

The above item from an American paper expresses forcibly the opinions we have heard given utterance to by some Canadian farmers on the same subject. It is felt as a hardship, by small farmers especially, who have to employ the large threshers and as many men and horses as the farmer who may have ten times as much, though the time occupied be less. In some of the maritime provinces they make a small thresher, requiring less power, and sold at a low price. We see in a report of the exhibition of the Royal Agricultural Society, held at Dublin, mention of modes of some small threshing machines which had obtained silver medals from the Highland Agricultural Society. A writer in the *Orilla Packet* says of them—

"They are strong, portable, durable and efficient, and can be driven either by steam, oxen or horses, or one horse or pony. There are several numbers and prices, of which the highest, No. 5, with steam engine and all complete, mounted on wheels, and capable of fifty bushels per hour, costs \$430. From this the capacity and prices decrease until a hand machine, fit to thresh ten bushels an hour, may be had for \$37.

Hay Clover Helps the Soil.

A few days ago a neighboring farmer, who is more than usually thoughtful and successful, called on me as I was spreading manure for corn. He wanted to ask a question and began at once.

"Is timothy poison to the soil?" I asked him how he came to think of such an idea. "Well," says he, "I have noticed for years that an old timothy sod will not produce so good corn or so good wheat, nor so good a crop of any kind as a clover ley. The soil turns up cold and heavy, and the corn does not get a fair start until July or August, when the cultivator will quicken and enliven it somewhat. On a clover ley the soil is light and mellow from the first, and corn starts as soon as planted, and grows right along. I have thought that may be the timothy poisoned the soil for other crops, and had about concluded never to sow any more, but thought I would get your idea on the subject."

There was plenty of both timothy and clover under our feet, and, pulling up a tuft of timothy, I found only a bulb about the size of a bean, and from that a few fine roots about an inch long. The ground was soft, and I got most of the root. Then taking hold of a clover plant of average size, I pulled at that, and slowly drew out fully sixteen inches length of vigorous tap-root, full ten times the weight of the timothy, and, unlike that, penetrating deeply into the subsoil, and probably considerably more was broken off and left in the ground. Holding the two plants, I said that they showed for themselves the defects of timothy and the advantages of clover for the soil.

No. Timothy does not poison the land. This little round bulb, lying within half an inch of the surface, does not impart any deleterious influence to the soil. It simply does not benefit it. A timothy sod furnishes only a trifling amount of plant food as compared with clover. Observe a farther difference. The long, deep root of clover strikes down and mellows the subsoil, bringing up the mineral elements of fertility in which the subsoil is often rich. It lets in light and air, making the fertility of the subsoil available. Besides, when the plow cuts this root off, it will only turn over about four and a half to five inches of the clover root. The much longer part will be left to decay in the subsoil, forming a vegetable mould which the roots of corn and wheat will follow and feed upon. These decayed roots open a drain for carrying down surplus water from the surface and storing it for need in time of drouth. They also open the subsoil to air, and thus make its fertility available. The timothy root does and can do none of these things. Timothy is a narrow-leaved plant, and so derives most of its growth from the soil, and its few fibrous roots exhaust the soil to the depth of 1 or 1½ inches from the surface. In a field of pure timothy the soil beneath this mat of fibrous roots is cold and lifeless. Water stagnates in it in wet weather, and the light and air cannot penetrate it at any time. Just as soon as the surface soil is exhausted, which will be in from one to three years, timothy will run out, and mosses and weeds, or June grass, will take its place. By plowing up you can secure a new surface and grow timothy on it until that also is exhausted; but in time this exhaustion of successive layers of earth will include the whole and leave the soil barren. The crop never does and never can benefit the soil as growing clover unquestionably does.

"Would you then sow no timothy?" continued my neighbor. On the contrary, I like to have a

little mixed with the clover. It is not that timothy injures land that makes it objectionable; it merely does not help it. In sowing plenty of clover, there will be occasional spots where clover will fail. In dry, hot seasons there may be pretty large spots. On these I had rather have some timothy than to leave the soil barren; in fact, where the soil is ever so poor, it will rarely be entirely bare. I much prefer a sprinkling of timothy than to have it grown up to weeds; or, for fields that are to be tilled, with June grass. Besides, where fields are seeded with timothy and clover, it is often very convenient, in case the seeding fails, to save a field two, three or more years, which cannot be done with clover alone. I don't like to have wheat two years in succession, but it is better to have wheat the second year than to have the soil bare. There is nearly always a good clover catch with wheat following another wheat crop, and this is a great point to be considered.

"Does not such cropping exhaust the soil?"

Not if you seed with clover as often as possible. A farmer who sows clover seed plentifully and uses plaster liberally, need not fear to grow as large crops as he can. Large crops enable him to make and use more manure, and thus increase the fertility of the soil. In the clover crop the large, broad leaf takes most of its growth from the atmosphere, and the root is mainly nourished by the subsoil. Thus, where clover is grown, the soil from five to six inches in depth is constantly tending to fertility, and where manure is carefully saved and used, the farmer who grows clover has observed the first requisite to success in his business.—*W. J. F., in Country Gentleman,*

Raising Clover Seed.

