

Woolly oak aphids in Florida (Hemiptera: Aphididae)¹

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INTRODUCTION: Woolly oak aphids are conspicuous pests on oak (*Quercus* spp.), because they are covered with large amounts of flocculent wax. Two genera of woolly oak aphids occur in Florida, each including one known native Florida species. One species, *Stegophylla brevirostris* Quednau, is common, and the other, *Diphyllaphis microtrema* Quednau, is rare.

DESCRIPTION: Florida woolly oak aphids can be recognized easily by the large quantities of woolly wax that they secrete (Figs. 1, 2). Beneath the wax, the aphid bodies are pale. Young nymphs can be pale green, and they tend to be more mobile than adults. Excreted honeydew forms brown droplets in the wax.



Fig. 1. *Stegophylla brevirostris* Quednau colony on oak (Photography credit: Susan E. Halbert).

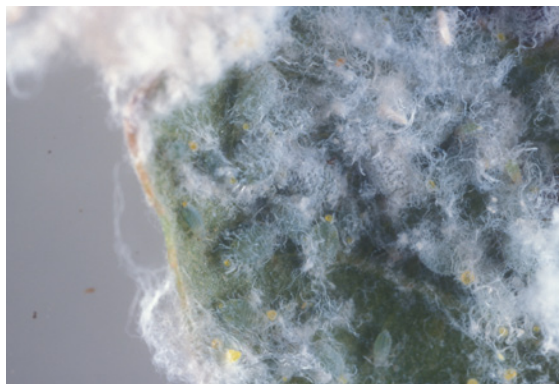


Fig. 2. *Stegophylla brevirostris* Quednau on live oak. (Photography credit: Lyle Buss, University of Florida)

Separation of the two species is based on microscopic characters. Both species have short appendages and pore-like siphunculi. They lack the tubular siphunculi present in many species of aphids. Species of *Stegophylla* have larger siphuncular pores, with a ring of setae surrounding them (Figs. 3, 4). Species of *Diphyllaphis*

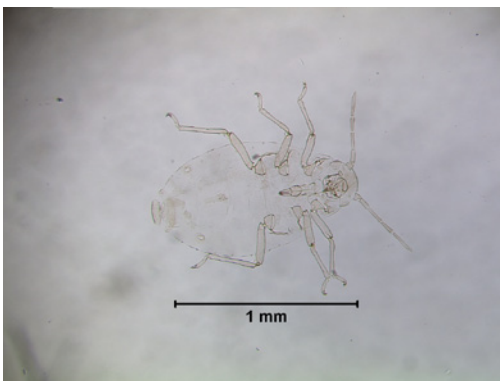


Fig. 3. *Stegophylla brevirostris* Quednau (Photography credit: Susan E. Halbert).

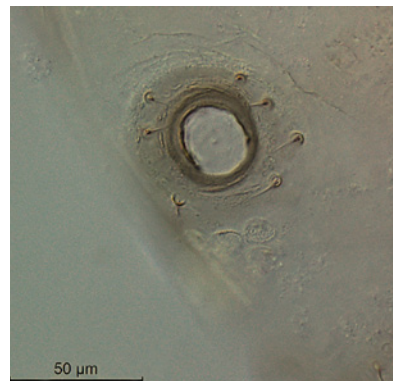


Fig. 4. *Stegophylla brevirostris* siphunculus. (Photography credit: Ian C. Stocks)

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have minute siphuncular pores that lack setae (Figs. 5, 6). The majority (59%) of DPI records for *S. brevirostris* indicate that live oak (*Quercus virginiana* Mill.) was the host. A few records came from other species of oaks. *Diphyllaphis microtrema* has been found on an assortment of oaks, including live oak, seemingly without a preference for species.



Fig. 5. *Diphyllaphis microtrema* Quednau
(Photography credit: Ian C. Stocks).

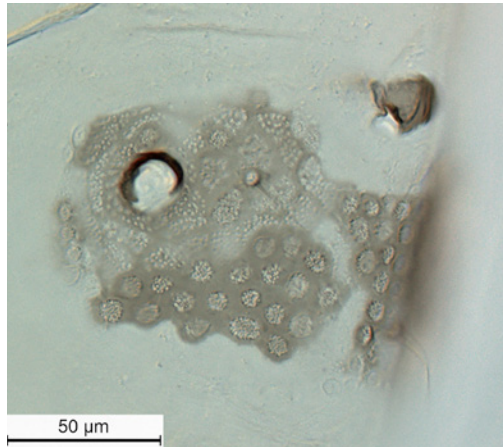


Fig. 6. *Diphyllaphis microtrema* Quednau siphunculus.
(Photography credit: Ian C. Stocks)

Stegophylla brevirostris only recently acquired a valid name. In the past, it was known as *Stegophylla querci* (Fitch) or *Stegophylla quercicola* (Monell). *Stegophylla querci* is not a valid name, because the species was synonymized in another genus (*Anoecia*) (Remaudière and Remaudière 1997). Quednau (2010) provided the new name, *Stegophylla davisii* Quednau, for *S. querci*; however, *S. davisii* also does not match Florida specimens. *Stegophylla quercicola* is a valid species, but similarly, it does not match the Florida specimens. Thus, a new name was needed for the Florida aphids. *Stegophylla brevirostris* was described in Quednau (2010). The species is distinguished from others in the genus by its short ultimate rostral segment and lack of empodial setae in viviparous forms.

LIFE HISTORY: *Stegophylla brevirostris* is permanently anholocyclic (no sexual or egg-laying forms) in Florida. We have raised *S. brevirostris* for a number of years at DPI, Gainesville and have never seen any oviparae (egg-laying females) or males in the colony. All forms throughout the year are live-bearing females. Moreover, no winged forms are known in Florida. One ovipara and one winged male are known from Maryland (Quednau 2010). Thus, in northern climates, *S. brevirostris* seemingly has a holocycle, with overwintering eggs. Among *Stegophylla* species, the only known winged forms are the males that occur in the fall and mate with the oviparae to produce overwintering eggs. It is not known how these aphids disperse, but possibly they are picked up and carried by birds and larger flying insects because of the sticky wax that surrounds the bodies of the aphids.

The life cycle of *Diphyllaphis microtrema* is similar to that of *S. brevirostris* in that there are no winged forms except for the males. However, we do have a few oviparae from Florida, indicating a probable holocycle in the state. Oviparae have greatly thickened hind legs and conspicuous silky wax plates near the siphunculi (Fig. 7).

DISTRIBUTION: Both species occur in eastern North America. *Stegophylla brevirostris* is a pest only in Florida.

HOSTS: Both species utilize various species of oaks. *Stegophylla brevirostris* has a preference for live oak, whereas *D. microtrema* uses a mix of species.



Fig. 7. *Diphylaphis microtrema* Quednau ovipara.
(Photography credit: Susan E. Halbert and Lyle Buss,
University of Florida)

SURVEY AND DETECTION: Woolly oak aphids are conspicuous because of the white woolly wax produced on the undersides of the leaves. Sometimes these aphids are mistaken for mealybugs or whiteflies.

CONTROL: Consult the local University of Florida extension personnel for control of woolly oak aphids. These are native species with native natural enemies. In most cases, control will not be needed. However, these species can make a significant mess, so control might be warranted in situations where populations are high, and plant appearance is important.

LITERATURE CITED

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