

care to protect. There is no more delicious fruit for the table than red raspberries, and for the market none that sells more quickly, and yet so scarce. The reason for this is that there have been so many tender sorts sent out and tried, and failed, that growers have become shy of them. We have nothing on our fruit farm that we look forward to next season for larger profits than our seven or eight acres of red raspberries, judging by the way they yielded on newly-set and a few old plants the past year. Three or four hardy and productive sorts have now been found, and we believe we shall hear less about the unprofitableness of red raspberries hereafter.—*Fruit Recorder*.

Apple Culture in a Nut-Shell.

From an essay by Prof. Beal, of the Michigan Agricultural College, we clip the following:—

A young tree should be treated very much as you would treat a hill of corn. Hoed crops will answer in a young orchard; sowed crops will do much harm to young trees. I think it a good plan to keep young trees mulched, and I am not sure but it is the best of all ways to treat large or old trees as long as they live. Mulch prevents the rapid evaporation of moisture from the soil, keeps the surface mellow, prevents the soil from often freezing and thawing in winter, and becoming overheated in summer. Whether or not to cultivate trees which have become well established depends upon circumstances. I have never seen an apple orchard which I thought was injured by too frequent shallow culture, but this may be the case in some places, especially in warm climates or where the soil is deep and very rich. Whether to cultivate or not can be told by the looks of the trees. If the color of the leaves is good and the growth all right, and the trees bear well of fine fruit, they are doing well enough, even if in grass. But if the leaves are pale, the growth of the annual twigs much less than a root in length on trees set twelve years, and the fruit small and poor, something is the matter, and they are suffering for want of plow, harrow or cultivator, or a heavy mulch or coat of manure, or two or more of these combined. The upper twigs of trees set twelve years ought to grow six to twelve or more inches each year. To judge of the condition of an apple tree is much like judging of the condition of sheep in a pasture. Look at the sheep and not at the pasture. As long as the sheep are plump and fat they are all right.

Packing Apples so as to Keep.

To avoid the cause of such complaints in future, it would be well to bear a few hints in mind: First, good, clean barrels are necessary; old, damp, musty ones should never be used. Over the bottom of the barrel scatter a layer of buckwheat chaff, one inch deep; then put in a layer of apples, so that they will just touch each other, taking care not to crowd them too much; and if the apples of each layer are of uniform size, so much the better. Now spread a second layer of chaff, just enough to cover the apples, and work it down between them by pressing the hand over each stratum a few times. Continue this operation until your barrel is full, always pressing your apples down tight after you have inserted four or five layers. Apples picked, sorted and nicely packed in this way, will hardly ever rot; and should one do, the chaff will absorb all juices, and those lying next to it will not be injured. Those who have only a few trees, and these mostly bearing fall fruit, can keep their apples far into winter, if packed in this way; and winter apples, indeed, do not get fit to eat until about mid-winter. No chaff except buckwheat will do, as all others are apt to gather dampness and mould.—*Rural New Yorker*.

Budding Fruit Trees.

There are two well-established methods now in very general use among experts in fruit culture, for changing or multiplying varieties of the same class on the same tree, and both of these are simple and inexpensive. The first of these is known as grafting, and is only practised on larger trees, and always in the spring before the foliage is developed. The other method, which is much more rapid, and quite as sure when properly done, is budding, and the time for doing this extends from the middle of July until September. Whenever the bark separates easily from the wood, the buds may be set, with fair chances of success. The outfit for budding consists of some narrow strips of bass matting such as comes on the inside of coffee-bags, and a

pocket knife with a single blade, with a small piece of ivory fastened in the end of the handle. When the incision is made the ivory is used to raise the bark up on either side, so that the bud may be pressed into place. The buds to be inserted should be cut from young, healthy trees, and always of the present year's growth, those that are most matured being selected. The leaves may then be clipped off the branch of buds, leaving say half an inch of the leaf stalk attached to the bud. Then with a keen-edged knife cut off each bud separately from a half to three-quarters of an inch in length leaving a thin slice of wood back of the eye or bud. These should be kept moist, and protected from the sun or air until they set; exposure even for a short time may prove fatal. When the whole top or any part of it is to be budded over, select the place for each bud in a smooth part of the branch, not too large, say from one to two inches in diameter. On this part make an incision through the bark in the form of the capital letter T, and raise or separate the bark from the wood with the ivory on the handle of the knife. The bud may then be pressed into place, cutting off square the portion that goes above the cross incision. Then, with a strip of the base matting wrap firmly around the branch above and below the eye, fastening the end of the strip by a slip-knot. This completes the operation, which can be successfully done, even by a novice in less time than it takes to describe it.—*Ex.*

Two Valuable Trees.

