season the crops must suffer as they do, the frost in some parts and in some seasons heaving the clover and the winter grain. It is the same in a drouth; the surface becomes hard and cracked, and the water below keeps it cold, and but little of it seems to be attracted to the surface. The reason is that it is too compact; the soil is not mellow enough to afford means for capillary action. But tap it by drainage, and new conditions will at once obtain. The land will be warmed by the rain-water passing through, leaving its fertility brought from the atmosphere, and a chemical action supervene. The frost will now act with success, benefiting the land mechanically, leaving it dry in spring, and ten to fourteen days earlier. This is my experience with land similar to that described. And there is an ill of such land; most of our clay soil is like it good for grass under favorable circumstances of tillage, enrichment, and the season, but not generally to be relied on, and under the most favorable conditions, less productive than when drained.—Cor. N. Y. Tribune.

Lime as a Fertilizer.

Noticing in your paper some interesting articles on lime, and judging that a farther consideration of the subject might be of interest to your readers, I submit the following condensed facts on the fertilizing quality of lime

Lime has little or no effect upon soil destitute of organic matter. Its apparent effect is inconsiderable during the

first year, compared with that which it produces in the second and third years. Its effect is most sensible when kept near the surface, and gradually decreases as it sinks into the subsoil. Under the influence of lime the organic matter of the soil disappears more rapidly than it otherwise would; and as the organic matter becomes less, fresh additions of lime produce a less sensible effect. Many crops carry away lime from the soil. Those most prominent are wheat, barley, oats, turnips, potatoes and red clover. Turnips grown on well limed land are better feeding for cattle and sheep than those grown elsewhere.

The most remarkable visible alterations produced upon pastures by lime are the greater firmness, sweetness, closeness, and nutritive character of the grasses. Its effects on arable land are improvement in the texture and mellowness of the soil, or, if stiff clay, the more productive crops, then better quality, and the earlier period at which they ripen, compared with crops on lands containing no lime. On old pastures, a frequent thin dressing is preferable, while on laying lands down to grass a heavy dressing is indispensable. If the soil be wet, more lime is needed to produce the same effect than on dry land.

The action of lime upon the soil and plants is manifold. It feeds the plants directly. It enters into composition and forms compounds with some constituents of the soil, and thus affords food for the plants. It takes the sourness from the soil by uniting with its acids. It decomposes substances hurtful to the plant, thus destroying them. During the decay of organic matter in the soil, it aids and promotes the slow natural production of nitric acid. With this acid it combines and forms nitrate of lime—a substance very soluble in water—entering rapidly into the roots of the plants. The success of frequent fallowing is partly owing to the facilities which it gives for the formation of this and other natural nitrates.—Cor. Country Gentleman.

KILLING QUACK.—A correspondent of the *Country Gentleman* has closely watched the growth and formation of quack, and his conclusion about deep and shallow ploughing, is that when ploughed deep it partially kills it, and if repeated often enough, will destroy it, but it will take much more ploughing; that when ploughed deeply, a single root will grow to the surface, and then branch out into a large number of roots, again quickly covering the ground; that shallow ploughing keeps the grass near the surface, and the whole mass constantly agitated, leaving no roots to grow at leisure deeply down. Shallow ploughing keeps it more compact and more easily under control, and more exposed to the elements, with much less root hold.

QUICK SOILS.—Very sandy and gravel soils do not hold manure for a succession of crops. They admit of free circulation of warm air through them, which hastens decomposition of organic material, and will mature plant growth in less time than more retentive soils. Hence they are called quick soils. They are better adapted to tap-rooted grain and grass than to the use of fibrous roots growing near the surface. Peas, beans and rye are appropriate. Red clover with a liberal application of gypsum, often does well. Top dressing with straw or other undecomposed manures answers well on such soils, because it wards off the direct influence of the sun to dry the surface, holds moisture, and renders its substance slowly, and is more lasting than decomposed manure. The finer soils, the more retentive and the longer it will show an application of manure.

