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Belipsocus chiquibulensis, new genus and species of Psocoptera from Belize (Psocoptera, Ectopsocidae)

by Alfonso Neri García Aldrete

Abstract. *Belipsocus chiquibulensis*, gen.nov., sp.nov., is here described and illustrated. It was collected at the Chiquibul Forest Reserve, Cayo District, Belize. It differs from the other genera in the family in two distinct autapomorphies. It is closer to *Ectopsocus* MCLACHLAN, 1899 and *Ectopsocopsis* BADONNEL, 1955 than to *Mascaropsocus* BADONNEL & PEARMAN, 1971.

Key words. Psocoptera – Ectopsocidae – *Belipsocus chiquibulensis* – new genus – new species – Belize

Introduction

The family Ectopsocidae presently includes the genera *Ectopsocus* MCLACHLAN, 1899, *Ectopsocopsis* BADONNEL, 1955, and *Mascaropsocus* BADONNEL & PEARMAN, 1971. The three genera are definable on genital characters, and have in common short fore wings, distally rounded, with pterostigma almost rectangular, M with three branches, and without areola postica (BADONNEL & PEARMAN 1970; THORNTON & WONG 1968; SMITHERS 1990, and MOCKFORD 1993). The validity of the recently erected *Ectianoculus* LI, 1995, from eastern China, seems questionable, as the only differing character from *Ectopsocus* is the lack of ocelli.

During the study of a collection of Psocoptera from Chiquibul Forest Reserve, in Cayo District, Belize, taken in Malaise and Flight interception traps, by Christopher Lyal and his associates of the Natural History Museum (London), a female specimen was found, representing a new ectopsocid genus. The purpose of this paper is to describe it and diagnose it as distinct from the other genera in the family. The female holotype is deposited in the National Insect Collection, Instituto de Biología, UNAM (México City). The measurements, given in microns, were taken, on parts mounted on a slide, with a filar micrometer whose measuring unit is 1.36 microns for wings, and 0.53 microns for other parts.

The following abbreviations stand for lengths of parts measured:

FW	.....	fore wing
Mx4	.....	fourth segment of maxillary palpus
fl...fn	.....	flagellomeres 1...n
IO	.....	minimum distance between compound eyes
D	.....	antero-posterior diameter of compound eye
d	.....	transverse diameter of compound eye
PO	.....	d/D

Taxonomy

Belipsocus gen.nov.

Type species: *Belipsocus chiquibulensis* sp.nov.

Diagnosis. Genus of the family Ectopsocidae. Subgenital plate bilobed, lobes glabrous; with a transverse posterior row of eight macrosetae. Underlying the subgenital plate, a deeply concave, strongly pigmented sheet, with two slender, glabrous apophyses. Differing from *Mascaropsocus* in lacking a middle lobe with a setae, between the lateral lobes of the subgenital plate, and in having an underlying sheet with two apophyses. Differing from *Ectopsocopsis* in having complete gonapophyses, lacking a median posterior tongue on the subgenital plate and in having glabrous lateral lobes and underlying glabrous apophyses. Differing from *Ectopsocus* in the structural plan of the subgenital plate: glabrous lobes and second sheet with apophyses.

Belipsocus chiquibulensis sp.nov.

(Figs 1–5)

Type material. Holotype female: “Belize, Cayo District, Chiquibul Forest Reserve, San Pastor, 560–580m, 30.V.–2.VI.1995, Malaise trap 13, T. King & A. Howe” (National Insect Collection, Instituto de Biología, UNAM (México City).

Description. Color (in 80% alcohol). Ground color light brown. Compound eyes black, ocelli hyaline. Antennae and maxillary palps brown. Fore wings opaque, fumose (specimen mutilated, without hind wings and legs). Thorax and abdomen brown.

