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CAULOTOPS DISTANTI (MIRIDAE: HETEROPTERA), A POTENTIAL YUCCA PEST NEWLY DISCOVERED IN THE UNITED STATES

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ABSTRACT

The plant bug *Caulotops distanti* (Reuter) is reported for the first time in the United States based on specimens collected in two Florida nurseries damaging potted cuttings of *Yucca elephantipes* Regel (Agavaceae). Because some of the potted plant material infested with *C. distanti* has been sold, this potential *Yucca* pest is considered at least temporarily established in the United States. *Caulotops distanti* was imported from Costa Rica, probably as eggs inserted in the stems of its host. A diagnosis and key are provided to help separate *C. distanti* from other U. S. species of *Caulotops* and the morphologically similar *Halticotoma valida* Townsend.

RESUMEN

Se reporta por primera vez en los Estado Unidos a *Caulopos distanti* (Reuter), basado en muestras colectadas en dos viveros, dañando plantas de *Yucca elephantipes Regel* (Agavaceae) sembradas en jarrones. Puesto que algunas de estas plantas infestadas con *C. distanti* han sido vendidas, esta posible plaga de *Yucca* es por lo menos temporalmente considerada establecida en los Estados Unidos. *Caulotopos distanti* fue importada de Costa Rica, posiblemente como huevos insertados en los tallos del hospedero. Se provee un diagnóstico y una clava para ayudar a separar a *C. distanti* de otras especies de *Caulotops* de los Estados Unidos y del morfologicamente similar *Halticotoma valida* Townsend.

The plant bug *Caulotops distanti* (Reuter) is here reported for the first time in the United States based on specimens submitted to the Systematic Entomology Laboratory, IIBIII, Agricultural Research Service, USDA, Washington, D.C. In this paper I outline the steps leading to the discovery of this mirid, present comments on its economic potential, and provide a diagnosis and key to the U. S. species of *Caulotops*.

Recently, I received 5 females of an undetermined *Caulotops* (submitted by F. W. Mead, Fla. St. Colln. Arthropods, Gainesville) collected by Paul Gibson in a nursery at Apopka, Orange Co., Florida, 6-VII-1984, on *Yucca elephantipes* Regel (Agavaceae). A later collection (9-VIII-1984) by Mr. Gibson (Fla. Dept. Agric.) of 33 specimens containing males taken in the same nursery on potted *Yucca elephantipes* allowed me tentatively to identify the species as *Caulotops distanti* (Reuter). By comparing external morphology and male genitalia to paratypes of Carvalho's *C. rufoscutellatus* (a junior synonym of *C. distanti*) series, I have been able to confirm my earlier identification. Further, study of paratypes of the subspecies *C. distanti major* Carvalho, 1948, suggests that this Mexican form is only a color variant of the nominate subspecies *C. distanti distanti* (Reuter) and is here considered a synonym.

The original of the *C. distanti* population has been traced to at least two nurseries located in north central Florida. The plant material was imported from Costa Rica as unrooted tips planted three per pot. At the time of importation, the cuttings were inspected and considered pest free, indicating that the population of *C. distanti* probably arrived as eggs inserted in the stems of the *Y. elephantipes*. Of the 375 original pots, 250 were sold and distributed to buyers in Louisiana, Maryland, Massachusetts, Michigan, Missouri, North Carolina, Ohio, Quebec, and Virginia. The remaining 125 pots were rendered unsalable in 6 months by the *C. distanti* population and have been destroyed.

Because the feeding habits and damage inflicted are similar to that of *Halticotoma valida* Townsend (Wheeler, 1976), it is likely that yucca plantings supporting populations of *C. distanti* can be killed if this pest is not controlled. It is doubtful that *C. distanti* can survive in climates as far north as Maryland or Virginia (or the northern range of *H. valida*), but yucca plantings in the more southern states could be considered susceptible. Because of the damage produced on the nursery stock in Florida, this species should be considered a pest of ornamental *Yucca elephantipes*, and possibly other native and ornamental *Yucca* spp.

Taxonomic history.—*Caulotops distanti* was described in the genus *Euryciptia* from Venezuela (Reuter, 1905) and later transferred to Bergroth's genus *Caulotops* (Reuter, 1908). Carvalho (1948) described the species *Caulotops rufoscutellatus*, also from venezuela, and the subspecies *Caulotops rufoscutellatus major* from Yucatan, Mexico (the latter here considered only a color form of *C. distanti*). After studying type material, Carvalho (1954) synonymized his species *C. rufoscutellatus* with *C. distanti.* The adult male and male genitalia [as *C. rufoscutellatus*] have been illustrated (Carvalho, 1948).

