

Exhaustion of Manure.

the circumstances under which we are placed, we should take into account all these. A wet season or climate would help to exhaust manures more rapid than a dry season or a dry climate, as all the growth of the crop would be stimulated, as all its power of assimilation would be encouraged. It is held here, where lime is used regularly, that it is all exhausted in five years. Our own experience would go to support this. But this rapid exhaustion may be due to our higher summer temperature, beneath which decomposition of organic matter in the soil proceeds very rapidly. It is therefore very probable that our peculiar climate, with its intense summer heat, would tend to exhaust all kinds of manures with equal, if not greater rapidity, than the cooler but moister English climate, and that the ratios of exhaustion there agreed upon might be fairly adopted for our guidance.—*N. Y. Times.*

Timothy Injurious to Land.

Timothy Injurious to Soil.

The roots of timothy grass are fine and near the surface, often in the second year forming a perfect mat. Yet such a sod is not equal to a much lighter growth of clover roots to fertilize the soil by plowing under, and if the timothy is mowed a few years it is constantly and surely robbing the soil of its fertility. Only on lands which are naturally irrigated by the wash of higher soils, or when manure in some form is plenty, can timothy grass be profitably grown for years in succession. It is fully as exhaustive as wheat, and more so than any other grain excepting oats. If the hay is sold from the farm it is hard to maintain the fertility of the soil, and when fed at home it is not nearly so beneficial and profitable as clover. The reason of this impoverishing effect of timothy is easily told: It exhausts the soil without ameliorating it. Its net work of roots take only the strength of the surface soil; but they do that thoroughly, while all beneath is left hard and not permeable to air and light. In such conditions soils gain nothing if they do not absolutely tend to sterility. In two or three years the surface is exhausted, and unless annually overflown or artificially manured the timothy begins to die out. If it is then plowed and seeded with timothy again, this exhausted soil is turned to the bottom of the furrow, and the inert soil brought up to have the process repeated. A few years of such treatment will take the virtue out of any land, provided timothy is grown alone.

The difference in this between timothy and clover is remarkable. Clover roots penetrate the subsoil; they not only draw up fertility from below, but by making the soil permeable to air, heat and moisture, they create new elements of fertility throughout the soil. Finally in their decay they leave a large mass of nitrogenous plant food from the surface to the sub-soil, which roots of wheat and corn will follow downwards, thus enabling those crops on clover sod to withstand drouth better. As I know they will do from frequent observation.

Some, but not all these advantages of clover, are found in so ugly a customer as the Canada thistle. Its roots also strike deep, bringing up fertility from the sub-soil, also loosening and ameliorating it. A great many poor farmers are more indebted to the Canada thistle than they will ever believe for lessening the injurious effects of timothy and other crops whose roots are all near the surface. One of your correspondents some months since criticised my advice to destroy Canada thistles, saying they were the poor man's clover, and the more he could get of them the better he should like it. The name, poor man's clover, does not exactly describe them. Call thistles the poor farmer's clover and it describes them exactly. A poor man cannot afford such costly clover as this, but a poor farmer is always trying expensive experiments, which is indeed one reason why he is a poor farmer. The grand difficulty with Canada thistles as a substitute for clover is that their roots will not die easily, while those of clover will. Clover is one of the best forage plants, while thistles are worthless for that purpose. It is said that asses will eat thistles. Taken surely let the asses grow them.

On land annually overflowed, timothy can be profitably grown, especially if near a good market. Some portions of the Genesee flats are wisely used for this purpose, and timothy hay always sells higher than any other in Rochester. Livestock-keepers and owners of fancy horses always buy timothy in preference to any other hay; and for a pure timothy, such as is sometimes grown the first year after sowing, fancy prices, higher per pound than any other, are sometimes obtained. This fact has

probably stimulated many farmers to grow timothy when their lands were not at all adapted to it, and now timothy sells in Rochester at only \$14 to \$16 per ton—a price at which no one can profitably grow it except on overflow lands. The sediment brought down in the overflow is deposited on the surface next to the mat of timothy roots, which also serve to keep the soil from washing away. With an animal coating of excellent manure, spread evenly and costing nothing, a farmer on the flats can grow timothy forever and with profit. Farmers who have to buy, make and haul manure, cannot.

