

A NEW SPECIES OF *ERIXESTUS*
(HYMENOPTERA: PTEROMALIDAE) FROM HONDURAS

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Abstract.—*Erixestus zygogrammae* Cave and Grissell, n. sp., is described from Honduras. This species is an endoparasitoid of the egg stage of *Zygogramma magica* Stål (Chrysomelidae), an herbivore of *Tithonia tubaeiformis* (Jacquin) Cassini (Asteraceae). *Erixestus zygogrammae* is compared with the known species of the genus: *E. pachyneuron* Grissell and De Santis and *E. winnemana* Crawford.

Resumen.—Se describe *Erixestus zygogrammae* Cave y Grissell, n. sp., de Honduras. Esta especie es un endoparasitoide ovífago de *Zygogramma magica* Stål (Chrysomelidae), un herbívoro de *Tithonia tubaeiformis* (Jacquin) Cassini (Asteraceae). Se compara *E. zygogrammae* con las otras especies conocidas del género: *E. pachyneuron* Grissell y De Santis y *E. winnemana* Crawford.

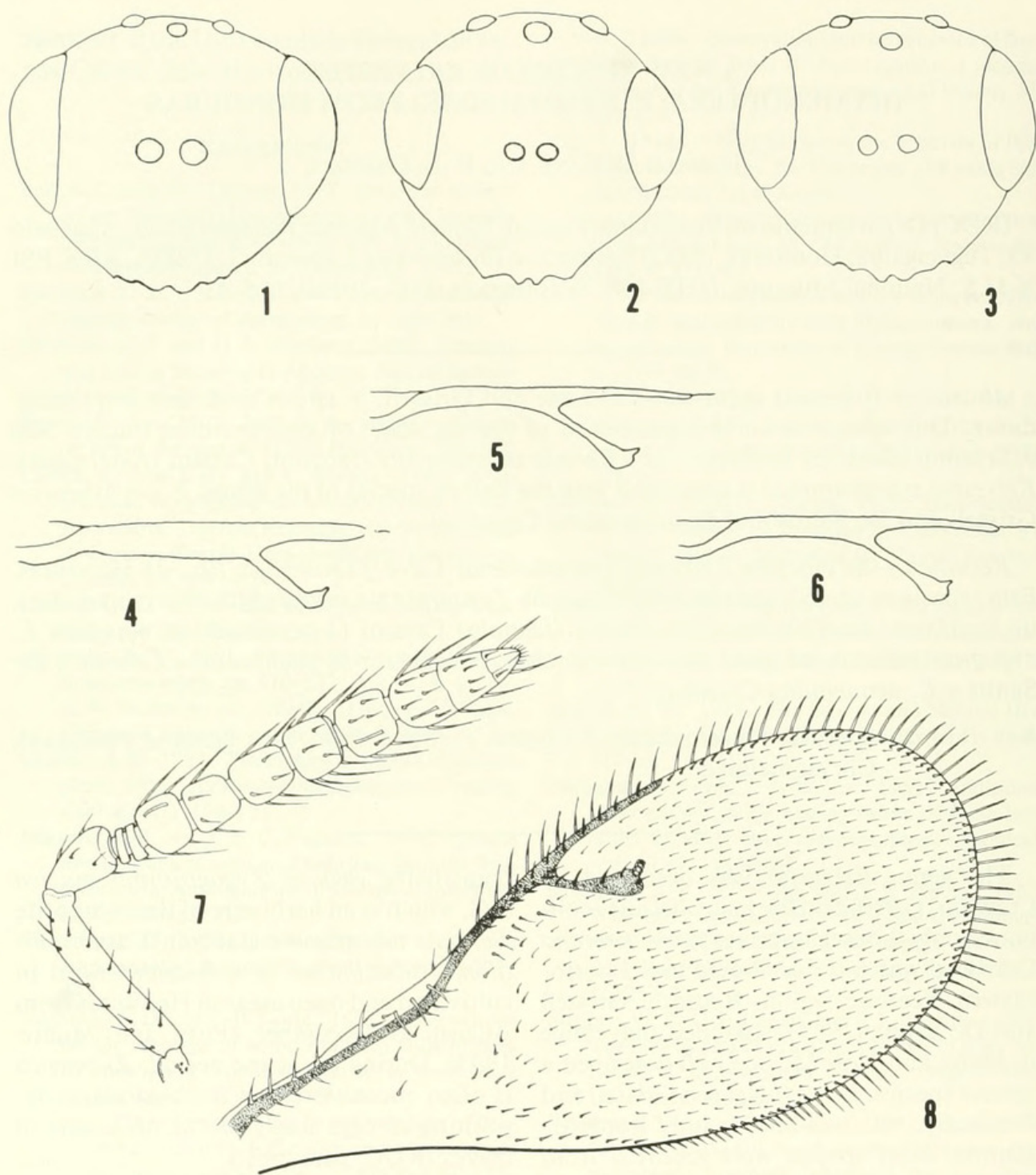
Key Words: Insecta, Pteromalidae, *Erixestus zygogrammae*, new species, parasitoid, Chrysomelidae

