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## Two new species of *Euxesta* Loew (Diptera; Otitidae)

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**Abstract:** Two new species of the genus *Euxesta* Loew are described and illustrated: *E. pacifica* from California and *E. atlantica* from Florida, in the *Quaternaria* subgroup of the *Notata* group. A key is presented to the two new species, as well as *E. calligyna* (Bigot 1857), *E. quaternaria* Loew (1868), *E. luteocesta* Foote (1960), and *E. nigricans* Wulp (1903) of the *quaternaria* subgroup.

**Key Words:** *atlantica*, *Euxesta*, *fasciae*, *notata*, Otitidae, *pacifica*, *quaternaria*, syntergite.

### Introduction

The genus *Euxesta* Loew includes about 90 described species and many still awaiting description. *Euxesta* species are restricted to the Americas, except for a few that have become more widely distributed by accidental introduction. The biology of the genus is very poorly known, although there is some evidence that many species are saprophytic and that a few may be primary invaders of living plant tissues. The latest key to the genus is by Curran (1935), and the latest revision is by Hendel (1909). The present work is preliminary to a more extensive one.

The two new species described at this time belong to a group of the genus *Euxesta* which I (George Steyskal) am recognizing in the more extensive work now in progress as the *Quaternaria* Subgroup of the *Notata* Group. This subgroup is easily recognized by the presence of 4 dark spots or fasciae on otherwise hyaline wings. The subgroup includes: *E. atlantica* n. sp., *E. calligyna* (Bigot), *E. quaternaria* Loew, *E. luteocesta* Foote, *E. nigricans* Wulp, and *E. pacifica* n. sp. The Mexican species, *E. nigricans* Wulp, is known from only a single male (genitalic details unknown, nor is anything known concerning the biology of the species).

### Key to Species of *Euxesta* (Subgroup *Quaternaria*).

- 1(2). Last preabdominal tergite of female yellow, remainder of abdomen dark, male abdomen wholly dark; 3rd wing spot (costad of *r-m*) not extending posterad of vein  $R_2$ ; frons shining (Chile) ..... *E. calligyna* (Bigot)
- 2(1). At least apical half of preabdomen of female yellow dorsally; abdomen of male wholly dark, except sometimes close to base; 3rd wing band extending posteriorly beyond vein  $R_2$ ; frons dull.
- 3(4). Wing with 3rd band cuneate, usually ending in a point a little before vein M; 3rd antennal segment roundish; mesonotum behind suture with each lateral 1/3 bronzy or purplish, especially in female; base of abdomen blackish in both sexes, abdomen of male wholly black dorsally, of female with large segment usually yellow with blackish anterior corners; 3rd and narrow last preabdominal tergite wholly yellow (Cuba) ..... *E. quaternaria* Loew
- 4(3). 3rd wing band covering at least part of *dm-cu*; base of abdomen yellowish, at least medially.
- 5(6). 3rd antennal segment about 1.5 times as long as wide; 3rd wing band bent basad medially; lateral mesonotum with bronzy or purplish coloring

extending mesally before scutellum to form cross-band; abdomen of female with 2 narrow blackish crossbands in middle of large yellow portion (Bahama Islands) ..... *E. luteocesta* Foote

- 6(5). 3rd antennal segment not more than 1.25 times as long as wide; 3rd wing band not bent basad; mesonotum with bronzy or purplish coloring not forming prescutellar crossband; abdominal tergites without narrow dark bands crossing middle of yellow portion.
- 7(8). Femora wholly and tibiae mostly yellow; abdomen of female with basal syntergite mostly yellow and with apical parallel-sided black crossband; anterior margin of large yellow syntergite very narrowly darkened and angularly emarginate at about 125 degrees (Florida) ..... *E. atlantica* n.sp.
- 8(7). Femora and tibiae entirely black or nearly so; posterior margin of postabdominal tergite not as above; venter with considerable amount of dark coloration.
- 9(10). Wing with 2nd dark band not extending into discal cell; dark coloration of distal wing spot on  $R_{4+5}$  lacking extension to wingtip by its own length on vein  $R_{4+5}$ ; abdomen of male wholly black (Mexico) ..... *E. nigricans* Wulp
- 10(9). Wing with 2nd dark band extending well into discal cell (Fig. 1); male with basal abdominal syntergite usually with considerable amount of yellowish coloration mesally (Fig. 3) (California) ..... *E. pacifica* n. sp.

