

should be placed between the lime and manure, and the whole should be covered with turf or more coal.

The analysis of soils abounding in fragments of limestone rocks, shows a marked deficiency of this important element in their composition. The reason of this perhaps unexpected deficiency I will now explain:

Disintegrated limestone is decomposed by the vital action of plants, and its carbonic acid is taken up by their roots. It will then combine with more of this gas which abounds in the air and soil; and will again give it out to growing vegetables. It is this way that plaster, (sulphate of lime,) after it has parted with its oil of vitriol, often produces such wonderful effects, although the amount applied is less than one fourth thousandth parts of the soil from which plants draw their nourishment. The action of the sulphuric acid, as I understand the matter, I will not stop to elucidate. But I wish to fix public attention upon the circumstance, that when lime in the soil has parted with its acid whether sulphate or carbonic, and especially the latter, it is soluble and very liable to be washed out of the soil by rain, &c. All water that has passed through a soil possessing sufficient lime to be good wheat land, is **HARD**, or holds lime in solution of which it has robbed the soil. The same is true, in a less degree, with regard to leaching of the soil, and its loss of alumina, potash and soda. The cultivation of the earth, without allowing any vegetables to grow upon it, would exhaust its fertility very rapidly.

The remedy for this is, to cultivate less land in grain crops, and cultivate it far better; to remove all excess of water by draining; to plough deep, and to turn up to the sun virgin earth from below, and apply thereon manure, sal, lime, ashes, and salt. Instead of applying large quantities of quick lime at distant periods, it is far better to apply a less quantity and often, to make up for the loss that occurs from its being dissolved in water, and carried with it into rivers and the ocean.

Leached ashes are valuable, when applied to grass lands and are far from being worthless on wheat, rye, oats, and barley—all of which need their silicate of potash, to give them a good firm stem. Grass and wheat know as well how to convey the apparently insoluble elements in leached ashes up into their organic structure, as did the trees from which these ashes were obtained.

FARMING AND GARDENING.—The Editor of the *Massachusetts Ploughman* says, we are sometimes complained of, for publishing so many different opinions on modes of farming and gardening; and are told that it tends to confuse the enquirer after truth, and to leave him as much in the dark as he was at first.

But such is the nature of all free discussion. There are more wrong heads than right ones in every community, but so long as freedom exists, every one is entitled to a hearing, and each hearer must judge for himself.

In regard to transplanting there are different modes and different opinions. It may be that none have yet discovered the very best plan of taking up and re-setting trees, and it is not prudent for any one to be very positive that he alone is right. Many prefer the plan of giving the soil a thorough soaking at the time of setting the tree; and one argument in favour of it is that all the cavities under the trunk will be filled and the tree will stand firmer with less liability to canker and rot than when reliance is placed on adjusting the fresh mould to the roots.

But other skilful orchardists totally object to "flooding the roots with water" or to rendering the earth more moist than it naturally is in May or the last of April. They contend that this is placing the ground in an unnatural state, and though you give a great abundance of moisture at first, you provide no means for securing that abundance, and if you could, you would have your tree in an unnatural element. Apple trees will grow rank, for a time, in wet lands, for such are not what they delight in. They uniformly flourish best on a side hill where there is no chance to flood them at any season.

The famous and ingenious Wm. Cobbett was so averse to wetting roots farther than the soil would wet them, that he would not allow of a drop of water on cabbage plants, on transplanting, even in June or July. He argued that by making a puddle there, you make the earth hard like a cake and prevent the extension of the roots. And to prove this theory he succeeded remarkably in taking a different course.

For our own part we prefer setting trees after the earth has become warm and been drained of a part of its moisture. We object to setting in October, because we do not desire to see the earth bedded down on the roots. And when we set in the spring we chose to leave the earth so light that the roots can extend without obstruction. By putting litter, of almost any kind, on the surface we keep the earth sufficiently moist in most cases, for the action of the roots. If the ground is sandy or gravelly care must be taken to prepare holes and render the texture of the earth suitable to retain a proper degree of moisture. And where artificial watering may be necessary the surface should always be covered with straw or litter, for in such case one pail of water would do more service than three without it; it would not soon evaporate.

We have set a variety and vast number of trees within forty-five years, and we have tried all the modes that looked plausible. Our preference is to set trees—that is those that shed the leaf in autumn, just before the leaf puts out in the spring, place the mould carefully about the roots that no cavity may be left open, cover the surface about the tree with litter to check the evaporation, to keep the earth light, and to support the body of the tree through summer against the attacks of the winds.

Stones may be laid on the litter to make the tree stand firmer, and stones lying on the surface never make soil lie heavy. In this mode no staking is required unless you intend to let the oxen trim the trees when they are allowed to roam every where.

As to cutting off tops for grafting there will be no danger while you confine yourself to small limbs.

POINTS OF A GOOD MILCH COW.—The following may be useful to your correspondent "G," in answer to his inquiries. It is from a report of the Guernsey Agricultural Society. *Points*.—1. Purity of breed and qualities of the dam for yielding rich and yellow butter. 2. Small head, large and bright eye, small muzzle, small ears, orange-color within. 3. Straight back from the shoulders to the tail, and chest wide. 4. A fine and loose skin, with soft and short hair. 5. Sides well rounded, flank small between the side and haunch, tail fine. 6. Fore legs straight and well proportioned, hind legs broad above the knee, fine and clean below; hoofs small; legs should not cross in walking. 7. Udder large, and the teats large and springing from the four corners of the Udder milk; vein large and well defined.—*Gardner's Chronicle*,