



ANIMAL SCIENCE

Review of the genus *Euantha* Wulp, 1885 (Diptera: Tachinidae), with key to species and redescription of *E. pulchra* Wulp, 1891

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Abstract: *Euantha* Wulp is a New World genus in the tribe Sophiini (Dexiinae). It includes three species: *E. interrupta* Aldrich, 1927, *E. litturata* (Olivier, 1811) and *E. pulchra* Wulp, 1891. This last species is poorly known, being restricted mostly to catalogues since its original description. Here *E. pulchra* is redescribed, a lectotype is designated and the male is diagnosed for the first time. In addition, this species (originally described from Mexico) is newly recorded from Guatemala. Finally, the first key to include all the species of *Euantha* is provided.

Key words: Dexiinae, neotropical, Sophiini, taxonomy.

INTRODUCTION

The New World tribe Sophiini is composed of 22 species allocated in nine genera, namely *Cordyligaster* Macquart, 1844; *Cryptosophia* Santis 2018; *Euantha* Wulp 1885; *Euanthoides* Townsend, 1931; *Leptidosophia* Townsend, 1931; *Neosophia* Guimarães 1982, *Neoeuantha* Townsend, 1931; *Sophia* Robineau-Desvoidy, 1830; and *Sophiella* Guimarães, 1982 (Guimarães 1971, 1982, O'Hara et al. 2020). This tribe has been studied recently in three contributions: Fleming et al. (2014) added a new species for *Cordyligaster*, *C. capellii* Fleming & Wood, 2014; Santis (2018) provided a key to the genera of Sophiini and described a new genus and species *Cryptosophia aurulenta* Santis 2018; and Santis & Nihei (2019) described two new species of *Neosophia*, *N. guimaraesi* Santis & Nihei, 2019 and *N. bispinosa* Santis & Nihei, 2019.

This taxonomic study of *Euantha* is the third part of a series of studies on the tribe Sophiini (see also Santis 2018, Santis & Nihei 2019). Herein these studies are broadened to include this

New World genus that includes three species: *E. interrupta* Aldrich, 1927 (Neotropical: Costa Rica, Panama), *E. litturata* (Olivier, 1811) (Nearctic: USA; Neotropical: Guatemala, Mexico) and *E. pulchra* Wulp, 1891 (Neotropical: Guatemala, Mexico). *Euantha* can be distinguished from other sophiine genera by the keys in Guimarães (1982) and Santis (2018), and by the diagnostic characters given below.

Euantha pulchra is poorly known and has not been studied since its original description from Mexico by van der Wulp (1891). It has only been included in catalogues (Guimarães 1971) and lists (O'Hara et al. 2020), in addition to Guimarães' revision of the sophiines (1982) as synonym of *E. litturata*; however, it was not included in any species key and its identity has remained uncertain. In this paper, *E. pulchra* is redescribed based on the type series and additional specimens, including the male for the first time. A lectotype is designated from among the three existing female syntypes to fix the name to a single specimen in accordance with Article 74 of the Code (ICZN 1999), that pertains

to the purpose of fixing the identity of the name to the respective name-bearing specimen, to clarify any taxonomic doubt involving that name. The first identification key for all species of *Euantha* is also provided.

MATERIALS AND METHODS

The examined material is deposited in the Natural History Museum, London, UK (NHMUK). The label data are presented within quotation marks for each label, with forward slashes indicating line breaks and semicolons separating different labels. Comments about labels, additional information and corrections are given in square brackets. Morphological terminology follows Cumming & Wood (2017).

Photographs of the pinned specimens were taken using a Canon EOS 5DSR and the Helicon Remote 3.9.10. The images were subsequently stacked (merging different focal planes into one image) with the software Helicon Focus 7.5.8.

Euantha Wulp, 1885

Euantha Wulp, 1885: 195. Type species: *Dexia dives* Wiedemann, 1830 (= *Ocyptera litturata* Olivier, 1811) by monotypy.

Van der Wulp (1891): 248 (revision); Brauer & Bergenstamm (1893): 128 (in key to his "Minthoidae"); Aldrich (1905): 505 (in key to North American genera); Coquillett (1910): 540 (type species); Townsend (1939): 164 (redescription); Sabrosky & Arnaud (1965): 1030 (catalogue); Guimarães (1971): 111 (catalogue); Guimarães (1982): 163 (in key to Sophiini genera), 164 (generic diagnosis); Wood (1987): 1249 (in key to Nearctic Tachinidae); Sabrosky (1999): 131 (family-group name based on *Euantha*); O'Hara & Wood (2004): 46 (catalogue); Wood & Zumbado (2010): 1384 (in key to Central American Tachinidae); Santis (2018): 435 (in key to Sophiini genera); O'Hara

et al. (2020): 119 (checklist of World Tachinidae); O'Hara & Henderson (2020): 29 (list).

