

setting, the value of which exceeds that of a crop of fruit.

The following spring, after the young plants are all removed from the ground, cut off the ends of the previous season's growth, to within one and a half to two feet of the root—it may seem wasteful, but is necessary to be done thereby, the size of the fruit is increased, and the labour of harvesting is greatly diminished.

There will now spring up large upright canes for the next season's fruiting; these, when one and a half to two feet high, in the latter half of June, should be cut or pinched off at the tips. This causes numerous side branches to start, and the main canes to grow more stocky, which prevents their being blown down by the wind, and also the necessity for staking and tying up to support the next crop of fruit. The following winter or early spring these side branches also should be cut off, at least one-third to half their length, and then such shallow cultivation as is sufficient to keep the weeds and grass subdued, is all that is needed till after the fruit is gathered, when all the old bushes may be cut away, and the ground thoroughly cultivated, or ploughed, not too deeply, turning the furrows toward the rows. And after this, in each year, the same course of treatment is advisable.

No pinching nor cutting back of the young canes after the first of July

In gathering berries for market, see that all are fully ripe—partially ripened fruit becomes soft and sour in much less time than it does when well ripened before being packed. Ventilated quart or pint boxes, not more than three inches deep, square in form, with bottoms elevated, so as to pack one upon the other, without shelves or drawers, are preferable for packing. The ordinary yield of the improved varieties of black raspberries is about 2,000 quarts per acre. But with labour and skill bestowed to that end, more than double that amount is not unfrequently gathered from a single acre in one season. A good picker often gathers 75 to 85 quarts in one day, but 50 quarts would be considered a good day's work in good picking, and 35 quarts would be a fair average during the ordinary season for berries.

In conclusion, in commendation of the improved varieties of the black raspberries as adapted to profitable cultivation, I am free to affirm that they have indeed most valuable qualities; they need no covering nor winter protection, do not fill the ground with suckers, are great bearers, and the fruit is so firm that it can be shipped to our most distant markets in good condition, and invariably finds a ready sale at highly remunerative prices.—*Utica Herald*.

KEEPING PLUMS.—“H. G.” asks, “Can you inform me of the best plan to keep plums fresh for a length of time, after being ripe? Will some one who knows how please reply to this inquiry?”

### The Work Done by a Leaf.

Now, what does it do? It pumps water from the ground through the thousands of tubes in the stem of the tree (the tubes which itself has made) and sends it into the atmosphere in the form of unseen mist, to be condensed and fall in showers—the very water that, were it not for the leaf, would sink in the earth, and find its way perchance through subterranean channels to the sea. And thus it is that we see it works to give us the “early and the latter rain.” It works to send the rills and streams, like lines of silver, adown the mountain and across the plain. It works to pour down the larger brooks which turn the wheel that energises machinery which gives employment to millions. And thus a thousand wants are supplied, commerce stimulated, wealth accumulated, and intelligence disseminated through the agency of this wealth. The leaf does it all.

It has been demonstrated that every square inch of leaf lifts 3-500th of an ounce every twenty-four hours. Now, a large forest tree has about five acres of foliage, or 6,272,640 square inches. This being multiplied by 3-500th (the amount pumped by every inch) gives us the result—2,352 ounces or 1,176 quarts, or 294 gallons, or 8 barrels, a medium-sized forest tree about 5 barrels. The trees on an acre give 800 barrels in 24 hours. An acre of grass, or clover, or grain would yield about the same result.

The leaf is a worker, too, in another field of labour, where we seldom look, where it exhibits its unselfishness—where it works for the good of man in a most wonderful manner. It carries immense quantities of electricity from the earth to the clouds, and from the clouds to the earth. Rather dangerous business, transporting lightning. I think it would be considered contraband by the “U.S.,” or “Merchants’ Union,” or any common carriers, but it is particularly fitted for this work. Did you ever see a leaf entire as to its edges? It is always pointed, and these points, whether they be large or small, are just fitted to handle this dangerous agent. These tiny fingers seize upon and carry it away with ease and wonderful despatch. There must be no delay; it is “time freight.” True, sometimes it gathers up more than the trunk can carry; and in the attempt to crowd and pack the baggage the trunk gets terribly shattered, and we say that lightning struck the tree. But it had been struck a thousand times before. This time it was overworked.

As we rub a stick of sealing-wax or a glass tube with a warm silk handkerchief, so the air is always rubbing over the face of the earth with more or less rapidity. And what a huge electrical machine. But be not afraid—the leaf will see that it is taken care of. As we guard our roofs from the destructive action of lightning—dashing to

the earth, crashing, rending, burning on its way—by erecting the lightning rod, whose bristling points quietly drain the clouds, or failing to do this, receive the charge and bear it harmless to the earth—so God has made a living conductor in every pointed leaf, in every blade of grass. It is said that a common blade of grass, pointed by Nature's exquisite workmanship, is three times as effectual as the finest cambric needle, and a single twig of leaves is far more efficient than the metallic points of the best constructed rod. What, then, must be the agency of a single forest in disarming the forces of the storm of their terror?

Nature furnishes the lightning, and it furnishes the lightning rods. Take a hint, then, and plant trees. *The American Entomologist and Botanist*.

### Wide Planting and Long Pruning the Grape.

As so much failure has resulted in planting vines so close to each other, and from the practice of cutting away the wood to from two to four canes if long pruning is practised, or to spurs if spur pruning is the system adopted, let new beginners in planting a vineyard set their grapes from eight to twelve feet apart in the rows, having regard to the richness of the soil and the character of the vine as a rank or moderate grower; let the trellises be six and a half or seven feet in height, with five wires. When the vines have fully covered the trellises, and are impatient of restraint, let the vigneron take out alternate vines, leaving the others from sixteen to twenty-four feet distant from each other in the rows.

Perform the first pruning in the fall or winter, cutting away some of the tangled mass of the wood, but leaving three times as much as would seem to be required. Do nothing more with the vines till the early days of summer. In the meantime the buds burst, and shoots push out, the leaves develop and the fruit clusters appear; and as not a few but very many buds are left to receive the life-giving currents proceeding from a large and strong root, vegetation proceeds in its normal course, and there will be strength and vigour, and not weakness and decay, in the progress it will have made. It is during the critical period of the starting of vegetation that nature should encounter nothing to disturb the performance of her functions, and this period having passed, when the clusters have appeared, the time comes when the real work of pruning may be done.

Surveying the trellises, the cultivator will no doubt see fruit clusters in excess; whereas, in case of deficiency, he would have no remedy. Have the courage to cut when cutting is attended with no danger, even though scores and scores of clusters of incipient fruit are thereby made to come to naught. The planter may remove entire canes, then