

Garden, Orchard and Forest.

Phylloxera.

What can be done with the Phylloxera, or grape louse insect? is one of the important questions of the day. I was an unbeliever in regard to the destructive effects of this insect until last summer, when the Committee of the Ohio State Horticultural Society went to Kelley's Island to investigate this subject, about the first of July. We then examined some strong growing roots of the Oporto and found all the new growth of root eaten up. When at work they are not visible to the naked eye, nor could we perceive them with a small glass; we could, however, see with the naked eye; the knots or bunches on the roots, which I suppose contained the young insect. They resemble the apple tree louse, which works on the roots and stalk of young trees. The Phylloxera also works on the leaves of the Clinton and Oporto; they do not appear to eat them, but form on the leaves what we call nut-galls, or little knots.

I was not satisfied with this investigation—did not leave with the committee—but laid over and visited an old reliable grape-grower, who declared that we would have trouble with the insect. I told him I had no faith in them, for I could not see any life in them. He said he would show me life enough. He put some Phylloxera under a good sized glass, and sure enough I saw the ugly looking "cuss" kicking away fast enough. Well, this convinced me. Now I have not much science or logic about me, nor much theory; am only a practical working man; but I want to state some facts from personal observation.

Twenty years ago there were many large, flourishing vineyards of Catawba grapes (which is our only reliable wine grape) on the banks of the Ohio river. Some of the Germans then called it the Rhine of America. These vineyards have all failed. By the way of contrast, I have seen vineyards in the south of France, said to be a hundred years old, bearing small crops every year, perfectly healthy.

For eighteen years the Catawba grape flourished on Kelley's Island, entirely free from disease, producing immense crops of splendid fruit under all circumstances, every year. The people then supposed there could be no failure of this crop, but during the last two or three years the leaf mildew and grape rot have done great damage on all the islands and along the lake shore. New localities in favorable situations succeed for a time, but sooner or later fail. Five or six miles inland from the lake, the Catawba vineyards bear two or three crops; then come the rot and leaf mildew and the vineyard is ruined.

Some twelve years ago I set out a vineyard of ten acres, mostly Catawbas, with Cincinnatis vines; these vines had some knots on the roots, but I then did not know any better than to set them; now these Catawbas have all failed. From personal observation and experience I am forced to believe in the theory of some grape-growers of much experience, that the Phylloxera is the cause of leaf mildew and grape rot; for certainly, if during the summer the new grape roots are consumed, there is nothing to sustain and mature the leaf and fruit. It is very natural to suppose that this insect, like many others, after a certain period will disappear, but experience is against this theory.

The Phylloxera has also appeared in Europe and is slowly spreading in that country. It has alarmed the French Government, which sent an agent to this country. He visited Kelley's Island for observation and to ascertain whether they had some strong growing native grape which would resist the Phylloxera and could be used in France to graft on their varieties. The French Government has offered the large sum of \$300,000 for any practical method of destroying this insect. It is of course very difficult to get at them so deep under the ground.

The Phylloxera has also appeared in California. In that dry, hot country—the land of the vine—it may do immense damage. I have learned by observation and experience, several methods for the destruction of some of our insect enemies, but am no entomologist. I have written these few lines hoping to draw out some observations from persons who understand this subject, for grape-growing is a large and profitable business on our islands and lake shore. —D. C. R., in Ohio Farmer.

Ashes and Iron for Flowers.

The observation of practical and experimental gardeners seems to confirm the fact that, to procure brilliant colors in flowers, it is necessary to supply the soil with an abundance of ferruginous constituents and silica. The latter supplies a material (says S. E. Todd in one of his foreign exchanges) which is of vast importance to the production of that brilliancy of the petals and the dark green luster of the leaves. That, if potash be added, or the ground be dressed round about the growing flowers with unleached wood ashes, an increased brilliancy will appear in every petal and leaf.

Any person who cultivates only a few flowers in pots, or on grassy lawns, or on spacious parterres, may readily satisfy himself of the exceedingly useful part the foregoing materials play in the production of beautiful flowers. Even white flowers, or roses that have petals nearly white, will be greatly improved in brilliancy by providing iron, sand and unleached ashes for the roots of growing plants. Ferruginous material may be applied to the soil where flowers are growing, or where they are to grow, by procuring a supply of oxide of iron, in the form of the dark-colored scales that fall from the heated bars of iron when the metal is hammered by the blacksmiths.

Iron turnings and iron filings, which may be obtained for a trifle at most machine shops, should be worked into the soil near flowers; and in a few years it will be perceived that all the minute fragments will have been dissolved, thus furnishing the choicest material for painting the gayest colors of the flower garden. When there is an excess of vegetable mold in the flower bed, and a deficiency of silica or sand, the flowers will never be so rich in color, nor so brilliant, as they would be were a liberal dressing of sand, or sandy loam, worked down into the bed, where the growing roots could reach it. If wood ashes can be obtained readily, let a dressing be spread over the surface of the ground, about half an inch deep, and raked in.

A dressing of quicklime will be found excellent for flowers of every description. It is also of eminent importance to improve the fertility of the soil where flowers are growing, in order to have mature, plump, ripe seed. Let the foregoing materials be spread around the flowers, and raked in at any convenient period of the year. When soil is prepared for flowers in plots, let some sand, some oxide of iron and ashes be mingled thoroughly with the leaf mold.

