the surface soils, we are lamentably remiss in our appreciation and treatment of *the subsoil.*

"Some months after, a merchant, in taking me over his wine-stores, pointed out, in some casks, that were being broken up, a mineral incrustation about as thick as a half-crown, and as brittle as glass, which he called *tartrate of lime*, adding, that it was commonly deposited by the wine, especially when new. I afterwards ascertained that potash and soda existed in the deposit."

This incrustation that forms upon wine casks is crude tartar, that is, the acid salt of potash, with two proportionals of tartaric acid, known in commerce by the name of *argol*. Chemically, it is identical with cream of tartar, degraded by some impurities from the wine. The best argols come from Leghorn and Bologna. *Tartaric acid* is found in the juice of grapes, and, it is said, in that of the tamarinds and mulberries, But it is the peculiar acid of the vine, wherein, after vinous fermentations, it always is found combined with potash, which alkali can only have been obtained from the *soil;* hence the interpretation of the singular process of deep trenching described by Mr. Hoskyns.

Horticulture.

CULTIVATING ORCHARDS.

BY J. J. THOMAS.

For a few years past about eighty thousand dollars' worth of fruit trees have been annually set out into orchards in the single state of New York. If these were all treated in the best manner, in preparing the ground, in carefully transplanting, and in good care and cultivation afterwards, each years planting would probably be worth to the owners in ten year's not less than three millions of dollars, so far as their value may be measured by a sum of money. The question arises, what proportion of this great number of trees are actually advancing with full promise of what they might attain?—What portion will really become in ten years, by the best treatment, full sized healthy and productive?

Several intelligent individuals have given it as their opinion that not one half of the trees that are set out, ever survive the third year. A very large number are certainly lost by careles removal, hasty transplanting into hard ground, and total subsequent neglect. But of those which survive, there are undoubtedly not one-tenth, that make half the growth they would attain under good management. We have seen whole orchards of young peach trees, smothered to death the first summer by the heavy growth of meadow grass which nearly enveloped them. A far larger number, however, are those which are not killed outright, but which linger year after year, with a slow and feeble growth. Now this tardiness is altogether unnecessary. Peach trees as far north as forty-three degrees, have been made to yield the third summer from transplanting, three pecks of peaches, and apple trees, the fifth summer, one bushel each.—An eminent pomologist now living in Western New York, set out a large fruit garden after long years had silvered his head with whiteness; yet for the past twenty years he has annually enjoyed a profusion of fruit from this identical garden. The secret consisted simply in treating his trees as well as every good farmer treats his corn and cabbages.

"But we cannot afford to give so much attention to our trees—the rich man only can do this," says the laboring farmer. What! not afford to be economical? The man of small means is the very person to save his trees after he has paid for them; he is the very man who should not spend his coin to have feeble and fruitless orchards. Let him buy half the number, and apply the other half of the purchase money in taking care of what he has, and he will soon become the gainer by the operation. It is however a great mistake to suppose that much expense is needed. Enriching the land is largely paid for by the heavy crops of potatoes, carrots and rutabagas which grow between the rows while the trees are small, and by the equally heavy and more valuable loads of ripe fruit profusely yielded afterwards. The expense of plowing once a year, and harrowing four times, is perhaps not half the first cost of the orchard, to say nothing of the annual crops afforded; while it soon renders it quadruple the value of the neglected plantation. Why do not farmers apply the same wit and wisdom to the management of their orchards, that they do to their corn and clover crops? Why should they not, when many who fortunately have already full grown orchards, get more in monied value from them than from all their farms besides.

The difficulty is rendered greater in most cases by the very inconvenient machinery used for plowing near the rows. A plow drawn with a two-horse team, with double whiffle-trees, cannot safely approach nearer than three feet to a tree, and every plowman dreads a task which is commonly attended with mutilated bark on one hand, and wide grassy "balks," on the other. A great improvement is made by placing one horse ahead of the other, with short single whiffle-trees, especially if the draught traces of the hinder horse are considerably lengthened to allow running to right or left.

A wide error is committed in cultivating orchards by those who forget that roots extend far beyond the circle measured by the branches.—The whole surface of the ground is covered by the net-work of roots, where full-grown trees stand 20 or 30 feet apart. The larger and more obvious roots, it is true, are near the base of the trunk; but all the finer ones, which so largely contribute nourishment, are spread at great distances. Hence all orchards which have made some years of growth, should have the whole surface cultivated and kept mellow, and not narrow strips or small circles just at the foot of the trees.—*Cultivator.*

FALLEN FRUIT.—Be careful to gather all punctured or decaying fruits, whether on your trees or on the ground, and give them to your hogs. If you do not, the worms which they contain,