Though timothy should seldom if ever be sown exclusively, I think it usually better to sow a little with other grass seed. Variety of food is important for stock, both in pasture and hay; and a little timothy with clover improves its quality especially if cut early, as it should be. It is a mistake when timothy and clover are growing together to wait for the latter grass to ripen, as it makes the clover nearly worthless. It is also much more difficult to cure green clover alone than if mixed with other grass, and this in haying-time is an important item. Besides, there may be places in the field not adapted to clover, and it is better for pasture or meadow to have these spots filled with weeds. But a very little timothy seed will suffice for the shrewdest and most practical farmers. One bushel of timothy to five of clover is a good proportion on upland—giving quite enough timothy, as its seeds are smaller than clover.

However little profit in growing, there is no grass that pays better to sell than timothy. It is less nutritious than clover, and though exhausting the soil more, has in itself less of the elements of plant food than clover. In fact I think lively stable keepers like timothy because it is less palatable than clover. Hay is the most expensive horse feed, and also the most bulky. Horses expected to travel fast do not want their stomachs disturbed with hay, especially when it is the most costly form in which nutrition can be given. The chief object is to give a horse some kind of hay that he will not eat much of, and make up the balance with more stimulating grain, and timothy is chosen, not as the best, but because it is one of the poorest of the grasses. On clover, horses, if allowed to eat at will, might feel themselves too full for fast travelling. On timothy and grain the horse will never be full, but always nervous, excited, and ready to make his mile in three minutes or less. This constant stimulation of the horse by concentrated food is not what farmers want. It shortens life, and incapacitates for steady hard work. By feeding clover moderately, without much grain, when not working, and mixing occasionally other grasses for a change of feed, farmers can keep their horses in a better condition for work, than by feeding less nutritious hay, and making up the deficiency by corn and oats.

But this opens up another subject. I have merely hinted at the proper mode of feeding horses, and unless I explain more fully, I greatly fear some of your correspondents will disagree with me. But this must be reserved for another time.—*W. J. F. in Country Gentleman.*

Manurial Value of Wood Ashes.

New land is proverbially good, not that it has more largely the elements of fertility in general, as the trees take care that this is not the case, using up what nutriment is annually furnished by the leaves; but it owes its value to the potash left after the land is burned over, as is the case in breaking up the prairie. The principle will be clearly seen by giving it a single thought. The ashes furnish the mineral, or inorganic part, the atmosphere the rest, the soil containing sufficient other material, (humus, clay, sand, &c.) for a basis. But science or philosophy aside, it has been found that ashes are a superior benefit. Around an old heap of spent ashes there will always be a circle of rank growth, usually of grass and weeds of bluish color. This is found to be the case whatever the soil may be. In the strongest garden soil I have noticed it, and also in very poor land. Unleached ashes have a still more marked effect, showing the importance of potash as manure. The tests that have been made, so far as I am cognizant, always show that the growth, especially of grass, corresponds to the amount of ashes applied; and the amount may be large—seven y to eighty bushels per acre, and even more. The benefit will show at once, but not all of it, as the ashes do not give up at once all they contain, being dissolved slowly, so as to supply potash for several years. This is my experience, and, I believe, the uniform experience of every

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is that they are too
on meadows, a few
are used. As but a
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But there are not and a large proportion of the wood is committed to go to waste with leached ashes, unleached, and equal every particle of our the stovepipes and special uses—to make trees, and to use lawns. Each farm wood, makes enough extent of land on uncultivated, they make the effect with tory. I have used most gratifying results to the mulch, have moist as well as to particularly excellent the growth of the fruit also, and I have the use of ashes improved. I know enough drainage this. Particularly are large eighty bushels per whether the ashes hardwood ashes be vines, fruit trees, yearly or biennial Of course a less application.—*Cor. C.*

Sowing Grass

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On moderately no crop of grain grass seed of much better than poor and likely small quantity of grass the benefit shade, even in dry come large enough benefited by the other plants. The overlooked is that with the young and moisture from ally benefit the

There is probably some where a field of grass. When the grass is cut and superior to the objectionable, we per acre, on account of the thick bottom grass, young grass, which does not grow thick and barley sown for a full crop as well as rye in favor of rye is either oats or barley is so much hummer often does, all killed. As spring in four or five find it profitable to raise spring in is to be stocked.

For farmers little or no value but many need grass is cut with a tant that the small knolls, hollows. Even if it be not to be smoothed to the ground.