Diagnosis. *Euantha* is most similar to *Neoeuantha* within the Sophiini and they both have lower calypter well developed, wing cell r_{4+5} not petiolate, scutellum with pair of strong apical setae, katepisternal with 2 setae, postmetacoxal area membranous, abdominal syntergite 1+2 not conspicuously petiolate and narrow, and tergites 3 and 4 with median discal setae. *Euantha* differs from *Neoeuantha* in facial carina present, scutum with acrostichal setae 2+1 or 1+1, and costal spine present (Guimarães 1982, Santis 2018).

Key to species of *Euantha*

1. Vein R_{4+5} with long appendage at bend; abdomen predominantly darkened yellow in ground color with tergite 3 to 5 with a narrow band of yellowish pruinosity on anterior margin. *E. litturata* (Olivier, 1811)
- Vein R_{4+5} without appendage at bend or with a mere trace of one; abdomen brownish black in ground color (Fig. 1b)..... 2
2. Abdominal tergites with silvery pruinose bands interrupted in middle; legs brownish black *E. interrupta* Aldrich, 1927
- Abdominal tergites with silvery pruinose bands on females (Figs. 1b-c) and yellowish on males (Figs. 2a, c), not interrupted in the middle; legs with femur yellowish, only brownish black on about distal $\frac{1}{8}$ (Figs. 1a, 2a) *E. pulchra* Wulp, 1891

Euantha pulchra Wulp, 1891

Euantha pulchra Wulp, 1891: 249. Described from five female syntypes. Lectotype female, here designated. Mexico, Guerrero, Amulango (formerly Amula) (NHMUK).

References. Aldrich (1927): 27 (synonymy with *E. litturata*); Guimarães (1971): 111 (catalogue, as valid and distinct from *E. litturata*); Guimarães



Figures 1. *Euantha pulchra* Wulp (female, lectotype): a. lateral habitus; b. dorsal habitus; c. head, lateral view; d. head, frontal view; e. labels.

(1982): 164 (synonymy with *E. litturata*); O’Hara et al. (2020): 117 (checklist of World Tachinidae, as valid and distinct from *E. litturata*).

Type material examined. Lectotype female (NHMUK), here designated: ‘♀’; ‘Syn-/type’;

‘Amula,/ Guerrero,/ 6000 ft./Aug. H. H. Smith’; ‘B.C.A. Dipt. II/ Euantha/ pulchra,/ v.d.W.’; ‘Centra America./ Pres. By/ F. D. Godman./ O. Salvin./ B.M. 1903-172.’; ‘Lectotype *Euantha pulchra* Wulp designated by Santis (2020)’; and a bar code

