

Wean at seven or eight weeks' old. For two days previous limit the sow's food. Remove her out of hearing, and return her at night. After the pigs have sucked, remove her, and return her again the following noon. Do it again two days later for the last time. If in the winter time, feed the young pigs often on skim milk, bran, shorts, and chopped oats, with perhaps a little linseed meal as a laxative. In summer turn them into a clover pasture, and feed a little less of the grain. Up to four months of age keep them growing as fast as possible, and then gradually change to a fattening diet of corn, peas, barley or rye. About three weeks before selling, pen in lots of six or eight, and feed all the corn they will clean up. Don't feed after 225 pounds weight is reached, and endeavor to force them to that weight inside of five months. In fact, force them all the time—first in growth, then in weight—and you are on the right track in hog-raising for profit.

J.
Lincoln Co., Ont.

Care of Calves.

Spring calves, whether allowed to be nursed by their dams or raised by feeding from the pail, will do better the first summer if kept in roomy box stalls or sheds, and fed good hay or green grass, or other soiling crops, cut and carried to them, together with a fairly liberal allowance of chopped oats or other meal and bran. The hot sun of summer days, and the plague of flies, is very hard on the youngsters, if they are exposed without the shade of trees or a shed. If they are to be kept on pasture they should not be put out until the nights become warm and danger from frosts and cold rains is past, and in any case they should have a shed for protection from cold winds and rain, or from the hot sun and flies.

A good plan is to keep them in during the day in hot weather and fly time, and let them run out on pasture at night. Care should be observed at all times to feed them their milk sweet and warm. If a cream separator is not used, and the milk fed before it becomes cold, it should be warmed upon the stove, or by the addition of hot water. Cold milk and unclean drinking vessels are liable to cause indigestion and scours, and are often responsible for a stunted condition of the calf, which discounts its usefulness for life by impairing its constitution. In periods of drouth, when pastures fail, the calves should be given some supplementary food, either in the form of green crops carried to them, or a mixture of meal and bran, or cake, to keep them in thriving condition.

FARM.

Building the Farmhouse.

Rural architecture is improving. Every year there is an effort to improve the appearance of the houses and barns being built. Convenience and comfort inside, while important, are not sufficient, the outside must be attractive, and the location must not only suit the needs of the occupants, but must lend itself to the improvement of the landscape.

The disadvantages and defects of location of many of the farmhouses already erected are cramped surroundings, lack of architectural style, and squatness.

The first consideration in building a house is to select a site that will permit of a good-sized grass plot between the house and the barn; a wide front lawn, to be dotted with trees, shrubbery and flowers—not the restricted lawn of the city residence—and a plantation of forest trees on the exposed sides. There is no necessity for placing the house as close to the barn as the insurance companies will allow, nor so near the road that passers-by can look in the windows. One of the chief advantages of living in the country is that there is facility for breadth and scope about the buildings.

The exact shape and style of the house may be decided by the builder. Architects are plentiful, and plans can be had on every hand, so there is little apology for the plain L-shaped house so commonly built a few years ago. Such houses, although convenient inside, are not compact enough to be economically heated by a furnace, and are very plain. Many excellent plans appear from time to time in the pages of the "Farmer's Advocate."

With modern appliances, by way of heating and plumbing, it is necessary to have a roomy cellar in the house. On rolling land this adjunct is seldom omitted, and on flat-lying districts the introduction of concrete makes it possible to build one perfectly waterproof. In order to have the best basement, the floor should not be more than three or four feet below the surface, the walls above being built frostproof and substantial. Some good cellars are built with the floor practically on the level with the ground outside, the house afterwards being terraced up two or three feet. Higher ceilings should also become more

general in the modern house, ten feet on the ground floor and nine upstairs being about the proper height. In the attic should be arranged a tank for water, then with the windmill and the modern furnace and water-heater, a system of hot and cold water pipes can easily be installed. The latter suggestion is one that cannot be too strongly recommended as a means of saving labor in the house, and a convenience for ablutionary purposes.

Problems of the Soil.—VII.: Summer-fallowing.

The practice of summer-fallowing has undoubtedly many merits. Chief of these is the undoubted fact that it is one of the best ways of cleaning the land of weeds, and it was this fact that led to its general adoption throughout this province. Many of the best farmers of the old grain-growing days were the most persistent and thorough summer-fallowers, and it was quite common to judge of a farmer's thoroughness by the amount of land he kept fallow, and the way he handled it. Even yet, in some parts of the Province, the system is extensively practiced, but in many parts it is being discredited, so that it is now a subject of agricultural debate. We shall endeavor, in this article, to give an intelligent explanation of the effects of summer-fallowing, and then draw some conclusions as to the usefulness of the practice.

In a well-conducted bare fallow, the land is kept in a state of constant cultivation from the early part of the summer till it is time to sow wheat, or later, if, as it is often the case, the crop is to be oats or barley.

The Opinion of a Canadian Senator.

I am glad to know that the Farmer's Advocate and Home Magazine is doing well and increasing in circulation. From what I know of it, I can honestly say that there is no periodical that serves a better place in the farmer's home than the Farmer's Advocate, and it is a matter of amazement to me that a paper containing lots of news and information valuable to any farmer that will read it should not be patronized by every farmer in Canada. I know nothing that would contribute more to the general prosperity and advancement in the art of agriculture than a weekly perusal of the columns of the Advocate. It is, in my humble opinion, a credit to the Editors and the company that issues it. I am,

Yours faithfully,

JAMES McMULLEN,
Senator.

