

modern machinery, as for you to succeed in farming without watching carefully for every improvement.

As the successful farmer must be a progressive one, allow me to suggest a few topics for your future consideration ; and among these is

#### THE THOROUGH PULVERIZATION OF THE SOIL.

For several years past it has occurred to me that sufficient attention has not generally been paid by farmers to a thorough preparation of the ground for a crop. The mere question of deep or shallow ploughing is not enough. The gardener who runs his spade through the soil, and merely turns it over, well knows that his more delicate vegetables would never thrive there, so he carefully pulverizes every clod. The fibrous root of plants will penetrate clods ; they will wind around them, the same as around a stone.

Farmers have within a few years made great improvements in ploughing, but not enough in harrowing. We need yet a new harrow, one that shall combine the principles of the old fashioned instrument, the English or Scotch grubber, and the cultivator ; one that shall completely divide the surface of the soil, rendering it light and easy to work. On your sandy lands this may not be so necessary ; but I submit it to the good sense of you, gentleman farmers, if you would not find your hoeing much easier, and your crop much improved, by thoroughly harrowing or cultivating your strong upland, and clayey soils. The finer your soil, as a general rule, the more fibrous the roots of your plant, and the more fibrous these are, the more thriving the plant itself. Farmers are generally ready to adopt an improvement, when convinced of its truth. I know of no better method to convince them of the principle here advanced, than to ask them to put in practice in their fields, what they know to be necessary in the garden.

It is true that the time of the farmer is precious in seed time in this climate ; but if the ground be sufficiently dry, the farmer who will spend as much time as he can possibly spare in a careful pulverization of the soil, will find himself amply rewarded.

Seed placed in the ground needs light and air to vegetate and thrive, and if the soil be sufficiently loose, it will absorb air and the gases in abundance. Did you ever notice how loath that hill of potatoes was to come up that you covered up with a coating of clay mortar ? How sickly it looked, and ashamed to be seen by its neighbors ? The air could not reach it. Do you remember how much better those cabbages and cucumbers looked when you stirred the soil around them ?

A highly successful farmer in this State tells us that he makes use of the grubber after plowing, by which he clears the soil of weeds, and carries his cultivation so far that he does not find it necessary to do more to his potatoes between planting and digging, than to run his double mouldboard plow through them, and he always secures a good crop by this mode of cultivation. But there is still another point.