

Garden, Orchard and Forest.

Remedies for Mildew.

Some years ago I read, in a German periodical devoted to practical chemistry and chemical technology, edited by Dr. Elsner, that molasses, mixed with water, was a certain remedy for mildew on gooseberries; but no proportions were stated. A few days afterwards I noticed that a gooseberry bush in my garden looked as though it had been sprinkled with flour, so much was it affected with mildew. I immediately mixed some molasses with an equal quantity of water and applied it to the bush with a common syringe, immersing some of the branches in the mixture. The next day the mildew had disappeared, the black spots only remaining on the leaves where the mildew had destroyed the epidermis. Since then I have repeated the application every year with the same result.

I find that it is better to take rather more water than molasses. The efficacy of the remedy is evidently based on the fact that it excludes the air from the leaves, forming a thin cuticle on them and thus suffocating the mildew. The first rain will dissolve it and carry it off. Several years ago a week solution of common glue was recommended as a remedy against mildew on grape vines—the action and the effect being the same as with the molasses—but I found that it was much more convenient to use the molasses than the glue. Not having the opportunity to try either of these remedies on grape vines, I do not know whether it will destroy the mildew on them.

In the same work a Mr. Roberts proposed another remedy for mildew, which he calls Sulphur-zone. He found that precipitated sulphur had no effect on mildew; that common sulphur, pulverized, was much better; but that the best was flour of sulphur. He has convinced himself that flour of sulphur, which is produced by sublimation, retains a good deal of sulphurous acid (not sulphuric acid,) less of which is found in pulverized, and hardly any in precipitated sulphur. He added that flour of sulphur impregnated with more sulphurous acid than it naturally contains, is found, by physicians, to be a more powerful remedy for destroying the insects which produce the itch than the flour of sulphur in its natural state. He prepared a powder which contained a quantity of sulphurous acid four times that of sulphur. In applying this he found that a comparatively small quantity was required to be as effective as the ordinary flour of sulphur.

His suggestions may be worthy of experiment on plants invested with mildew, but should be conducted cautiously for fear of injuring the plant. The flour of sulphur, as ordinarily used for checking this pest, should be moistened with some sulphurous acid; but in what proportion should be made a matter of experiment.—*Dr. Siedhoff, to the American Garden.*

Covering for Wounds of Trees.

BY DR. CHARLES SIEDHOFF.

[However good plastic slate may be for the purposes mentioned below, our experience forbids its use for roofing purposes.]

It often happens that, either by intention, as in pruning, or by accident, trees are wounded in various ways. A common practice is to cover large wounds with coal tar; but this is objected to by some as injurious to the tree. Experiments made in the orchards and gardens of Pomological Institute, at Ruthlengen, in Germany, go to show, however, that its use in covering large wounds is not injurious; but that, on the contrary, a callous readily forms under the tar, on the edges of the edges of the wound, and that the wounded part is thus protected from decay. There is, nevertheless, another objection; for if the tar is applied a little too thick, the sun melts it and it runs down on the bark of the tree. This can be obviated by mixing and stirring and thus incorporating with the tar about three or four times its weight of powdered slate, known as slate flour—the mixture being also known as plastic slate and used for roofing purposes. It is easily applied with an old knife or flat stick, and though it hardens on the surface, it remains soft and elastic underneath. The heat of the sun does not melt it, nor does the coldest winter weather cause it to crack—neither does it peel off.

The same mixture is also useful for other purposes in the garden. Leaky water pots, barrels, pails, gutters, sashes, &c., can be easily repaired

with it, and much annoyance and loss of time be thus avoided. It will stick to any surface provided it be not oily; and as it does not harden when kept in a mass, it is always ready for use. A gallon will last for a long time.

