

perchance radial branches have been formed lower than three feet, the knife of the mercenary nurseryman has trimmed them off.

To produce a pyramidal form from this, (and I may here say after many examinations of American nurseries, that it is almost impossible to find any other treatment of a tree) we commence by cutting back one-half its length. The next effort of nature is to have the root sap aerated, and there are few or no leaves to effect it. A large amount of sap is thrown upon these few, and often, what horticulturists term suffocation, ensues, and a sickly growth of thin small shoots is the only result. When, however, the roots are not sufficiently vigorous to produce this effect, several roots start from near the amputation and force their way up in a thick bushy clustre, or a gourmand or two springs up, absorbing all the sap and growth. It becomes more and more difficult to draw out the buds below, and after the bark is two years old, almost impossible. So here we must start for our pyramid, with a raw amputation that for years exhibits its ungainly scar, and at last closes over with bark and wood, which conceals within a dead and decaying piece of organism, that must prove similar in its irritating effects to a carious bone in the animal economy.

Let it henceforth be settled as an axiom of Horticulture, which we are required to believe before he can pass the threshold of the science, that to cut any portion of the wood of more than one year old, is to interfere more or less seriously with the organism of the tree. That to cure is better than to amputate, and to form a tree properly we must have begun at the foundation.

The maiden plant must stand at sufficient distance from its fellows to enable it to radiate its branches from the ground for the distance of a foot on either side, without interference. Then, when a sufficient number of radial branches do not form, the terminal bud must be pinched off during the midsummer growth. This wood, now in its succulent and sappy condition, heals over at once, and no scar is left. By the loss of the terminal bud the sap is distributed to the lower buds and radial shoots push forth. Thus is formed the true pyramid, and by an occasional pinching in of its succulent growth, no great interference with its vital organism is effected, and its form is preserved through all its coming growth.

And now I may be asked, what advantages are to be gained for all these pains-takings? What compensation gains for all tedious labor?

When trees have endured the common interference with their structure, and have been trimmed up until they have unwillingly been forced to stand with all their superstructure of leaves, limbs and fruits, mounted on a stem that connects them with their substructure of roots and absorbents, did any one ever seriously ask himself what office the naked trunk of a tree performs in the economy of a tree? did any such querist ever obtain a satisfactory reply? It seems almost as though our fathers, having only the models of the giant and naked bolls of the primeval forest before them, feebly imitated them in their fruit trees.

CAUSE OF SUCH TRAINING—TO OBTAIN GRAIN CROPS IN ORCHARDS.

1st. A tree standing on an open plain should be nearer the model, only that the grass and seeds have forced a short trunk upon it by suffocating its lower limbs. In cultivated grounds this would never exist. With a trunk six to ten feet high the sap must travel through so much waste wood before it reaches the branches where it is to perform its various offices. How ludicrous would be the exhibition of human beings never approaching their food nearer than six to ten feet, and drawing and sucking it through a gutta perch tube! But little less monstrous is the enforcing of this unnatural custom of the shape of trees. The sap, obliged to travel up this waste of wood, becomes thickened and coagulated by the fervent action of the sun's rays, and in midsummer the tree languishes and much of its leaves and fruit falls to the ground. The bark thickens and indurates under this action with mysterious sympathy, to secure the inner structure from the excessive heat; then becoming hide bound, another surgical operation becomes necessary, and the thick bark is slit from top to bottom.

2d. The tree now takes the form of an inverted cone, standing on its apex, and this again lifted upon a pedestal six to ten feet high. It now throws a shadow which covers, and poisons by its shade, an area of ground ten times the surface, measured by its own diameter of foliage. That is, to grow a tree thirty-eight feet in height, eight feet of which is trunk, and whose loose straggling and spreading top could be compressed into a pyramid of twenty feet in height, and then exhibit equal foliage to the sun and air, we