Morphology. Lacinial apex (Fig. 4), with outer tyne bifid. Five distal inner labral sensilla, in line: one placoid on each end, followed inward by one trichoid, and one large central placoid. Fore wings (Fig. 1), with R and M connected by a crossvein. Subgenital plate (Fig. 5), deeply concave posteriorly, with glabrous, pigmented lateral lobes, and a transverse row of eight macrosetae. Underlying the plate posteriorly, a deeply concave sheet, with two slender, glabrous apophyses. Gonapophyses (Fig. 3): v1 and v2 slender, v3 large, finger-like, setose as illustrated, v2 apically with field of microspines. A large membranous area anterior to the valves. Paraprocts (Fig. 2), large, elongate, with a transverse row of two macrosetae and two short cones; with a mesal marginal cone bifid and asymmetrical, and a macrosetae next to it, and a field of short setae on posterior border. Sensory fields with seven trichobothria, each issuing from a basal rosette. Epiproct (Fig. 2), trapezoidal, with a posterior hyaline area; setae as illustrated.

Measurements (in microns). FW: 1251, Mx4: 88, fl: 185, f2: 79, f3: 75, IO: 327, D: 160, d: 89, IO/D: 2.03, PO: 0.55.

Comments

The monotypic genus *Belipsocus*, endemic to Belize, is clearly separated from the other genera in the family Ectopsocidae, by two singular autapomorphies: the glabrous lobes of the subgenital plate, and the presence of a concave sheet underlying the

subgenital plate. In the area of occurrence, it only coincides with species of *Ectopsocus*; *Mascaropsocus* is only known in the islands of Mauritius and Réunion, and *Ectopsocopsis* is Aethiopian, Holarctic and Oriental-Pacific. Table 1 presents a matrix of seven characters for the ectopsocid genera; it was analyzed using the NTSYS-pc program, with the UPGMA clustering method, to generate the phenogram of Fig. 6. The results indicate that *Belipsocus* keeps a sister group position with *Ectopsocus-Ectopsocopsis*, and that *Mascaropsocus* is the sister group to the other three genera, which agrees with the geographic distribution of the four genera, and with the morphological differences among them.

Acknowledgments

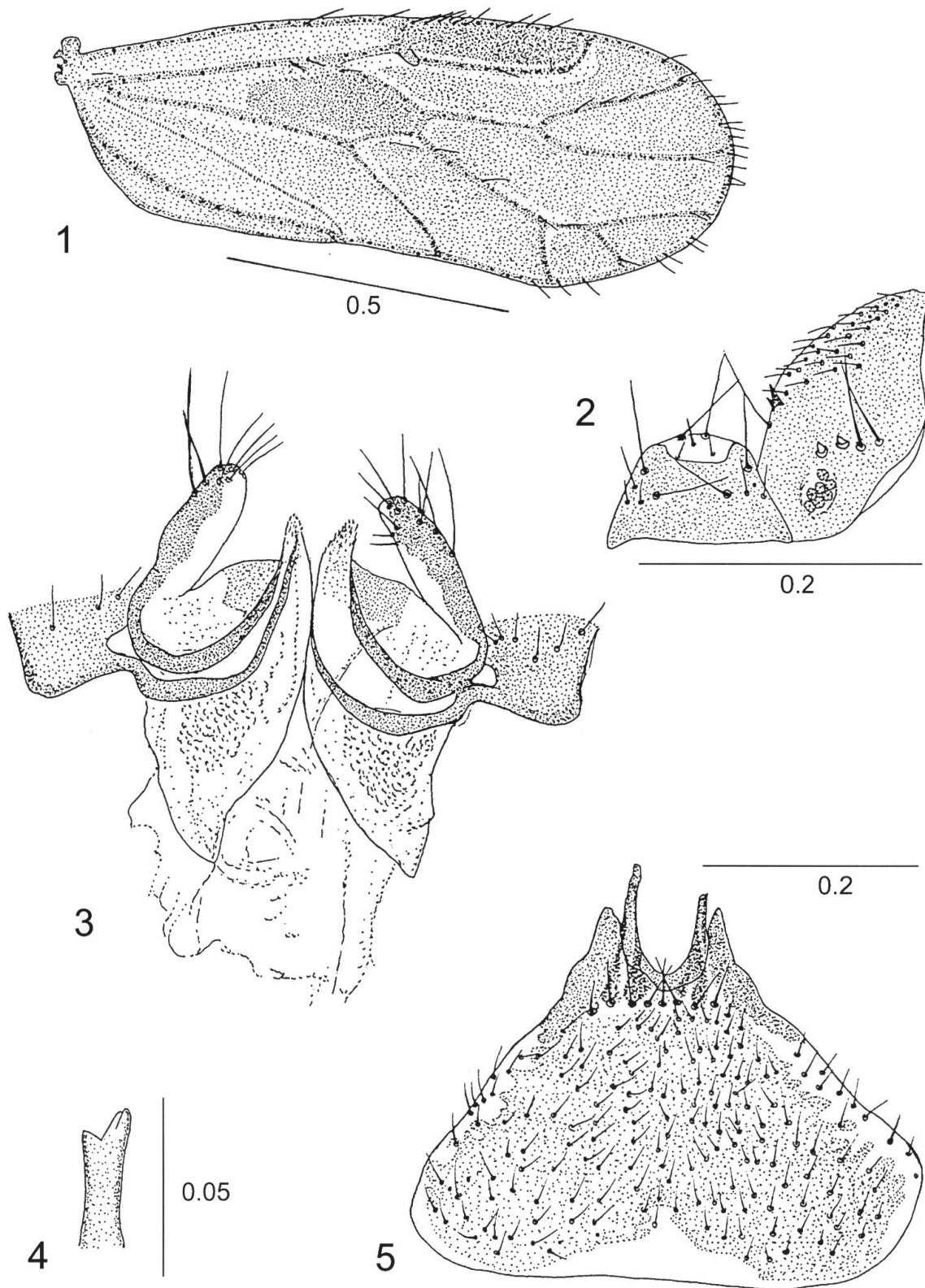
To Christopher Lyal and Luis Cervantes Peredo, of the Natural History Museum (London), for the donation of Psocoptera collected at the Chiquibul Forest Reserve, Cayo District, Belize. To Courtenay N. Smithers (The Australian Museum, Sydney), and Tim R. New (LaTrobe University, Bundoora, Victoria, Australia) who read and made useful comments on a previous version of the manuscript).

