

Cactus Weevils, *Gerstaeckeria hubbardi* (LeConte) and *Gerstaeckeria fasciata* Pierce (Insecta: Coleoptera: Curculionidae)¹

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

There are 18 species in the weevil genus *Gerstaeckeria* in North America, north of Mexico. Of these, only *Gerstaeckeria hubbardi* (LeConte) and *Gerstaeckeria fasciata* Pierce, feed on cacti of the genus *Opuntia* in Florida.

Synonymy

Gerstaeckeria hubbardi (LeConte)

Acalles dilatatus Casey, 1895

Acalles hubbardi LeConte, 1880

Gerstaeckeria fasciata Pierce, 1912

(from O'Brien 1970)



Figure 1. Adult *Gerstaeckeria hubbardi* (LeConte), a cactus weevil. Head at right.

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Distribution

The genus is known from Cuba, Guadeloupe, Guatemala, Haiti, and Mexico (Arnett 1962, Kissinger 1964). In the US and Canada, the genus is known in all regions except in

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eastern Canada, the northeast US, and states in the Great Lakes region (Arnett 2000). *Gerstaeckeria hubbardi* and *Gerstaeckeria fasciata* are the only species found in the eastern US (O'Brien 1970).

Gerstaeckeria hubbardi is known in Alabama, Georgia, and Florida (Peck and Thomas 1998). It probably occurs throughout peninsular Florida.

Gerstaeckeria fasciata was originally described from Buck Key, Florida. All known localities are in Monroe County, and the species may be confined to the Florida Keys, associated with one or more of the southern species of *Opuntia*.

Description

These are medium-sized weevils with *Gerstaeckeria hubbardi* 7.5 to 9.5 mm (0.3 to 0.4 in), and *Gerstaeckeria fasciata* 5.0 to 5.8 mm (0.2 in) in length (O'Brien 1970). Beaks are concealed in a groove. Surfaces are coated with minute scales that vary in color from white through shades of brown to black. These scales can be rubbed off, and the pattern is somewhat variable. The general pattern of white humeral angles and a broad light colored apical band is similar in many species, including the two Florida ones.

Biology

All members of this genus are known to breed in *Opuntia* cacti, although there has been little specific data published on their life histories. Brief notes on western species were published by Pierce (1907, 1912), and Hunter et al. (1912).

The adults feed externally on the pads, often hiding beneath those on the ground during the day. Both Florida species appear to be more active at night. When disturbed they drop to the ground, fold up the legs, and feign death. They are difficult to distinguish from their surroundings.

The larva of *Gerstaeckeria hubbardi* feeds within the pads, producing semicircular scars, leaving the epidermis intact. The single pad is usually killed and sometimes separates from the main plant. Hunter et al. (1912) suggested that the weevil appears "to follow the work of *Melitara prodenialis* Walker." This is a moth of the family Pyralidae, the larvae of which feed on *Opuntia* in Florida.

The pupal cell of *Gerstaeckeria hubbardi* is formed near the base of the pad and is composed of sand grains cemented around a chamber of larval feces and decaying cactus. The adult may remain in the cell for some time before emerging. Adults have been collected in Florida every month except

January, July, August, September, and October. Most of the records are for April, May, and June.



Figure 2. Adult *Gerstaeckeria hubbardi* (LeConte), a cactus weevil.
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Figure 3. Adult *Gerstaeckeria hubbardi* (LeConte), a cactus weevil, feigning death. Head to right.
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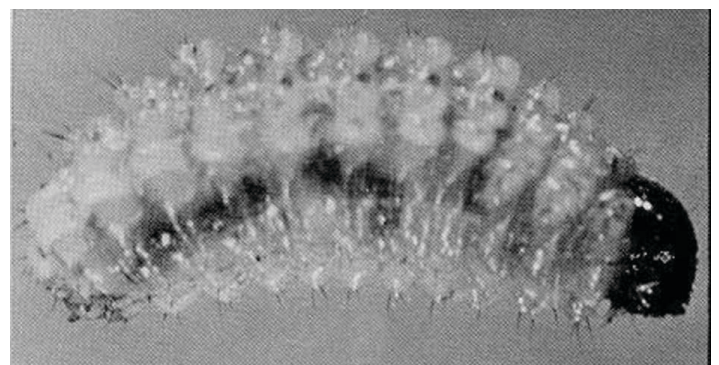


Figure 4. Larva of *Gerstaeckeria hubbardi* (LeConte), a cactus weevil.
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Figure 5. Adult *Gerstaeckeria hubbardi* (LeConte), a cactus weevil, near larval damage (right).

