

GARDEN AND ORCHARD.

A Useless Method.

In a recent issue we replied to an enquiry from a subscriber regarding a reported process of injecting substances in the trunks of trees, with the idea of destroying insect pests and fungous diseases. We notice by the report of the Western New York Horticultural Society just issued, that its standing committee on botany and plant diseases have reported upon the subject. This committee consists of Prof. F. C. Stewart, botanist of the New York Experiment Station, chairman; Dr. L. H. Bailey, the eminent authority on horticulture, director and dean of faculty, College of Agriculture, Cornell University; Albert Perkins, Rochester; C. H. Stewart, Newark; and Willis T. Mann, Barker.

In conclusion, this committee finds as follows: "It makes no difference what the substance is, for IT IS NOT POSSIBLE TO PREVENT THE RAVAGES OF INSECTS AND FUNGOUS DISEASES BY INSERTING ANY CHEMICAL IN HOLES BORED IN THE TRUNKS OF TREES. Although it is possible to get soluble salts into the circulation of the tree in this way, enough poison to affect insects and fungi could not be gotten into the leaves without killing the tree." Fruit-growers would do well to heed the foregoing, and govern themselves accordingly.

Frozen Fruit Trees.

On behalf of the U. S. Department of Agriculture, Mr. M. B. Waite visited several orchards in the Eastern States to ascertain the extent of the damage done to fruit trees and to make some recommendations regarding the treatment of the same. In his report, he says:

"In the bearing peach orchards the trees most injured by freezing show the bark entirely blackened and dead, more or less separated from the trunk, and the wood turned a very dark brown color. Such trees are dead beyond all question, and should be treated accordingly. With many peach trees, however, the bark is slightly separated from the wood, which is of a dark walnut color next the cambium and brown throughout. Though still alive, the bark is somewhat browned and discolored, the youngest or outer layer of wood has been frozen until it is now of a dark walnut color, and the wood of the trunk is blackened throughout. Where the bark is adhering or only partially separated from the trunk the chances for recovery are good. The tops of such trees are usually found in fair condition, the wood brownish, but the white cambium layer uninjured, though lying immediately in contact with the brown, dead wood. In severe cases the leaf buds are killed, but as a rule they are still alive. Of course, on all such trees the fruit buds are killed. The most injured part is the trunk just above the snow line. About one-half of the orchards examined were in this condition. A third class, which may be described as the moderately-frozen trees, in which the wood above the snow-line is blackened, but the bark not separated from the wood, and with the cambium still apparently alive, although water-soaked and injured, frequently has minute brown streaks in the bark immediately in contact with the cambium. Such trees will almost invariably recover. Moderate pruning back, say from one-third to not over one-half the tops, gives the best results on trees of this character.

HOW TO TREAT THE PEACH TREES.

One should be cautious about pulling out damaged trees. Almost all the trees in which the bark is stuck tight at the critical point—about two feet from the ground—may be expected to pull through, and many which have the bark partially loosened may recover. Moderate pruning back, followed by good cultivation, and, unless the land is in very good condition, with a moderate amount of fertilizing, will be the best course to pursue. If the buds can push out in the tops, growth will extend downward, resulting in many cases in a complete covering of new, sound, white wood, even over the most injured part on the trunk. The frozen dead wood can conduct the crude sap as long as it remains moist. If the bark remains alive it will carry the elaborated sap downward from the leaves. This shell of new wood will be sufficient to maintain the tree in profitable bearing and will, of course, be added to annually. The aim should be, with good cultivation and fertilization, to grow the tree out of the injury. Stable manure will probably answer the requirement in some cases. Nitrate of soda at the rate of two hundred pounds per acre may be preferable in other cases.

Interests Fruit-growers.

We have received a copy of the proceedings of the forty-ninth annual convention of the Western New York Horticultural Society. This society has issued good reports in the past, but we doubt if they ever sent out one as "live" or practical as this. Its one hundred and seventy-two pages are packed with valuable information on nearly every branch of the subject of interest to fruit-growers in these climes. The volume is printed in fine taste, and has a frontispiece with portraits of Dr. Jordan, of the Geneva Experiment Station, and Doctors Roberts and Bailey, of Cornell University. The secretary is Mr. John Hall, Rochester, N. Y., by whom the report is edited. It goes to members of the society.

Hardy Shrubs for a Cold Climate.

By Anna L. Jack.

There is nothing in the permanent ornamentation of a garden that can take the place of shrubs, for they adorn the dooryard and borders, growing stronger year by year, are easily managed when once started, and permanently beautiful. Many of the hardy kinds root easily if put in the ground during the growing season, and may be propagated by root division. Before the last streak of snow has melted from the garden, the *Daphne Cneorum* shows its umbels of deliciously fragrant pink flowers. It does best in a peat soil, and requires



Hydrangea paniculata.

to be protected a little by taller shrubs near by. Before it fades we have *Spiraea Thunbergia*, with its pale-green feathery foliage and starry blossoms. Then comes the gem of the garden, the *Magnolia Stellata*, rightly named "a star." It is quite hardy when once acclimatized, and blooms before the leaves are seen, first opening a pale pink sheath that becomes white as the flower expands. On the little shrub shown in the illustration, from 80 to 100 flowers have been counted some seasons, but this winter has been so unusually severe that the plant suffered above the snow line, although never injured before during the last ten years of its growth. The flowers are fragrant, the petals spread star-like, but afterwards become reflexed. It is a marvel of beauty, standing like a ghost on the lawn while the rest of the shrubs are only brown stems. Then come the jaunty yellow bells of the *Forsythia*, gleaming in the spring sunlight with a golden shower of bloom. These shrubs were brought from China to England in the eighteenth century, and planted in Kensington Gardens, being named after William Forsyth, who was then director. In unfavorable weather the flowerbuds on the top of the plant fail to open in this climate, but at the same time lower branches will be full of bloom.