The genus *Erixestus* was described by Crawford (1910) and for many decades contained only the single species *E. winnemana* Crawford which is distributed in the north-eastern Nearctic region. Recently Grissell and De Santis (1987) expanded that range to Idaho and New Mexico and described a second species, *E. pachyneuron* Grissell and De Santis, which is known only from Argentina. Both species were reported from eggs of a species belonging to the chrysomeline genus *Calligrapha* (Grissell and De Santis 1987), and more recently *Erixestus winnemana* was reported from *Zygogramma exclamationis* (F.) (Chrysomelidae) in Canada (Charlet 1992; identification of wasp by Grissell).

While conducting inventories of arthropods in Honduran agroecosystems, one of us (RDC) discovered a species of *Erixestus*

parasitizing eggs of *Zygogramma magica* Stål, which is an herbivore of the composite *Tithonia tubaeiformis* (Jacquin) Cassini. *Tithonia tubaeiformis* is a frequent weed in cultivated and open areas in Honduras from August to December (Pitty and Muñoz 1991). During this same period, *Z. magica* is often encountered on the host plant, depositing its eggs singly on the underside of leaves (RDC, pers. obs.).

Grissell and De Santis (1987) commented that the genus *Erixestus* might be more widely distributed than records indicated because numerous and widespread species of *Calligrapha* were known throughout the New World. The occurrence of *E. winnemana* in Canada and the discovery of a third species of *Erixestus* in Honduras associated with another species of *Zygogramma* serve to reinforce the opinion that the genus is



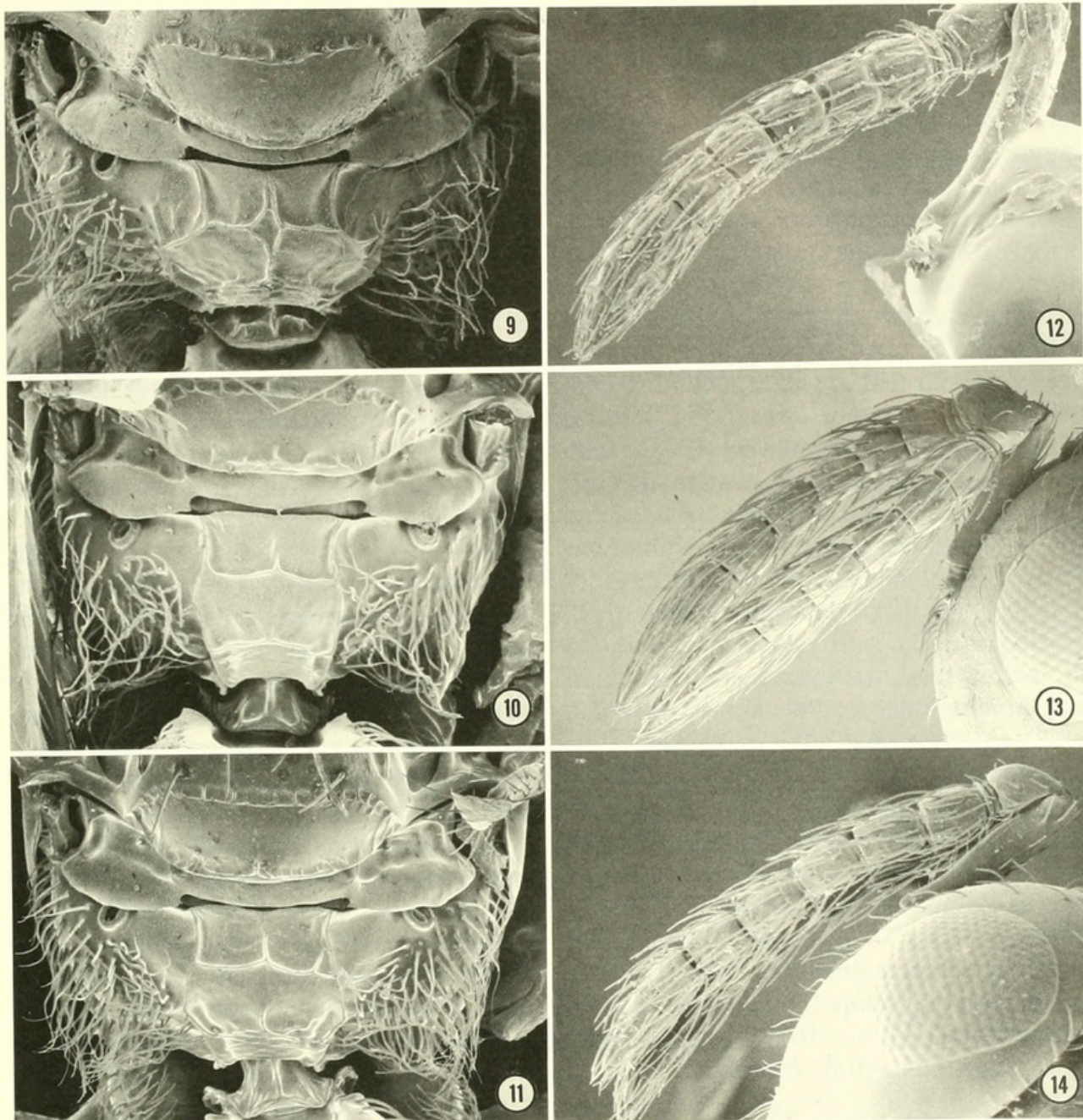
Figs. 1-8. *Erixestus* spp. 1-3, Faces, frontal view. 1. *E. pachyneuron*. 2. *E. zygogrammae*. 3. *E. winnemana*. 4-6, Forewing venation, male, dorsal view. 4. *E. pachyneuron*. 5. *E. zygogrammae*. 6. *E. winnemana*. 7. *E. zygogrammae*, antenna, female, lateral view. 8. *E. zygogrammae*, forewing, female, dorsal view.