***Euxesta pacifica* Steyskal,**  
new species (Figs. 1-6)

**Diagnosis.** As noted in the foregoing key and comments, *E. pacifica* is most similar to *E. nigricans* Wulp, from Guerrero, Mexico, and to the new species, *E. atlantica*. *E. pacifica*, like *E. atlantica*, second band extending well into discal cell, not so with *E. nigricans*. *E. pacifica* without anterior margin of large yellow syntergite narrowly darkened and angularly emarginate as in *E. atlantica*. *E. pacifica* male basal syntergite usually with yellow coloration mesally, *E. nigricans* male abdomen wholly black.

**Female.** Length of wing 3.6 mm. Body and legs black, with slight purplish or greenish metallic sheen, especially on sides of thorax and dorsum of scutellum, and with thin pale grayish microtomentum.

Head with frons brown, parallel-sided, dull, 0.25 of total head width, with scattered short, black setae and narrow, white-tomentose ocular margins; face, clypeus, genae, and subgenae gray to brownish; clypeus narrowly shining along lower edge and a little reddish medially; genal-subgenal suture with narrow shining black stripe about 2/3 of distance from lower orbit to oral margin; combined height of genae and subgenae 0.14 height of eye; antennae 0.36 as long as eye-height; 3rd antennal segment elliptical, 1.33 times as long as wide; palpi brown, spatulate, with narrow dark brown stems.

Thorax without obvious pattern of microtomentum or coloration; small postlateral areas adjacent to scutellum colored as scutellum. Legs black, only extreme tip of forefemur and approximately basal 2/3 of all basitarsi reddish brown; wing as in Fig. 1; 2nd band from base extending into discal cell, but becoming faint posteriorly; 3rd band fading out at about midlength of dm-cu (posterior crossvein); apical spot extending basad approximately halfway from tip of  $R_2$  from 3rd band and apicad almost to tip of cell. Veins brown where traversing brown markings, white elsewhere. Halter with club white, stem yellowish. Squamae white.

Abdomen as in Fig. 2; syntergite 1-2 black, with yellow anterior area set off by distinct carina; tergite 3 in dorsal view yellow, except blackish anterior corners; ovipositor sheath elongate-cordate, with truncate tip; sheath and ovipositor when fully extended 4.94 mm long, sheath a little longer than tergite 3 (Figs. 2 and 3); tip of ovipositor and spermatheca at high magnification as in Figs. 6 and 4 respectively. Sternites, especially apical ones, blackish.

**Male.** Length of wing 3.2 mm. wing pattern similar to that of female, but sometimes with faint more extended expansion. Abdomen shining black, syntergite 1-2 with ill-defined median yellowish area, sometimes rather broadly divided by darker median area. Terminalia as in Fig. 5; surstyli rather asymmetrical; cerci truncate apically, gently bi-emarginate, and with pair of short sharp spinules; aedeagus very long, slender, coiled.

**Distribution.** California.

**Host.** *Washingtonia filifera* (desert fan palm). *Euxesta pacifica* specimens were reared from hollow *W. filifera*, suggesting that the species is saprophagous.

