

Notes from a Rogue entomologist**From orchards to vineyards:
Treehoppers follow the trend**

BY RICHARD J. HILTON

I have previously noted how my work has evolved over the last 30 years here in southern Oregon—from focusing almost entirely on pears to more of a mix of crops, including considerable time spent in vineyards during the past decade.

In my *Applegater* article two years ago, I talked about a new virus, red blotch, that we were finding in grapevines. The identity of an insect vector was, at that time, a key topic of research. Some sort of sucking insect that feeds on grapes was the most likely suspect, and one published study showed that a leafhopper had transmitted the red blotch virus in a greenhouse experiment. However, those findings were never duplicated despite repeated attempts by multiple laboratories. And, to my knowledge, that study was never defended by any of the original researchers.

So other sucking insects were tested, and, about a year and half ago, a group at University of California-Davis announced that they had identified a treehopper, the threecornered alfalfa hopper, as a vector of red blotch. Those findings were recently verified by work done at Cornell University. Let me note that “threecornered alfalfa” is a bit of a misnomer as this insect can attack many plants besides alfalfa, including shrubs.

In light of this new information, starting last year treehoppers became the

primary focus of our attention. We already knew that the threecornered alfalfa hopper can attack wine grapes—in the 2003 *Oregon Viticulture*, it was included as a pest, albeit a minor one. However, while the direct damage from the treehopper to the grapevine is negligible, when the insect is transmitting a virus like red blotch, suddenly the injury caused by its feeding is magnified. Now it is potentially a major pest.

Another wrinkle in this story is that the treehopper we found feeding on grapevines was not the threecornered alfalfa hopper but a closely related species which, unfortunately, has no common name. One of the best articles we discovered while searching for information on this treehopper concerned its attack on tree fruit in the Pacific Northwest and contained data from the late 1920s and early 1930s.

One resource that proved very helpful for our study on our “new” treehopper pest was past insect collections made in pear orchards. Peter Westgard, my predecessor, had done a fantastic job documenting the insects that inhabit pear orchards. He left two extensive collections of insects, one from the 1960s, when he was looking at a pear orchard here at the research center where no insecticides were applied for a ten-year period. Peter hired his predecessor,



Treehoppers on a pear tree.
Photo: Phil VanBuskirk.

Louis Gentner (of fritillaria fame), then in his 70s, to make this collection. This was a perfect job for Louis, a highly accomplished insect collector.

The other collection was amassed in 1980 by Larry Gut, Peter’s graduate student who was studying the insect community in pear orchards and how it was affected by surrounding habitat. Larry is now a top tree fruit entomologist at Michigan State University.

Examining these two collections, I found over 125 treehopper specimens. While there were some threecornered alfalfa hoppers, the vast majority were the same species of treehopper that we are now finding in wine grapes. By looking at the dates when the treehoppers were collected, I could discern the general pattern of adult emergence and determine that there is only a single generation per year. It was quite valuable to have this source of information,

demonstrating that old data can still be very relevant.

It seems clear that our native treehopper species was able to inhabit orchards when they were first planted here over a hundred years ago, and now they seem to have successfully moved to vineyards and

are feeding on this new crop as well.

And the feeding that these treehoppers do is rather unusual. With their sucking mouthparts, they will feed around a shoot or leaf stem, often resulting in a girdle. In red grape cultivars this girdling causes the distal portion of the plant to turn bright red, making it stand out—often very dramatically. When we’re searching for these treehoppers, this is one of the signs we look for.

While new problems create the need for new research, the first step is always to check the past and learn from it.

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**Lorquin’s Admirals are
abundant this season**

BY LINDA KAPPEN

The Lorquin’s Admiral (*Lorquini limenitis*) is a butterfly of the Nymphalidae family. It can be up to three inches on open wing. The dorsal (open wings) view shows black with white bands along the median of the wing. Wingtips are orange and narrow and run on the top margin of the forewing. The ventral (underside) view shows patterns of reddish-brown with white bands and a grayish-blue band. This describes the butterfly in our area, but there can be some variations in appearance throughout the Pacific Northwest.

Males perch in their habitats looking for females. The female will lay a single egg on the tip of a host plant, which is mainly willows, but also orchard trees, shrubs, and trees of the prunus or poplar family. Larvae will feed on the leaves of plants and will overwinter in a hibernaculum (bud or underground stem) of rolled leaf shelters.

Adults will nectar on a variety of flowers such as yerba santa, yarrow, dogbane, coyote mint, thistles, and many others. For most butterfly species, only males use seeps from roadside ditches or wet mountain streams that create wet spots for their nutrients. It has been reported that the female Lorquin’s Admiral will also use

these wet spots. Maybe that is why so many of these butterflies can be seen at once in this type of spot.

Lorquin’s Admirals can be seen in flight on warm days in late February then through October. Their habitats are streams, rivers, forest edges, canyons, parks, or gardens. These types of places provide some of their host plants. The butterfly ranges from coast to inland and west in the Pacific Northwest.

Lorquin’s Admirals are in good numbers this season, and we could see up to three broods. Look for them as you travel country and mountain roads. I have seen them nectar on excrement of animals or dead reptiles, a great place to observe them up

close. As they land on a tip of a branch, they will turn around and face the sun, displaying their beauty even more.

Quick butterfly fact: Pierre Joseph Michel Lorquin was a French entomologist who collected lepidoptera in the mid-1800s in California and Oregon during the gold rush. He also made great discoveries in the natural history of the terrain and collected for Jean Baptiste Boisduval, one of the most celebrated lepidopterists in France. Pierre Lorquin is honored with two butterflies in his name: Lorquin’s Admiral and *Papilio lorquinianus*, a sea-green swallowtail found in Indonesia, Sulawesi, Borneo, Java, Sumatra, and the Philippines.

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Photo credits: Lorquin’s Admiral butterfly (bottom left and right) by Linda Kappen. *Papilio lorquinianus* (below) by Dana Ross, Oregon State Anthropol Collection.



Papilio lorquinianus



Lorquin’s Admiral dorsal view



Lorquin’s Admiral ventral view

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