both widespread and probably less host specific than previously thought, at least within the chrysomelines.

In this paper we describe the new species *Erixestus zygogrammae* from Honduras and compare it to *E. winnemana* and *E. pachyneuron*.

Erixestus zygogrammae
Cave and Grissell, NEW SPECIES
 (Figs. 2, 5, 7, 8, 10, 13)

Female.—Body Length 0.75 to 0.90 mm. Shiny black with faint blue reflections on head, sides of thorax, and abdomen. Scape



Figs. 9–14. *Erixestus* spp. 9–11, Propodea, posterior view. 9. *E. pachyneuron*. 10. *E. zygogrammae*. 11. *E. winnemana*. 12–14, Antennae, male, lateral view. 12. *E. pachyneuron*. 13. *E. zygogrammae*. 14. *E. winnemana*.

dark brown with basal one-fifth often paler. Antenna and tegula dark brown. Mandibles pale yellow. Legs brown, femora apically and tibiae basally paler. Wings hyaline with pale brown veins. Body polished except occiput, mesoscutum, scutellum and axillae faintly alutaceous.

Head and thorax with sparse, but obvious setae ($1-2\times$ as long as diameter of ocellus). Eyes glabrous. Pronotal collar with about 10 setae along hindmargin of anterior ca-

rina. Midlobe of mesoscutum with 3 pairs of setae, middle pair closer together than anterior and posterior pair, sidelobes each with 6–8, axillae each with 5, scutellum with 2–3 pairs. Hindcoxae dorsally and propodeum laterally covered with long white setae.

Head as wide as thorax. Frontovortex width greater than eye height. Clypeus with anterior edge bilobed, malar area without genal suture; malar distance 1.05 ± 0.01

(range 1.00 to 1.25, $n = 10$) intermalar distance (Fig. 2). Mandibles each with 4 teeth. Posterior ocellus $3 \times$ own diameter from inner margin of eye. Dorsal edge of occiput rounded. Antennae inserted midway between median ocellus and free edge of clypeus; antennal proportions as shown in Fig. 7, longest seta as long as diameter of flagellar segment. Collar of pronotum with anterior edge vaguely carinate. Propodeum (Fig. 10) with well developed costula and entire plica, nearly parallel but angulate medially. Distribution of setae on wing as in Fig. 8. Ratio of postmarginal : marginal veins 0.78 ± 0.06 (range 0.68–0.86, $n = 10$), of stigmal : marginal veins 0.66 ± 0.04 (range 0.59–0.72, $n = 10$). Hindtibial spur ca. half length of basitarsus. Petiole of abdomen short, wider than long (Fig. 10). Metasoma elongate-oval, tapered apically, nearly as long as head and thorax together; first three terga subequal in length, remainder together shorter than T2.

