

CANE AND GRAPE SUGAR.

Editor Canadian Agriculturist :

DEAR SIR,—I notice in your January number a short paper descriptive of a process for preparing sugar from Indian Corn and Oil of Vitriol. The process is by no means new, having been invented by Kirchoff at the end of last century; but from the description above referred to, most persons unacquainted with the subject would be led to believe that the sugar produced is identical with that of the cane, the beet, the maple, and the corn stalk. Such is not the case, it is grape sugar which is formed;—that peculiar modification which exists in the grape, raisins, figs, honey, and in almost all fruits, and which does not possess more than a small fraction of the sweetness of ordinary cane sugar. It cannot therefore be applied to all the same purposes as this latter kind, although in some few instances it might perhaps be usefully employed. If a person desirous of having his cup of tea rather sweet, were to employ the starch sugar, he would have to fill his cup with it first, and then add the tea.

I may also take this opportunity of pointing out a rather serious error into which your correspondent, Mr. Moyle, has fallen. He seems to have no very distinct ideas respecting the difference between phosphorus and phosphoric acid; in the lime stone alluded to, the phosphoric acid is combined with lime, and is not in the slightest degree altered by any heat to which it may be subjected. The experiment with decaying phosphorescent wood has no bearing on the question whatever.

I remain,
Yours, very truly,
HENRY CROFT.

UNIVERSITY,
Toronto, Jan. 16. 1853.

HORTICULTURE.

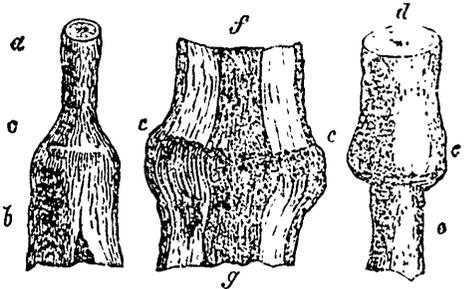
PROPAGATING BY GRAFTING.

When particular sorts of shrubs and trees cannot be procured from seed, or when the seedlings would be a number of years in blowing or fruiting, slips of these sorts, or even buds, are cut off, and instead of planting them in the ground, they are fitted to a cut made in another suitable tree or shrub, called the *stock*, by an operation variously performed, termed *grafting*, which can only be properly taught by a master and not by a book.

The principal upon which the union takes place is, that the pulp from the cutting descends to its junction with the stock, where, being excluded from the air and light by a ball of prepared clay, it forms woody fibres instead of roots as it might have done in the ground; while at the same time, the sap from the stock rises into the cutting, whose leaves convert it into pulp.

When the texture of the wood is softer in the cutting than in the stock, the latter interrupts the descent of the pulp, and forms a bulging scar; when the cutting has a harder texture than the stock, the contrary takes place.

In the practice of grafting, only the sorts of the same or similar species succeed. A pear cutting for instance, may be grafted on a quince or apple stock; but not a plum on a cherry stock. The apple, however, succeeds when grafted on the hawthorn or the mountain ash, though much better when grafted on a crab stock.



a, the Pavia lutea, a shrub, which never attains the size of a tree, cleft-grafted on the horse-hesnut, b, a tree of great size. It is remarkable that the Pavia is much enlarged near the junction c, like a tree near the ground, a circumstance which would not have occurred but for the graft. The bark of each remains distinct. d, the white-lime tree grafted on the European lime tree, e; each growing in diameter according to its particular nature, without any intermixture at the line of graft, c; a vertical section, f, g, of an almond tree, f cleft-grafted on a prunus, g, showing that not one of the characteristics of the two individuals ever pass the line of junction, c, e, any more than the spin grafted on the comb of the cock ever changes its hard horny nature for the soft fleshy nature of the comb.

When one branch of a growing tree or shrub is grafted to the branch of another growing plant near it, the process is termed *inarching*, but this system is seldom practised, except with rare and choice plants. When a bud from one tree is inserted into the bark of another tree, it is termed *budding*, and this is exceedingly advantageous to rose trees, for a fine standard rose may thus be obtained by simply inserting buds of good sorts on a stock of the wild rose and the sweetbrier. It is also very useful in filling up the breaches in peach trees trained to the wall, which are sometimes occasioned by the decaying of a large branch.

PLANTING.

It has been previously suggested that this operation should be performed in cloudy or showery weather. It must never be forgotten, in planting, that a plant is a *living* thing. For this reason it should not be kept out of the ground, or its roots allowed to dry, or these last be much crippled. The new earth should also be placed about the roots with great care and gentleness, and not pressed upon them too violently. October and November are the best months for planting trees and shrubs, because they are then comparatively at rest, and the weather is usually dull and quiet. Where little check is required to be given, balls of earth to the roots must be obtained, if possible, and these