Agriculture by Philip Ulanowsky

Phylloxera hits California vineyards

Wine growers face disaster, as the pest conquered a century ago comes back.

A species of root louse that kills grapevines is rapidly spreading in two of California's prime wine-growing districts, forcing growers to rip up thousands of acres of premium vines. Estimates of repairing the damage caused by the new infestation currently range as high as $1 billion. However, even this may turn out to be conservative.

An article in the Aug. 31 issue of *The Wine Spectator* has reported some very hard facts about California's—and perhaps other areas'—wine future.

The pest involved is a mite-like bug called phylloxera. It attaches itself to the deep vine roots, feeding on their nutrients and breeding rapidly. The strangled root becomes increasingly incapable of supporting the vine, at first diminishing its yield, and eventually dying. Since the phylloxera works well below the soil surface, pesticides are ineffective.

A century ago, phylloxera wiped out major portions of the French wine production, along with American plantings of the European species of vines, *vitis vinifera* or vinifera for short, the grapes which produce the highest-quality drinking wines, including Chardonnay and Cabernet Sauvignon. The solution discovered was the grafting of the vinifera vines onto native American root stocks, which, for reasons that are still a mystery, the little critter seems to find distasteful.

Following that catastrophe, emphasis on root stock research continued in the United States until shortly after World War II. In the 1950s, one particular cross, the AxR#1, was chosen as a prime stock over a number of others by a leading California researcher, due to its ability to produce high yields while retaining fairly high resistance to phylloxera and good resistance to various other pests. Reportedly, research dropped off precipitously after that, although both experimentation and planting continued with a number of stocks. Today, some vineyards in the affected areas are lucky to be planted on more resistant stocks.

The AxR#1's splendid performance for over 40 years has contributed to California's emergence as a world wine-making center. Unfortunately, a false sense of security set in, to the extent that when the first reports of the new phylloxera, much later identified as Biotype B, began coming in a decade ago, little was done. Now, the price is being paid.

Biotype B, the origin of which is unknown, looks just like the "original," but it can reproduce 40 times as fast. In its 30-day cycle, a single female produces 200 offspring. In other words, start with one, and one year later you will have a billion. All the phylloxera in California are female. Biotype B also destroys more quickly: Biotype A commonly takes 10 years to kill a vine; B can do it in 3 to 5 years.

To make things worse, exactly how it spreads is not known, according to *The Wine Spectator*'s report. Of course, it can be transported in dirt clumps, on vine roots being transported, or potentially on agricultural equipment; some believe its spread may be encouraged by drought, others by excessive ground water; possibly, it may be spread airborne. While vine transplants coming into California are quarantined, phylloxera has not been on the screening list.

The Wine Spectator quotes sources saying that, in the two wine regions hit so far, Napa and Sonoma, 26,000 acres will have to be replanted in the next seven years, and another 17,000 are susceptible (i.e., growing on AxR#1 or other vulnerable root stocks). A few years from now, at the peak of the foreseen replanting, as much as 30% of these two areas acres may be out of production, since a vine does not produce for three to four years from the time of planting. Furthermore, younger vines often do not produce fruit of the quality which older vines can, with their larger root systems and trunks.

The cost of major replanting, as opposed to the normal replacement of older or sick vines and similar rotational replanting, is too great for hundreds of smaller wineries. The $9,000-15,000 an acre nominal replanting cost does not even include the cost of lost production. Nor can growers be optimistic about getting much help. The disaster comes at a time that the state of California can't even meet its payroll, and bank loans are not forthcoming.

However, California's troubles pale in comparison to what the existence of the new biotype of phylloxera portends. While *The Wine Spectator* says that no reports of new phylloxera outbreaks have come in from other wine-growing regions around the country or, for example, France, this "AIDS of the vineyard" could well have already spread far beyond the two counties currently identified. Four years ago, only 100 acres of the prime Napa Valley region were identified as suffering from phylloxera; today, the area is 45 times greater.