

**STUDIES OF NEOTROPICAL CADDISFLIES,
LII: THE GENUS *WORMALDIA* IN NICARAGUA,
WITH THE DESCRIPTION OF A NEW SPECIES
(TRICHOPTERA: PHILOPOTAMIDAE).**

Oliver S. FLINT, Jr.*

RESUMEN

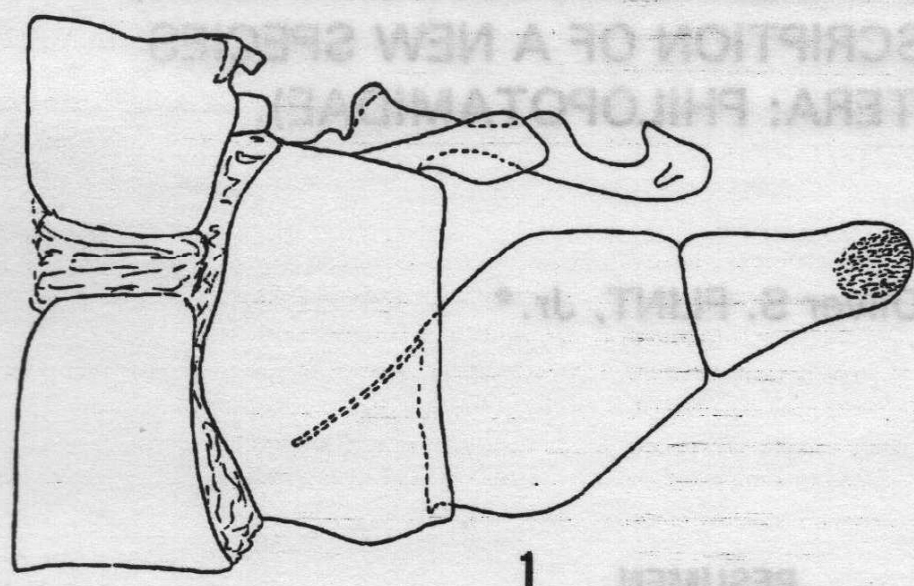
Wormaldia matagalpa, nueva especie, se describe del norte de Nicaragua. Es miembro del grupo *arizonensis*, muy similar a *W. cornuta* Bueno & Holzenthal, conocida del sur de México. La especie *W. planae* Ross & King, de amplia distribución, es reportada por primera vez de Nicaragua.

ABSTRACT

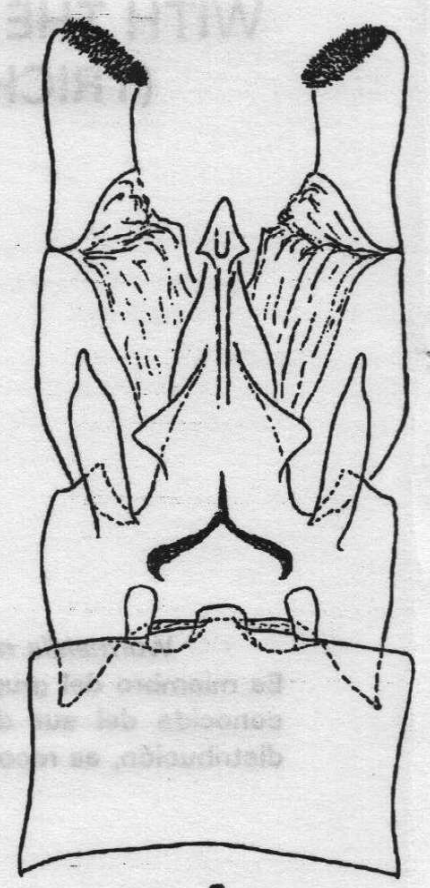
Wormaldia matagalpa, new species is described from northern Nicaragua. It is a member of the *arizonensis* group, most similar to *W. cornuta* Bueno & Holzenthal, known from southern Mexico. The widespread species, *W. planae* Ross & King, is recorded for the first time from Nicaragua.

* Department of Entomology, National Museum of Natural History, Washington, DC, USA.

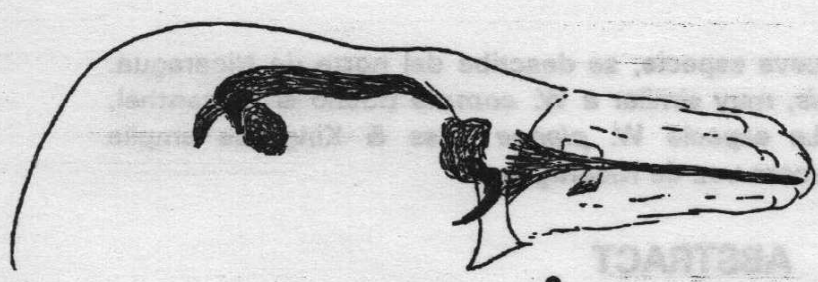
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1



2



3

RESUMEN

ABSTRACT

Wormaldia *montana*, new species is described from northern Nicaragua. It is a member of the *andersoni* group, most similar to *W. cornuta* Stein & Howard, known from southern Mexico. The widespread species, *W. atrata* Post & Long, is recorded for the first time from Nicaragua.

