

harrow, sow with drill, and if necessary follow with a harrow, then the roller, sowing one and one-quarter to one and one-half bushels of wheat, one and three-quarters to two bushels barley, two to two and one-half bushels of oats, two and one-quarter to three bushels of peas per acre.

We secure our seed off a different soil, from a local man who has had a good crop free from all foul seeds, and have it properly cleaned with a modern fanning mill.

We sow a mixture of two bushels of oats and one of peas per acre for soiling and hay only. Some of our neighbors sow rape with oats with apparent success.

#### Allow No Foul Seeds to Ripen in Grain Field.

BY J. FRED DAVIDSON, PETERBORO CO., ONT.

I have been endeavoring of late years to shorten the rotation of cropping as much as possible, or, in other words, to seed down as often as circumstances will permit, and thereby get as much vegetable matter as possible into the soil. The breaking of sod and the time for doing it is regulated by the crop that is intended to follow. For peas, generally plow late, when it is left loose and friable until seed time the following spring; and this is a condition favorable to peas—a loose, open, warm seed-bed. If oats or barley are to follow sod, it is plowed early and worked on top, but never turned up. By means of top working in late summer and autumn, a firmer seed-bed is gained and a decomposition of the sod begun on our loamy land. We do not ridge up to frost, but on heavy land I believe it would be better. We now aim to sow wheat on pea land without bringing up the sod, but with shallow cultivation, as the pea straw roots and sod roots make excellent food for wheat. Roots and corn follow oats or barley. Where our manure is applied through the winter, the finer parts put in small heaps, or spread, and the coarser from sheep pens and calf pens is mixed along with some stronger manure from either horse stable or beef cattle stables, in piles of five or six loads together, and turned as soon as heating commences. This corn and root ground is then sown to wheat and seeded down without plowing. In spring we aim to have ground well and evenly worked, not deep, nor before it is properly dried, and all grain sown with a drill. In sowing grain with a drill the seed is deposited under the loose soil and in direct contact with the moisture from below, and the loose soil acts as a blanket over it, whereas if the grain is scattered broadcast through this loose soil some is near the surface, some deeper, and is surrounded by loose, dry soil, and in a dry time will not do nearly as well.

The varieties I propose sowing this year are: Wheat—Harrison's Bearded; oats—Siberian for higher and drier land, and Joannette for heavy or damp land where other varieties are liable to lodge; barley—the Duckbill; peas—Canadian Beauty. I just sow one bushel per acre of Harrison's Bearded, one bushel of Joannette oats, 1½ bushels Duckbill barley, and 3 bushels of Canadian Beauty peas, and 1½ bushels of Siberian oats. All seed grain is selected from best parts of field and best ripened. We allow no foul seeds to ripen, as we go through the grain in the summer, removing all such, believing this way preferable to cleaning grain in the barn.

I always sow some peas, oats and barley, mixed, for feeding, and find they do well. One gets a grand fodder and more grain. They are mixed according to the size of grains and the varieties: about 1½ bushels of oats, 1 bushel of large peas, and ½ bushel barley per acre. This makes grand feed for horses in fall, if cut on green side and run through cutting box along with some hay or straw and a little more ground grain added after damping the feed. You will get a larger yield per acre by mixing these grains than by growing them separate, both in straw and grain. I have grown some flax along with barley with good results. The trouble is the flax will ripen a little soon for most grains and shell out. Barley is about the nearest you can get to it. I sowed about two pints per acre along with barley.

#### Underdraining Tells to Good Effect.

BY ROBT. NESS, CHATEAUGUAY CO., QUE.

As a rotation the six-year system is followed; that is, two years crop, two hay, and two grass. Spring wheat is rarely sown here now; oats is the predominating crop, the Banner oats being the favorite. Barley is little sown now, except in small quantities. The common white field pea is mostly sown. We plow all in the fall, and in the spring as soon as the land is dry, and this is where properly drained land tells—the work can be done some days earlier. All kinds require a good seed-bed. We use all kinds of modern implements, as cultivation can't be too thoroughly done. I am a firm believer in mixed sowing of grain. We sow oats and barley one to four, and find the barley extra. This we grind as it grows, adding sometimes a few peas. This makes good feed for all kinds of stock.

#### Rich and Well-Cultivated Soil will Not Suffer from Drought.

BY J. D. THOMPSON, MIDDLESEX CO., ONT.

Have never followed a regular system of rotation, but in a general way manure the poorest land direct from the stable, spread evenly and thick, and plant to corn and roots, chiefly the former. The next year sow barley and seed down; cut hay two or three years, then pasture or plow up again. We generally sow fall wheat on sod plowed in July and August. Sod plowed late in the fall we sometimes plant to corn. Do not sow peas to any extent on account of the bug.

