

# First neotropical species of *Neoariseumus* BOTOSANEANU & VAILLANT, 1970 (Diptera: Psychodidae)

by Francisco COLLANTES and Ezequiel MARTÍNEZ-ORTEGA

## Abstract

A new species of Psychodidae, *Neoariseumus maesi* from Nicaragua is described. The morphology of male and notes on their biology are offered. Also a table with all known species of *Neoariseumus* is included.

**Key words:** Psychodidae, *Neoariseumus maesi*, new species, Nicaragua, Neotropical.

## Resumen

Se describe la nueva especie *Neoariseumus maesi* de Nicaragua. Se detalla la morfología del macho. Se aporta una tabla con todas las especies de *Neoariseumus* conocidas.

## Introduction

Only one American species belonging to the genus *Neoariseumus* BOTOSANEANU & VAILLANT, 1970 is known, *Ne. niger* Banks, 1894, which was designated as type-species of this genus (BOTOSANEANU & VAILLANT, 1970). After the reviews of DUCKHOUSE (1978, 1987), it seems that *Neoariseumus* is mainly an African genus (21 sp.), although several species are known from Spain (1 sp.), Sardinia (1 sp.), Afghanistan (1 sp.) and Ryukyu Island (1 sp.) (see Appendix I). QUATE (1960) synonymized *Ne. spinitibialis* (TOKUNAGA & KOMYO, 1955) from Japan with *Ne. niger*. WAGNER (1979) is wrong when he indicates "new combination" for *Ne. fuscus* (TONNOIR, 1939), since it was said by DUCKHOUSE (1978) yet. Also, as DUCKHOUSE (1978) points out, there are some undescribed species from Colombia.

The diagnostics character for the males of *Neoariseumus* are the eyebridges separates, pectinate  $R_s$  and complete, basal wing forks, but the most obvious character is the form of their cercopods. The basal region is swollen with some scars and the narrower distal region bears several brush-like or spike-like retinacula near the apex. There are usually one or two rows of hairs along the cercopod.

The aedeagal complex is asymmetrical and composed of a large main element, the aedeagus, with some internal sclerotizations, and a lateral shaft that, may be the paramere.

The purpose of this work is to describe a new species of *Neoariseumus* from Nicaragua, the first neotropical species belonging to this genus.

## Material and methods

Specimens were caught with a single light trap and Malaise trap. They were preserved in 70% ethanol. To describe the species, the specimens were dissected and put on slides using DPX as embedding medium. A drawing mirror on a NIKON LABOPHOT microscope was used to draw the taxonomically interesting parts.

The studied specimens were collected by Mr. J.M. Maes (Museo Entomológico, S.E.A., León, Nicaragua).

The type material of these species will be deposited in the collection of the University of Murcia, Spain, Departamento de Biología Animal (Zoología) (DBA) and the Museo Entomológico, S.E.A., León, Nicaragua.

