

Ligustrum Weevil (suggested common name), *Ochyromera ligustri* Warner (Insecta: Coleoptera: Curculionidae: Tychiinae: Tychiini: Endaeina) ¹

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Introduction

Chinese privet or hedge privet, *Ligustrum sinense* (Lour.) (Oleaceae), is a semi-deciduous shrub or small tree of Asiatic origin that is commercially available from the nursery industry as a landscape ornamental (Broschat and Meerow 1991). This woody shrub is frequently used as a hedge or border plant in Florida because it adds color and design to landscapes, especially in its variegated form (Watkins and Sheehan 1975, Whitcomb 1975, Dehgan 1998).

A seed-attacking weevil was recently found attacking Chinese privet in Tallahassee, Leon County, Florida (Cuda and Zeller 1998). The insect was discovered in a sample of several hundred seeds collected for germination studies. Six weevil adults that emerged from the infested seed sample were later identified (by M.C. Thomas) as the ligustrum weevil, *Ochyromera ligustri* Warner. The remaining seed stock from Tallahassee was dissected and inspected for the presence of the insect. Weevil larvae were recovered from 89 of the 358 seeds

examined. Overall, 24.9% of the Chinese privet seeds collected were infested with weevil larvae. Voucher specimens of the larval and adult stages of the ligustrum weevil were deposited in the Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville.



Figure 1. Adult ligustrum weevil *Ochyromera ligustri* Warner, lateral view. Note triangular tooth on the front leg. Credits: J.F. Butler, University of Florida

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Distribution

The ligustrum weevil has been reported from Florida, Georgia, North and South Carolina, and Virginia (O'Brien and Wibmer 1982, Johnson and Lyon 1991). In Florida, this insect occurs in the northern part of the state where established populations have been documented in Jefferson and Leon Counties (O'Brien and Wibmer 1982; Cuda and Zeller 1998, 1999, 2000; Bloem et al. 2002).

Description

Weevils of the genus *Ochyromera* Pascoe are small to medium sized insects characterized by having the profemora (or front legs) armed with a large unserrated triangular tooth and the antennae consisting of seven segments in the funicle (or apical portion) (Warner 1961).

Egg: The egg stage of the ligustrum weevil has not been described.

Larva: Although the larval stage has not been formally described, the larvae of the ligustrum weevil are typical of most weevil larvae in that they are soft bodied, somewhat C-shaped, cream colored in appearance, and without legs. The distinctive urogomphus (or cuticular process) visible on the apical abdominal segment of the ligustrum weevil larva is a unique character. Larvae of the Curculionidae normally are differentiated from related families by the complete absence of terminal abdominal spines (Anderson 1991).



Figure 2. Mature larva of the ligustrum weevil, *Ochyromera ligustri* Warner. Note the sclerotized terminal process at the apex of the abdomen. Credits: J.F. Butler, University of Florida

Pupa: The pupal stage of the ligustrum weevil has not been described.

Adult: The adult is shiny brown with golden yellow hair-like scales. The prothorax is wider than long with a definite median stripe and somewhat obscure lateral stripes when viewed from above. Females are larger than males (3.9 mm versus 3.7 mm) and have a longer snout (1.4 mm versus 1.1 mm).

Life Cycle

The biology of the ligustrum weevil on Japanese privet, *L. japonicum* Thunb., was reviewed by Johnson and Lyon (1991). The adults feed on the foliage by making small perforations (3 to 4 mm long) in the interior of the lamina (or leaf blade) and occasionally along the leaf margins. The weevil is easily alarmed and will drop to the ground when disturbed during feeding or while resting on its host plant. In North Carolina, adults are active from late June to early July. Females deposit their eggs in the seed or in the mature fleshy fruits. Larvae hatch within a few weeks. The young larvae feed inside the fruits during the fall and winter months. Full-grown larvae and pupae appear in late April and early May during the following year. The larvae destroy the seeds as they complete their development to the adult stage. New adults emerge from the seeds (one weevil per seed) in mid-May, and there is only one generation per year.

Hosts

The ligustrum weevil was first discovered in 1959 on Japanese privet in Wake County, North Carolina (Warner 1961, Wray 1961), and is believed to have immigrated from the Orient in nursery stock imported into the United States. Although it prefers Japanese privet, the ligustrum weevil also has been collected from wax-leaf ligustrum, *L. lucidum* Ait.; common privet, *L. amurense* Carr.; lilac, *Syringa* spp. and grape, *Vitis* spp., in North Carolina (Warner 1961, Wray 1961). It is not clear from the literature whether lilac or grape are true host plants capable of supporting complete development of the weevil. However, Kojima et al. (1998) reported that adults have been collected on Japanese privet, wax-leaf ligustrum, common privet and lilac but larvae were

found only in Japanese privet. Considering that Leon County is the only locality in Florida where Japanese privet is documented as naturalized (Wunderlin and Hansen 2004), it is not surprising that the weevil has adapted to Chinese privet in this region of north Florida where the two species of *Ligustrum* have sympatric (or overlapping) distributions.

Economic Importance

Depending on the location, the ligustrum weevil may be considered harmful or helpful. Chinese privet is still regarded as a desirable plant for landscaping in many areas of the southeastern United States because of its attractive flowers, dark green or variegated foliage, resistance to most pests and diseases, and general hardiness. Where it is being cultivated as an ornamental or for erosion control, feeding damage by the adult weevil destroys the buds of Chinese privet, causing bunched growth and a tattered appearance (Baker 1980). To minimize the damage, the ligustrum weevil can be controlled mechanically by shearing off the flowers and fruits (Baker 1980).

However, the ligustrum weevil may be considered a beneficial species in natural areas that have been invaded by Chinese privet. Following its introduction into the United States in 1852 (Dirr 1983), Chinese privet eventually escaped cultivation, and by 1932 had become naturalized across the southeastern United States (Small 1933). Chinese privet ranges from Connecticut to Texas (USDA, NRCS 2004), and is considered an invasive weed in the southeastern United States (Dirr 1983, Nelson 1996), including north Florida, Alabama, Georgia (Godfrey 1988), Mississippi (Goddard 1992) and Tennessee (Faulkner et al. 1989). Songbirds and bobwhite quail are primarily responsible for spreading the plant by ingesting the fruits and dispersing the seeds (MacRae 1980). In some cases, Chinese privet forms dense thickets that displace more desirable native vegetation (Faulkner et al. 1989). According to Goddard (1992), dense stands of this weedy shrub also may harbor populations of the blacklegged or deer tick, *Ixodes scapularis* Say, a suspected vector of Lyme disease in the southern United States (Oliver 1989).

The Florida Exotic Pest Plant Council currently lists Chinese privet as a Category I invasive species because there is documented evidence it causes severe ecological damage by disrupting native plant communities (FLEPPC 2003). Because Chinese privet is considered invasive in Florida, is not recommended by UF/IFAS faculty for landscaping in the northern and central zones but may be recommended in the southern zone if it is managed to prevent escape (UF/IFAS Assessment 2004).

By attacking the seeds of Chinese privet, the ligustrum weevil may be important for adventive biological control of this invasive weed. As an immigrant natural enemy of *Ligustrum* spp., the ligustrum weevil may be capable of reducing the spread of Chinese privet into new areas and/or the densities of existing stands. However, field and laboratory studies will be required to determine the extent to which this insect is capable of controlling the growth and spread of Chinese privet populations in Florida's natural areas.

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