

*EUSCHISTUS ACUMINATUS*, A PENTATOMID NEW TO  
THE UNITED STATES (HEMIPTERA: PENTATOMIDAE)

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ABSTRACT

*Euschistus acuminatus* Walker is reported for the first time for the United States. The various stages are described, the 5th instar is figured, and the biology is discussed.

RESUMEN

Se registra *Euschistus acuminatus* Walker por primera vez en los Estados Unidos. Se describen los estadios, se ilustra el quinto instar y se discute la biología.

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The first Florida specimens of *Euschistus acuminatus* Walker were collected by Mr. George Gwinn and Ms. Connie Stieger, Florida Department of Agriculture and Consumer Services, Division of Plant Industry, from *Cestrum diurnum* L. (day jessamine, Solanaceae) at 8301 NW 8th St., Miami, FL on 25-VII-1980. These specimens were sent to the Division of Plant Industry, Taxonomic Section, Gainesville, for identification. Examination by Drs. F. W. Mead and R. I. Sailer proved them to represent a species not known from the United States. Specimens were subsequently sent to Dr. L. H. Rolston, Department of Entomology, Louisiana State University, Baton Rouge, LA, who identified them as *E. acuminatus*.

Additional specimens were collected for life history studies by Mr. E. Peña, also with the Division of Plant Industry, on 27-X-1980 and by Mr. George Gwinn on 29-X-1981 at the same location. On the last date, a 4 block area was surveyed, but *E. acuminatus* was apparently still confined to the original site. *Cestrum diurnum* was also examined in several areas ca. 20-30 miles south of Miami but *E. acuminatus* was not found. According to Long and Lakela (1971) *C. diurnum* has been introduced into Florida from tropical America. It is found in cultivation throughout south Florida and has also escaped cultivation.

*Euschistus acuminatus* can be recognized by the following description.

Head, corium, scutellum and pronotum uniformly yellowish to dark brown. Corium, scutellum and portion of pronotum posterior to an irregular transverse line between the humeri with uniform dark punctures; pronotum anterior to this line and head with punctures concolorous with background color or only slightly darker. Anterolateral margins of pronotum concave, denticulate, a black band originating at anterior corner of margin, fading approximately half way to humeri. Humeral angles strongly produced, spinose, black, slightly upturned. A prominent black C-shaped and 3 ir-

regular black marks located on either side of the midline on the anterior portion of the pronotum. Membrane smoky brown, antennae yellowish, legs yellowish with occasional light brown spots. Venter usually paler than dorsum. Thoracic pleura typically with 5 black spots on each side.

Adults examined range from 8.8 to 11.2 mm in length.

The prominent black spinose humeral angles and C-shaped marks on the pronotum readily distinguish *acuminatus* from all other Florida species of *Euschistus* and it will key out in Blatchley (1926) to *E. crassus*. *E. acuminatus* can easily be separated from *crassus* by the humeral angles being more strongly produced and by the black marks on the pronotum. The adult is figured by Barber (1939).

Outside of Florida *acuminatus* is known to occur in Hispanola (from where it was originally described), Puerto Rico, (Barber 1939) and Cuba (Barber and Bruner 1932).

#### Description of *Euschistus acuminatus* nymphs

All measurements are in mm.

##### 5TH INSTAR (Lab reared; in alcohol) (N=3), (Fig. 1)

Ground color yellow-brown. Head, pronotum, scutellum and wing pads punctate and with red to brown dots. Cicatrices on pronotum outlined in brown. Anterolateral margin of pronotum with small irregular serrations. Abdominal terga with irregular reddish spots, lateral margin of each tergite with a U-shaped brown mark; plates surrounding scent gland ostioles with dark brown irregular spots. Legs yellow-brown, base of setae on femora and tibiae brown. Antennal segments 1, 2 and distal half of 4 yellow brown with bases of setae on 1, 2 brown; segment 3 and proximal half of 4 stramineous. Head length 1.73, width 1.74, interocular space 1.07. Pronotum length 1.39, width 4.91; wing pad length 2.48; abdomen length 4.45. Labial segments length I 1.28, II 1.29, III 1.49, IV 1.69. Antennal segments length I 0.60, II 1.16, III 1.19, IV 1.17. Total body length 8.35.

##### 4TH INSTAR (Lab reared, in alcohol) (N=2)

Ground color yellow brown. Head, pro, meso and metanotum punctate; punctures on disk, scutellar area of mesonotum and all on metanotum except for lateral ends, surrounded by reddish dots remaining punctures with brown dots. Pronotal cicatrices outlined in brown, a pair of elongate brown bars near anterior margin of mesonotum. Abdominal markings similar to 5th instar. Legs yellow brown, base of setae on femora and tibiae brown; distal end of tibiae slightly infuscated, tarsi brownish except for mid area of 1st segment. Antennae yellowish except for brown distal half of segment 4; base of setae of segments 1, 2 brownish. Head length 1.28, width 1.31, interocular space 0.92. Pronotum length 0.81, width 2.96; wing pad length 0.90, abdomen length 2.0. Labial segments length I 0.85, II 0.89, III 0.44, IV 0.44. Antennal segments length I 0.48, II 1.09, III 0.88, IV 0.93. Total body length 4.78.