May 13, 1904. Mount Forest, Ont.

sown the next spring. Weed seeds are sprouted and killed, and plants that propagate by means of running roots, as do the Canada thistle and couch grass, are drawn to the surface and killed by drying, so that the land is kept clean. So much, no one will deny. Further, the advocates of the system claim that the land, by "resting," increases in fertility, and is thus greatly improved; that stiff clays are opened up and made friable, and the texture of all soils is improved.

These claims, while having some elements of truth in them, are not undisputed, and are worth investigating. Beyond this, even the advocates of summer-fallowing must admit that it is a costly and wasteful system, involving a large amount of work, and losing a season's crop.

Let us examine, first, the effect on plant-food in the soil. As we saw, in our last article, cultivation can have no effect in adding to the plant-food in the soil. What it does is to make available what is there already. Where cultivation is carried on in hot weather, the effect is most marked in the case of the element, nitrogen, which is in the soil, chiefly in the form of humus. This, which is insoluble in water, and slowly available to plants, is changed into the form of nitrates, soluble, and very easily available. So far,

so good. The summer-fallow has done no harm; has only increased the available plant-food, and the next crop will be in a position to benefit. And for this reason we do generally find a luxuriant crop after a fallow. The effect, however, is not lasting. A great deal of the most available plant-food has been made soluble and used up; the best humus has been oxidized or slowly burnt by exposure to the air, and the succeeding crops are left to get their food from less easily available sources in a soil containing less humus. Hence the fallow acts as a sort of stimulant to plant-food, giving an immediate increase in the amounts available, to be followed by a corresponding shortage. But this is not all. All the plant-food which is made available and soluble does not remain in the surface soil for the use of the succeeding crop. There is, in a bare fallow, a constant movement of soil-water from the surface to the lower layers, because evaporation is largely prevented by cultivation; there are no plants to draw the water to the surface and use it, and the rains of summer, prevented from escaping again into the air, must leave the surface soil by drainage, either into artificial drains or into the subsoil. Thus, water carries with it much soluble fertility, and leaves the surface soil poorer. This loss may be very great, as some very interesting experiments carried on at the great English experiment station at Rothamstead show. There a piece of fallow land was drained, and the drainage water accurately measured and analyzed to determine the amount of nitrogen which was lost in this way. It was found, in an average of several years, that this soil to a depth of twenty inches lost in this way 37.3 lbs. of nitrogen per acre per year; an amount equal to that contained in three tons of horse manure. It is probable that in Ontario, with our hotter summers, the loss is even greater.

The effect of fallowing on fertility, then, is this: A large amount of nitrogen is made soluble, and a good deal is lost through drainage, or into the subsoil, though enough may remain to show an increase in the first crop after the fallow. The best humus is used up in this way, and the land is left poorer in a valuable constituent. For this reason, even the good effect of mellowing the soil is not lasting, since humus has a very important function in keeping the soil open and mellow, and when it is removed or used up, there is nothing to prevent a clay soil from running together and baking as soon as it meets unfavorable conditions of moisture. I believe experience bears this out, for, so far as my observation goes, clay land that has been most persistently summer-fallowed is the most lacking in humus, the most liable to bake and become hard, and the most liable to suffer from drouth.

I do not believe, in spite of some advantages, that the summer-fallow has a place in Ontario agriculture at the present time, whatever may have been the case on the rich new land of the earlier days. There are two serious losses in summer-fallow—the loss of fertility, in the way we have seen, and the loss of a year's crop, to be offset by one gain, the cleaning of the land. We may, however, clean the land as effectively, and almost as cheaply, by a hoed crop, such as roots or corn, and at the same time produce a very valuable crop, and prevent losses of fertility. This is, by all odds, the best way to clean land, but if we must fallow, let us at least grow some cover-crop, such as buckwheat, or, better, peas or clover, which will prevent losses of fertility, and increase, rather than decrease the humus of the soil. D.

Potato Culture.

I have read Mr. Stavert's article on potato culture, and I laugh when I think of the idea of plowing out potatoes, and one man scratching out fifty bushels per day. I dig by hand, with a potato fork, and one man can easily dig an acre a day, but it takes two smart boys to pick it. Different from Mr. Stavert, I prefer to plow shallow in the fall. By shallow fall plowing, most of the weeds are sprouted before spring plowing, and are no more bother during summer months. In the spring, manure heavily and plow. After a good harrowing, I mark both ways, in squares 32 in. apart, planting in the last mark opposite to the first, and covering with the plow. A doubletree five and a half feet long, with a thirty-one inch draft, should be used, so that the horse on the land walks between the drills, and does not displace the seed potatoes. I always plant the way the ground was marked first. After a week or ten days level drills down with an up-turned harrow, or a fairly heavy pole. In wet weather the seed should be planted immediately after being cut, but in dry weather, dry seed tubers by letting them stand a day or two before planting. Small seed planted whole do well, when planted once in three or four years.

When plants can be traced in the drill, scuffle crosswise, and in a few days scuffle opposite way. The potatoes should now be thoroughly hoed, and then hilled up with a moulder. I prefer planting about June 1st, as then I have less trouble with bugs, and potatoes do just as well as planting earlier.

I have used Paris green for years, and never knew of it rotting the tubers. By following this method I have grown over four hundred bushels to the acre, and grow from five to fifteen acres a year.

Wellington Co., Ont.

READER.

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