Have tried selected Canadian Thorpe and Mandscheuri, but find the ordinary six-rowed barley to be the best yet. Will sow Banner, Siberian and Black Beauty oats.

As to quantities of seed: barley, 2 bush. per acre; oats, 2 to 2½; timothy, 4 lbs.; red clover, 8 lbs.; Alsike, 2 lbs.; and white Dutch, 1 lb. Have sown half an acre of alfalfa to cut for calves, bulls, etc. Sow timothy with fall wheat about two weeks after wheat is up, and the latter part of March or first of April sow the clovers. When seeding down in the spring with barley, which is sown broadcast, we thoroughly pulverize the soil and roll after the barley is sown, then sow the clover and timothy and

give a stroke with diamond harrows. Sow the grass seed with small crank seeder.

We keep about 125 head of stock, including all classes, through the winter, feed and bed them well, drawing the manure each day to the field.

Keep corn and root ground clean, and run from 20 to 35 sheep on pasture. Keep the soil rich and thoroughly cultivated and the crops will not suffer much from drought.

#### Prepare for Spring Seeding.

The wise farmer will look ahead, make his calculations, lay his plans, and make preparation for the spring seeding before the time is upon him when he ought to begin the seeding operations. He should have his mind made up as to what crop he will sow on each field, and have a sufficient supply of good seed provided for each. The yield of the coming crop will depend very much upon the variety of seed sown and the quality of the seed. Special pains should be taken in cleaning the seed to get out of it all weed seeds and all imperfect seeds of the grain, so that only sound seed of good size and well developed shall be sown. If the varieties that have been sown in former years have proved satisfactory it may not be necessary to seek a change of seed, as there is always some risk in making a change to a variety you have not tried on your farm, and changes had better be made on a limited scale for the first year till it is seen how they are adapted to your soil. If the seed or the variety you have had has not been satisfactory and a change is determined on, care should be exercised in making the change to see that a variety is introduced which has proved very successful on soil somewhat similar to your own, or a variety that has been tried and found successful in the hands of careful men in many different sections of the country, and has been grown on a farm free from bad weeds. The seed should be cleaned, measured and set aside ready to be bagged and taken to the field as early as the land is in fit condition for cultivation and seeding. We are fully persuaded that it will pay well to treat all seed spring wheat, oats, and barley with a solution of bluestone for the destruction of the fungus of smut which is increasing rapidly in most districts and proving a menace to the production of good crops. This treatment is largely practiced in Manitoba and the Northwest, and the best farmers will not think of neglecting it. It seems hardly necessary to add that the implements to be used should be looked over in good time and put in proper condition for doing good work, which can only be done by the harrows and cultivator teeth being sharp. The horses should also be prepared for their work by proper feeding and exercise, their collars being put in good repair and well fitted, and the harness, whiffletrees, clevises, etc., should all be looked over and made ready for effective use when required. These precautions being observed, the up-to-date farmer will be ready to push on the seeding at the earliest date when the land is fit to work, knowing from experience that as a rule the earliest sowing is the surest for a good crop.

#### Farm Fencing.

As a country grows older and the timber becomes scarce, the fencing problem becomes more and more a serious matter. The old plan of getting out cedar, basswood, ash or elm rails can no longer be resorted to in most Canadian sections, which after all is not a matter for serious regret, as there is perhaps no greater harbor for weeds and rubbish than the zigzag rail fence. Besides this, it takes up double the land it should, and unless it has been exceedingly well constructed and firmly staked at the corners it frequently gives way to the ever-increasing wind storms due to the removal of shelter. The snake fence has also the objection of yielding readily to the crafty old mare that leads the other horses into the grain fields. While the old fence was the best in its day, we need not mourn its departure, as its place is being taken by more satisfactory structures.

While metal fences are gradually replacing former wooden ones, invention has given us numerous means of utilizing the remnants of rail fences by a more economic use of the remaining sound rails. We would like to hear from readers who feel that they have a satisfactory plan of converting failing zigzag fences into straight ones by the use of posts, stakes, wire or other means. We believe a live discussion on this subject will be exceedingly helpful to one and all, providing the writers give details as to methods of construction and cost of same.

