

FARM AND FIELD.

EXHAUSTED LANDS.

So long as farmers have fields that need restoring they will be interested in the above topic. Dr. Kedyil, professor of chemistry in the Michigan Agricultural College, in a recent lecture on restoring lost fertility, said: I believe the cheapest and easiest way to bring up a run-down farm—one that any and every man can use—is by green manuring. Suppose your farm is too poor for clover, and grass makes only a feeble growth; put on it a manurial crop that will grow, such as rye or Japan clover, turn this under with your plough, and then you can raise something better; keep feeding your soil with everything your shovel and your team can command—ashes, leached ashes if you can get them by drawing them within five miles—muck, marl, anything that will bring a green mantle over your fields. Soon you can set the clover or pea pump to work pumping up to the surface the inexhaustible resources of your subsoil. If an animal dies, don't stop to bewail your luck and exclaim, "Everything goes to the dogs on my farm!" Don't send it to the dogs at all, but compost it with muck, or even soil, and thus secure a most valuable manure. Pick up all the bones you can find, put them under cover and mix with them two or three times their bulk of ashes from your kitchen; moisten them with enough water so that the potash may act on the gelatine of the bones, stir them over once a week, and in a month or two you will find the bones so tender that you can cut and crush them with a blow of your shovel; beat the whole into a powdery mass, and you will have a manure better than the average of the superphosphates which you feel too poor to buy. Give a handful of this to each hill of corn, and see how it will wave its banner of green and pour into your basket the golden ears of corn.

GETTING LAND IN GOOD ORDER.

The great value of clover to land has been so often shown by practice, that it is known to everyone. Clover roots deeply, and withstanding drouth tolerably well, is very valuable as forage. But above all this is its use in bringing poor land into good condition when ploughed under. Many and many an acre of land thought to be good for nothing at one time has been made fertile by the process. We can readily believe one who says "he has corn that is a foot taller than he can reach with his cane, in which a horse would be hid at two rods distance, on land where five years ago his son said the corn would not pay for cultivation. Cause—a good clover and timothy sod turned under last fall. We can get this sod on any of our prairie soil. Of course a little manure will help it along, and when we have a good sod, who does not know we can raise anything we choose?" We look on clover as of great use to the farmer. With some planning in its use, a farm can be worked with much less manure than without its use.

LIME IN AGRICULTURE.

All writers on agricultural subjects seem to agree that the use of lime on clayey soil is of great benefit, crops thus treated showing the advantage of its mixture with the soil. A correspondent of the *Farmer's Review* writes from France that the European farmers coincide with our agriculturists in this respect, and concludes as follows: "The extending use of lime is excellent for clay soils. Argil augments in volume when moist—diminishes when dry. Carbonate of lime possesses neither of these properties; applied then to cold, clay soil, it enables the air

and heat to penetrate more readily, thus making the land friable. On light soils the action of lime is weak, and on those very light the use of lime is misplaced. But as the action of lime rapidly transforms the nutritive capital of the land, its success cannot be permanent unless rationally supplemented by direct fertilizers, as farm-yard manure, etc. Hence the adage, 'Lime enriches the father, but ruins the children.' If the soil has an excess of acids, lime 'sweetens' by neutralizing them; 'all cultivated soils are slightly acid, such being necessary for vegetation. Too much, however, acts directly on plants, and indirectly by the formation of soluble and noxious salts of lime.'

HOW TO DISTRIBUTE MANURE.

Farmers are often at a loss to know how to distribute the manure on a field properly. An example may help them. For instance, suppose a field of $5\frac{1}{2}$ acres, on which 82 loads of manure are to be drawn. Dividing 82 by $5\frac{1}{2}$ gives 15 loads per acre. By making 4 heaps of each load and placing the heaps 9 yards apart, the manure will be evenly distributed. Or, if he makes 9 heaps of each load, placing them 6 yards apart, the result will be the same. A cubic foot of half rotten manure weighs about 56 lbs.; coarse, dry manure, about 48 lbs. A load of manure is about 86 cubic feet, hence a load of half rotten manure will weigh a little over a ton (2,016 lbs.); if coarse and dry, it will weigh 1,728 lbs. There are 49,560 square feet in an acre; if you multiply this by the number of pounds you want to spend on each square foot, and divide the product by 2,016, the quotient will give the number of the loads required of half rotten manure.

RE-SEEDING WORN-OUT PASTURES.

