

From Mr. Riley's synopsis of experiments and observations we gather the following statement respecting the different varieties of grape:—

EUROPEAN VINE (*Vitis vinifera*)—Rarely subject to leaf-gall, but it generally succumbs to the attacks of root-lice after a few years.

RIVER-BANK VINE (*V. riparia*)—The Cornucopia, Alvey and Othello suffer very little or not at all from Leaf-galls, but to a considerable extent from Root-lice. The Clinton and Taylor are very subject to the Leaf-galls, but from the great vitality of their roots they do not succumb to the attacks of the Root-lice. The Golden Clinton and Louisiana do not suffer much from either. The Marion a good deal affected by the former, but little by the latter. The Delaware suffers considerably from both.

SUMMER GRAPE (*V.estivalis*)—The Cunningham, Norton's Virginia, and Rutlander suffer not at all from the Leaf-gall, and very little from the Root-lice. The Herbemont and Cynthiana suffer slightly from both.

NORTHERN FOX GRAPE (*Labrusca*)—The Challenge, Dracut Amber, Israella, Martha, Northern Muscadine and Wilder, are not subject to the Leaf-gall, and only slightly to the root-lice. The Diana, Goethe, Hartford, Isabella, Ives, Maxatawney, North Carolina, Rebecca and Salem are also free from the Leaf-gall, but have the Root-lice more abundant and suffer more from its attacks. The Catawba and Iona do not suffer from the Leaf-gall, but are most subject to the Root-lice. The Concord has the Leaf-galls but rarely, and does not suffer much from the Root-lice; the Creveling also is usually free from the former, but suffers much more from the latter.

SOUTHERN FOX GRAPE.—This species is entirely free from the Phylloxera in any form.

The above enumeration is founded principally upon Mr. Riley's observations in the central portion of Missouri; he has also examined many of the varieties in Kansas, Illinois, New Jersey, Pennsylvania and New York. The Arnold's hybrids, which he has examined, all suffer, he states, but some of them more than others.

MEANS OF COPING WITH THE DISEASE.—Grafting the more susceptible varieties on the roots of those that have a greater power of resistance, would probably counteract the disease to a great extent. This plan is now being tried on a large scale, but it will be necessary to wait a year or two before any positive conclusions can be obtained.

"In planting a new vineyard the greatest care should be taken not to introduce Phylloxera on the young plants, and a bath of weak lye or strong soap suds before planting will, perhaps, prove the best safeguard. Remembering that the lice are spreading over the ground from July till fall, and principally in the months of August and September, a thorough sprinkling of the surface with lime, ashes, sulphur, salt or other substance destructive to insect life, will, no doubt, have a beneficial effect in reducing their numbers and preventing their spread.

The insect has been found to thrive less and to be, therefore, less injurious in a sandy soil; while mixture of soot with the soil has had a beneficial effect in destroying the pest. It is, therefore, recommended for the more susceptible varieties, and that they be planted in trenches first prepared with a mixture of sand and soot. An addition of lime will also prove beneficial. There is every reason to believe that vines are rendered less susceptible to the disease by a system of pruning and training that will produce long canes and give them as nearly as possible their natural growth.

NATURAL ENEMIES.—There are a number of predaceous insects which serve to keep the leaf-lice in check; but as the injury is mostly done underground it will suffice to enumerate the principal of these in this connection. The most efficient is a black species of Fringe-wing or Thrips with white wings (*Thrips Phylloxerae*). They are found in several different kinds of Phylloxera galls, and do more than any other species to keep the leaf inhabiting species within bounds.

The next most efficient aids in the destruction of the leaf-lice are the lace-winged flies (*Chrysopa*); the lady birds (*Coccinella*); certain Syrphus fly larvæ; a few true bugs and other insects.

The enemies known to attack the Phylloxera underground are, naturally enough, fewer in number. In one instance, Mr. Riley relates, I have found a Scymnus larva at the work six inches below the surface, and there is a Syrphus fly, whose larva lives underground and feeds both on the apple-tree root-louse and on this grape root-louse. Wonderful indeed

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