

PEST ALERT

Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Charles H. Bronson, Commissioner of Agriculture

Phaedon desotonis Balsbaugh (Coleoptera: Chrysomelidae), a *Coreopsis* (Asteraceae) pest new to Florida

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INTRODUCTION: Until 2001, *Phaedon desotonis* Balsbaugh was known from a single specimen collected in northern Alabama (Balsbaugh and Hays 1972; Balsbaugh 1983). Since then, *P. desotonis* has been discovered to have a broad distribution in the southeastern United States (Wheeler and Hoebeke 2001) and has emerged as an occasional pest of ornamental plantings of tickseed, *Coreopsis* spp. (Braman *et al* 2002), Florida's official state wildflower. This publication records its presence for the first time in Florida and summarizes the available information on its habits, life history, and pest potential.

IDENTIFICATION: The genus *Phaedon* includes eight described species in the U.S. (Balsbaugh 1983). They are oblong, convex, metallic beetles about 3-5 mm in length. There are only two species known to occur in Florida: the newly recorded *P. desotonis* (Fig. 1) and the widespread *P. viridis* (Melsheimer).

Phaedon desotonis (Fig. 1) is more elongate, has a greenish pronotum and purplish black elytra, while *P. viridis* (Fig. 2) is less elongate, and in Florida is entirely bronze. Elsewhere, it may be greenish or bluish. In *P. viridis*, the anterior borders of the mesosternum and first visible abdominal sternite have very large punctures, while those of *P. desotonis* do not. The structure of the male genitalia also differs in the two species (see Wheeler and Hoebeke 2001, Fig. 1, for *P. desotonis* and Balsbaugh 1983, Fig. 19, for *P. viridis*).

BIOLOGY: Biological information summarized here was derived from accounts given by Wheeler and Hoebeke (2001) and Braman *et al* (2002). Adults emerge in early spring to feed on foliage of *Coreopsis*. Larvae were found in South Carolina as early as late March. Larval damage can be severe and heavy infestations can result in plants being almost literally eaten down to the ground. New generation adults emerge and feed for a few weeks, but by mid-June they have diapaused in leaf litter and protected spots near the host plants, where they remain until early the following spring when they emerge to start a new cycle. Most of the information in Wheeler and Hoebeke (2001) was gathered amidst rock outcroppings in several southeastern states, which is what the authors considered to be the natural habitat of the beetle. Apparently, the beetle is able to tolerate a wider range of habitats since there are no granitic rock outcroppings anywhere near DeFuniak Springs, Walton Co., where the first Florida population was discovered.

DISTRIBUTION: The first and for a number of years only record for *P. desotonis* was from DeSoto State Park, DeKalb Co., Alabama (Balsbaugh and Hays 1972, where it was misidentified as *Phaedon purpurea* Linell). Wheeler and Hoebeke (2001) added new records for Alabama, Georgia, South Carolina, and Tennessee. The discovery of a population in an ornamental planting of *Coreopsis* near DeFuniak Springs, Walton Co., in Florida's Panhandle, is the first record of this species for Florida.

COMMON HOSTS: *Phaedon desotonis* is only known to feed on *Coreopsis* spp. and *Bidens aristosa* (L.), all members of the Asteraceae. Braman *et al* (2002) tested *P. desotonis* against 37 plant species in 11 families in no choice trials. They found that adults and larvae would consistently feed only on species of *Coreopsis* (*C. lanceolata* L., *C. tinctoria* Nutt., and *C. verticillata* (L.) plus the related *Bidens aristosa* L. The DeFuniak Springs infestation involved an ornamental planting of *C. lanceolata*, *C. basalis* (A. Dietr.) S.F. Blake, and *C. integrifolia* Poir. The beetles apparently attacked all three species equally (D. Dobson, pers. comm.). There are 13 native species of *Coreopsis* in Florida. *Phaedon viridis*, on the other hand, is confined to *Cruciferae* (*Brassica* and *Lepidium*).

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Fig. 1. *Phaedon desotonis* Balsbaugh, dorsal view.



Fig. 2. *Phaedon viridis* (Melsheimer), dorsal view.