

makes me advise a mixed system of grain, feeding and dairying, butter and cheese.

Rotation.

The farm we live on consists of about 200 acres now arable and in good working order. Set apart 20 acres for various purposes around the house. This will leave 180 acres for cropping, in fields of about 20 acres each. Have a good growth of grass. When you break up a field you may need three horses to the plough. Do it early and, if possible, subsoil as deep as you can. Spread 36 bushels of lime on the acre; harrow it in. When spring comes, sow three bushels of good, well-cleaned oats; harrow well, roll, top-dress with 75 lbs. superphosphate ammoniated, or 75 lbs. ground bones, 100 lbs. salt to supply soda, and 100 lbs. plaster to attract nitrogen. Second crop, peas. Sow 3 bushels. They should be ploughed in, or use a land presser to secure a crop. Top-dress with 150 lbs. plaster, 150 lbs. salt, 50 lbs. superphosphate ammoniated, or 60 lbs. bone meal. Third crop, barley or wheat. The ground to be wrought fine, seed drilled in, or use the land presser. Top-dress with 150 lbs. plaster to attract nitrogen, 30 lbs. ammonia, 100 lbs. superphosphate ammoniated, and 112 lbs. salt for soda, &c. Fourth crop, oats. The ground should be well prepared by ploughing early in the fall, and grubbing in spring. Sow 2½ to 3 bushels clean heavy oats. Top-dress as for the barley or wheat.

I have found that the best time to roll is when the seeds are well rooted but not braided above the ground. If the leaf is much above ground the roller will cover it with earth, and it will be suffocated. The fifth crop will be rye for soiling, the treatment of which I will defer to my next.

JOHN ROBERTSON.

Wintering Osage Hedge-Plants.

A correspondent gives the *Lulama Farmer* some particulars in regard to keeping through the winter, the young Osage hedge plants that will be taken up this fall for next year's setting. As we have lately been informed that the Osage is found to be less liable to winter-killing in Ontario than in Western States of much more southerly latitude, we reproduce the gist of the correspondent's remarks.

Farmers should always get them before any hard freezing sets in and put them away for winter, then when spring comes, they will have them at hand, so that as soon as the frost is out and the ground will do to work, set out the hedge plants,—the first thing to be done on the farm.

My mode of keeping is this:—Take a box,—say a boot box,—set it on end; place about one inch of fine moist earth on the bottom, as it stands open; the bundle of plants place about one inch in depth with roots in on the dirt, then dirt and plants about one inch each alternately until the box is full; then fall the box back, which will bring the plants on end; then fill up with dirt until the plants are about all covered over; then place the box in the cellar or bury it in the garden, where the plants will not freeze. The cellar is the best place; then they can be guarded through the winter.

When I put away plants of my own growing, I never lose more than the ordinary loss we meet with in all nursery stock. I have been in the business for 20 years, and have made it my study, not only wintering the plants, but raising and cultivating them into a fence. The plants should be taken from the cellar or pit as early as possible in the spring, and placed in the sun. Care should be taken not to let them get too dry in winter. If by chance they should, soak them 48 hours in water before setting.

Exterminating Red Root or Pigeon Weed.

This pest of wheat fields is known by different names in different sections of country. By some farmers it is denominated stone weed, by others growwell, stink weed, stem kraut or pigeon weed. (*Lathospermum arvense*.) The red root is a biennial plant that will not germinate to any great extent in the spring, it being its nature to come up in autumn, and cannot therefore be eradicated without fall ploughing, or by cultivating such crops as grow from seed put in during the vernal months. This plant, like many others—like winter wheat and winter rye—must have the advantage of a part of two seasons or the seed will not mature. Wherever this seed has gained a root-hold, the ground should be ploughed in the fall, just as deep as it was for the wheat, and well harrowed. In the spring the ground may be ploughed again. In some instances it is better to use the large cultivator with steel teeth, as not one spear can escape if it is thoroughly cultivated, and the ground will be in better order for the crop, which may be barley, oats or spring wheat.