Male.—Body length 0.7 to 0.8 mm. Similar to female except as follows: basitarsus paler; midlobe of mesoscutum often with only 2 pairs of setae; antennal setae more abundant (Fig. 13), slightly longer ($1.5 \times$ as long as diameter of flagellar segment). Malar distance 1.13 ± 0.08 (range 1.00 to 1.22, $n = 10$) intermalar distance; ratio postmarginal : marginal veins (Fig. 5) 0.76 ± 0.06 (range 0.66–0.84, $n = 10$), of stigmal : marginal veins 0.64 ± 0.07 (range 0.58–0.76, $n = 10$).

Type material.—Holotype female, allotype male from HONDURAS: Fco. Morazan, San Antonio de Oriente, El Zamorano, 2 Nov 1991, rcol. R. Cave/ex: huevo de *Zygogramma magica* (Chrysomelidae) en *Tithonia tubaeiformis*, deposited in U.S. National Museum. Paratypes all from HONDURAS with same rearing data as holotype: 5 females, 2 males, Fco. Morazan, San Antonio de Oriente, Zuncuya, 4 Aug 1988.20; 2 females, same except 12 Aug 1988.07. 2 females, Tegucigalpa, San Juan del Rancho, 2 Aug 1990.17. 73 females, 75 males El Zamorano: 9 Oct 1990.03 (2 males),

17 Oct 1991.02 (13 females, 15 males), 22 Oct 1991.02 (27 females, 29 males), 2 Nov 1991 (33 females, 29 males). Paratypes deposited in U.S. National Museum, Escuela Agrícola Panamericana Agroecological Inventory, Canadian National Collection, The Natural History Museum (London), Florida State Collection of Arthropods, and Universidad de Costa Rica Museo de Insectos.

Etymology.—Named for the genus of its only known host, *Zygogramma magica*.

Biology.—*Erixestus zygogrammae* is a solitary egg endoparasitoid. Unparasitized eggs of *Z. magica* are white, but when parasitized turn yellowish brown when the parasitoid nears completion of its development. The meconium is yellow. Emergence from the host egg always occurs through the pole opposite the meconium. Rates of parasitism in November at El Zamorano vary from 45% to 66%.

Discussion.—Among the 3 known species of *Erixestus*, *E. zygogrammae* appears more closely related to the nearctic *E. winnemana* than to *E. pachyneuron* so far found only in Argentina. Both sexes of *E. zygogrammae* and *E. winnemana* share the relatively long stigmal vein which is $\frac{2}{3}$ the marginal (less than $\frac{1}{2}$ in *E. pachyneuron*) and the propodeum (Figs. 10, 11) having each plica entire but somewhat angulate medially (in *E. pachyneuron*, Fig. 9, plica is broken medially by a long, laterally angled carina; note that the conspicuous median areolet shown in Fig. 9 is not always as distinct as indicated). Additionally, males of *E. zygogrammae* and *E. winnemana* have the marginal vein (Figs. 5, 6) narrow (widened in *E. pachyneuron*, Fig. 4) and the antenna with elongate funiculars (Figs. 13, 14), the scape about $\frac{1}{3}$ the length of pedicel + flagellum, and the club subequal in width (in *E. pachyneuron*, Fig. 12, funiculars quadrate, scape about $\frac{1}{2}$ pedicel + flagellum, and club wider). Finally, in both sexes, *E. zygogrammae* and *E. winnemana* have the legs (including coxae) and scape yellow or orange (rarely infused with black), but in

E. pachyneuron these areas (and the entire antenna) are white.

Erixestus zygogrammae differs from *E. winnemana* in only one character, namely the length of the malar distance relative to the intermalar. In *E. zygogrammae* (Fig. 2) the malar distance is equal to or longer than the intermalar distance in both sexes (ave. 1.1, range 1.0 to 1.25, $n = 20$, 10 of each sex), whereas in *E. winnemana* (Fig. 3) the malar is shorter than the intermalar (ave. 0.85, range 0.75 to 0.93, $n = 20$) (even shorter in *E. pachyneuron* (Fig. 1): ave. 0.71, range 0.65 to 0.75, $n = 20$). The relative difference between *E. zygogrammae* and the other two species is somewhat evident in the longer face below the eyes when comparing front facial views of the three (cf. Figs. 1, 2, 3). The malar distance appears to be lengthened by a slight reduction in the eye height, though attempts to quantify this were not conclusive. In all 3 species, ratios of malar distance to eye height are close and overlap enough to make this measurement of little practical help in distinguishing between them. *Erixestus zygogrammae* appears to be shorter in body length than *E. winnemana*, being 1.0 mm or less (range

0.7–1.0), while the latter is generally 1.5 mm or longer (range 1.5–2.5). Adult wasp size, however, is undoubtedly related to host size, so that some care should be taken when using size alone to distinguish between species.

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