The box alder is a tree well worth description. In the country west of the Alleghanies where this tree is common, it is called box alder, but some call it the ash-leaved maple. Of all the trees of the United States this species ventures further into the northern latitudes, for in the Atlantic States it is first seen on the banks of the Delaware, and even there it is rare. In the maritime part of the Southern States, also, it is far from being a common tree, which is less attributable to the heat of the summer than to the marshy nature of the soil on the borders of the rivers. West of the mountains, on the contrary, it is extremely multiplied, and, instead of being confined, as in the upper parts of Virginia and the Carolinas, to the riversides, it grows in the woods with the locust, wild cherry and coffee tree. But in the bottoms that skirt the rivers, where the soil is deep, fertile, constantly moist, and often inundated, this tree is most abundant and fully expanded. Even here it can only be considered a tree of secondary size. The largest box alders are not above 50 feet in height and twenty inches in diameter, and trees of these dimensions are only found in Tennessee and the back parts of Georgia, which lie far to the south. In Kentucky they are only half this height. Though growing in thick forests the box alder expands into a head like that of an apple tree. The box alder branches at a small height, and a disagreeable odor arises from the cellular integument. The proportion of the sap to the heart is large, except in very old trees; in these the heart is variegated with rose colored and bluish veins. Some cabinet makers in the western country employ it to ornament furniture made of mahogany or wild cherry tree. The wood is of fine and close grain, and is said to split with difficulty, but it soon decays when exposed to the air.—*Western Farm Journal*.

The Flower Garden.

So far as we have seen, there has evidently been a mistake committed by our horticulturists in not having adopted for cultivation in their gardens some of the charming and profuse blooming hardy perennial herbaceous plants, now easily to be had, many of which claim the first rank in flower-garden decoration, and of these we shall for the present only name a very few. And first, as a useful plant for cut flowers, we mention the Valeriana rubra and var. Alba. These come into bloom in June, and never fail in producing their fine feathery flowers until sharp frosts set in. The next is Delphinium sinensis—both single and double—in many varieties, of an intense blue down through a mauve to a pure white, yielding flowers during the most of summer. Then we have the double varieties of Spirea aruncus, S. ulmaria and S. filipendula, popularly known as "Meadow Sweet." As a double white flower continuing in bloom during the hottest of weather, is the Achillea Ptarmica fl. pleno; this to the florist is an invaluable plant, affording white flowers for wedding and funeral bouquets at a season when such flowers are scarce. To grow it well you must give it strong, rich land.

Growing Chestnuts from Seed.

Mr. J. S. Budd thus gives his experience to the *Western Rural*:—

In 1871 I grew about 3,000 trees from seed procured the previous fall, perfectly fresh in their burs. As soon as received, I hulled them and placed them in a common dry-goods box in my cellar, with alternate layers of moss, such as is used for packing plants for shipment, scattering the chestnuts on the moss so as not to come in contact with each other. The moss should be but slightly damp, and if the surface becomes very dry during the winter, it may be sprinkled, but the moss need not be disturbed until planting time in the spring, say the 10th or 15th of April. The nuts by this time have nicely sprouted. Long roots will be attached to the moss and adhering firmly to the fibres. These should be allowed to remain and be planted with them, and should the season be dry, the moss will be rather a benefit than otherwise, by retaining moisture about the root. From nuts treated in this way I grew more trees than I planted nuts, as some have double kernels and produce two trees.

I planted in drills, four inches apart in the drills, and sufficient space between them to use a small garden hoe, the whole occupying less than one square rod, affording a good profit at an average price of \$3 per hundred, when sold in the fall. I have trees eight years old, grown from seed in the above manner, that bore nuts at the age of five years, and at eight years produced a peck of hulled nuts.

The soil and situation in which to grow the chestnut is all-important. They flourish best on high, dry situations, or on rolling, well-drained, silicious soils, but are impatient of much wet, or low, tenacious localities.

Shading the Currant.

In our small garden of about an acre we have two rows of the common Red Dutch Currant, and while one row contains nothing but the currants, the other was planted some two years ago with the Red Antwerp Raspberry, for want of space elsewhere, and the soil being of a porous nature, a rich sandy loam, by frequent application of manure for vegetables the raspberries made a very strong growth, besides producing the present season a bountiful crop of fruit. As I desired to get all the plants I could for planting another year, the suckers were allowed to grow, so that the currant bushes were pretty well covered up by them. Now the result was more than double the amount of currants in the shade of raspberries than on the other row. The situation is a gentle southern slope, but a northern one is much better. The sun is a little too hot for the currant here, and the fruit is mostly found in the shaded part of the bush; therefore, as a protection, I would suggest planting the raspberry, and you will not only have more currants, but some raspberries too.—*J. H. Fairfax Co., Va.*

The English Bird Cherry.

Take it all in all, the *Prunus padus*, or English bird cherry, is one of the most desirable of our small or medium-sized ornamental trees. But to show to the best advantage the soil should be well drained, deep, and moderately rich, so as to induce a luxuriant growth and large, deep-green foliage. It looks best when branching from the ground, and the limbs, all of which assume a drooping character with age, are very numerous and especially attractive when covered with their long, pendant racemes of pure white, deliciously fragrant flowers. The odor of these is peculiar to themselves, and although exceedingly powerful, not oppressive, as is that from the tuberose and some other flowers. This tree grows rapidly for a few years after setting on the lawn, but if stunted in growth, the abundance of fruit it produces causes a scarcity of foliage and a starved look. It is readily increased by seeds, but to secure a supply the birds must be kept away, as they are especially fond of them, although bitter and astringent. This species, like most others of the family, throws up a few occasional suckers, and these may be transplanted with success.

The apple crop is likely to be a failure in Missouri this year. The caterpillars stripped the trees so thoroughly last June and July, that few of them had strength enough to blossom this year.