The destruction of the seeds carried to the barn with the wheat is the most difficult part of the subject; and in

order to effect it, no pigeon weed must go into the barn; for, if it be carried there, it will be taken back again. It should be borne in mind that the presence of pigeon weed is a positive tax upon the farmer, and that every dollar successfully expended in its removal is to him an absolute gain. The most of our land is seeded down after wheat, and, of course, receives its red root seeding at the same time; consequently a large proportion of the seed lies near the surface. If this be turned under to the depth of eight inches, but a small portion will germinate, and the wheat will be to a certain extent free from its pernicious presence. If ploughed twice, the seeds are mostly thrown back to the surface, which is admirably adapted to the increase of the pigeon weed, while once ploughing is found to be at least as good. If it be possible, the red root should be pulled out of the wheat; but if the quantity be too great for this purpose, a more protracted effort must be made to destroy it.

A farmer of Genesee county, New York, writes.—“I should be well paid for my trouble if all farmers would either pull their red root at the time of blowing or burn all they pull up instead of placing it in the wagon track of the road. When muddy, the seed and mud cling to the wheels, shake off in the barn yard, get with the manure and then into the wheat fields. It requires more labor to rid a farm of this weed than of Canada thistles.”—*New York Herald*.

Pruning Evergreen Trees and Hedges.

A visitor the other day asked us, “when is the best time to prune evergreens, both specimen trees and hedges?” As it is a subject not generally understood by many farmers, it may not be out of place to give some hints on the subject.

If you have specimen trees and the object is to check exuberant growth, or if the growth be uneven, throwing the specimens out of balance, the pruning should be such as to bring the tree as nearly into the desired shape as possible. For this prune in June, or before the new wood begins to harden, cutting near buds and from the bottom of the twig or branch up slant wise to the bud, and with a sharp knife that will make a clean cut. This is to be done after the pruning has been done to bring the tree as much as possible into shape. Summer pruning checks growth, and autumn pruning strengthens. So if you wish to check exuberant growth, prune in June, but if to strengthen, prune in the autumn or after the season's growth has been made.

Evergreen hedges should not be pruned until they have made several seasons' growth and the plants are well established, except just sufficient to keep them in balance. In proportion to the tops will be the roots; and in weakening the tops you prevent the proper formation of roots. This is true in all plants, for the larger the leaf surface, the greater the capacity of the plants to elaborate sap. So to encourage the growth of the hedge, prune as little as possible, removing rampant growth, and this in the autumn.

As the hedge gets older, and when it has attained the height and breadth needed, the object will be to weaken the growth. Then prune in June, giving a second cutting in the fall, if necessary.

However much one may be told of practical agriculture and horticulture, deftness comes only by practice and observation. Examine at every opportunity not only your own trees, but those of your neighbors, and consider if they may be bettered, and how. Note carefully also in your travels those trees of the best contour and symmetry. Examine them closely if possible, to determine how the effect has been brought about, and then a little practice will enable you to operate rapidly. Thus you will be surprised to find how easy an operation becomes when you have learned how.

We know many intelligent men who have been deterred from planting ornamental trees, and especially shrubs and flowers, from the idea that they required special care and culture, that must be entrusted to a class who make it a business. Such, however, is not the fact, as the many grounds and gardens over the West will show, cultivated entirely by the female portion of the household, with such help as the men folks could give at odd times. It is true, ladies as a rule have a more acute appreciation of the beautiful, and the arrangement may be safely left to them, if the details are conscientiously carried out by the husband and brothers of the family.

As to varieties of ornamental evergreens, there are none better for ornamental hedges or wind-breaks than Norway Spruce and Arbor Vitæ; except, indeed, in situations favorable to it, that prettiest of evergreens, the Hemlock. What a pity it is not generally hardy in open situations in the west.—*Western Farm Journal*.

THE SOIL IS ONLY A MEDIUM in which plant food is prepared and given out on demand. The more thoroughly soil is pulverized, the stronger is the capillary attraction within its pores. As a fine sponge will hold water longer than one of larger tubular structure; so fine soil holds water longer than coarse.

THIS SOWING.—A friend of Mr. Meeh, who farms nearly 1,000 acres in Suffolk, writes to him as follows:—“It may gratify you to know that the best piece of barley I know hereabouts is on my — farm, from less than 2 pecks of seed per acre. It is so stout that I fear it will go down.” “What will our 12 and 16 peck men say to this? I do not sow thin enough says Mr. Meeh.”

