

Turn these windrows with a fork, say once before dinner, and then immediately after dinner. About three or four o'clock rake in to large windrows and cock up carefully for the night. If necessary, spread it out the next morning, and turn it over in an hour or two. That which was opened first will probably be ready to draw in by half-past ten or eleven o'clock. There are many other methods, but, all things considered, we prefer the one we have briefly prescribed. If we could be sure of the weather, we should cure the hay in cock, and it is often convenient to adopt both plans.—*American Agriculturist*

#### EXPERIMENTS IN CURING HAY WITH LIME.

Last summer I put about five tons of hay in one stack, composed of about one-third each of timothy, clover and weeds. I put it up the same day it was cut, and it was quite green. I sprinkled it plentifully with lime, about half air-slacked; it commenced to heat immediately, and got so hot that I thought it would burn, but in twenty-four hours it had cooled off. It kept remarkably well, and moulded only where there were large stalks or weeds. The cattle ate it but did not like the lime.

I put the same amount of hay in a barn; this hay was better cured and drier than the other. To this I added both lime and salt, but it did not keep as well as the other. The salt appeared to take as much dampness as the lime took up, which rendered it useless. In another barn I put hay that was well cured. I added lime to it also; the horses didn't relish it as well as that which had no lime, but they appeared healthier and have less cough than when fed on hay that was not limed.

I would advise the use of lime only in a free stone country. A certain amount of lime is necessary to make bone for all animals, but in a limestone country they often get too much, which causes disease of the intestines and bladder.—*Ohio Farmer*.

#### BENEFITS FROM HOEING.

Too many persons who use the hoe suppose that the chief benefit derived from it is to kill the weeds. That, certainly, is an important work, and one greatly neglected. Weeds are not only in the way of cultivating the crops which we plant, but they rob them of much of the nutriment which they need.—Hoeing, then, is an essential service in respect to destroying the weeds.

There are other advantages, however, which are quite commonly overlooked. Let us see:—

1. The loosening of the soil in the operation of hoeing is beneficial to the plants; as much as the destruction of the weeds, or more so.

2. Moisture abounds in the atmosphere during the hottest months, and is absorbed and retained most abundantly by a soil which is in the most friable state. Prof. Schubert found that 1000 grains of stiff clay absorbed in 24 hours only 36 grains of moisture from the air; whilst garden mould absorbed 45 grains, and fine magnesia absorbed 76 grains.

3. Then, again, pulverizing soil enables it better to retain the moisture absorbed.

4. The soil, in order to be healthy and active, must breathe. A light, porous soil admits the air, and thus it is fed and greatly invigorated by the atmosphere.

5. The sun's rays heat a hard soil much quicker than a loose one, and the hotter the soil is, so much greater will be evaporation from it. So that the hard soil is deprived of its moisture much sooner than one of a loose texture.

6. The roots of plants can find their way through a moist, loose soil, in search of food, much better than they can through a hard, dry soil.

7. The soil that has been ploughed well, and then kept loose near the surface by the action of the hoe, will receive and hold the rain water that falls, while a hard soil will allow most of it to run off into the valleys and streams as it falls.

Let us hoe thoroughly all the season until the crops are perfected, and while engaged in work, observe and discuss the benefits we may derive from it.—*New England Farmer*.

#### TRANSPLANTING IRISH POTATOES.

It is a fact, but not perhaps generally known, that Irish potatoes do well transplanted. I have tried it repeatedly, and every time with satisfactory results. I find it to be an improvement in point of quality, quantity and earliness. Try it and report your success through the *Homestead*.—*Cor. Iowa Homestead*.

#### COMPOST HEAPS.

It is reported as said by Dr. Voelcker, chemist of the Royal Agricultural Society of England, that the escape of ammonia from fermenting heaps of manure goes on but slightly; that while the escape is great from the heated centre part of the heap, the ammonia is absorbed by acids formed by the decomposition, and by the water present in the heap. All this goes to show that the manure heap should be kept well covered with absorbents, and that an occasional sprinkling with water is beneficial. Besides, good will result from copious sprinklings of ground gypsum or plaster.

#### FEED THE SOIL.

This is a maxim that no farmer can afford to forget, unless he can afford to work for little or nothing and remain poor. Every crop extracts from your fields a portion of the natural wealth which has been accumulating there for ages. When the soil is first turned over, the "new ground," rich with every element of plant food, produces immensely, and from the way it is usually treated in this country, it never produces as well thereafter. The reason is plain. We commence removing the elements which go to make up the crop, and we scarcely ever return anything back in the shape of manure, and the consequence is that in all ordinary clay or soils, the land grows poorer with each successive crop, and the crop grows less, and the farm grows poorer and worth less money, and the owner of it grows poorer and has to work harder every year to make a living.