* Department of Entomology, National Museum of Natural History, Washington, DC, USA.

INTRODUCTION

The genus *Wormaldia*, as defined by Ross (1956), is almost worldwide in distribution. It is most diverse and speciose in the Northern Hemisphere of Europe, Asia and North America, but reaches Madagascar off southern Africa, Sumatra in southeastern Asia, and Peru in South America. A number of species have been described from Baltic Amber, probably of Upper Eocene time, 35-40 millions years of age. Fourteen species have been described from the United States and Canada, eight from Mexico (an additional species is known from both USA and Mexico), two from Colombia, and one from Peru. *W. plana* Ross & King, originally described from southern Mexico, is very wide ranging and commonly encountered: Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Venezuela, Guyana, Brasil, Trinidad, Tobago, Granada, and St. Vincent. *W. prolixa* Flint, also inhabits a considerable area: Colombia, Panama, and Costa Rica. All the others, however, are only known from the type locality or a few adjacent sites. Here are recorded the first two species of the genus taken in Nicaragua, one the wide-ranging *W. plana*, the other a new species that is probably one of those with a very circumscribed distribution (further examples of the species have not been found in the 7 or 8 undescribed species of the genus known from Costa Rica).

The immature stages of a number of European (Nielsen 1942, Lepneva 1970) and North American (Ross 1944, Wiggins 1977) species have been described. They are all remarkably similar in structure and appearance. They construct elongate, tubular, silken nets in which they live and which serve to strain their food from the water that flows through them. The larvae spin several layers of meshes, each mesh narrow and rectangular, about $0.4 \times 3.7 \mu\text{m}$, and then superimpose each layer at different angles, thereby even further restricting the effective mesh opening (Wallace & Malas 1976). Larvae are found in flowing water, usually springs or small spring-fed streams. They are often extremely difficult to find, perhaps due to a tendency to be hyporheic.

Figs. 1-3 : *Wormaldia matagalpa*, n. sp. male genitalia: 1, lateral; 2, dorsal; 3, phallus, lateral.

SYSTEMATICS

Wormaldia plana Ross and King

Wormaldia plana Ross & King, in Ross, 1956:64; Flint, 1991:31 (distribution, male genitalia).

This species, described from Chiapas in Mexico, has since been found to be widely distributed throughout Central America, northern South America, and the southern Lesser Antilles (see above). Its presence in Nicaragua was expected.

Material examined : Nicaragua, El Coyolar, 50 Km. NE Matagalpa (on road to Waslala), 13°07'N, 85°50'W, Alt. 900 m., Coll. S. Hue in 6 volt light trap, May 1991, 44 males, 18 females; same, but 15 May 1991, 25 males and females; same, but Jun 1991, 2 males; same, but Jul 1991, 15 males, 6 females; same, but 20 Aug 1991, 10 males and females; same, but Oct 1991, 1 female; same but 15 Dec 1991, 1 male; same but 15 Jan 1992, 4 males and females.

Wormaldia matagalpa, new species

This distinctive new species is a member of the *arizonensis* group, most closely related to *W. cornuta* Bueno & Holzenthal. The shape of the tenth terga in the two species is very similar, but the basolateral lobe in *matagalpa* is more pronounced. However, the eighth tergum in the two is very different: in *cornuta* the posterior margin bears a submesal pair of elongate, pointed process separated by a deep, U-shaped, mesal excision, while in *matagalpa* there are a pair of paddle-shaped submesal processes, but mesally there is a small, projecting, quadrate lobe.

Adult. Male. Length of forewing, 4.5 mm. Specimen completely cleared, in alcohol: light brown. No sternal processes.

Genitalia. Eighth tergum with posterior margin produced into a short, truncate, mesal lobe, flanked laterally by small, paddle-shaped lobes. Ninth segment with anterior margin slightly convex. Tenth tergum long, slender, with a strong, erect, basolateral shoulder, a midlength hump, and with apex strongly reflexed and pointed; in dorsal aspect with divergent basolateral shoulders meeting on midline, a laterally directed, triangular expansion at midlength, tip spear-shaped. Cercus about half as long as tenth tergum, clavate. Clasper with basal segment short and broad, equidimensional, apical segment much narrower, more than twice as long as broad, with a circular patch of dark spicules apicomeresally.

Phallus with two curved spines, apicalmost only half as long as basalmost, with lateral, rodlike sclerites supporting apical membranous portion with small sclerotized structure basomesally between these sclerites.

Material. Holotype. Male: Nicaragua, Department of Matagalpa, on the road Matagalpa-Jinotega, Fuente Pura, 13° 01' N, 85° 55' W, Alt. 1300 m., in 220 volt light trap, 22 Jan 1994, Colls. J.M. Maes, J. Téllez & E. Van Den Berghe. NMNH Type.

ACKNOWLEDGMENTS

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