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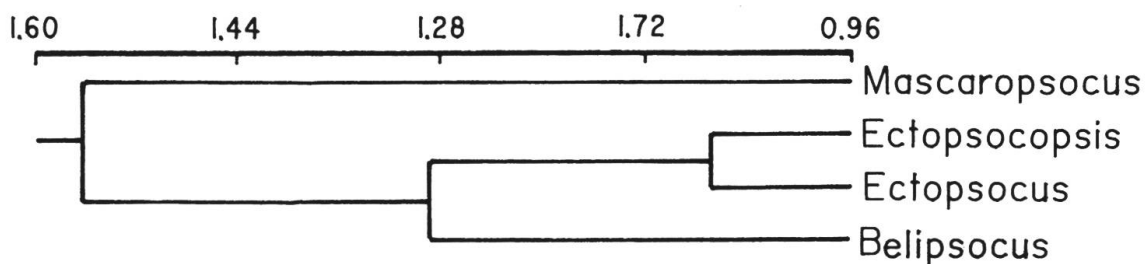
Figs 1–5. *Belipsocus chiquibulensis* sp.nov., female: 1, fore wing; 2, epiproct and left paraproct; 3, gonapophyses; 4, apex of lacinia; 5, subgenital plate. Scales in mm. Fig. 3 to scale of Fig. 2.

Table 1. Matrix of seven characters for the genera of Ectopsocidae.

Taxon	Character						
	1	2	3	4	5	6	7
<i>Mascaropsocus</i>	0	0	0	0	0	0	1
<i>Ectopsocopsis</i>	0	1	0	1	1	1	0
<i>Ectopsocus</i>	0	0	0	1	1	1	1
<i>Belipsocus</i>	1	0	1	1	1	1	1

Character

- 1 Apex or lobes of subgenital plate bearing setae (0), or glabrous (1).
- 2 Gonapophyses complete (0), or reduced (1).
- 3 Subgenital plate without (0), or with (1), underlying sheet.
- 4 Subgenital plate with (0), or without (1), small protuberance between lobes, bearing seta.
- 5 R 2+3 and R 4+5 more than three times as long as Rs (0), or shorter (1), never that long.
- 6 R 2+3 and R 4+5 almost parallel (0), or decidedly diverging (1).
- 7 Subgenital plate with (0), or without (1), median posterior tongue.

**Fig. 6.** Phenetic relationships of the genera of Ectopsocidae (NTSYS-pc program, utilizing the UPGMA clustering method).