The great majority of our lands have not more than ten inches of soil, while the fir land has very much less. Now this land will require manure, or it will be poor land. The manure is but returning to the soil, in another shape, what the crop took from it.—The manure is wealth, it is money, it is labor, it is time, and no farmer can afford to waste it.

As on individual farms, so in whole countries; they can be worn out and reduced to desert, and the people to want and starvation, as recently in Persia, where hundreds of thousands have perished for want of food. Persia was once one of the richest agricultural regions in the world. Now it is a desert, made so by ignorant farming, and its people reduced to ruin and starvation.

#### CULTURE OF ROOTS IN ENGLAND.

Mr. Wall, who recently returned from England, says:—

"It is certainly true that the culture of root crops has been the salvation of English agriculture. The cultivation of these crops may as truly be the means of improving the soil in our Eastern States. We had once hoped that the manufacture of beet sugar would enable Western farmers to avail themselves of this root as a fallow crop, but we fear that this will not prove to be the case just yet; perhaps time may give us cheaper labor by which it may be done. Fortunately we have Indian corn, which enables our farmers to clean their land in an admirable manner, if properly attended to. Still, it can never take the place of tap-rooted plants.—The turnip crop will probably never be available in the West, even if we could afford to make it take the place of corn as a feeding crop, for the reason that our hot summers are not suitable to the plant.

#### THE LEGUMINOUS PLANTS.

The pea vine has ever been held in as high repute, wherever it has been properly cultivated, for turning under to make vegetable mould, and to provide manure for the grain crops, as the clover has been, in our sections. In fact the clovers, sainfoin, vetches, &c., belong to the bean family. The largest mineral constituent of all these crops is lime, and they flourish best on lime soils, and are most successfully cultivated in limestone districts—and where lime does not exist in the soil where they are grown, it should be artificially supplied.

Prof. Voelcker, in his work on agricultural chemistry, says that sulphur is also requisite or at least generally found beneficial to these crops, and this can be furnished by gypsum or plaster of Paris, which contains sulphuric acid and lime, and on this account may be regarded as a special manure for all the leguminous plants. We thus find how admirably Nature has provided for these crops, the most valuable that are grown next to the cereals, in the supply of lime and plaster, two of the

very cheapest minerals which are found useful as fertilizers to replenish the soil exhausted by the carelessness of man.—*Jefferson Farmer*.

#### GRASSES.

Among the grasses said to be the most profitable for mowing, are timothy, red-top, white bent, orchard grass, perennial rye grass, June grass, meadow fescue, and tall fescue. The artificial grasses comprise red, white and other clovers, and some others not cultivated in this country. It is said that the grasses cultivated in England for the use of animals comprehend not less than two hundred varieties; but in America there are not more than twenty. A greater weight of grass and hay can be obtained from an acre by using several judiciously selected species, than if one or two are used; since different species require different kinds of nutriment and the number of one species which will grow to vigorous maturity on a square foot of soil, will not be diminished by the growth on the same soil of plants of different species requiring different substances for them. But in selecting the mixture for mowing or for pasturage, regard should be given to the modes of growth and other peculiarities of each kind. Some grasses are well adapted to cut for hay, but are not so suitable to form pasture-turf. Timothy is not so good to sow for pasturage, as it cannot bear the close cropping of cattle, though one of the best of our grasses for mowing.—*My Little Book*.

#### THE IMPROVING AGRICULTURE OF THE SOUTHERN STATES.

Agriculture is making such rapid advances in this State, that while two years ago there was scarcely an agricultural society in the State, now there are some forty organized, and others in process of formation. In Georgia, the empire State of the South, there are more farmers who have studied the chemistry of manures and who understand the economical application of it to the soil, than there is in any one of the old free States at this time. The great revolution from slave to free labor so far from discouraging the Southern farmer, has only shaken him up from his lethargy and compelled him to be energetic, self-reliant, and willing to learn everything that can aid his farming under the new regime.—*Texas Farmer*.

Sow PLASTER as soon as the clover has made a slight growth in the spring, and apply as soon as it is fairly up. It will pay to haul ashes, especially for sandy land, five or ten miles, or even more if you get them for nothing. It is one of the best fertilizers known, on the soil you mention, and in connection with plaster and barnyard manure, we should want no better land.

#### RAT-PROOF CORN CRIBS.

There are not many farmers who do not lose corn enough by rats every year, to pay the extra expense of making their crib or cribs rat-proof. Such is the general dampness of the ground that the floor on which corn rests should be at least three feet above the earth. Pillars of this height above ground for crib-sills should have plates of zinc or sheet iron extending six or eight inches on all sides before the sills are put upon them. Rats going up to the pillars (whether wood, stone or brick) cannot pass the sheet-iron or zinc, nor can they jump three feet from the ground and fasten themselves to the side of a crib. The steps, by which one enters the door of a crib, should be taken away at all times when not in use. In this way a farmer can easily keep rats from eating and polluting his bread corn.—Where rats have access to one's crib, they multiply rapidly, catch chickens, go to the dwelling house and become a perfect nuisance there also. All this evil is due, in a large degree, to feeding and breeding rats at a corn crib. This is the most unprofitable stock a farmer raises. The next are the curculios that destroy his peaches and plums.

