well. He let calves and sheep run in his orchard, and sometimes he mowed the grass. He took peach stones in the fall and covered them about two inches in the earth, and the next spring cracked and planted them and they did well.

MARL.

In reading a very elaborate report from the pen of a celebrated Geologist, who has been employed in one of the Southern States for the past few years, we were astonished to notice that tracts of country equalling some hundreds of square miles, had been increased in value within the past eight years, to an extent of upwards of one hundred per cent, and this great advance in the rise of property, was attributed almost solely to the use of marl From the moment we read this report, we embraced every opportunity, when in the country, of discovering the location of valuable beds of marl, and have in a number of cases tested the qualities of the specimens that have come under our observation. The only kind of marl that can be profitably brought into general use in this country, is that which is generally denominated *shelly marl*, which is evidently a deposit of shell fish, which have become, in process of time, converted into calcareous earth, containing both *stimulating* and *fertilizing* properties, which make it so highly prized in Britain, that it is classed among the animal manures in point of value. It exists at the bottom of most bogs and morasses, or other pieces of stagnant water, and is usually under layers of a deep black peatty earth. The specimens which we tested were taken from beds covered with about three feet of black vegetable mould, and the timber which grew upon the land was principally a dwarfish growth of black ash. They contained about 50 per cent. of pure lime, and in one instance even a much greater quantity. If a substance containing from 40 to 50 per cent. of lime can be had without any cost further than the mere drawing, such farmers as have this substance within their reach, would find it to their advantage to apply it to their cultivated land at the rate of about *five tons* per acre. We would recommend experiments with marl, on a small scale, and by this means its adaptation to the soil on which it is applied may be fairly proved, and the most untutored cultivator would soon be able to form a correct estimate of its value.—The principal ingredient in marl, that is found to be valuable to the farmers, is the carbonate of lime which it contains, and it is owing to the presence of this earth that marls effervesce on the addition of acids. The most common test is, to add a small portion of dried marl to a wine glass full of vinegar. A species of violent fermentation will take place if the marl be rich with lime which will quite astonish a person inexperienced in such matters. This test is so simple and efficient, that it is scarcely necessary for us to mention others. We might, however, mention another: Let the marl be put into a glass, partly filled with water, which will expel a portion of acid contained mechanically in the marl. When the marl is thoroughly penetrated by the water, add a little muriatic acid, or spirit of salt. If a discharge of air should ensue, the marly nature of the earth will be sufficiently established.

If a farmer, whose soil is deficient in lime or calcareous earth, can procure, at a convenient distance, a quality of marl, being rich with lime, he will find by such application, effects equally as beneficial, as though he had used pure lime from the kiln. When the marl is used, of course the quantity would be required to be greater, but only to an extent equal to the amount of silex and other substances not being carbonate of lime, it contained The action of marl on the soil will be more slow and lasting than fresh burnt lime, but the benefits in the end will be found to be equally as great.

In some sections of the country, an abundance of lime, for agricultural purposes, may be had for the mere expense of burning, drawing, and spreading on the land; where farmers are thus favorably circumstanced, they should, without fail, dress a portion of their land with lime, each and every year. If it were used at the rate of about 40 bushels per acre, on a small scale, say a few square rods, its value as a *stimulant* and *fertilizer* would soon become well established, and we doubt not but that it would be brought into very general use. But in every instance where shell marl can be had, without drawing too great a distance, it should be used extensively,—and will be found, on the score of economy, to exceed the use of lime So well satisfied are we of its value upon strong clay land, that we shall spare no reasonable expense and trouble in having it brought into immediate use. The monthly Agricultural meetings, that we hope to attend in the several Townships of the Home District, will be among the best opportunities that we shall have, to bring this matter fairly under the notice of the agriculturists; and we assure those with whom we have not the pleasure of thus commingling, that every fresh item of information of importance on this or any other topic of Agriculture that is elicited on those occasions alluded to, shall be published for the mutual benefit of our fellow countrymen.

LIME AND ASHES.

ALBANY, Feb, 16, 1844.

These are doubtless about the cheapest, and most available vertilizers within the reach of most farmers in this state. Lime is most serviceable on all clay, loam and mucky soils which have been more or less exhausted by undue cropping, or on such as lacked lime in their primitive natural condition. Ashes whether leached or unleached, are perhaps more valuable to be applied to the same soils in addition to lime. I should prefer to apply a less quantity of each, and give my wheat field the benefit of those indispensable elements in the wheat plant, silica, phosphorus, potash, soda and magnesia always contained in leached ashes, rather than depend entirely on fertilizing with lime alone. I will first explain the nature and operation of lime.

