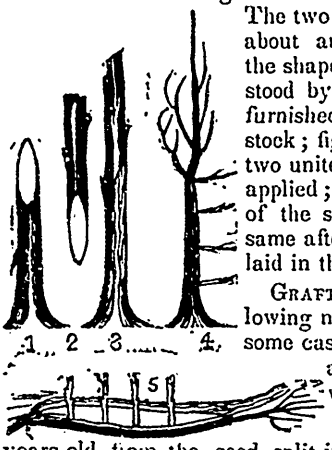
around the tree, both on the upper and lower edges of the plaster, to exclude rain, &c. This plaster is all the ligature required, as the union soon becomes perfect. After the scion sends forth its shoots, all starting sprouts below the splice, should be removed. As to the precise time for grafting, there seems to be some discrepancy of opinion; but I prefer that time when the buds are swelling. Still, I have met with success when the leaf began to develope itself.



The two parts should lap on each other about an inch and a quarter. That the shape of the splice may be understood by all, the annexed drawing is furnished; fig. 1, representing the stock; fig. 2, the scion; and fig. 3, the two united before the wax plaster is applied; fig. 4 shows the appearance of the stock and graft, and fig. 5 the same after the stock is bent down and laid in the earth.

GRAFTING INTO LAYERS.—The following mode, altho' not wholly new, in some cases may be found to possess advantages over other modes, where stocks may be scarce. Take a stock of two or three years old from the seed, split it with a sharp point-ed knife, about once in three or four inches; whittle off your scion wedge-shaped, and stick it at right angles through the stem. Apply wax and bandage, bend down the stock and confine it in a trench three or four inches deep; cover up with earth, leave one bud of the graft above the surface, and it is done. Three years since I first thought of and practised this plan. Nearly all the scions took and grew finely. The spring following, I divided the stock with a sharp knife between each graft and let them stand. This spring I transplanted them, found them perfectly sound where they passed through the stock, and finely rooted. From 100 stocks, you can have from 300 to 400 thrifty grafts—quite a saving of labor and time

A. B. PRICE, M. D., *Boon Grove, Porter Co., Ia., March* 1848.

TIME FOR PRUNING ORCHARDS.

D. SINCLAIR, jr., writes from Cape Island as follows:—"My objection to pruning in the winter is, the frosty winds dry and crack the wound; if delayed till May, the sap would keep it alive till grown over. I have for several years pursued the business of grafting in Canada and the States, and have seen trees that were pruned in the winter on the decay, while those of equal size pruned at another season, were healed. I use a moist and durable composition, bearing the changes of the weather, and will cover the wound until grown off. It consists of—

Beeswax, 1 lb.,
Tallow, ¾ lb.,
Rosin, 4½ lb.

Early summer pruning would, doubtless, be advantageous in several respects, but it usually happens that it is a very busy season with nearly all cultivators. There appears, however, to be no objection to late winter pruning, if the wounds are protected by a suitable water-proof covering; a good and cheap one consists of a mixture of tar and brick dust applied warm; or a better and more expensive one may be made by dissolving as much gum shellac in alcohol as will make it of the consistence of paint, to be kept corked in a wide bottle and applied with a brush.—*Albany Cultivator.*

From the Gardeners' Chronicle.

There is an idea on which the whole THEORY of FARMING rests, the truth of which, though as nearly as possible self-evident, has not, we are convinced, that constant residence in the mind of the agricultural student which it deserves. The idea is connected with the atomic theory to which we lately adverted. It might be expressed thus:—Farm products are made of atoms, which though built up together, it may be for the first time in the forms we see, have always, each of them, existed since the creation, possessed of the properties then conferred upon them. This may appear to be a very abstract proposition—one of little practical use—but we believe that no definite idea of the rationale of any farm process is possible without the admission of it.

The indestructibility and unchangeable nature of matter are capital points in the theory of agriculture. Strange as the statement may seem to one who sees the manure added to the soil, and the harvest taken from it, no farm process alters the nature of the matters on which it acts: the living plant or animal cannot change the character of the atoms presented to it; it flourishes or dies according as they are food or poison; it can but select those proper to its growth. Extra fertility is simply an extraordinary accumulation in the soil of those atoms which form the substance of our cultivated plants; skill in agriculture is for the most part simply that which enables the farmer to procure these atoms from the cheapest sources and collect them for use by the living seed or plant he has placed in the soil to assimilate them; the efficiency of all agricultural practice consists in its ability to detach these atoms from previous combinations, setting them free for use by the vegetable at the time it requires them.

Now take either an onwards or a retrospective glance at agriculture: consider in the one case how the soil during winter becomes broken up, disintegrated, and decomposed, under the influence of frost and rain, how it is enriched from the farm-yard in spring, and how the atoms thus prepared in it and added to it are absorbed along with other atoms from the air, and, uniting, form within and on the plant the produce aimed at by the farmer. Or, on the other hand, take a specimen of farm produce—flesh, for instance; consider whence the atoms which form it have been taken—the various processes, combinations, and decompositions which they have undergone since first taken from the earth or the air. Mark how each has maintained its individuality and its character throughout—the numberless companions from which it has parted—the others with which it has united, until all have become resident in the animal structure of which they ultimately form a part.

Such an examination, if worked out in detail, would convey a perfect idea of the nature of that chemical manufacture which we call farming. And while analysis enables us to conduct it more into detail as regards the general truth on which we have been insisting, so we are able to apply the idea with equal force to every portion of farm practice. That of manuring, for instance: how entirely it destroys the merit of mere bulk or weight, apart from composition! So many "cubic yards per acre" are often spoken of—but no information as to the value of the application can thus be conveyed. The question is whether the particles are really there which shall ultimately take their place in the product aimed at. We know of no better subject for investigation in this way than that which the English Agricultural Society has propounded for one of their Essays for 1849:—How to increase the produce of meat? A full discussion of it will involve every agricultural process, from the preparation of the soil to the sale of the ox. The atoms of which meat is formed are no doubt worked apart from the soil by nature: added to it by art; absorbed by plants; taken from the air and the rain; united, and parted, and re-united as the crop matures; and, when harvested and mixed with other matter imported on the farm, prepared for food; and ultimately separated during digestion for the nutrition of the various parts of the animal. At every stage of the lengthened process, economy may be usefully applied or waste suffered, and thus everywhere there is room for the application of skill and intelligence.

The atomic theory, so to speak, of farm practice will lead us, too, to see how fertility may be self-sustained: how, in the long run and over the surface of a large territory, it will appear that the actual weight of matter comprised in the animal, or in the vegetable, or in the mineral kingdom, remains constant, so that no transposition of matter from the one to the other is carried on to any great extent—to the enrichment of the one or the impoverishment of the other. The atoms removed from the soil, it will thus appear, should, under good management, all return to it again—and to a great extent they do. This