Garden, Orchard and Forest.

Horticulture at the Centennial Exhibition.

BY A GARDENER.

After a rather lengthy interval I proceed to make good my promise of last March of saying something about what I saw at the Centennial Exhibition last September.

In my former communication I said nothing of the Exhibition proper, confining myself merely to what I noticed of interest in the way of horticulture in the gardens of Philadelphia. Now I will resume my letter by going into the Centennial grounds, but must perforce confine myself to the department which presented the greatest amount of interest to myself, viz., that of Horticulture.

The park (of which the Exhibition grounds are a part) did not strike me as possessing any very striking features, apart from its extent, some 1,500 acres, its well made and capitally preserved drive and beautiful green grass, which at that hot season of the year certainly looked the perfection of verdure.

The trees were large, apparently as planted by nature, and the effect had been made more by cutting away than by planting additions. But once inside the grounds, this was changed entirely; on every hand were indications of cultivated gardening skill carried out to the most minute particular, and seemingly every available clime had been drawn upon to do its share toward adding to the beauty of this charming place.

The Horticultural Building, standing in the midst of a world of richly colored flower beds, was a very tastefully conceived building, looking quite in keeping with the object for which it had been erected. The visitor, on entering the building, finds himself in a warmer climate than that prevailing outside, for it has been fitted up as a palm house, and is heated artificially to accommodate the habits of the rare tropical plants with which it is filled. Immense Australian ferns, bearing a tuft of fern-like frouds, on a bare trunk eight and ten feet high, are scattered here and there through the whole area. Lofty palms, their heads nearly touching the glass, together with the great heat and humid atmosphere, indelibly stamp the place as tropical in the extreme.

A particularly interesting plant among them was the *Eucalyptus globulus*—foliage blue, rather than green, and of a most peculiar odor, which arrested the attention of nearly all. This is the tree which is being planted now to such a large extent in the malarious districts of the Southern States and South America, as a fever destroyer. It has also been used successfully in some French hospitals as a cure for ulcerous sores, extracting the poisonous matter and healing the sore by merely laying the leaves on the part affected. Hundreds of rare plants and trees, all with their botanical and English names attached, and also the countries of which they were natives, filled up the main portion of the house, all planted out and growing as luxuriantly as though in their native homes. Now mount up stairs—take one look inside down on to the mass of strange foliage, enlivened by the forms of the busy sight-seers moving here and there through the plants, and then outside to the roof of the building, where one of the finest sights to be seen at the Exhibition meets your eye—I do not know how many acres of the most perfectly kept flower gardens it is easy to conceive; row after row along the walk sides of ribbon beds, that is, colors of either foliage or flowers so arranged as to give the appearance of long strips of ribbon with four or five colors running unbroken from end to end. Large clumps of standard roses—beds of new and rare plants, furnished by different nurserymen and kept in thorough order, having the name of the firm by whom they were supplied, was a novel feature and one that we might take a hint from in the furnishing of our London park, if ever we are to have one. One large plot, entirely filled with cotton plants, which were just bursting the pods and showing the snowy material within, attracted considerable attention. Masses of all the different kinds of Coleus planted on raised beds, sloping from the centre to the edges and trimmed perfectly even with sheep shears, presented a very unique and striking appearance. Rhododendrons, Azaleus, Kalmias, and new and rare varieties of Evergreens studded the grounds in every direction, with here and there an object of more than ordinary interest standing conspicuously out, such as several fine specimens of *Sequoia gigantea* (the Mammoth Tree of California), the bark of which was exhibited elsewhere as cut from the tree in its native home, eighteen inches thick. Several varieties of Beech, including the Cut-leaved, Crested and Weeping, together with different kinds of the purple-leaved sorts, showed to what an extent these things were prized by some nurserymen.

Auracuria imbricata (the Chili Pine), *Cedrus deodara* (Indian Cedar), *Cedrus Libani* (Cedar of Lebanon), and *Cryptomeria Japonica* (the Japan Cedar), all were represented by beautiful specimens, and reminded us of some we had seen under most favorable circumstances in the west of England.

Enough could be said, Mr. Editor, about the things to be seen in those horticultural grounds alone to occupy a large portion of your space, and in case I am already trespassing upon it, I will for the present close my remarks, trusting they may be found of interest to some of your numerous readers.

S. J. P. N.

Root Pruning.

From the Gardeners' Chronicle.