Where rail fencing has passed away and new material has to be purchased, wire fencing (smooth or barbed) of some sort is resorted to. A discussion touching upon their merits, cost, mode of construction, distance apart of posts, number of wires high, size of wire, best means of setting the corner or end posts, bracing, etc., would be helpful to many if clearly outlined by those who can speak from two or more years' experience. In order to open a discussion we will offer a suggestion as to the best means of setting the corner or end posts, knowing that all wire fences depend to a large extent on these terminal stays. It is needless to state that a heavy, solid post is necessary. For this at least a 4½-foot hole should be dug. This hole should be at least 4 feet square, and around the post after it is placed in the center should be built up with stone, leaving three or four inches between the post and stones. This space should be filled in with soft cement, well rammed down, so

as to be forced to some extent between the stones. We believe if the hole were filled to the surface of the ground in this way a week or ten days before putting on the wire, that a well-nigh everlasting firm corner post would be the result, and a well-constructed wire fence maintained in almost perfect condition. Another plan, and perhaps a better one, would be, instead of building in stones, get a good wagon load of clean gravel, and with it mix rock cement in the proportion of six of gravel to one of cement. These should be thoroughly mixed, moistened, and well rammed down in six-inch layers, filling the four-foot hole from the post to the edge. All cement work should be done when there is no frost. In addition to having the post made perfectly firm in the ground, unless a very large post is used it may be well to put in a stiff brace from the bottom of the second post to the top of the end one. Will readers suggest a better method of setting a corner or end post for a wire fence, and then take up the other questions?

#### Third Annual Meeting of the Nova Scotia Farmers' Association.

(Continued from page 104.)

**Farming on Business Principles.**—Mr. Hopkins, Superintendent Dairy Station at Nappan, in an address spoke strongly against the feeding of turnips to dairy cows. The tops, he said, should never be fed, nor the roots for at least one month after pulling. In his address he said: "The great question among farmers to-day is, 'How can we meet competition?' This is an age of agriculture, and in the race of competition farmers are suffering more than any other class, and those who lack knowledge, skill or industry are crowded out. When agriculture suffers other businesses feel the effects. He pointed out how easy means of transport had increased competition, and advised farmers to keep posted in agricultural matters by reading agricultural papers. Successful farming, he said, was a business, and must be conducted upon business principles. The farmer's goods were his stock—his bank account, the fertility of his farm. Who draws on his bank account must also pay in. He thought there could be no better machine upon a farm than a good dairy cow. The farm should be a manufactory where the raw materials were converted into milk, butter, cheese and eggs, thereby increasing their value and saving the fertility. Farmers should exercise skill. It required skill to cause a cow to give 6,000 pounds of milk a year instead of 2,000 pounds, or to produce butter that would sell for 20 cents instead of 12 cents. One ton of butter worth \$400 could be sold and not as much fertility taken off the farm as in selling one ton of oats worth \$20.

A long discussion took place upon the benefits of continuous stabling and indoor watering. Opinions were very conflicting. Hugh Fraser, of Elmsdale, found more satisfaction in turning cows out to water. He thought continuous stabling made them tender, and weakened their constitution. Mr. Robertson thought it better to give a cool drink in a warm stable. Experience had shown that dairymen could not afford to turn cows out of doors. Continuous stabling would tend to foster disease if it was present, but it would not create disease. C. P. Blanchard did not believe in hot stables. He thought 40 or 45 degrees was about right, and that cows kept in a temperature of 60 or 65 degrees had not such good appetites. During the late cold spell there had been a good deal of frost in his stables, but there had been no decrease in the yield of milk. He thought the constitution of cows constantly stabled deteriorated. Mr. Robertson thought cows could be better developed in the stable, and that cows that did not lose in the yield of milk when turned out were not doing their best at the time.

**The Hon. T. R. Black** in an address claimed that farmers should look upon their calling as a profession, and if it were intelligently pursued it offered a positive certainty of success and independence. There was no reason why a farmer's son should not take the old homestead or buy a farm on credit and make a good living. He (Mr. Black) had started with nothing. He had bought a farm, going in debt for the whole of the purchase money. He had paid the debt, made money, and had a good time. He thought farmers denied themselves too much pleasure. The children should be encouraged to stay upon the farm by making the farm attractive for them and by teaching them to respect the farmer's calling. They should be encouraged to labor while young and allowed to participate in all the pleasures possible. A good horse and rig was a great inducement for a young man to remain upon the farm. Farmers' children could be just as well educated as those of the city. City life appeared gay and easy to them, but it was a delusion. By sticking to the farm they would have a competence in after years when many of those in the city had nothing. When farming would not allow him to own a fast horse and give him time to drive it himself he would leave it.

J. R. Starr thought the Hon. Mr. Black a living illustration of the fact that farming does pay, and that young men make a great mistake in going to the States. If they made more money there they had to work harder. The same amount of hard work here would enable them to drive a fast horse and assure them of a competence in the future.

**Agriculture Needed in the Schools.**—Peter Innis thought farmers did not realize their present position, and that the prospects for agriculture in Nova Scotia were very black. While one, like Mr. Black, had made money by farming, there were thousands, like himself, who had failed. He thought the Government was not doing enough, and urged the establishment of a department of agriculture with a minister at the head. Children should be taught how to make a living and agriculture should be taught in the schools. He thought a technical education was required and that it should partly replace the present literary curriculum.

**The Government's Position.**—Hon. Mr. Black said he thought the work of the Association was outlined in the