The advice of that venerable agricultural sage, the Hon. George Geddes, was lately asked in regard to the treatment of "a field of thin, dark, mucky soil, formerly seeded with timothy. The present crop consists of Canada thistles, timothy, June grass and white clover—mostly thistles." This description will apply to a great many Canadian fields. It was desirable to keep the land in pasture, and the question was how to improve it without ploughing it up. Mr. Geddes advised first to cut the thistles and all the clumps of grass close to the ground this fall. A mowing machine will do this work better than the scythe. The object of this preliminary operation is to fit the ground for harrowing next spring. As soon as the land is fit to work in the spring, it is to be thoroughly harrowed, then sown with grass seed liberally on the raw surface. Cover the grass seed lightly. Just how much the surface is to be harrowed must depend on circumstances. If cattle can be kept off for a time, more harrowing may be done than if it is to be at once pastured. The best plan would be to keep them off until midsummer, and cut a crop of hay. In this case the old sod may be a good deal cut up with the harrow. It will stand a great amount of ripping and tearing, without killing the grass roots already in the ground. In regard to the kind of seeds to be sown, Mr. Geddes recommends a liberal proportion of red clover seed, say six quarts to the acre. The object of this is to eradicate the thistles. As often urged in this department of the *Witness*, there is no thistle-killer to equal red clover sown thickly. It beats even the thistle in rapidity of growth, and, after one mowing, will completely smother them down. How strange it is that farmers are so slow to learn, believe and practise this. They go on toiling at their summer fallows, losing their labour and the use of the land, when, if they would only put plenty

of red clover into the ground, they might destroy the thistles, and have a crop into the bargain. Nor is this all. Clover, when done as a crop, becomes a most valuable manure. Mr. Geddes also recommends a bushel of orchard grass to be sown with the clover. Orchard grass is slow in taking possession of the ground. But, as the clover dies out, the orchard grass will spread itself and take the place of the clover. For a permanent pasture, a little Kentucky blue grass and Timothy should be sown with the rest. A bushel of the blue grass and four quarts of Timothy to the acre will not be too much. Gypsum or plaster of Paris is not an advisable fertilizer for land such as described, but on upland it may be sown at the rate of a bushel per acre, and even this small quantity will greatly help the clover. There are thousands of acres of old pasture, yielding but little feed, that might be renovated in this way at far less cost of money and labour than the usual methods of procedure. Even harrowing an old pasture for the purpose of getting some clover into it will do some good, because the clover during its lifetime will store considerable fertilizing material at the surface, the benefit of which will continue when the clover has disappeared. In this country grass lands are broken up too often. With judicious management, we may have permanent grass lands just as well as the British farmer. The trouble is that we expect grass land to get along without any attention. It should be top-dressed now and then, occasionally, harrowed and re-seeded. Such attentions will be well repaid by an increased yield of pasture and hay.—*Lindenbank, in Montreal Witness.*

DORMANT SEEDS.

Many people cannot be brought to believe that the seeds of chess will remain for a long time dormant in the soil, and then grow when the conditions are favourable. An Iowa correspondent of the *American Naturalist* relates a curious incident of clover seed lying dormant on the ground two winters and one summer, and then "germinating by millions" the following spring. If this may take place in so small and delicate a seed as that of the clover, which one would think might soon lose its vitality, is it not far more likely to happen with a stronger and hardier seed like that of chess? The dormancy of seeds is one of the curiosities and mysteries of nature.

FERTILIZING MATERIAL.

Nearly every farmer goes to the nearest village to trade, visit a mechanic, or obtain his letters and papers, at least once a week. He often takes a load to market, but he rarely brings one home. He can, with very little trouble, haul a load of material that may be obtained for nothing, and which will be of great benefit to his land. Most village people make no use of the ashes produced in their stoves, or of the bones taken from the meat they consume. Scarcely any brewer has any use for the hops that have been boiled in his vats, and the blacksmith hardly ever saves the clippings he takes from the feet of horses. All these materials make excellent manure. A barrel of shavings cut from the hoofs of horses contains more ammonia than is contained in a load of stable manure. Applied to land without preparation, they might give no immediate results, but they would become decomposed in time, and crops of all kinds would derive benefit from them. They may be so treated that they would produce immediate results. By covering them with fresh horse manure they will decompose very rapidly. They may also be leached in a barrel, and the water that covered them drawn