Magnolia stellata.

The word "hardy" is the talisman in selecting shrubbery plants for the north, and we cannot ignore the lilac, with its many shades from white to red, with all intervening tints. But the old-fashioned lilac that has the familiar fragrance dear to childish hearts is an old-time delight for most of us. Nowadays there are the great white lilacs that seem so stately and pure, heavy with perfume, and marvellous in size of truss. These shrubs are apt to grow stronger than other varieties, and should be planted where they will have room to develop. Young bushes can be pruned into any shape, and the tendency to sucker can be kept in check.

The flowering almond comes about this time,

with its miniature roses; it is slender-branched and graceful. Then comes the Missouri currant, considered by some people unworthy of their garden, but which has, nevertheless, a bewildering spicy perfume, unlike any other, which is very attractive to the bees. Little wonder that the busy little insects swarm around its yellow blossoms, which are richer in honey than any other flower of that season!

Before the *Syringas*, there are the late lilacs, the *Japan* and the *Villosa*, and then the *Shad-bush*, that flowers in late May, its fruit ripening early enough to have given to it the name of *Juneberry*. Long before this, the hardiest shrub of all will have blossomed and faded. It is the *Siberian pea*, with its pale green leaves and bright clusters of yellow flowers, that slightly resembles the *Laburnum*. This plant has proved a boon to the Northwest; it is early and sure, never having been injured by severe frost. The *Spiræas* troop in succession through June and July; their name is legion, but perhaps the best is the well-known *Van Houttei*, that is sometimes called *bridal wreath*, and is graceful and effective. All these *Spiræas* do not expend their beauty with the blooming, for in autumn they are a bewildering maze of leaves, rich claret, deep red, with purple tones, orange and scarlet, and the gatherer of autumn leaves finds the richest colored trophies among the *Spiræas*. In midsummer there are a number of low-growing *Spiræas*, the best being "Anthony Waterer." It is rose colored, and continues to bloom through the autumn.

The *Japan quince*, with its brilliant orange-scarlet flowers, must not be forgotten. In gardens a little farther south it is used as a hedge, but the habit of winter-killing on the top renders it uncertain; yet an old bush of twenty years' standing here, perfects a few quinces every autumn near the ground.

For hardiness, the *Tartarian honeysuckle* excels, and will spread almost to wildness, while on the other hand the *Deutzia* is often killed down to the snow line.

As the season advances shrubs become scarcer, and one of interest is the *Euonymus atropurpureus*, called often "Burning Bush." It does not grow beyond shrub size, but is well worthy of attention. The flowers are small and inconspicuous, but the fruit is four-lobed and smooth. When ripe the scarlet capsule opens to discharge the crimson-covered seeds, and gleaming among the dark-green leaves, these glowing seed cases give the name to the shrub, the capsules clinging to the branches after the leaves fall. Even the old snowball has been improved in Japan, and the newer sort is more compact and of finer flower and foliage. After *Syringas* fade (and they are a hardy acquisition for a northern climate), there is a lull in the shrub blossoming. The *Hibiscus* does not grow strong enough to show its beauty of flower, and the *barberry* is just turning into its autumn beauty of fruit and foliage. Then another Japanese importation becomes the favorite, as *Hydrangea paniculata* sends out its spikes of bloom. It is a shrub that wins admiration, its flowers having four distinct seasons of color—first pale green, then a clear cream white, turning to pink, and afterwards to brownish red. So its panicles delight us from August till October, and we think what a magnificent sight it must be in Southern Japan, where it becomes a tree thirty feet high, with drooping branches. If large trusses of bloom are wanted, it is best to prune, but if quantity is desired, the natural growth can be left, only straggling branches being removed.

So many shrubs have white flowers that the pendulous magenta blossoms of the *Desmodium* give a variety late in the season. The Japanese single rose (*Rugosa*), too, with its leathery, glossy leaves, always free from insects, shows its large and fragrant blossoms of red from June until frost, and is one of the hardiest of our shrubs.

With a choice of so many varieties that form a procession of flowers all through the season, there is every inducement for planting in the north, where, with a winter protection of leaves or litter around the roots, and the usual blanket of snow, we shall be able to make even the wilderness blossom.

Plant Introduction.

The United States Department of Agriculture has decided to establish a Plant Introduction Garden and Experiment Station at Chico, California. A beginning will be made with ninety acres, but it is the intention of the Department to extend the area as the needs of the institution require. The garden will be devoted to experimental culture of the plants introduced from various parts of the world, and to a careful study of plant life. Chico is situated near the eastern border of the great Sacramento Valley, seventy-five miles north of Sacramento, the State capital.

The order-in-council of January 15th, 1903, by which nursery stock was permitted to enter Vancouver, B. C., during the winter months only from October 15th to April 15th, has been amended by extending the time to May 1st.