## *Neoariseumus maesi* sp. n.

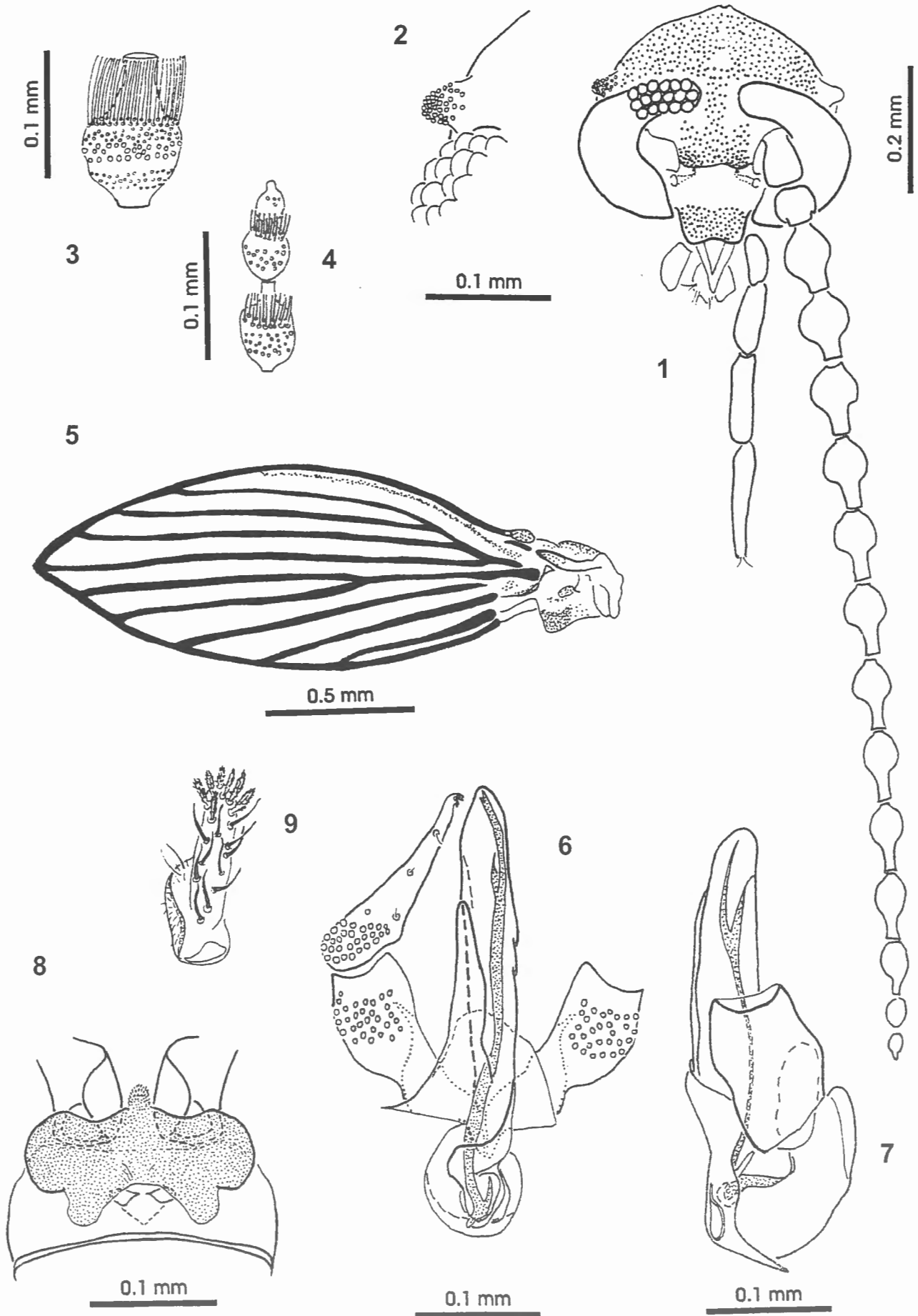
**Diagnosis:** Two rows of fine digitate ascoids forming a complete circlet at apex of basal bulb. First flagellomere noduliform. Cercopod with dorsal pleat. Small allurement organs.

**Material examined:** *Holotype*. ♀, **Nicaragua:** Masaya, Las Flores, 11° 44' N 85° 50' W, Malaise trap, /iv/93, J.M. Maes (DBA, type No. Ni-1971).

**Paratypes.** 13% (DBA, types No. Ni-1956, Ni-1957, Ni-1958, Ni-1959, Ni-1960, Ni-1963, Ni-1969, Ni-1976, Ni-1977, Ni-1979, Ni-1981, Ni-1982, Ni-1986) with holotype; 1 % León, 12° 25' N 86° 52' W, UV and white light trap, 27/i/93, J.M. Maes (DBA, type No. Ni-2002).

## Description

Male. **The head** (Fig. 1) broader than long. Eyebridges of 3 facet rows, separated by about 3 facet diameters. Without interocular suture. Frons with undivided patch of scars, lateral lobes and wide median band connected with patch of vertex. Behind union, naked subtriangular area which continues as naked midline. Vertex 2.2 times width of eyebridges. Behind eyes, dorso-lateral allurement organs (Fig. 2), lobe-like covered by little pits with a central knob. Large anterior tentorial pits, deeply sunken at posterior ends of grooves flanking clypeus. Clypeus broad, slightly wider than long. Palpi about 1.4 times length of head. Proportion of palpal segments 1.0:1.8:2.6:3.2. Antenna 0.78 times length of wing. Scape 1.3 times length of pedicel. Flagellum slender with 13 flagellomeres; post-pedicel not fusiform. Flagellomeres 1-11 noduliform (Fig. 1-3), with two rows



of fine digitate ascoids forming a complete circlet at apex of basal bulb. The last two flagellomeres (Fig. 4) reduced in size, globular and without neck, the last one finishing in a small apiculus.

*Wing* (Fig. 5) is 1.70-1.79 mm long, 2.75 times as long as broad.  $R_1$  slightly sclerotised and closed to Cs.  $R_s$  pectinate;  $R_{2+3}$  is very short, reduced to short stump anterior of the fork. Medial fork beyond radial, and basal of center of wing.  $CuA_2$  expanded at base.