A most excellent preparation for small wounds and for grafting is thus prepared:—Melt a pound of rosin over a slow fire. When melted, take it from the fire and add two ounces of balsam of fir (Canada balsam), or two ounces of Venice turpentine (not spirits of turpentine), stirring it constantly. As soon as it is cool enough, mix in four to six ounces of alcohol of 95 deg. strength—according to the season—until it is as thick as molasses. It keeps well, in close-corked bottles, for a long time. Should it become too thick, by the gradual evaporation of the alcohol, it can easily be thinned by putting the bottle in warm water and stirring in sufficient alcohol to bring it to a proper fluidity. It is applied with a brush.

This preparation is much better than the liquid grafting wax composed of rosin, beef tallow and spirits of turpentine, which often granulates. If there be any danger that the scions will dry up by evaporation, they may, beneficially, be brushed over with this composition—it being first made more fluid by adding alcohol. By this means I succeeded, in February of last year, in grafting a single eye of *Egle sepiaria* upon a lemon tree, in a dry sitting-room, without the use of any glass covering.—*American Garden.*

The Perforating Power of Roots.

It is indeed wonderful how easily the roots of plants and trees bore through hard impacted soils in search of nourishment. They use for this purpose a sort of awl, of immense power, situated at the end of the root, and capable, with the aid of the other root machinery, of thrusting aside heavy weights and getting through almost any obstructions. Yet the awl only consists of a mass of microscopic absorbent cells formed by protoplasm or vegetable mucus—the fluid in which vital action is first set up. The roots of the elm and maple will bore through the hardest soil of walks or streets, enter drains, twine about water pipes, and penetrate through the seams of stone and brick structures. The roots of some plants have been known to pass through eighteen inches of solid brick-work, and made their appearance in a wine cellar below. Plants have a great power in overcoming obstacles, when foraging for food. They are like a hungry animal which no fences can restrain when there is food beyond. The movements of roots in soils proceed on certain principles of utility in connection with the welfare of the plant. Some need more moisture than others, and the roots will drive through rocks or obtain it; others need silicious food, and will penetrate through a clay bank to reach the desired foraging ground. The urgency with which Nature drives plants and animals in pursuit of food is almost irresistible.—*Journal of Chemistry.*

Tree Planting in Towns.

The *American Garden* makes an earnest plea for the planting of trees in the streets of cities as a sanitary measure. Growing plants assimilate the carbon of carbonic acid, discharging its oxygen into the atmosphere. The respiration of men and animals, and the consumption of fuel, load the atmosphere with carbonic acid, and the only means of destroying that poisonous gas is found in plant agency. Hence, if the atmosphere of a city were to be closed within impermeable walls, and there were no growing plants within the enclosure, the air would quickly become irrespirable. But of course the air is nowhere thus walled out, and hence the deleterious gases it contains are dissipated and carried away by the unceasing movements of atmosphere to other regions where an abundant vegetation may deprive it of its carbonic acid. Still there is no doubt that this purification of the air is accelerated by the presence of vegetation in the cities themselves. The writer in the *Garden* says that "Paris has now so large a number of parks, and its streets and boulevards are so profusely planted with trees, that the death rate has thereby been reduced from one in thirty-four as it formerly was, to one in thirty-nine as it now is." But trees are further of service in shading gutters and roadways, thus materially retarding and preventing the action of the sun in producing noxious fermentation. Then, too, the roots of the trees take up largely of such matters as are washed by the rains into the interstices of the pavements.

Providential Help.

It is well to consider that with all our progress in knowledge, which seems to hold out hopes to us of almost all power, we should be very badly off were it not for providential help, which often seems to come to us in the most unexpected manner, and just as we are made to feel our utter helplessness against the forces that are contending with us. We, in agriculture, see this beneficial power more perhaps than any other class, and in nothing more than in our experience with insect enemies. Some few, as in the case of the plum curculio, seem to hold their own in spite of everything; but this does not attack things absolutely essential to our happiness. It would be a very nice thing to have plums as plentiful as black-berries; but we can resign the plum, though to be sure not without some regret. And then in spite of the curculio we do get plums and peaches, and cherries, and sometimes so abundantly that after all it seems as if this plaguy thing only takes the surplus after all. We do not know that there is any countercheck in nature on the curculio; but on most others there seems to be.