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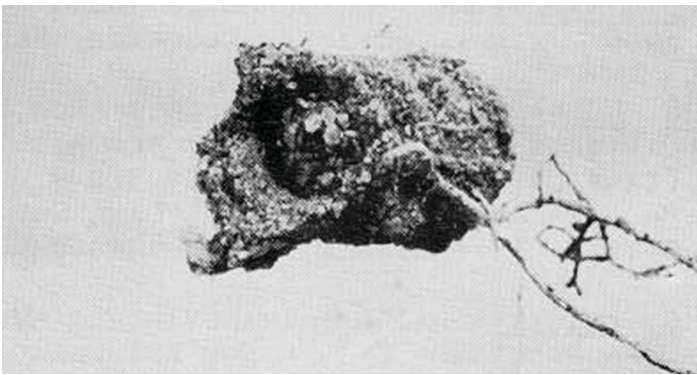


Figure 6. Pupal cell of *Gerstaeckeria hubbardi* (LeConte), a cactus weevil.

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Key to the Florida Species of *Gerstaeckeria*

1. Elytral color pattern predominantly black and white; length 7.5 to 9.5 mm (0.3 to 0.4 in); elytra nearly twice as wide as pronotum; peninsular Florida *hubbardi*

1'. Elytral color black with white humeral spots and caramel or tan subapical band; length 5.0 to 5.8 mm (0.2 in); elytra about 1.5 times wider than pronotum; Florida Keys (Monroe County) *fasciata*

Hosts

All known species are associated with cacti of the genus *Opuntia* (sens. lat.). *Gerstaeckeria hubbardi* was listed by Pierce (1912) from *Opuntia vulgaris*. However, Small (1925) did not list this species from Florida, although he does list approximately 13 other species of *Opuntia* from within the range of *Gerstaeckeria hubbardi*. At Gainesville, the author found it on the “joe jumper,” probably *Opuntia tracyi*. The localities where *Gerstaeckeria fasciata* was found are within the distribution of at least three species of *Opuntia* (*dillenii*, *keyensis*, *stricta*).

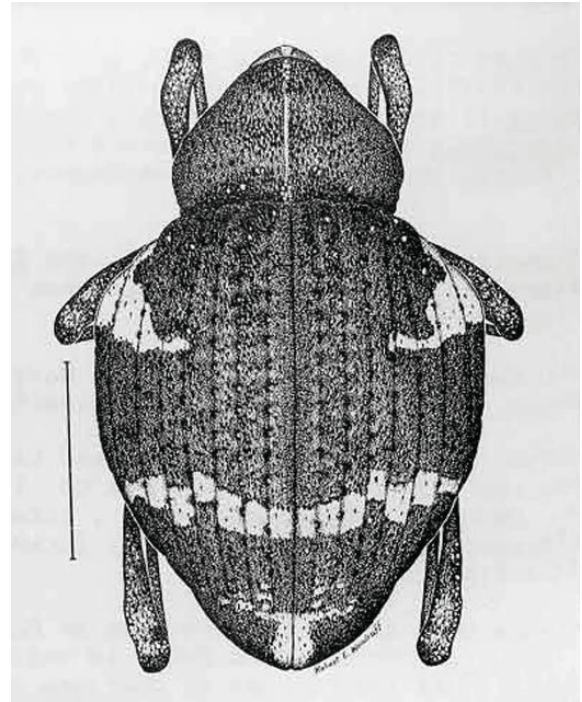


Figure 7. Adult *Gerstaeckeria hubbardi*, showing cryptic coloration.

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The genus *Opuntia* is a large and taxonomically confusing one, with the status of several Florida forms somewhat in doubt. However, it is likely that *Gerstaeckeria hubbardi* feeds on several species. It is possible that *Gerstaeckeria fasciata*, with its restricted distribution, is more host specific.

Management

Since most members of the genus *Opuntia* are considered weeds or undesirable plants, these weevils are, therefore, beneficial. However, their damage has not been noted severe enough to suggest their usefulness in biological control. Additional life history studies may suggest their value in combination with other cactus-feeding insects.

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