**Types.** Holotype: female, Campus UCR (University of California, Riverside) 27.III.1927 coll. K. W. Cooper, reared from hollow *Washingtonia filifera*, deposited in the United States National Museum (USNM), Washington, D.C. Allotype: male, Campus UCR 27.III.1927 coll. K. W. Cooper, reared from hollow *Washingtonia filifera*, deposited USNM. Paratypes: 7 females and 2 males, Campus UCR 27.III.1927 coll. K. W. Cooper, reared from hollow *Washingtonia filifera*, all deposited USNM except 2 female paratypes deposited at University of California, Riverside (UCRC); 3 females, Indio, Calif. IX-1951, E.R. Tinkhem coll; 3 females, Indio, Calif., 7.31.130, on decaying date-palm tissue, No. 104, F. S. Stickney, 3 at USNM and 3 at UCRC; 1 male and 1 female, Westwood Hills L.A. Co., Cal., VII20-38, R. M. Bohart collector, both at University of California, Davis (UCDC). Two males, Borrego Springs, San Diego Co., Calif., 1 June 1965, S.E. Haseltine collector, VI; 3 females and 1 male, Borrego Springs, San Diego, Co., Calif., 24 May 1965, S.E. Haseltine collector, IV; additional paratypes with same data except as noted, 2 females, 8 May, 1965; 1 female, 15 June, 1965; 1 male, 18 May, 1965. All Borrego Springs paratypes at UCDC, except 1 male and 1 female at USNM. Five females, 6 males, 1 unknown, Corona Riv. Co., Cal., X-10-1962, McPhail trap, M. Finney collector, Cal. Dept. Agr. 62J15-39, 2 males and 2 females at USNM, the remaining paratypes at the California Department of Food and Agriculture, Sacramento, California.

**Etymology.** The name of the species is derived from the fact that the type series is restricted to xeric areas of California, which are located on the Pacific coast of the continental United States.

***Euxesta atlantica* Ahlmark,**  
new species (Fig. 7-12)

**Diagnosis.** *Euxesta atlantica* most closely resembles *E. pacifica* and *E. nigricans*. *Euxesta atlantica* female similar to *E. pacifica* female with 2nd dark wing-band extending from costal vein well into discal cell in both cases; not the case with *E. nigricans* [fide Van der Wulp 1903] female. Femora and tibiae mostly yellow in *E. atlantica* and mostly black in *E. pacifica* and *E. nigricans*. Basal two syntergites in *E. atlantica* female large and mostly yellow with apical margins dark, second basal syntergite angularly emarginate, characteristics unique to *E. atlantica*.

**Female.** Head (Fig. 8) yellow-brown, eyes beige, frons sienna brown, region in the immediate vicinity of ocelli metallic blue-green and area of frons marginal to eyes adjacent to ocelli metallic blue-green. Frons with surface texture flat, not shiny, and apparently microtomentose. Face not short; palpus yellow; clypeus yellow. Antennae predominantly yellow; third segment in basal half yellow, apical half brown, oblate in profile, mildly compressed laterocentrally. Third segment (profile view) length 0.266, width 0.178. Arista black except yellow basal end; length 0.78 mm.

Thorax mostly metallic dark blue-green, surface shiny, apparently with sparse microtomentum. Dark metallic brown pattern evident on thorax, near ends of scutoscuteellar suture extending in ensiform fashion directly over dorsocentral setae and terminating well before reaching transverse suture.

Abdomen (Fig. 9) shiny, nonmetallic, not tomentose, with two large primarily yellow segments dorsally. Basal syntergite with apical parallel-sided dark brown crossband; second tergite with posterior margin very narrowly darkened and angularly emarginate dorsocentrally at about 125 degrees; abdominal venter yellow. Ovipositor as in Figure 7.

Legs yellow overall; fore- and hindtibiae darkened apically; tarsi pale yellow.

Wing length 3.52 - 3.86 mm. Wings (Fig. 10) microtomentose with four dark bands extending posteriorly from costal vein. First band at base of wing extending posteriorly to anterior border of alula and partially bordered on basal side by MA. Second band extending posteriorly through cell  $CuA_1$  to  $A_1+CuA_2$ ; not closely bounded on basal side by  $bm-cu$  and  $CuA_2$ ; closely bounded on costal vein by intersection of costal vein and  $R_1$ , not closely bounded by  $r-m$  on apical side. Third band extending posteriorly from costal vein to wing edge with  $dm-cu$  in center of band; basal and apical sides of band approximately 1/2 length of  $dm-cu$  from  $dm-cu$ . Fourth band at apex of wing connected with third band by narrow strip along costal vein in cell  $r_1$ ; extending posteriorly nearly to  $M$ ; band curving slightly anteriorly to a costal vein location between  $M$  and  $R_{4+5}$ , which is closer to  $R_{4+5}$  than  $M$  by one third the distance between the two.