Though Manitoba is some hundreds of miles north of Minnesota, yet the storms are never so powerful as there, or the thermometer so low by ten degrees. There has been only one man frozen in Manitoba this winter, against the hundreds that have perished in Minnesota this winter. This is a fact that ought to be known in Europe, as large numbers of emigrants are gulled by the reports of unscrupulous American emigrant agents.



#### ARDEN, ORCHARD AND FOREST.

##### WHEN TO PRUNE GRAPES.

The following we clip from an exchange, who publishes it as Kelley's Island, Ohio, and if from him, is good authority on grape culture:—

"At first I supposed that it was improper to trim in spring, when they bleed the worst, the Germans, whom I mostly employed, having a prejudice against it. But sometimes some parts of the vineyard were trimmed at this supposed improper time.

"The closest observation I was able to make discovered no bad result, and I have never seen that it made any difference when the vines were trimmed, from the time the leaves were ripe in the fall, to as late as the 20th of June. I seldom get all my vines trimmed before the first of June.

"Since we have had the rot, I have in some vineyards tried leaving the three canes the full length until August, when, if rot appeared, I cut off the surplus wood; but if the rot sets in, I have left the whole vine, and got a larger yield than from vines short pruned. But where there was little or no rot, the shortest pruned vines have uniformly borne the best crops. I am clearly of the opinion that the best time to trim is whenever it is most convenient after the leaf is dead in the fall to the first of June.

"I have always root-pruned pretty severely, plowing deeply close up to the vine, and cutting the roots in the first hoeing in the spring in most of my vineyards; but I have also tried the reverse, and must confess I have not been able to see much, if any difference, in the results. There are now some seven or eight hundred acres here in bearing. Some persons think that spring trimming is best, but do not claim that they have any facts to prove it. It is true that some parts of vineyards have been trimmed in the fall, and did not bear as well as the part trimmed in the spring, but the reverse is also sometimes true. It is quite common to have one part of a vineyard do better than another one year, and the case reversed another year."

##### HOW MUCH MANURE FOR THE GARDEN?

I am often asked "How much manure shall I put upon my garden?"

In the first place neither all kinds of soil nor all kinds of crops require manuring alike. A heavy loam with a clay subsoil will bear a coat of coarse manure that would be an absolute injury to a light sandy soil; and if we had two as dry seasons as the last ones have been, it would probably receive little benefit from it; while a heavy coat of well rotted manure, well mixed with the light soil, will enable it to stand drouth wonderfully. Hence, if you have a heavy soil you may plow under coarse manure in large quantities, and it will pay you well for it, but if your soil is a light one, get well rotted manure, even if it costs twice as much as the coarse manure would.

As to quantity—it is possible to injure peas, beans, potatoes, tomatoes, and perhaps a few other crops, by too much manure, but for every loam that I have seen this done, I have seen hundreds of these crops that were suffering for want of more manure. Even for these crops I would not hesitate to put on twelve or fifteen cords of well rotted manure to the acre, and should expect to get well paid for it in the first crop, provided that it did not cost more than five dollars a cord. It will hurry on the crop, and if your early peas bring \$2 or \$3 per bushel in the pod, the potatoes \$1.50 or \$2 per bushel, it does not take long to get back the money for the manure. Cabbage, cauliflower, celery, corn, onions, asparagus, pieplant, beets, parsnips, and in fact the most of our garden crops will not only bear, but be much improved by an immense amount of manure. I would not hesitate to put on 20 cords of well rotted manure per acre, upon any of those crops, and with good cultivation and an ordinary season, I should expect the crops to pay for all the expense, and leave a profit beside.

In fact it may be set down as a rule that, other things being equal, he who uses the most and best of manures gets the largest crops, as well as the best in quality.

There may be a few exceptions to this rule, but they are very few. My stable manure

will not am getting for manu and phos for manu and if I with it b first tim has prov Then l let us cu as the se the rule,

A Wom Iowa

Mr. E year-beg the subje stead, wa readers h ashes are result.

I will p in leache

In Nov trees tha large eno sides, fac been in c yellow, v I had se laid all a three wh put aroun ashes aln limbs. the trees fall were

In the worth of December unleache of my c sulting in pear and spring th on the tr green abe perience will not ones. I ments th

Now is ing. In the curra berry sho trees we together our gar contain l of those son. Th should b

The pl late the require i of plant green tr Evergre and too of the w pleasant They sh more, so sociable within f you inte planting screens. general be remo awn to a ng their

TH Every dency in in other year, or, year, an fruit. " from the which le ducing c one year this beco habit, a ding. of the f well wh trees wh year,