Distribution.—In addition to the Venezuelan [type-locality of *C. rufoscutellatus*], Mexican [type—locality of *C. rufoscutellatus* major], and Florida specimens, I have examined a series of 17 adults and 7 nymphs in the USNM collection that were taken on *Yucca* sp. at Brownsville, Texas, 19 Oct. 1944, apparently intercepted on plants originating from the Neotropics. With these records, *C. distanti* is now known to occur in Costa Rica, Mexico, and Venezuela. Its establishment in the United States (possibly Florida, Louisiana, North Carolina, Virginia, and Texas) needs further confirmation.

Diagnosis of C. distanti.—Male: Length 3.40-3.62 mm, width 1.50-1.56 mm.

Head: Width 0.96-1.00 mm, width of vertex 0.62 mm. Rostrum: Length 1.26-1.30 mm, extending slightly beyond bases of metacoxae. Antenna: Segment I, length 0.44-0.46 mm; II, 0.60-066 mm; III, 0.56-0.62 mm; IV, 0.54-0.60 mm. Pronotum: Length 0.64-0.70 mm, basal width 1.22-1.26 mm.

Female: Length 3.67-4.08 mm, width 1.67 mm. Head: Width 1.04-1.06 mm, width of vertex 0.64-0.66 mm. Rostrum: 1.34-1.36 mm. Antenna: I, 0.46-0.48 mm; II, 0.62-0.68 mm; III, 0.64-0.66 mm; IV, 0.64-0.68 mm. Pronotum: Length 0.68-0.72 mm, basal width 1.32-1.38 mm.

General coloration of head, pronotum, scutellum, venter, and legs pale yellowish brown to orange; hemelytra fuscous to bluish black. Head: Color as above with epicranial suture stippled with red, frons with 7-8 transverse brownish marks on each side of meson, these more distinct on pale, yellowish-brown individuals, apex of tylus fuscous. Pronotum: Color as above with calli infuscated on pale individuals; scutellum uniformly yellow to orange. Hemelytra colored as above, usually with a pale yellow to orange wedge-shaped streak beginning narrowly at base or middle of corium and broadly expanding at cuneal fracture; membrane and veins fumate. Venter uniformly yellow to orange, abdomen sometimes slightly infuscated. Antenna: Segment I pale yellowish brown, apex and narrow sub-basal ring fuscous; segments II-IV fuscous. Legs: Yellowish to orange; bases of femora and apices of coxae paler on orange individuals.

Remarks.—The genus *Caulotops*, previously represented in the United States by *C. agavis* Reuter and *C. barberi* Knight (both known only from Arizona), is most similar to the genus *Halticotoma*. Knight (1968) provided a key to separate the two genera, using the form of the calli as the distinguishing character. As currently defined, species of *Halticotoma* have the calli relatively smooth and undifferentiated, the body broadly rounded, and the hosts are primarily species of *Yucca* (Agavaceae). Species of *Caulotops* have distinctly raised calli with a depression between them, the body is more slender and elongate, and the hosts generally are species of *Agave* (Agavaceae). Unfortunately, these morphological characters and host preferences intergrade when all species in both genera are compared. A thorough analysis of the two genera, with a comparison of genitalia, is needed to clarify their relationships. The following key will separate the U.S. species of *Caulotops*.

Key to the U. S. species of *Caulotops*

1. Body length 4.1 mm or less; first antennal segment pale with apex and sub-basal ring fuscous; central area of corium usually with yellow or orange wedge-shaped streak ..... *distanti* (Reuter)
   Body length 4.6 mm or greater; first antennal segment uniformly black; hemelytron uniformly bluish black 2
2. Antennal segment II longer than width of vertex and single eye combined; tubercle on left side of male genital segment thick and bluntly rounded apically ..... *agave* Reuter
   Antennal segment II shorter than width of vertex and single eye combined; tubercle on left side of male genital segment slender and acute apically ..... *barberi* Knight

In the eastern United States, *C. distanti* keys to *Halticotoma valida* in Blatchley (1926). *C. distanti* is easily separated from *H. valida* by the current generic definition of characters in having the body more slender and the calli raised and separated by a distinct mesal groove. *C. distanti* is

further separated from *H. valida* by the pale first antennal segment that has the apex and a sub-basal ring fuscous (first segment uniformly black on *valida*), the uniformly yellow or orange scutellum (scutellum mostly fuscous on *valida*), and the larger size (*valida* ranges from 2.8-3.5 mm, but most individuals are 3.0-3.3 mm).

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NOTES ON THE GENUS *EUPHYES*, WITH DESCRIPTION OF A NEW SUBSPECIES (LEPIDOPTERA: HESPERIIDAE)

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ABSTRACT

A new subspecies of *Euphyes pilatka* (W. H. Edwards) is described from the Florida Keys and compared with the nominate subspecies. The