*Terminalia* (Fig. 6-7) Gonopods with short inflated coxite, with a patch of scars on the outer side. Style 1.4 times longer than coxite. Broad base with outer patch of scars and slender distal region, with fewer setae, slightly hooked at tip. Two small sensorial setae slightly in front of tip. Hypandrium narrow and poorly defined. Gonocoxal apodemes with broad and large base, narrowing and joined at midline, and dorsally linked with aedeagus with ball-and-socket connection (Fig. 7). Connection smaller than other species. Aedeagal complex with large and broad phallus and straight left paramere. Inside aedeagus, longitudinal sclerotised element with T inverted-shaped base and sinuously extending to tip; distal region forked. Paramere narrowed to tip, extended to distal third of aedeagus and close to it. Under the aedeagus and paramere, a trapezoid parabasal plate. Epandrium (Fig. 8) 2 times broader than long, with two close-set apertures. 10th tergite conical and small. Cercopod (Fig. 9) with swollen base and distal half more slender. Base with dorsal pleat and many ventral hairs. Distal half with 2 longitudinal rows of 7-8 setae and 6 spike-like retinacula around the tip.

Female. Unknown

#### Etymology

We name this species in honour of Jean Michel Maes, in acknowledgement of his help in providing the specimens and valuable information.

#### Habitat

All specimens were collected in an area of crops (mango, bean, corn, manihot, etc.) with patches of altered dry tropical forest.

#### Discussion

The new species is distinguished by the shape of the aedeagal complex, its left paramere and the shape of the cercopod with a dorsal pleat. This pleat is similar to that seen in the cercopod of *Ne. angularis* DUCKHOUSE, 1987. Pursuant to DUCKHOUSE (1978), regarding what he says about the American species of *Nearisemus* (*N. niger* and undescribed Colombian species), *Ne. maesi* is included in the group of species which shows many fine ascoids as well as the African species *Ne. satchelli* and *Ne.*

*tapetipennis* DUCKHOUSE, 1978, although the new species has a flask-shaped first flagellomere.

#### Acknowledgements

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F. COLLANTES

Alcaraz, Departamento de Biología Animal  
(Área de Zoología), Facultad de Biología,  
Universidad de Murcia,  
30.100 Murcia, España.  
FAX: 34-968-36 96 63;  
e-mail: fcollant@fcu.um.es

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Fig. 1-9 — *Neoisemus maesi* sp. n.: 1 head; 2 detail of allurement organs; 3 first flagellomere; 4 tip of antenna; 5 wing; 6 gonopods and aedeagal complex from above view; 7 aedeagal complex from lateral view; 8 epandrium, tergite 10th, and base of cercopods; 9 cercopod.

Appendix I - Known species of *Neoarisemus*

Species	Author-year	Original combination	Original reference	Distribution
<i>Ne. advenus</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. anarticulus</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. angularis</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. brevicornis</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. brunneus</i>	DUCKHOUSE, 1987		<i>Ann. Natl. Mus.</i> , 28(2): 231-282	South Africa
<i>Ne. collarti</i>	SATCHELL, 1955	<i>Telmatoscopus (Arisemus) collarti</i>	<i>Revue de Zoologie et de Botanique Africaines</i> , 51: 339-372	Zaire
<i>Ne. elongatus</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. fuscus</i>	TONNOIR, 1939	<i>Telmatoscopus (Arisemus) fuscus</i>	<i>Psychodidae in Ruwenzori Expedition 1934-5</i> , 1(4): 35-80	Uganda, Zaire, South Africa
<i>Ne. ibericus</i>	WAGNER, 1978		<i>Senckebergiana biol.</i> , 58: 157-170	Spain, Mallorca, Greece Islands
<i>Ne. impeditus</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. linderghi</i>	VAILLANT, 1963	<i>Telmatoscopus linderghi</i>	<i>Opusc. Ent.</i> 28: 211-214	Afghanistan
<i>Ne. niger</i>	BANKS, 1894	<i>Psychoda nigra</i>	<i>Canadian Entomologist</i> , 26: 329-333	
<i>Ne. obtusistylis</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. okinawanus</i>	TOKUNAGA, 1959	<i>Telmatoscopus spinitibialis okinawanus</i>	<i>Philippine Journal of Science</i> , 88(4): 453-508	Ryukyu Islands
<i>Ne. pectinatus</i>	TONNOIR, 1939	<i>Tematoscopus (Arisemus) pectinatus</i>	<i>Psychodidae in Ruwenzori Expedition 1934-5</i> , 1(4): 35-80	Uganda, Zaire, South Africa
<i>Ne. plesius</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. pristinus</i>	DUCKHOUSE, 1987		<i>Ann. Natl. Mus.</i> , 28(2): 231-282	South Africa
<i>Ne. prodigiosus</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. sardous</i>	WAGNER & SALAMANA, 1984		<i>Boll. Soc. ital., Genova</i> , 116(1-3): 47-55	Sardinia
<i>Ne. satchelli</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. tapetipennis</i>	DUCKHOUSE, 1978		<i>Ann. Natl. Mus.</i> , 23(2): 305-359	South Africa
<i>Ne. youngi</i>	DUCKHOUSE, 1987		<i>Ann. Natl. Mus.</i> , 28(2): 231-282	South Africa