We have had held up to us alarming pictures of grape ravages by the phylloxera, and from French experience there appears no doubt about its being in many cases a terrible thing; but Prof. Riley tells us a minute parasite has found it out, which, industriously following it and feeding on it, may keep it from being very destructive. Very often these parasites do certainly get the upper hand. A few years ago a caterpillar attacked the cabbage plants in the east, and it was almost as hard to get a crop there as it is likely here to get a crop of potatoes; but its enemy followed it so closely that the cabbage-worm is now of no account where the parasite exists. Even the dreaded potato beetle in some parts of the West, where it was once abundant has considerably disappeared, and it is believed chiefly through its being preyed on by other insects, which have greatly diminished their numbers. Even the grass-hopper, which in number and suddenness beats all other insect plagues, has at length been found by some other insect, which deposits its egg in the young hopper before it leaves the ground, and takes its life before it has had the chance to lay its eggs for another brood. It has long been known that great numbers of insects like to prey on the grasshopper; that is to say, they deposit their eggs in their bodies, and the young larvae thus live during their earlier stages on grasshopper food. The common hair-worm, which many people suppose is a real horse hair transformed by falling into water into a living thing, is in its earlier stages, a parasite in the grasshopper. It eventually kills its foster parent, and then makes its way out, and has an independent existence either in the damp ground or in water.

Thus in many ways does a good providence come to our help, and though we are apt to feel sorely troubled just now with the great destructiveness of our insect foes, there will no doubt soon come an end to them all.

Raising Evergreens from Seed.

The cones of our native evergreen trees should be gathered when fully mature in Autumn, and before they open, then spread them upon shelves or the floor of a dry, warm room, and leave in this position until sufficiently dry to permit the seeds to drop out when handled. Some of the pines, however, have very persistent cones, and may require considerable drying before the scales will relax sufficiently to allow the seeds to drop out; but in such cases it is best to soak the cones for a few hours in warm water before drying. When the seed have been secured and all refuse matter removed, they may be put into bags and hung up in a cool room until the season arrives for sowing in Spring.

SEED BEDS.

It would be folly to attempt the growing of evergreens from seed in the open ground, as we do most kinds of deciduous trees. The hot sun and drying winds of our climate make havoc with the young seedlings when they first appear above ground, and even with all the care bestowed and artificial appliances employed by our nurserymen, serious losses frequently occur at this period in the life of seedling evergreens. Knowing the sensitiveness of these plants to the influence of hot, dry winds and scorching rays of the sun, beds for the reception of the seed should be prepared in such a manner that full protection may be given during the period named. Frames made of boards a foot wide will answer every purpose, and placed

upon the surface been prepared. In convenient size screens may be feet by four, which able to be broken the strips of lat they are wide, permit enough o sure a healthy g nish shade enoug as screens of clof making the bu building or unde are cheap and less useful to hav to keep out the It is well to mak the winter mon when required fo

BEST S

A light porous sand, loam, or and moderately will not answ comes compact would prevent up, consequent purpose. When obtained in su clusively for the er quantity will surface to the d

As soon as th dry to work re sown in drills si frames. If the over them to t better than c plements. After applying with a rose. The so time forward, c to give just eno but not enough "damp off," men. It is eas seed, when on The seedlings during the enti planted the sec secured.—*Rural*

Our Expe berri

We have ma set the abov best." We ha fall planting. leaving no vaca settings we alv their coming. rows, and as following fall even. Second third better g the spring. attend to it i hence can mak

For years w and our prefer that they can of a very ligh unsettled or k persons fail to part of spring on, many fail spring proves set, both of " we have fully tions of rasp won't they he them?" are land, it shoul rows, so as t strips as possi vember, then were plowed harrowed or previously, o berries and bl with a one-ho one way (7 fe 3 feet the oth plant, setting