**Male.** Noticeably smaller than female as evidenced by the differences in wing lengths. Head same as female. Thorax same as female except no metallic dark brown pattern evident. Abdomen shiny non-

metallic, very little tomentum present. First two basal tergites yellow, third and fourth tergites dark brown; ventral side yellow except toward the terminalia end. Terminalia as shown in figure 11. Wing (Fig. 12) length 2.6-2.9mm. Wing pattern similar to female, however second band not extending to  $A_1+CuA_2$  quite as clearly as in female. Third band barely extending to border if at all. Apical band not attaining the juncture of C and  $R_{4+5}$ , and extending only halfway through cell  $r_{4+5}$ .

**Biological note.** One male recovered for study was infested with phoretic acari (*Uropodidae*), genus and species undetermined. The mites exhibited anal pedicels by which they attached themselves to the thorax and abdomen of the fly. As most non-mymecophilous or non-termitophilous *Uropodidae* are saprophagous or mycetophagous (Kranz 1970), their close association with *E. atlantica* suggests that the fly may be found commonly in detritus.

**Distribution.** Florida.

**Host.** Unknown.

**Types.** Holotype female, 9 female paratypes, Florida, Duval Co., Jacksonville, 19 May 1982, coll. Gloria Virgona, MacPhail trap; additional paratypes with same data except as noted, allotype male, 6 females and 1 other male 29 June 1983; 1 female, 25 March 1982, coll. D. Derbonne; 1 female, 20 April 1983; 3 females, 27 April 1983; 2 females, 4 May 1983; 9 females and 2 males, 11 May 1983; 6 females and 1 male, 25 May 1983; 1 female, 1 June 1983; 15 females, 17 June 1983; 1 female, 16 August 1983; 3 females, 28 October 1982; 10 females, 3 November 1982. Holotype and all but 9 females and 1 male in Florida State Collection of Arthropods, Gainesville, Florida. The other 10 paratypes are at the United States National Museum, Washington, D.C.

**Etymology.** The name of *E. atlantica* is suggested by the current indications that the species is apparently precinctive to the United States East coast providing a counterpart to the related *E. pacifica*, which is apparently precinctive to the United States West coast.