SMUT IN WHEAT.—This is no more contagious than the mould sometimes found in cheese, as both are minute parasitic plants, the spores of neither of which ever take root in substances un congenial to their growth and development. Anything which tends to weaken the vitality, or in other words make wheat sickly, such as wet soils, long rains, severe drouths, or extremes of any kind, invites the attacks of the smut plant. Soaking the grain in the urine of animals, was practised by the ancient Romans as a preventive of smut and bluestone or brine has been employed for the same purpose for many centuries, but these substances have no more direct effect upon the disease than to assist the grain to make a healthy and vigorous growth and thereby, to become able to resist the attacks of the smut spores. If you will only manage to keep your wheat healthy, smut or similar disease cannot injure it. In un congenial climates this cannot be done; hence losses in spite of the best efforts of the husbandman.

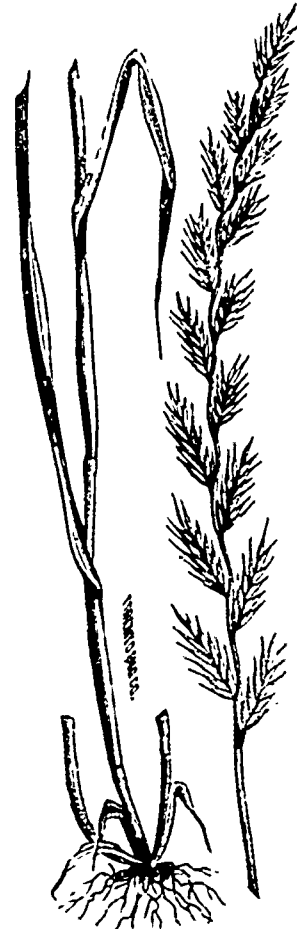
HARVESTING OATS.—I have found out accidentally that the best way to save oats is to cut them while the sap is in the straw. (grain in the dough or some in milk) bind sheck (about twelve bundles) and cap by breaking the bundles and laying on top. The past season thoroughly tested it, and saved a few capped as above without mould, when nearly every bundle was mouldy when capped by tying two bundles together and setting butt up, which leads the water through the sheck. The reason I assign is, the oats being bound green, the shrinkage of the straw leaves the band loose, so that if they get wet, they have a chance to dry. If bound ripe, or after being stinned a day, as is the practice generally, I believe, and they get wet, the straw swells and makes the band so tight that mould is the inevitable consequence, unless opened and spread. I have noticed a few bundles at different times cut when so green that in curing, in the centre of the sheck they, became nearly as white as this paper.—Cor. Country Gentleman.

Grasses and Forage Plants.

Italian Rye Grass—*Lolium Italicum*.

The Italian Rye-Grass, *Lolium Italicum*, represented on this page, is a variety of the *Lolium perenne* illustrated in our last issue. We are not aware that it has been grown in Canada, but it has been grown experimentally in the United States, and has been found to succeed well. In connection, we refer our readers to another article on this page.

Italian Rye-Grass differs from Perennial Rye-Grass in having its spikelets more conspicuously bearded, and in the flowers being terminated by long, slender awns. It is a native of the plains of Lombardy, a district which is frequently inundated and where one of the chief characteristics of the plant, viz., the readiness with which it responds to irrigation, is called into play. In England, it



is grown very extensively, especially on the farms which are irrigated by the sewage of cities. It is of this grass that the great weights are cut from the sewage farms. Our recollection is that twenty-one tons in a year have been cut from an acre on the Warwick sewage farm.

Though succeeding best under irrigation, Italian Rye-grass stands drouth well. Cattle eat it greedily. It is sown, after the field is harrowed, at the rate of about eighteen pounds to the acre. It is more hardy than the Perennial Rye-grass, as it will stand winters in the north of Europe, where sometimes the latter is killed. It loses less in drying than any grass. A moist, rich, tenacious soil is best suited to it. It is one of the best of soiling crops. Weight for weight fresh cut Timothy greatly excels fresh cut Italian Rye-grass in nutritive qualities. In the dried state the difference is not so marked, but it is still, weight for weight, in favor of the Timothy.

MOSS IN LAWNS.—The best and most economical method to get rid of moss in lawns is to rake whenever the ground is bare in winter. Even when the ground is frozen the moss is readily torn up. After the moss is removed, give a top-dressing of finely-rotted barnyard manure, and early in spring sow on a liberal quantity of blue grass seed and a little white clover. Then roll with a heavy roller and not mow in spring until the young grass has become well established.