



Value of Heat.

While the thermometer is standing at ninety in the shade, and many are complaining of the intensely hot weather, and wishing it were cooler, we would take the opportunity to say a few words to our readers, about the value of heat to the horticulturist. We probably know as yet very little of what is daily going on in that natural laboratory which we call our garden; but there are a few things, which we think we do know, and are encouraged to believe that though we stand now only in the outer porch of that great temple, man shall yet enter its halls and penetrate within the veil. It may be that we shall never know how the changes are made, how the spring dressing of decaying matter, which we yearly spade into the soil, is so transformed, and combined with the rains and dews and air as to produce those nice vegetables which we lay with so much satisfaction upon our tables or those tempting fruits so refreshing and so wholesome. But we are rapidly learning the conditions under which these changes go on most readily and successfully, and how to supply these conditions most advantageously. Now one of the conditions necessary to the perfect development of our garden products, is a certain degree of heat. In our anxiety to lengthen these short summers, we make spring hot beds and try to supply the lack of solar heat, by bringing to our aid the heat of fermentation. In this way we are enabled to bring many things on to such a degree of maturity that by the time the warmth of the atmosphere has risen high enough, the plants are sufficiently advanced to come to maturity before the return of frosts. Observation will soon teach us that some plants grow to perfection in the cooler weather of early summer, and accordingly we sow our peas and lettuce, expecting that by mid-summer the ground may be sown with turnips, or planted with late cabbage. Others of our garden vegetables require the whole season to come to maturity, and when the hot weather of July and August is not accompanied with frequent showers, we find that heat alone makes the garden a desert. But we must not, therefore, conclude that it is not in our power to mitigate the disadvantages arising from lack of rain, for that the heat is not doing a valuable work. The evaporation that is going on so rapidly in hot weather, at the surface of the earth, is in a degree counterbalanced by the rising of moisture from below. It follows then that the deeper down the soil is pulverized, the more readily this flow of water upwards to the surface will take place. The force which draws the water upwards is known among scientific men as "capillary attraction," and though so contrary to our common experience, that water will run down hill, as none the less true and real. This water in the earth is more or less charged with soluble salts, such as help to form the plants we cultivate, which salts are thus brought to the surface, and as the water evaporates are left there; unless taken up by the growing vegetation. If then we pulverize the soil deeply, we are not only allowing the air to permeate it, and enabling the roots to penetrate it, but we are opening a source of supply of moisture when the rains fail, and not of moisture merely, but of moisture filled with food suited to the support of vegetation, which the heat is drawing to the surface by the process of evaporation.

But there is other work which the heat is doing. Within certain limits the processes of assimilation go on more rapidly in a high temperature, and we believe in many instances more perfectly. This is more clearly perceptible in the case of fruits. Strawberries that are ripened in cloudy and damp weather, may have greater size, but they are wanting in sweetness of flavor and depth of colour, in comparison with those that are ripened in hotter weather and in a bright sun. And what is true of strawberries is true of all other fruits, and of some in a yet more marked degree. How tasteless are melons in a cool season, peaches also seem to have lost their flavor and even pears and apples show a difference. The flavor and value of grapes depends greatly upon the amount of heat crowded into our short summers. For many varieties our seasons are too short, but there are

those which will mature perfectly in a short season if it be only sufficiently dry and hot.

But heat in summer does an important work in preparing our trees, shrubs, and vines to withstand the cold of winter. We well know that when the young growth has been moderately fast and has been thoroughly ripened, when the cells are small and only moderately filled with sap, the trees, &c., pass unharmed through a degree of cold that would otherwise have destroyed their vitality. In a hot season, not accompanied by excess of moisture, this ripening of the wood is obtained in the highest degree, the growth is moderately rapid, the cells are not disturbed beyond their natural size, nor filled with superabundant moisture, and when winter comes the tree or vine is prepared to drop its leaves and withstand the cold.

These are some of the offices of heat. Our summers are short, and it is a blessing that they are hot. When they are cool all our plants, grains, fruit, &c. are not quite perfectly matured. A proper course of cultivation will economize all the value of the heat, while the evils will be visited only on the sluggard or the unthoughtful.

Budding Fruit Trees.

This is the season when most of the fruit trees are in the best state for performing successfully the operation of budding. It is of the first importance that the buds should be well matured. They are taken from the shoots of this season's growth, and are to be found at the base of the leaf-stalk, usually termed the axile of the leaf. Those buds which are found near the point of the shoot are not usually ripe enough to be used; the wood of the twig is soft and the bud green; those which lie at the base or butt end of the shoot are not often well developed, being mere rudiments of buds. The buds which lie about the middle of the shoot are those most suitable and in the best condition for budding. After cutting off the twig from the tree the leaves should be all cut off, leaving a portion of the leaf-stalk attached, and the soft end of the shoot containing the unripened buds cut away. The twig when thus prepared will resemble fig. 1.