##### 3RD INSTAR (Lab reared, in alcohol) (N=1)

Ground color of head, thorax and abdomen cream. Head, thorax with

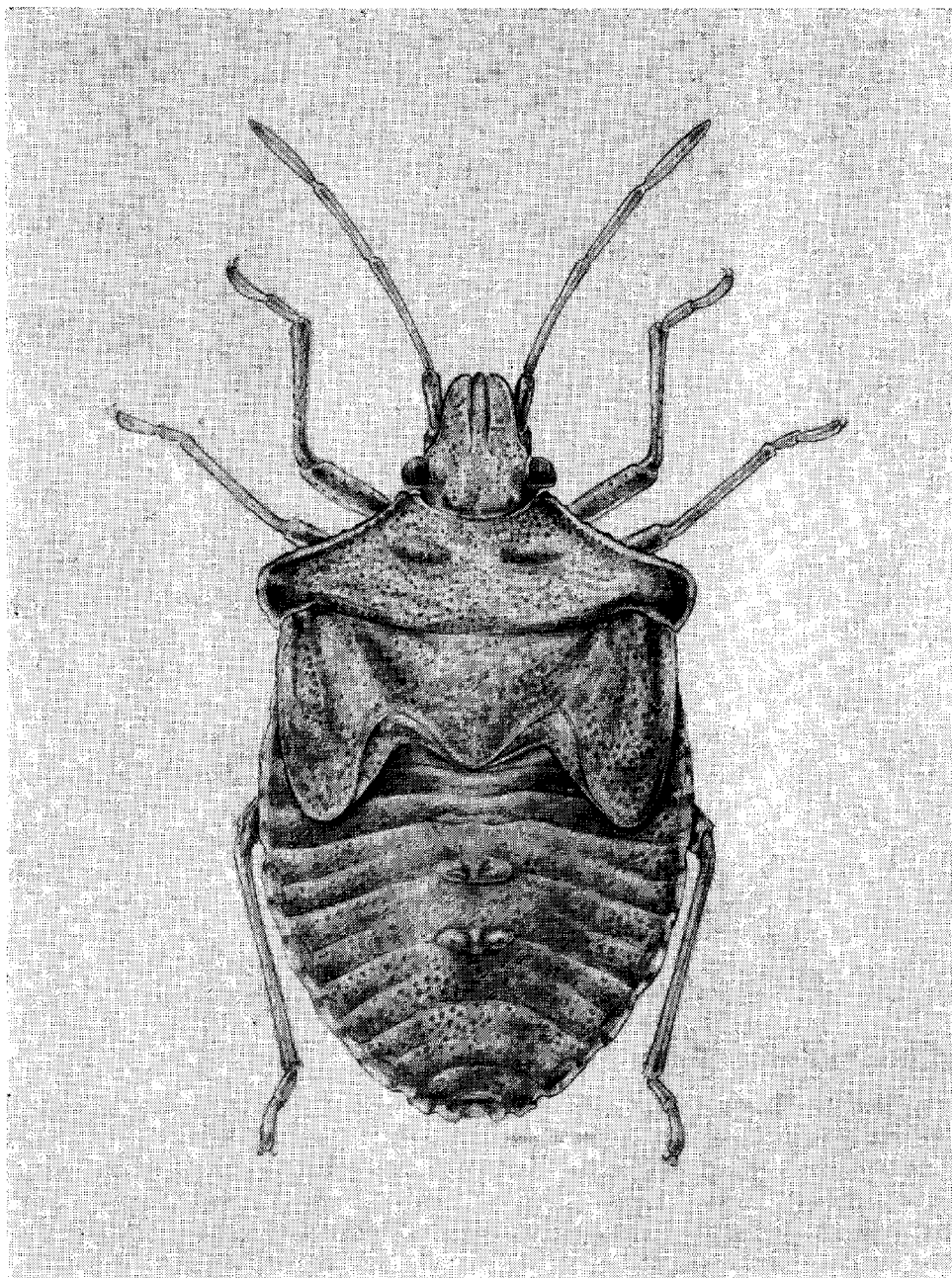


Fig. 1. *Euschistus acuminatus*, 5th instar nymph, dorsal view.

brownish punctures, suture between jugum and tylus brown; a brown elongate spot mesad of eye margin. Pronotal disc with an elongate brown ring, on either side of mid line, opened on posterolateral corner. Mesonotum with 2 elongate bars and metanotum with a single irregular bar in the same location. Abdominal segments with reddish dots; lateral margin of each segment with a brown U-shaped mark. Legs brown except for distal half of femora yellowish. Antennal segments, 1 mostly brown, base of 2 brown, remaining portion of 2, all of 3 yellowish with base of setae brown, segment

4 except for pale base dark brown. Head length 1.0, width 1.06, interocular space 0.72. Pronotum length 0.50, width 1.88; abdomen length 1.60. Labial segments length I 0.52, II 0.60, III 0.32, IV 0.38. Antennal segments length I 0.26, II 0.66, III 0.58, IV 0.70. Total body length 3.60.