In regard to raising clover seed, this article from the *Register of Rural Affairs* is seasonable and sensible:—

The first requisite is to have a good field of clover, sown on clean land and clear of weeds. This will make all the difference between clean and foul seed. Some weeds are comparatively harmless, while others may take years of work to eradicate. The next year after seeding the field to clover, let it be cut down closely about the time of its first blossoming, which at the North is about the middle of June. It may be cut for hay, or it may be pastured closely. The first mode is rather the most reliable. A second growth will spring up and bear an abundant and even crop of blossoms, which will ripen seed early in Autumn. The proper season for cutting is indicated when most of the heads have become brown. There are different modes used for cutting. One is to cut the crop with a mowing machine, raking it into quite small cocks, the drying being assisted by occasionally turning them over, as examination may indicate. Another and more systematic way is to take a combined mowing and reaping machine, put on the platform, sharpen the knives well, and then with a good hand rake keep the crop on the platform until there is enough for a large bunch, when it is pushed off. At the next passing drop a bunch at the same place so as to make windrows. When partly dry, cook it and let the drying process be completed as already described. This plan obviates raking and leaves the crop in better condition. Draw it in on a dry day and thresh it at the proper time with a clover huller. When a mowing machine cannot be had, the crop may be cut slowly with a scythe. If a clover huller cannot be procured, let the hay become quite ripe, and if it has been wet, it will shell the better, and resort to the more imperfect mode of threshing and passing through the fanning mill. The threshing is of course most easily and perfectly performed in sharp, frosty weather.

Early Cut Grass Best.

The German papers publish details of a series of experiments carried on at the agricultural schools in that country for the purpose of testing the nutritive properties of grass and hay at various stages. By an elaborate series of analyses it is shown why young grass is more nutritious than mature grass. The physiological experiments show that it is more easily digestible. Thus grass 2½ inches high contains nearly 50 per cent. more of albumenoids than grass which is 6 inches high, and 10 more of "crude fat." The mature grass contains more woody fibre and less flesh-forming matter than the young grass, and, besides this, it is found that the nutritious albumenoids exist in a less soluble form in hay than in young grass. Hence the difference of nutritive value and digestibility. Autumnal hay was found to be more nutritious than summer hay.

Large or Small Seeds Experiments.

The former superintendent of the Kansas Agricultural College reports an experiment with grasses. Timothy took well, but the most promising forage plant grown on the farm was Alfalfa, or Lucerne. Seed was sown the first week in April, at the rate of 20 pounds per acre. The seeds germinated perfectly and the plants made continuous growth for three months; the top roots measured 14 inches in length.

Among the experiments reported from abroad is one to determine how much difference there was in the product of large and small seeds or grains of different plants. Beans and peas were planted in the garden, small and large seeds being placed in adjacent plots. The crop was carefully watched during growth, and repeatedly measured, and at harvest carefully weighed. The plants from the large seed were healthier and grew more rapidly than the others, and the yield from them was much greater. There were on the one set of bean vines, July 31, 3,188 pods, and on the other 2,779 pods. When the crop was harvested, Aug. 5, the weight of vines and pods from large seeds was 219 pounds; of the small seed 183 pounds. The large seed gave 162 pounds of first quality, while the small seed gave 121 pounds beans of first quality, and 25 pounds second quality. The difference in peas was greater, the large seed producing 485 pounds peas of first quality and 19 pounds second quality. This experiment shows the importance of selecting perfect seed. Any man in planting corn, or anything else, is looking to the question of profit, and the time he gives to the selection of seed, or the extra expense he incurs in securing it, will be more than balanced in the larger yield and the higher degree of excellence.

India Wheat.

Of late some noise has been made about wheat purchased in Liverpool which was grown in India. Samples of wheat from Bombay have been received in this country, and been examined by some of the best judges of the New York Produce Exchange. One of these gentlemen, whose decision was asked, says:—"The sample submitted is commercially a soft wheat, probably raised from Spanish or Hungarian seed. American soft white wheat is raised in Michigan, Indiana, and, to a certain extent, in Wisconsin; but this wheat is not as soft as the production of those states. Soft white wheat is also raised in Kentucky, and is very similar to that of the before-named states. Soft white wheat is also raised in Virginia and Missouri; but while it is of the soft variety the production of these latter states is much harder than that of the former, and in addition to starch contains a large amount of gluten, which adds largely to its value. The Bombay wheat apparently resembles closely Virginia or Mississippi wheat. To decide whether it has gluten like those wheats requires a microscopic examination of a section of a grain, or an examination by an expert of the meal from it, combined with water. Growing in a warm climate, I should deem the presence of the desirable gluten highly probable.

The Effect of Ripe Hay on the Land.

You see this field of wheat we are now passing over. Well, last year was a peculiar year and the drouth came early in the season. I cut this field twice, as I do a great many of my fields now. I cut the first crop off this field the latter part of June, just when the head had grown, and before it showed symptoms of coming into bloom. I cut it again and took off the field, not very late in the season, the second crop and it was nearly one-half heavier than the first crop. Now does it look as if it had been cut very close or very late? We noticed that the field we were on had a strong, thick sod, into which the foot sunk, and with a strong, healthy growth of young grass. It seemed as if it had been cut in ample time to give a good growth before the frost set in. Now one of the great points of my success with grass is this system of cutting early. I know my practice is different from that of most men who grow grass, but it is the result of my observation, not only of my own land, but of all the farms that I have watched for years.—*Michigan Farmer.*

The *N. Y. Tribune*, May 16, says of the crop.—Reports from the North-west give sixty-nine counties where there is a small amount of wheat in farmers' hands, thirty-seven where there is a large quantity, 50 report a larger average than last year, and seventy are smaller; sixty-eight give the condition of the crop as good, and twenty-three give it as bad.