

PROPAGATION BY CUTTINGS.

THIS is one of the most common and available modes of extending plants. A cutting is simply a part of a plant taken off and placed in a position to form roots, and become in all respects a living representation of the original from whence it was taken. The constitutional conditions, or special proportionate arrangements of the constituents of plants most favourable for the emission of roots, has not been determined. While, therefore, some will throw out roots under any conditions, others will do so very tardily under the most favorable circumstances.

Cuttings taken from extreme points of shoots will produce early flowering plants, and frequently a tendency to bushy and dwarf growth; those from side branches incline to horizontal growth, and in some cases it is only by securing an upright shoot from the base of such side growing plants that upward growth is obtained. These peculiarities are not constant, and are not considered important, although occasionally useful for particular purposes.

The formation of roots is dependent upon the previous or immediate action of leaves; the best shoots, therefore, for propagation are those possessing a considerable portion of the organized matter consequent upon maturity, but in which the processes of growth are still in full operation; in other words, those shoots that have commenced to mature, but are possessors of healthy, active foliage.

Cuttings of young and succulent shoots, are immediately dependent upon the simultaneous growth of stem for their successful rooting, the leaves must therefore be preserved in order to assimilate matter for root formation.

It is necessary to surround the cuttings by an atmosphere containing a uniform degree of moisture. All moist bodies, when placed in a dry atmosphere, lose moisture by evaporation. If the cuttings are subjected to aridity their contained sap will speedily be exhausted, and they will shrivel and die. Hence the practice of propagating in close-fitting frames, or covering with a bell glass to insure the required atmospherical temperature and contained moisture.

Light in excess is equally injurious, shading is requisite from strong sunlight: care is required, however, that enough light be admitted to maintain a healthy leaf action.

Every one who has experience in this mode of propagation is aware that under certain conditions, cuttings will grow and increase at the top without forming roots; while under others the same kind of cuttings will produce roots without indicating the slightest symptoms of growth by external buds. Heat is the great stimulus to the vital forces of plants, and when the atmosphere in which they are placed is of a higher temperature than the soil in which they are inserted, the branches are incited to growth. On the contrary, these conditions are reversed when the soil is a few degrees warmer than the air; roots are then encouraged while the stem may remain stationary. In propagating cuttings it is therefore a good general rule to place them in the lowest average atmospherical temperature that they will endure to retard upward growth, and, on the other hand to raise, by the application of artificial heat, the soil to the highest average temperature, in order to stimulate into activity the processes carried on in the vessels beneath the surface of the soil, and the more completely these conditions are secured, the greater the chances of success.—W. SAUNDERS in *Horticulturist*.

TO PRESERVE VINES FROM BUGS.—Messrs. Editors. After reading the many remedies to prevent bugs from destroying vines, in the last number of your paper, I would like to mention this simple remedy I tried last season with great suc-