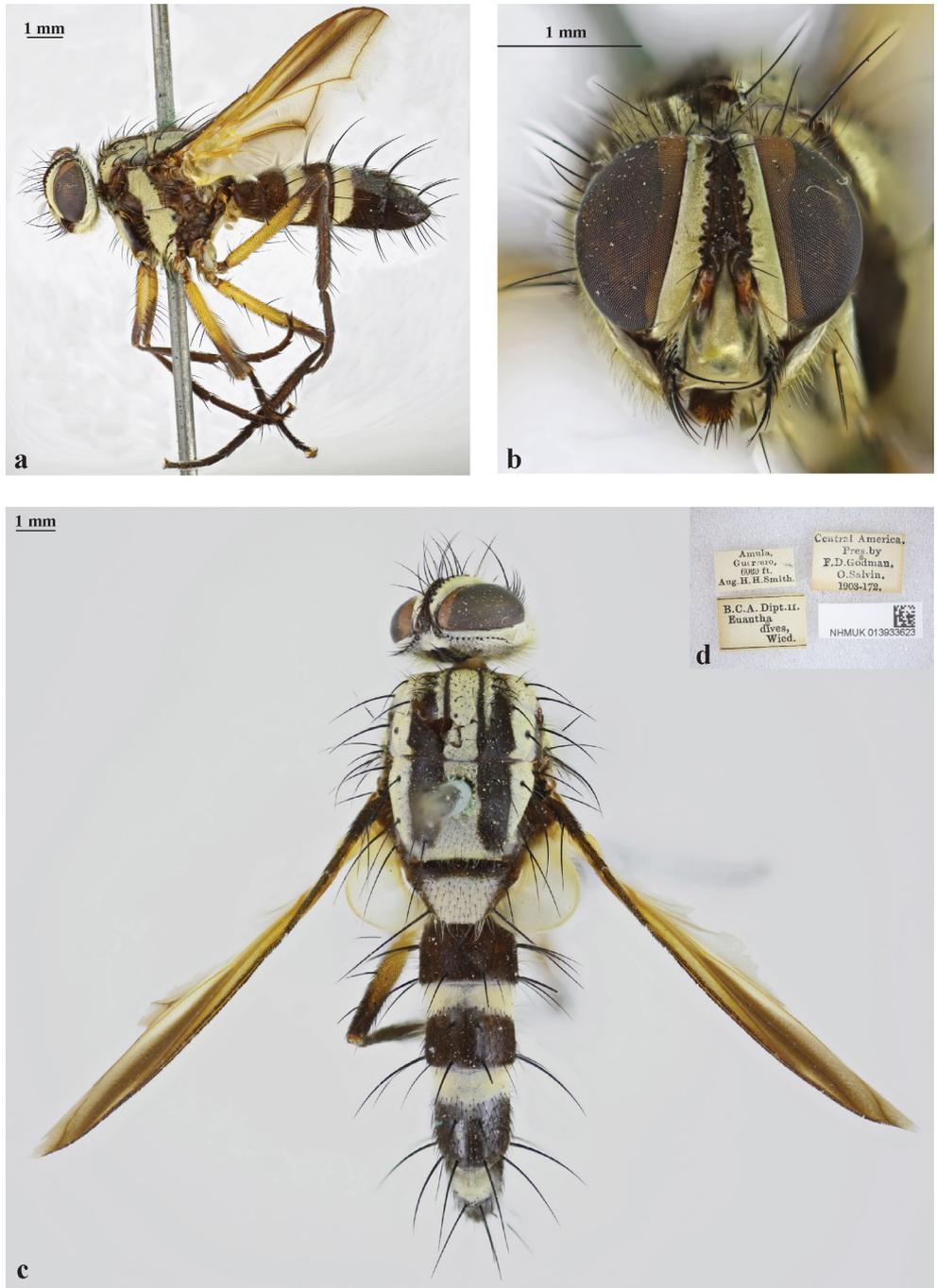


Figure 2. *Euantha pulchra* Wulp (male): a. lateral habitus; b. dorsal habitus; c. head, frontal view; d. labels.

(NHMUK 013933622) was added. Specimen in good condition.

Paralectotypes: two females (NHMUK), same locality data as lectotype, and conspecific with the lectotype. A green label written “Paralectotype” was added to each specimen. Van der Wulp (1891) described this new species

based on five female syntypes, that should all be in NHMUK but only three female syntypes were found.

Additional material examined. MEXICO. Guerrero, Chilpancingo, Amula, 6000 feet, 1 male, Smith coll. (NHMUK); Omiltemi, 8000 feet, 1 male, Smith coll. (NHMUK); GUATEMALA. Alta

Verapaz, Chiacam, 2400 feet, 1 male, Champion coll. (NHMUK).

Diagnosis. Vein R_{4+5} without appendage at bend; abdominal tergites with silvery pruinose bands on females, and yellowish on males, not interrupted in middle; legs with femur yellowish, but on about $\frac{1}{8}$ on distal region is brownish black.

Redescription of female

Body length: 12.5 mm.

Coloration (Figs. 1a-d) Occiput with silver pruinosity; with long golden setae. Fronto-orbital plate blackish, but external portion, about $\frac{1}{4}$ silvery pruinose. Parafacial, face and gena silvery pruinose. Genal dilation light brown. Antenna dark brown. Arista light brown. Palpus dark brown. Labellum and prementum dark brown. Thorax laterally dark brown, but silvery pruinosity on anepisterum and katepisternum. Scutum silvery pruinose with two broad brownish black vittae. Postpronotal lobe with silver pruinosity. Scutellum dark brown, but silvery pruinose on distal half. Subscutellum and postnotum dark brown. Tegula and basicosta dark brown. Wing hyaline, but with dark markings on subcostal and costal distal cells and distal portion of cells r_1 , r_{2+3} and r_{4+5} and darker along the veins. Calypters whitish. Halter with knob dark brown and stalk light brown. Legs dark brown, but coxae with silver pruinosity and femur yellowish, but on about $\frac{1}{8}$ on distal region is brownish black. Claws dark brown. Abdomen brownish black, but tergites III and IV with a broad band of white pruinosity on about $\frac{3}{4}$ of anterior margin, extending down to the sides; tergite 5 with silver pruinosity dorsally.

Head. (Figs. 1c-d) Ocellar setae long, well developed and proclinate. Inner vertical seta decussate, strong, outer vertical seta absent. About 9-10 pairs of frontal proclinate setae, ending before the antenna insertion level.