Protecting Fruit and Seeds from Birds.

A correspondent of the *London Field* gives the following method as having proved, in his experience, entirely efficacious:—

And what, you will ask, is my talisman? Simply a ball of grey or whitey-brown linen thread. I take a ball of this in my hand, fasten the end of it to one of the twigs of the gooseberry or currant bush, and then cross the thread backwards and forwards from twig to twig in perhaps a dozen different directions, fasten off, and the thing is done; and it will last two years—the thread on the trees I mean. It is not necessary the thread should be white or coarse; it ought rather to be fine and dark, a thing to be felt, not seen. I have watched the birds after performing the operation; they come boldly to settle on the trees, and they strike against these, to them, invisible snares, for such no doubt they deem them to be; they fly off in a terrible hurry, and settle on the walls or trees round about, longing and getting hungry, till at last they disappear, and you will see them no more.

As regards peas and other seeds which I always sow in drills, I simply stretch a thread, sometimes two, along each drill, at about two inches from the ground, supporting it at that height by little forked sticks. If you put it much higher than this the birds do not seem to care for it—it does not touch them; that is the grand secret, something which touches them, something they do not well see nor know what it means.

I have seen people put thick white string with feathers tied to it, and perhaps two feet from the ground. The birds soon understand these, and care little for them; in short I know to my cost it sometimes acts as a lure, a notice to the birds that there is something to be had worth looking after. I will answer for it, anyone adopting the plan I recommend will never have cause to complain of the birds, however numerous they may be.

An Insect Year.

The promise of a good yield of agricultural products generally in the United States is not without some attendant evils. If the season has been favorable to vegetation, it has also tended to the interest of the numbers of the innumerable hosts of rapacious insects that sometimes make the fields that had promised to fill the granaries with the necessities and luxuries of life, become in a few days brown and barren as the great desert. The *Country Gentleman* speaking of the prospects of the season in this wise:

"The present season bids fair to be one of the worst insect years ever experienced. The Hessian fly has committed extensive depredations on wheat in Tennessee, Kentucky and Southern Indiana; scores of complaints of chinch bugs come from Illinois and Iowa, and some from other sections; in still other places immense swarms of black caterpillars and army worms (the true army worm that lives on grass and other vegetation on the ground) are doing great damage. But the worst of all is the Rocky Mountain potato bug; this pest, it appears, prevails much more extensively than ever before, at least so early in the season. They are also fast pushing their way east, having entered Ohio on the south line of march, and crossing the Detroit river in swarms on the north.

"The *Detroit Free Press* says, 'every chip, plank, stave, bark, board and floating thing, large or small, in shore or channel, in stream or eddy, was filled with a crew of potato bugs, calm, contented, and as much at home as if feasting on the potato.' Most of them were taken by the wind across to the Canadian shore; others 'struck boldly and rapidly down the rapid current, still eastward bound, via Lake Erie to Buffalo.' And it is said they will either disembark at Buffalo, or continue their course down the Erie canal. Now, leaving all pleasanties out of the question, it will not be at all strange if the potato bugs should make their appearance in the vicinity of Buffalo in the course of the season. Indeed, it would rather be surprising if they did not secure transportation on some of the passing propellers, and finally reach the potato fields of Western New York. Meantime, says the *Free Press*, 'the potato bug possesses the land. Farmers do not hope to save the crop at all. From all parts of the State (Michigan) the same cry comes up, and potatoes have greatly risen in price. Let the citizens of New York pray shipwreck of the fleet on Lake Erie.'

"There seem to be but two remedies for this pest; one is picking off the bugs, which, when they get so numerous, is impracticable; and the other is Paris green. The *Free Press* says:—'All sorts of remedies have been tried. Paris green seems to have the most reliance placed upon it. The druggists of Detroit have had their stock exhausted. One firm disposed of a ton in three days. Telegraph orders have been transmitted to New York to forward with all speed a new supply.'

"Thus it is seen that the present season for some cause—as a very early and in many sections dry spring, or perhaps in some other phase or phases in the weather—is very favorable for insect depredators, and that if no heavy storms, friendly insects, or other preventives come to the farmers' relief, they are likely to do immense damage during the season."

A farmer boy in Ohio, recently observing a small flock of quails in his father's corn field, resolved to watch their motions. They pursued a very regular course in their foraging, beginning on one side of the field, taking about five rows, and following them uniformly to the opposite end, returning in the same manner over the next five rows. They continued in this course until they had explored the greatest part of the field. The lad, believing that they were pulling up the corn, fired into the flock, killing but one of them, and examined the ground. In the whole space which they had traversed he found but one stalk of corn disturbed. This was nearly scratched out of the ground, but the earth still adhered to it. In the crop of the quail he found one cut worm, twenty-one striped vine bugs and one hundred chinch bugs, but not a single grain of corn.

A correspondent of the *Rural New Yorker* says: "Set a tomato plant into each hill of cucumbers or melons, and you will have no trouble from the striped bugs that are so destructive to these plants. The plants can be tied to stakes, and if well pruned when large, both subjects can proceed with their fruiting without detriment to one another."