


To what is the fertilizing property of old leached ashes owing? We cannot definitely answer this question. We are inclined to think, however, that it is owing in some way to a substitution of the alkali ammonia for the potash and soda, which have been leached out. It may be that they contain the double salt of silicate of alumina and soda, to which clay owes its power of retaining ammonia. If this is the case, by adding leached ashes to a sandy soil, we add ammonia, or at least, the means of retaining the ammonia brought to the soil by rain from the atmosphere; and that, too, in the best condition for assimilation by the plant. Taking this view, it would follow that the older the ashes, and the more they had been exposed to rain, the better and stronger they would be for manure.

But whatever difference of opinion there may be as to the cause or reason of the fertilizing value of leached ashes, all agree that they are valuable for wheat on sandy soils.

There are in many parts of the country old asheries, from whence leached ashes can be obtained at a mere nominal price; and it is truly surprising that they are not more extensively used. The fall is the best time to apply them, though they might be spread on the wheat, while more or less snow is on the ground in the winter, to advantage.—*Harris's Rural Annual.*

#### DEEP PLOWING.

 HERE is no subject in agriculture more worthy of consideration, than that of plowing deep in the fall, under certain circumstances. My experience on this subject has shown me, that clayey and slate soils may be greatly benefited by plowing deep in the fall, exposing the soil to the action of the air and frost during the winter. Experience has also taught me, that plowing clayey, soils deep in the spring, so as to turn up two or three inches of soil never before exposed to air, is sure to be a failure in the first crop.

After being thus exposed for one year to the atmosphere, and plowed the following spring, the increase in the next crop will be plainly seen, proving the advantage of plowing such lands deep in the fall. On slaty soils I have seen far greater results from this method.

A portion of my farm is slate. I was told by some of my neighbors that a part of this slate has been under the plow for over twenty years. He also told them he

had tried a number of times to seed it, but without success. I commenced plowing this piece of land with the intention of restoring it to fertility. I plowed it beam deep, and sowed oats in the spring, and seeded to June clover. The result was more than I expected. A uniform growth of oats, three feet high, was the result. The next June I mowed one and a half tons per acre of good clover hay upon said land. In September following, there was a greater growth of clover than in June, I commenced plowing in the clover on the 15th of September, and sowed to winter heat. The July following I harvested a fair crop of wheat, considering the amount of insects which worked upon it. I plowed again in the fall, and sowed oats in the spring expecting that there would be clover seed enough left to seed it; but in this I was disappointed; the result was a fair crop of oats for this year; I have plowed again this fall with the intention of seeding next spring.

Another piece of land adjoining I plowed in the fall, and sowed with oats in the spring. I harvested what the insects left after doing their work, which was 45 bushels per acre. Said piece of land did not produce more than 40 bushels of ears of corn per acre the year before. I have satisfied myself that there must be some power in slate stone for the growth of vegetation, when brought into a state to be acted upon by the roots of plants, which is done by the action of heat and cold, in pulverizing the slate.

Geology and experience have taught us that no soil, unless exposed to the atmosphere, will vegetate the least plant. We may take swamp muck, as an example, which experience teaches will be of no use until brought to the air, and changed by a chemical process in uniting with some other substance, or the action of the atmosphere upon it, thus changing it into a valuable manure.

In the other case, the soil is not so much saturated with water, as in the former, and nature is, in this case, her own remedy, when the soil is exposed to the atmosphere. The distance to which air penetrates clayey soils cannot be more than two or three inches when plowed shallow. While with deep plowing it may penetrate to three times that depth.

Experience has taught me that upon fine loam or gravelly lands, the soil is far more porous than in clayey lands, and if plowed