The stock into which the bud is to be inserted should be thrifty and growing well. If in this state the bark will peel freely from the wood. A smooth place on the stock should be selected, and a straight perpendicular cut be made with a sharp knife through the bark, and another horizontal cut at the upper end of the perpendicular cut, making a mark not unlike the letter T, as shown in fig. 3. Now cut off a bud

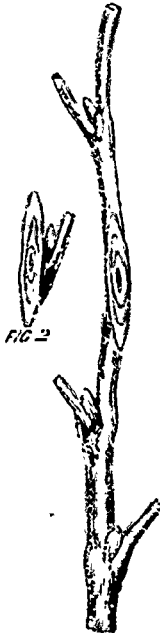


FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

from the twig with a smooth, straight cut, taking as much of the wood of the twig as possible. The bud when cut off should resemble fig. 2. Then raise the corners of the bark of the stock where you have cut,

it sufficiently to insert the lower end of the bud under the bark, and gently crowd it down the slit until it is introduced under the bark. It will then be in the position shown in fig. 4. If any part of the bark of the bud extends above the cross cut, it should be cut off by pressing the knife through it, into the cross cut, thus making the bark of the bud to lie evenly with the bark of the tree. Now the bud should be tied in its place with a strip of bass bark or a bit of woollen yarn. This needs to be snugly and thoroughly done, so that nothing can be seen but the bud and the portion of the leaf-stalk attached. When tied it should resemble fig. 5. In a fortnight the buds should be examined, and when the bark of the tree begins to swell, so that the binding is cutting the stock, the string should be removed. With these directions and illustrations any one may, by a little practice, put in buds with the fullest expectation that they will grow.

Rogers' Hybrid Grapes.

We request such of our readers as have fruited any of these grapes, to give the readers of THE CANADA FARMER the benefit of their experience. Mr. Rogers has attempted by fertilizing the blossoms of native wild grapes with the pollen of the Black Hamburg and other foreign varieties, to combine the hardihood of the native with the flavor of the foreign. With what success, there is already a diversity of opinion. A writer in the *New England Farmer* says, "Rogers' No. 19, is proving to be an excellent out-door grape for the latitude of Massachusetts. I am confident that it is one of the very best of Mr. Rogers' grapes. Persons with whom the Black Hamburg is a favorite, will be likely to select No. 19, because it so much resembles the former. No. 19 within my observation proves to be as hardy as any of our out-door grapes, is a vigorous grower, bears large crops of large fruit, both bunch and berry being large; the quality is generally admitted to be superior to the Concord, and it ripens at least one week earlier than the latter."

DRESSING FOR STRAWBERRIES.—It is said that no dressing will so delight the strawberry as a heavy coat of dark forest mould. They are the children of the wilderness, force them as we will; and their little fibrous roots never forget their longing for the dark, uncultivated odour of mouldering forest leaves.

A ROSE TREE, now in Glencoe, Long Island, is described as decorated with some 9,500 buds and roses, hanging in bunches of twenty to thirty each. It is one of the family of "*Rosa Rubifolia*," its standard or trunk stands six feet in height, measuring five inches in diameter; the branches form an umbrella-shaped arch, and measure twelve and a half feet in diameter, or thirty-six feet around.

THE ONION MAGGOT.—The *Boston Cultivator* says of these pests, and of the remedies applied to the crop, when their presence has been discovered. "These maggots on emerging from the eggs laid by the onion flies, bore through the leaves into the bulb which they soon destroy. As soon as the visitation of this pest is observed, the plants attacked are easily detected by the yellow fading leaves; these should be pulled, burned, and lime-water poured into the holes whence extracted. Strewing soot or powdered charcoal round the remaining plants, leaving a few unprotected, as recommended, as traps, is found useful. It is also recommended to saturate the bed with strong soap-suds."

RASPBERRIES AND BLACKBERRIES.—The *New York Tribune* says:—"The old canes have about performed their duty, and the new shoots are aspiring to overtop their parents. Remember, that the next year's crop will depend entirely upon these new canes. To insure a vigorous growth, cut out all the old ones as soon as the fruit has been gathered—they would never bear again—and unless an increase of stock is wanted, cut out a portion of the weak canes of the present year. This will throw all the growth into the remainder and secure strong shoots for future fruiting. They are often left too crowded. If in large hills four feet apart, four raspberry, or three blackberry canes are quite sufficient for a hill. We prefer them in drills, to be trained upon a trellis, with single canes of raspberries fifteen inches, and blackberries twenty inches distant, the rows four feet apart for raspberries and six feet for blackberries. On rich ground, well tilled, the growth will be sufficient to fill the trellis, which need not be more than two wires or slats in height. When too aspiring, nip off the shoot a reasonable height, to induce side branches. This will make a miniature tree, which, with the Lawton blackberry, has been known to produce six and even eight quarts per cane."