Usnea longissima in California

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Readers who have never seen a large tree festooned with long strands of *Usnea longissima* Ach. are encouraged to refer to the accompanying map and go in search of one to visit. *U. longissima*, with its three to four meter long, silvery thalli, is a unique and beautiful lichen.

Like all Usneas, *Usnea longissima* has a tough cord running down the center of the thallus. Unlike in other Usneas, however, the cortex is generally crumbling or even absent on the main branches, giving it the distinctive silvery look mentioned above. Side branches are few but are corticate and are "thickly clothed with simple, nearly straight, horizontal, comparatively short fibrils," as Herre (1910) so aptly described them. The long strands, so distinctive for this species, break up easily, allowing fragments to be blown to another part of the same tree or to a neighboring one. Cracks which develop in the cortex may make it easier for the thallus to break up, and thalli are also weakened and break more readily where they are draped over a branch in direct contact with bark (Gauslaa 1997).

For the most part chemical spot texts are negative in *Usnea longissima*, but the central cord in the main branch reacts blue with iodine, and this may help in identifying questionable specimens, such as fragments or young specimens that have not yet lost their cortex.

Fig. 1. U. loggissima, Seaview Road, Sonoma County, California.

Herre (1910) went on to describe the apothecia as small or very small, lateral as well as terminal, concolorous or pale tan, the spores short ellipsoid. He did not mention soredia.

In an earlier report, Schneider (1898) had described the apothecia as rare or wanting, and also made no mention of soredia. Fink (1935) described the apothecia as small, very rare, and terminal. His only reference to soredia was to say that the branches were "scaly, whitish sorediate, especially at the base." Hale (1988), on the other hand, said apothecia were lacking, and Bruce McCune and Linda Geiser (1997) also reported that no apothecia were seen. The latter, however, did report soredia as rare, whereas they are not mentioned at all by Schneider (1898) or Herre (1910). Does the increased rarity of apothecia and the recent report of soredia indicate some overall change in *Usnea longissima* in the United States? In Europe, apothecia are reported as extremely rare, and in Norway fibrils of freshly collected thalli are often richly sorediate (Gauslaa 1997).

We note that the overall distribution in California has changed since 1910, when Herre reported it to be as far south as Purissima Creek in San Mateo County. Now we have no reports of its presence south of Sonoma County (Doell 1997). A casual look at the accompanying map of the distribution of *Usnea longissima* in California (fig. 2) shows that for the most part the old growth forests where we find this lichen growing are in the same ecological area as the redwood, *Sequoia sempervirens*, even though the lichen does not necessarily grow on that tree. As with the redwood, we find *U. longissima* in the coastal mountains north of San Francisco, where the climate is cool and moist, and not more than forty kilometers inland. As we