"Young trees for kitchen garden borders and quarters are generally trained as pyramids, and as such I will notice them. When planted, see that they are not planted over deeply, and their roots nicely spread out. Do not use any gross manures, only maiden loam to give them a good start. Pears on the quince should be planted out enough to cover the union of the stock and scion. I prune rather closely the first two or three years, according to their respective growths, not to encourage grossness, but to secure sufficient branches to lay the foundation for handsome, symmetrical trees. In summer pruning I only remove superfluous laterals. In winter pruning I cut back the leading branches, according to their respective growths, shortening the leader well back to get plenty of lateral branches; I don't summer pinch the laterals of young trees—as for winter pruning they are generally cut further back than they have broken. In bearing trees it is all the pruning required except the regulating of laterals, of which there is no great quantity in well root-pruning trees.

"By the end of three or four years they will be getting nice trees, and well furnished with branches to form handsome pyramids. Early in the autumn I have them carefully lifted, open a trench round three or four feet from the stem, carefully follow the roots to within a short distance of the stem, then return the soil back to within eight or ten inches of the surface level, treading it firmly down, then cut any bruised part of the roots, spread them equally over the surface, and cover them with some fresh loam. If the weather is dry I give them a nice watering, and level the surrounding soil. As soon as the leaves drop, I have them nicely drained by driving a few stiff pegs into the soil three or four feet from the stem, then run a wire around the top of them, which is fastened by a few hooks. To this I tie the bottom branches as nearly in a horizontal position as possible. If the trees looked full of wood it is wonderful how this operation seems to lessen their number. If well done they look as if done by an expert in Azalea training.

"From this time forward give up using the knife, unless you cannot find time to use your finger and thumb. In the course of a few years I again lift the roots back again to where I left them at the last lifting, raising them nearer the surface. This periodical root pruning, if performed early in the season, does not lessen the chances of a crop the following season.

"I will now notice the old neglected trees. I would at once carefully remove all superfluous shoots, retaining a few where there were space for them. They generally form nice bearing wood. As soon as sap had risen into the eyes of the cut shoots I would begin root-pruning—the earlier in the season the better—according to the age and strength of the trees. I cut a deep trench around them, deep enough to meet with all their roots; I then have the soil carefully forked away from the roots, following them nearly up to the stem. I find a few pegs useful to peg the roots out of the way of the workman, so as not to bruise the roots more than possible; they are easier retained to the surface when retained a good length. The soil is now levelled back and well trodden in to within 15 inches of the surface. I placed three or four inches of good, fresh soil on top of this, then carefully prune all the bruised parts of the roots, spread them nicely on the fresh soil, a person with a spade placing some on the top of them, to keep them in their proper places, and when all is nicely levelled off the work is finished.

"The next time they are root-pruned I dig a trench round them a little further than where I left them at the last, and fork the soil away till I come to the former cuts. I then prune as before, and carefully cover up. It is not well to leave them until they show signs of grossness.

"I think the labor bestowed upon them is amply compensated by the return and superior quality of the fruit. It takes very little more to root-prune than it does to remove the faggot-wood out of them; besides, in their neglected state they are only worthless cumberers of the ground. I question very much if there is any more useful fruits than good apples and pears; many prefer them when in good condition to grapes and pines, but when smothered up in dense masses of unnatural foliage they cannot attain either their proper size, color, or flavor."

Experiment in Grape Culture.

A correspondent of the *Prairie Farmer* writes as follows: Seven years ago, in grubbing up a Catawba vineyard, the writer left one row of the vines. The stakes had been taken away, and as a lot of apple tree trimmings were convenient, a quantity were placed on each side for the vines to run on, just keeping them off the ground, but scarcely more than a foot from it in any place.

The experiment has been completely successful. The last three years have been excessively wet, and both rot and grape curculio have run riot among the Concords, while these vines are altogether exempt. This year, hot, steamy weather would occur immediately after severe showers; the result has been wide-spread blight among pear, apple and other trees, and grapes could be seen to mildew while observing them; but these vines, close to the ground, have been kept shaded all the time, and were also much cooler. In no case do they show any evidence of atmospheric or insect injury of any sort.

Experiments like these are recommended in localities where mildew is common, and where choice sorts, like the Catawba do not usually prosper. The mode of culture has many merits. It costs little or nothing to care for them, only placing brush or rough forks under them to keep the vines from contact with the earth. In winter, the snow, leaves and other sheltering cover, sift in among the branches and remain there, preventing injury from severity of the climate. Last and most important of all, the fruit is of a superior quality, without any imperfections in any part, even while requiring no care.

Forest Culture.

The time for making entries for the liberal prizes offered by the Massachusetts Society for Promoting Agriculture, has now passed, and we regret to learn that the number of entries has been small. We have at different times during the present year called attention to the subject, and from the many inquiries upon the subject and the wide distribution of the little pamphlet containing the essay of Prof. Sargent, reprinted from the last Report of the Secretary of the State Board of Agriculture, we very naturally inferred that there was a wide-spread interest in the planting of trees and that there would be some active competition for the prizes. But such does not appear to be the case.