Allow me to state a fact as the basis of my theory: I am informed by Mr. P. B, Porter, Jr., that his father Judge A. Porter, of Niagara Falls, has applied to his farm in that vicinity, over 4000 bushels of unslacked lime, and has realized again in his wheat crop—having some years over one hundred acres—the first season after the lime was used, sufficient to defray the whole expense of this fertilizer, well spread, at the rate of 40 or 50 bushels per acre, on his fields. It is proper to state that the lime was purchased at 6 cents a bushel at the kiln, and hauled but half a mile. The increase of crop was estimated at from 4 to 7 bushels per acre —giving a less gain on some acres than others. This case is deemed the more worthy of note from the circumstance that, the lime was applied to a soil lying upon a limestone rock, abounding in its pebbles, and therefore might naturally enough be thought not to lack this element in its composition. The result in this case confirms what I have before stated to the readers of the Farmer in an article on the "preparation of the food of vegetables," viz: That the cultivation of the soil, not only robs it of its lime by removing it, as a component part of the crops taken from the fields; but that the lime is largely dissolved in water, after its cabonic acid has been taken from it by the vital action of the roots of the plants, and this pure lime thus dissolved, is washed out of the surface soil, partly into rivulets, and partly into the subsoil. The only remedy for this waste is to apply more lime; and if it costs the farmer a high price, he must use more economy in its application—in other words—feed his plants *little* and *often*. The principle use of lime is to correct any acidity there may be in the soil, and especially to absorb carbonic acid and ammonia from the atmosphere—important elements of cultivated plants, which are brought to the earth in all due quantities by falling rains and snows. The roots of plants take these elements from lime agreeably to the laws of vegetable life. And until the lime be entirely washed out of the soil it will continue to absorb again and again both carbonic acid and ammonia, and feed them to the roots of plants, which are as greedy to receive their appropriate nourishment with *open mouths* as young robins. A word or two about ashes.

As all the ashes found in a maple tree were dissolved in water before they entered its roots, why do they not all dissolve in water when put up in a leach tub?

Because the soluble silicates of potash and soda that enter the roots of all plants are decomposed by the vital action of such plants, and a considerable portion of the alkaline bases —potash and soda—are returned to the earth to dissolve more silica or flint. Now flint is the *bone of plants*, just as lime is the earth of animal bone Hence a silicious sandy soil that lacks potash—this alkili being very liable to be washed out of such a soil—is greatly benefited by the application of ashes. Mark the operation of nature in this matter. There will be sufficient potash even in leached ashes to enable the roots of plants to dissolve a small portion of them.* This silicate of potash or of soda thus dissolved, enters into the pores of roots, passes up into the stem and is there decomposed, and precipitates its insoluble silicate. In other words the vital functions of the plant transform soluble ashes, into insoluble ashes, the free alkalies prevail, like those obtained by leaching ashes, only in a much weaker solution, return to the soil and dissolve *more sand* to be again taken up to give strength to a stem of wheat or grass. Now, lime will not form a soluble silicate with sand or flint; and therefore lime alone on poor sandy soils, such as are to be found in Albany county and on Long Island, will not bring good wheat or grass. Ashes operate much better, for the reasons I have given.

As the subsoil lying under the tilled surface, which has been stirred up and cultivated for 10, 20, or 50 years, abounds in alkalies and alkaline earths, subsoil ploughing is of great value in bringing up such elements of fertility to the light, heat, frost, and atmospheric influences of summer and winter As a general rule, however, it is not best to bring up too much of this stiff soil at once, for it takes time to manufacture it into good surface soil.—*Ib.*

*Flint is only soluble in an excess of potash or of soda.

ASHES.—In my opinion the land best suited to the use of ashes, is that dry kind which abounds in oxide of iron, You may know it by the rust color of the ledges and small rocks and stones in its vicinity, as well as by its rusty yellow color, on such land, and also on such dry land as abounds in sour qualities, say black moss, sorrel, or decayed rosineus weed; on those kind of lands, I know of no fertilizer that equals ashes, leached or unleached. They neutralize the metalic and sour qualities in the soil, and give a fertility that cannot be brought about with common manures alone. I find no manure so valuable according to its cost as leached ashes are for wheat, or that will make grass grow so well, or hold out so long. Perhaps it is proper to state that I have not made a practice of using leached ashes on lands which have not been manured at all.—*Maine Farmer.*