2ND INSTAR (Lab reared, in alcohol) (N=1)

Ground color of head, thorax and abdomen whitish. Posterior margin of head black connecting to an anterior projecting black line mesad of eye margin extending just anterior to eye margin; also mid line black, may or may not be connected to black posterior margin. Margins of jugae, suture between jugum and tylus black. Areas between black lines with numerous black punctures. Thorax with numerous black punctures, those along posterior margin coalescing; median punctures also connected by irregular black marking; explanate margins translucent with black markings. Abdomen with red dots; scent gland plates blackish-brown with whitish mid line and lateral dots. Legs blackish red except for distal end of femora white. Head length 0.64, width 0.72, interocular space 0.52. Pronotum length 0.26, width 1.12; length abdomen 0.74. Labial segments length I 0.36, II 0.36, III 0.20, IV 0.26. Antennal segments length I 0.16, II 0.36, III 0.36, IV 0.48. Total body length 1.80.

1ST INSTAR (Lab reared, in alcohol) (N=1)

Head light brown with irregular mid line and area posterior to eye cream colored. Thorax uniformly brown with cream colored mid line. Abdomen reddish with irregular whitish spots coalescing around brownish scent gland plates, margin of abdominal segments with brownish triangular spots. Legs brownish, with apical end of tibiae and tarsi cream. Antennae burgandy with intersegmental areas red. Head length 0.60, width 0.58, interocular space 0.38. Pronotum length 0.16, width 0.84; Abdomen length 0.74. Labial segments length I 0.18, II 0.18, III 0.14, IV 0.22. Antennal segments length I 0.10, II 0.20, III 0.20, IV 0.36. Total body length 1.40.

EGG (Lab reared, in alcohol) (N=10)

Typically barrel shaped, somewhat more flattened on the anterior end, a uniform pale green color when first deposited, changing to tan in alcohol; 34-40 slender micropylar projections, 0.08 in length and having the distal end somewhat thickened, arranged around the pseudoperculum. Chorion with a triangular reticulated pattern with a fine spine or setae at each angle.

#### LABORATORY STUDIES

Stock specimens of *E. acuminatus* were kept in plastic containers 120 mm in dia, 180 mm high with a screened top. Tap water was provided in a vial with a cotton wick. Plant material was changed every 3-5 days. To determine stadium duration individuals were maintained in plastic petri dish type containers, 18 mm high, 80 mm in dia with ventilated tops.

Fifty per cent of the eggs hatched in 7 days, 27% in 8 days and the remainder in 5 and 6 days (N=97). The duration of the 1st nymphal stadium was 3-4 days for 70% of the reared individuals while the remainder

required 5 to 7 days (N=79). The 2nd nymphal stadium required 4 days in 68% of the cases, the remaining individuals ranged from 3-7 days (N=40). The 3rd instar nymphal stadium also lasted 4 days for most of the individuals (47%), with the remainder ranging also from 3-7 days (N=38). Half of the reared individuals required 4 days to complete the 4th nymphal stadium, and the remainder ranged from 5-9 days (N=34). Twenty individuals were reared through to adult. The 5th nymphal stadium required 4 days for 1, 6 days for 1, 7 days for 7, 8 days for 6, 9 days for 4, and 1 required 10 days.

Individuals placed on *Cestrum nocturnum* L., another introduced species that may also have escaped cultivation, had the same development time as those on *C. diurnum*.

One of us (Sailer) has reared several species of *Euschistus*: *servus* (Say), *tristigmus* (Say), *variolarius* (P. deB.), *ictericus* (L.) *obscurus* Dall. and *latimarginatus* Zimmerman on green snap beans (*Phaseolus vulgaris* L.). Unlike these species, *E. acuminatus* apparently will not survive beyond the 3rd instar on green snap beans. Of 26 newly hatched 1st instars, 22 required 5-6 days to molt, 24-48 hrs longer than individuals on *C. diurnum*. Individuals surviving through the 2nd instar also required considerably more time. Four individuals took 6-9 days and 1 each required 13, 14, and 22 days. Only 3 individuals survived through the 3rd instar, molting at 5, 8, and 9 days. No individuals survived beyond this stage.

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