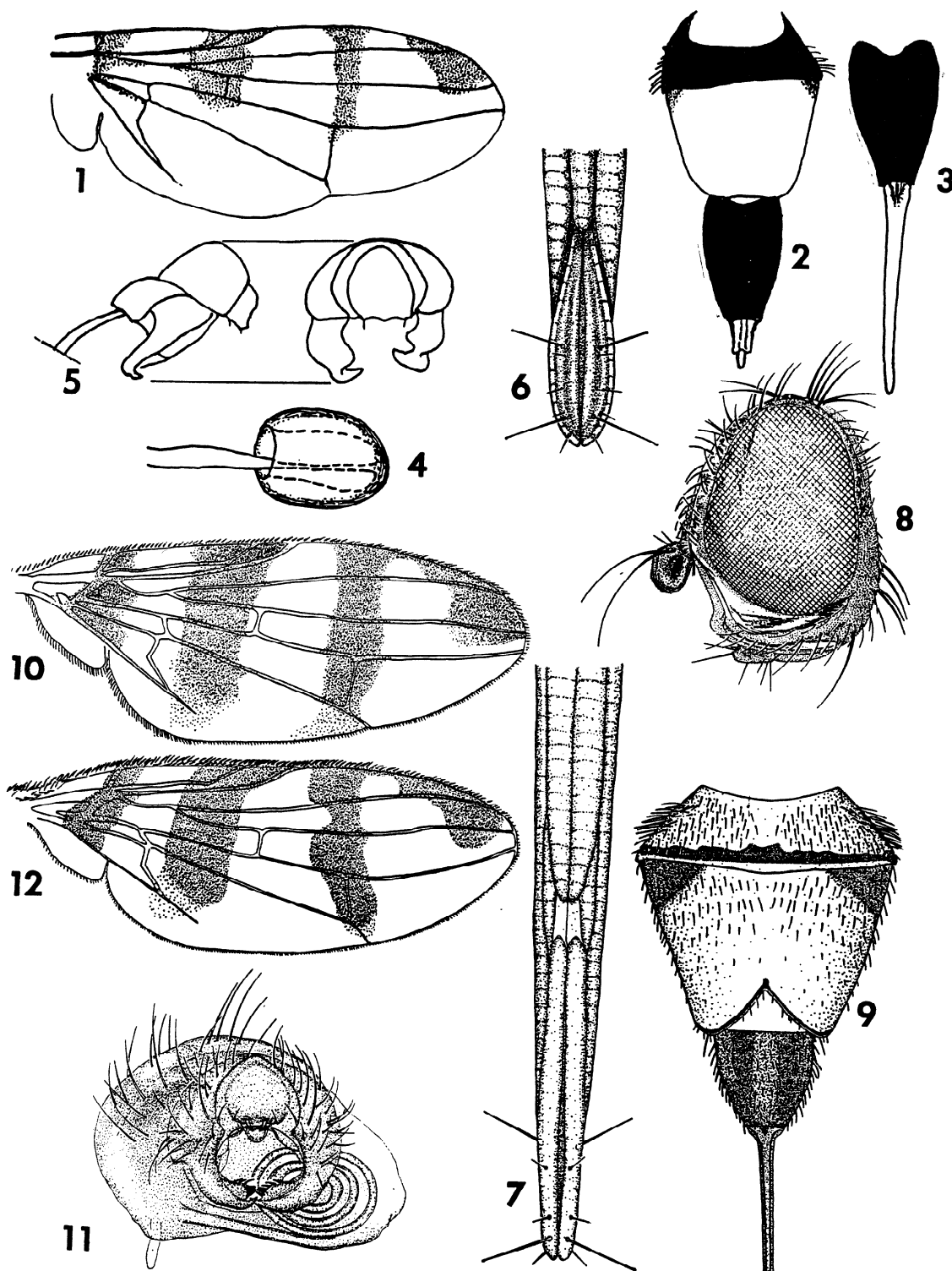
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#### References

- Bigot, J. 1857. Dipteres Nouveaux, Provenant du Chili. Ann. Entomol. Soc. Fr., (3), 5: 304.
- Curran, C. H. 1935. New American Diptera. American Mus. Novitates 812: 7-24.
- Foot, R. H. 1960. The Tephritidae and Otitidae of the Bahama Islands (Diptera), Jour. New York Entomol. Soc. 68: 83-99.
- Hendel F. 1909. Ueber die Gattung *Euxesta* Loew (Dipt.). Ann. Mus. Nat. Hung. 7: 151-172.
- Krantz, G. W. 1970. A manual of acarology. Oregon State Univ. Book Stores Inc., Corallis, Oregon. pp. 75, 76, 83-94.
- Loew, H. 1868. Die amerikanischen Ulidina. Berlin. Entomol. Zts. 11: 283-326.
- Steyskal, G. C. 1965. Family Otitidae. pp. 642-654. In A Catalog the Diptera of America North of Mexico, U.S. Dept. Agric., Agric. Handbook No. 276: 11696.
- Steyskal, G. C. 1987. Otitidae, pp. 799-808. In Manual of Nearctic Diptera, Vol. 2, Monog. 28, Res. Br., Agric., Canada.
- Van der Wulp, F. M. 1888-1903. Biologia Centrali-Americana, Insecta, Diptera, Vol. II: 1-489.



Figs. 1-6: *Euxesta pacifica*. 1.wing, female; 2.abdomen, dorsal view, female; 3. lower abdomen and ovipositor, dorsal view; 4. tip of spermatheca, lateral view; 5. genitalia, male; 6. ovipositor, ventral view. Figs. 7-12: *Euxesta atlantica*. 7.ovipositor, ventral view; 8. head, profile, female; 9.abdomen, female; 10.wing, female; 11. genitalia, male; 12.wing, male.