Fronto-orbital plate with 2 proclinate and 1 latero-clinate orbital setae. Parafacial bare. Width of parafacial measured at distance between inner margin of eye and antennal insertion 2.5X the gena height. Postpedicel slender, 1.5X the length of scape and pedicel combined; arista long plumose. Facial carina present. Facial ridge setulose on lower third (near vibrissa insertion). Lower facial margin not protruding, and not visible in profile. Genal height about 2.5X the eye height. Vibrissa long, inserted at level of lower facial margin. About 5 subvibrissal setae. Labella well developed, about half the length of prementum, which is about the same length as palpus.

Thorax. (Figs. 1a-b) Acrostichal setae 3+0 (presutural setae very weak). Dorsocentral setae 5+3. Intra-alar setae 1+2; intra-postalar seta absent. Supra-alar setae 1+2. Postpronotal lobe with 2 setae. Anepisternum with 4 strong setae and none upward directed setulae anteriorly. Katepisternum with 2 setae. Anepimeron with just 1 short setulae. Notopleuron with 2 equal-sized setae. Postalar callus with 2 setae. Propleuron and prosternum bare. Anatergite bare. Meron with 2 setae. Posterior spiracle with posterior lappet equal sized with anterior one. Katepimeron bare. Scutellum with 1 basal, 1 subapical and 1 apical pairs of setae.

Legs. Fore coxa with 5 setae anteriorly; fore femur with dorsal and posteroventral rows of setae; one submedian anterodorsal seta and 1 submedian anteroventral seta, and 4 preapical setae: 1 anterodorsal, 1 posterodorsal and 1 posteroventral and 1 anteroventral. Mid femur with 1 submedian anterodorsal seta, 1 posterodorsal seta on distal third. Mid tibia with 2 submedian seta on posteroventral, 2 anterodorsal setae, 2 posterodorsal setae, and 6 preapicals: 1 dorsal, 1 anterodorsal, 1 posterodorsal, 1 ventral, 1 anteroventral and 1 posteroventral. Hind femur with 1 anterodorsal

seta on apical third, 3 posteroventral seta on anterior half, 3 anterodorsal seta on distal third, 1 anteroventral seta on apical third. Hind tibia with 2 submedian anteroventral setae, 2 anterodorsal and 2 posterodorsal setae on submedian, and 6 preapicals: 1 dorsal, 1 anterodorsal, 1 posterodorsal, 1 ventral, 1 anteroventral and 1 posteroventral. Tarsus flattened dorsolaterally (Figure 1a). Claws straight with the tip curved, length shorter than 5th tarsomere.

Wing. (Fig. 1b) Costal spine present. Base of R_{4+5} with 2-3 setulae ventrally and dorsally. M bent forward to R_{4+5} , somewhat convex after bend and with a small extension, reaching wing margin separate from R_{4+5} .

Abdomen. (Figs. 1b-c). Syntergite 1+2 with mid-dorsal longitudinal depression extending well before the posterior margin. Syntergite 1+2 to tergite V with a pair of median marginal setae; tergites 3 to 5 with 1 pair of median discal setae; syntergite 1+2 to 3 with 1 pair of median lateral setae; tergites 4 and 5 with a row of marginal setae. Sternites 2 to 4 absent (wholly membranous).

Male. Differs from female by the following. (Figs. 2a-c): without orbitals on the fronto-orbital plate. Postpedicel with proximal half orange and distal half light brown. Head, thorax and abdomen with golden pruinosity. Prescutum pale silvery pruinose, with four brownish black vittae, the outer four times the width of the inner. Scutellum pale golden pruinose. Claws and pulvilli longer than the female.

Biology. Unknown.

Distribution. Mexico (Guerrero) and Guatemala (Alta Verapaz). New record from Guatemala.

Remarks. In the same work, van der Wulp (1891) additionally recorded two males and six females as *Euantha dives* (Wiedemann, 1830) [= *E. litturata* (Olivier, 1811)]. However, MDS's examination of Wulp's material at NHMUK

revealed that three males identified as *Euantha dives* by Wulp are, in fact, males of *E. pulchra* and are treated as such herein. Furthermore, Aldrich (1927) also noticed that van der Wulp (1891) wrongly mistook some males of *E. dives* (= *E. litturata*) as females, having concluded that *E. pulchra* would be a synonym of *E. litturata*, a position also maintained by Guimarães (1982). While it is confirmed herein that Wulp mistook the gender of those specimens, the synonymy cannot be maintained. Guimarães (1971), and later O'Hara et al. (2020) treated *E. pulchra* as valid, but Guimarães (1982) listed it as a synonym of *E. litturata* without giving an explanation for this change in status. However, based on our comparisons with other species of *Euantha*, we confirm that *E. pulchra* is a valid and distinct species.

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MDS: Examination, identification and illustration of species, writing original draft; SSN: identification of species, writing review and editing. Both authors read and approved the final version of the manuscript.