IMPORTANT EXPERIMENT ON TOP-DRESSING GRAIN.—AN Eastern Ross farmer writes us says the *North British Agriculturist*, that he experimented on two acres of last oat crop with the view of testing the value of dressing with artificial forcing manures. “I applied,” he writes, “about 3 cwt. of superphosphate and nitrate of soda, fully more than half being nitrate to an acre of oat crop in spring. I cut, threshed, and dressed the produce of that acre and the yield of an acre not top-dressed quite separately, and the result has been unsatisfactory. On the undressed acre I had 138 lbs. more weight of grain, though the bulk from the manured acre was 2 bushels above that on the other plot. There was 5½ lbs. per bushel difference in favor of the unmanured acre. I had fully a third more straw from the top-dressed portion, but the quality of it is inferior. The experiment was tried on second-class land, some of it being strong clay and part of it light loam, and the result will induce me to use little nitrate for the time to come.”

THE MANURE SUPPLY.—The majority of farmers do not put forth that decided effort to make the most of the manure supply within their precincts as they might. One needs to keep his eyes open for these things, as well as for the main chances in a good trade. How many farmers have made particular arrangements for saving all the liquid manure from their stable, by providing an ample supply of bedding for their stock? Dried muck is probably best for this purpose, but if you can't get muck, get the next best. Leaves make good bedding for stock, but their absorptive properties are not so good as other materials of less manurial value. Sawdust is a great deal better than nothing, for its absorptive properties are good, while for some heavy lands it will be found beneficial as an ameliorator in the division of particles, rendering the soil less compact when applied. Sawdust from resinous woods is less valuable than that from hard wood, though Boussingault says that 260 pounds of pine sawdust contains as much nitrogea as 100 pounds of stable manure, which may be a fact, but we should choose the manure every time.—*German Town Telegraph*.

GYPSUM.—One of the cheapest and most efficient of the mineral manures is gypsum, (common plaster). Under favorable circumstances this works “like a charm.” Plaster as it is dug from the quarries contains forty-six per cent. sulphuric acid, thirty-three per cent. lime, and twenty-one per cent. water. The latter is held in the mineral in a mechanical state, and can be driven off by heat; but for agricultural purposes it is better to let it remain. Both sulphuric acid and lime are the direct food of plants, and both act as powerful absorbents of ammonia and other nutritious gases. It is only on the latter supposition that we can account for the wonderful effects which plaster sometimes produces. Sown at the rate of two or three bushels per acre, on a piece of newly stacked land, it often doubles the crop of clover, as into this crop both lime and sulphur enter largely, and the ammonia is furnished from the air by the absorption of the plaster. Such a result has led farmers in some instances to rely upon plaster alone as a fertilizer—a mistake of which a few years' experience is sure to convince them. Their farms become “plaster sick,” as the expression is.

THE EFFECTS OF DRAINING.—By draining we remove the water from the soil to a depth equal to that at which the drains are laid, or in general from three to four feet. This seems to be a simple matter, and the removal of this water from the soil is recognized as a beneficial operation, so far as it goes, by every farmer. But there are some indirect effects resulting which are not less valuable than the removal of the water. In effect draining has, to a great extent, every advantage that can accrue to the soil from deep subsoil ploughing. As the water escapes into the drains, the air descends into the soil and fills the vacancies left. The air is warmer than the soil, and raises its temperature several degrees. As the rain descends time after time, every shower displaces the air in the soil, and as the water again finds its way to the drains, air again takes its place. A circulation of air thus occurs in the soil, which is incessant during the growing season, and by which the warmth of the soil is increased. Another indirect effect which results is, that the roots of plants penetrate into the subsoil as far and as fast as it is freed from stagnant water. Every root exerts a powerful effect both in opening and loosening the subsoil during its life, and after its death in furnishing certain acids which help to dissolve portions of the soil with which they come in contact. In this way draining is a valuable aid to the plough in helping to maintain the original fertility of the soil, and add to it in a measure proportionate to its thoroughness.—*New York Times*.