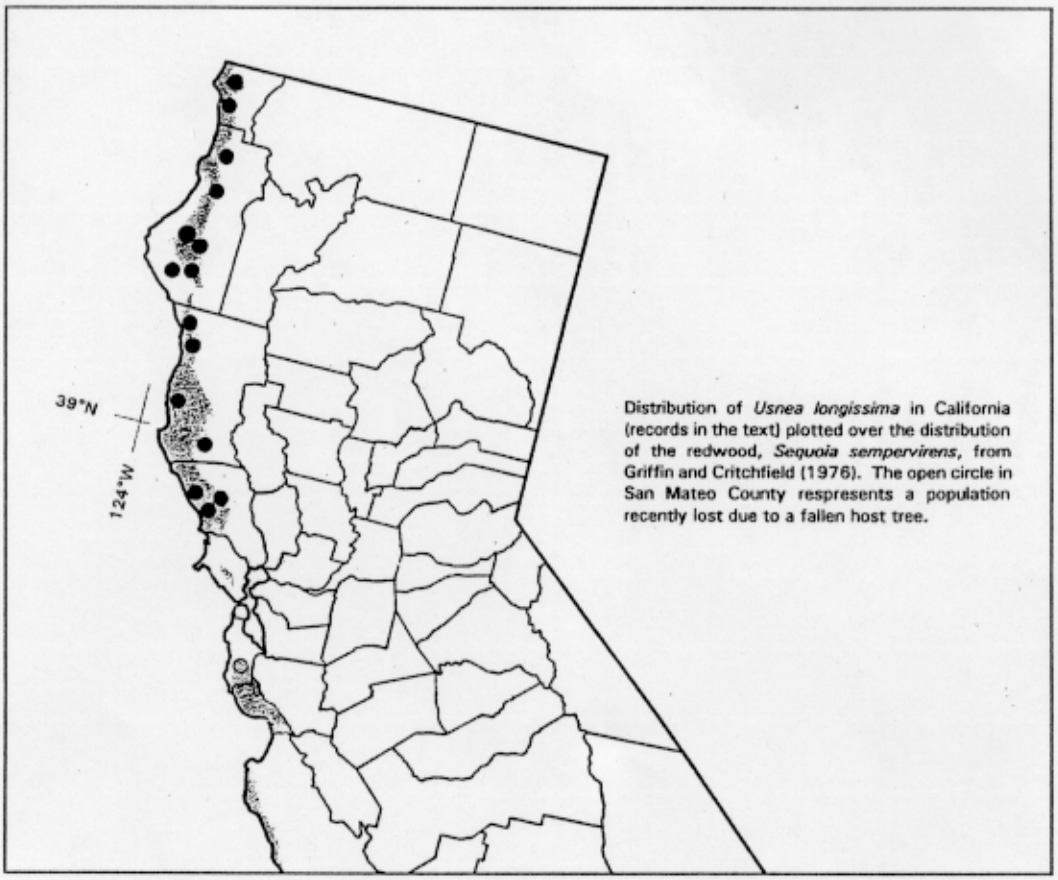

Fig. 2. Distribution of *Usnea longissima in California.*

continue north reports are more numerous, and this trend continues into Canada and Southeast Alaska, where it is recorded as abundant (Geiser et al 1998). This species might be regarded as a remnant of forests that were once more extensive and a climate that was cooler. What we are finding appear to be relictual populations which may now be extending themselves by wind- and bird-dispersed fragments. The evidence that we are getting that *U. longissima* is becoming rarer in this country is echoed and underlined in Europe, where in many areas it is considered extinct (Poelt 1969; Wirth 1995, v. 2; Gauslaa 1997).

21 populations have been identified statewide: **Del Norte County**: Damnation Creek Trail; Jedediah Smith State Park (2 localities); **Humboldt County**: Bald Mountain east of Maple Creek; Bull Creek near Highway 101; Grizzly Creek State Park; Harper Creek (Mattole Rd.); Honeydew; Mattole Rd. (2 localities); Humboldt Redwoods State Park, Squaw Ridge Rd.; Monument Rd. west of Rio Dell; Prairie Creek Redwoods State Park, Ossagon Trail; Redwood National Park, Dolason Trail; **Mendocino County**: Comptche-Ukiah Rd. near Fort Bragg; Usal Rd.; Yorkville, Galbraith Preserve; **San Mateo County**: Oil Creek Rd. (recently extinct); **Sonoma County**: Austin Creek Recreation Area; Salt Point State Park, Kolmer Gulch; Seaview Rd.; Coleman Valley Rd.; Stewart's Point-Skaggs Spring Rd. (2 localities); Tin Barn road about 5 km from Hauser Bridge Rd. A dot on the map may indicate more than one population. The map of the distribution of *Usnea longissima* in Hale's *How to Know the Lichens*, 2nd edition (1979, p. 213, fig.425), shows the species extending over about three-fourths of the state from west to east, but we have seen no records from outside the redwood zone.

Because the habitat in which *Usnea longissima* thrives is becoming rarer with the steady increase of air pollution, development, and logging in mature forests, it is time to

consider a plan to protect it along with our other threatened lichens. There is little precedent for this type of action in the United States, but David Magney, CALS member and environmental consultant, has compiled a Red List of California lichens, using a ranking system based on that prepared by the California Native Plant Society for vascular plants. Recently *Usnea longissima* was placed on this list, and the best Humboldt County population appears to have been protected from clear-cutting, partly by this listing. With California lichenologists coming to the aid of this effort, perhaps this spectacular lichen can be saved from the decimation which led to its extinction in most of Europe.

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