

**A NEW SPECIES OF *HEMICAECILIUS* ENDERLEIN
BASED ON A MALE FROM CUZCO, PERU
(PSOCODEA: 'PSOCOPTERA': LACHESILLIDAE)**

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ABSTRACT. A new species of *Hemicaecilius* Enderlein is here described and illustrated. It is based on a male collected near Machu Picchu, Peru, that constitutes the third specimen and the first male known in the genus. Its morphology confirms the closeness with *Nadleria* Badonnel & García Aldrete, that had been established on basis of female characters. The holotype is deposited in the National Insect Collection, Instituto de Biología, Universidad Nacional Autónoma de México, Mexico City (coden CNIN).

Key words: Taxonomy, South America, neotropics, Psocoptera.

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RESUMEN. Una nueva especie de *Hemicaecilius* Enderlein es aquí descrita e ilustrada. Está basada en un macho colectado cerca de Machu Picchu, Perú, que constituye el tercer ejemplar y el primer macho que se conoce en el género. Su morfología confirma la cercanía con *Nadleria* Badonnel & García Aldrete, que había sido inferida con base en caracteres de la hembra. El holotipo está depositado en la Colección Nacional de Insectos, Instituto de Biología, Universidad Nacional Autónoma de México, México, D. F. (Codon CNIN).

Palabras clave: Taxonomía, Sudamérica, neotrópico, Psocoptera.

INTRODUCTION

The genus *Hemicaecilius* Enderlein is known from two female specimens, one of them is the holotype of *H. bogotanus* Enderlein (1903), of which only one fore- and one hind wing remain, mounted on a slide, deposited in the Museum für Naturkunde

der Humboldt Universität in Berlin; the other specimen is the holotype of *H. venezolanus* García Aldrete & Mockford (1997); the head, wings, legs and genitalia are mounted on a slide; the remains of the body are preserved in 80% ethyl alcohol. This specimen is deposited in the National Insect Collection, housed in the Instituto de Biología, Universidad Nacional Autónoma de México (coden: CNIN).

The information provided by the above two specimens, allowed García Aldrete & Mockford (1997) to place *Hemicaecilius* in the family Lachesillidae, subfamily Lachesillinae, in which the genera *Ectolachesilla* García Aldrete, *Hemicaecilius* Enderlein, *Lachesilla* Westwood, and *Nadleria* Badonnel & García Aldrete, are included (García Aldrete 2006, 2008). The genus was placed close to *Nadleria*, on the basis of a simple outer tine of the lacinial tip, an Rs-M crossvein present in the forewing of both genera, and fusion of the ovipositor valvulae with the ninth sternum in *Hemicaecilius* and most Lachesillinae. The closeness of the pair *Hemicaecilius*-*Nadleria* made predictable that the structural plan of the male of the former would be similar to the male of the later. Li Fasheng (2002), in his treatment of the Psocoptera of China, included in the Lachesillinae the genera *Dicrolachesillus* Li, *Lachesilla*, *Zonolachesillus* Li, *Ceratolachesillus* Li, *Homoeolachesilla* Li, and *Zangilachesilla* Li; some differences among these genera are indicated in the key, in Chinese (p. 1706), and in the English Abstract (p. 1921-1926). Lienhard & Smithers (2002), recognized *Homoeolachesilla* in the Lachesillinae, and Lienhard (2003) synonymized *Dicrolachesillus* with *Lachesilla*. *Zonolachesillus* and *Zangilachesilla* would probably best be synonymized with *Lachesilla*, while *Ceratolachesillus* probably constitutes a distinct genus, but further study is needed to validate the changes.

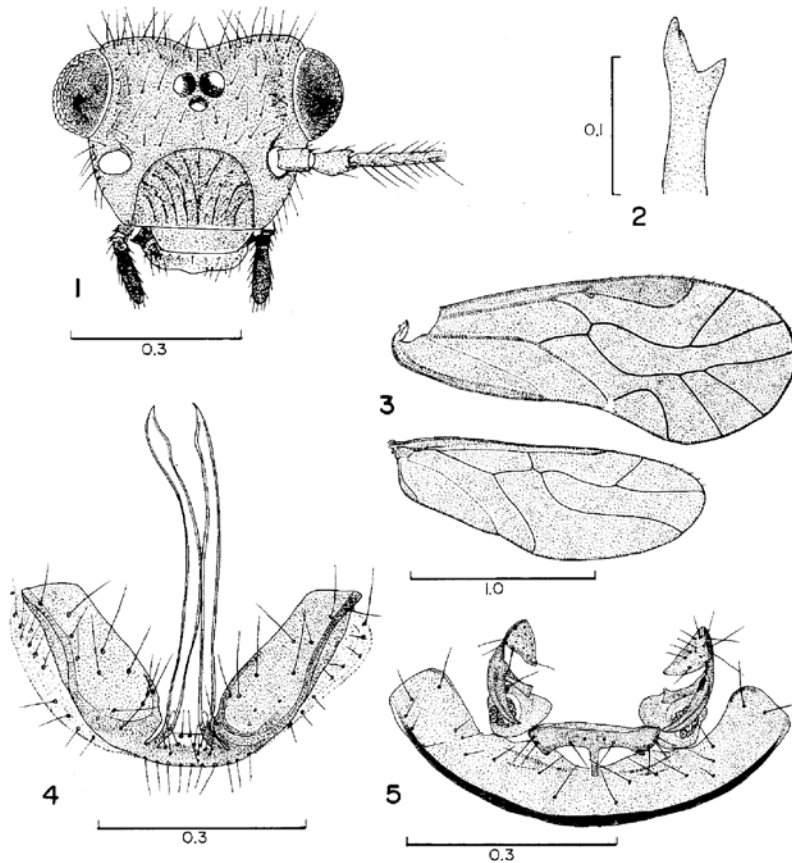
In this paper we study the third specimen known of *Hemicaecilius*, the first male known in the genus.

MATERIAL AND METHODS

One male specimen was available for study. It is here described and illustrated; it was treated in the usual way for mounting on a slide in Canada Balsam; the usual measurements, stated in μm , were taken with an AO filar micrometer (measuring units 1.36 μm for wings, and 0.53 μm for other parts, see García Aldrete 2006). Color was recorded by placing the whole specimen, before dissection, under a microscope, illuminated with white, cold light, at 80X. The type is deposited in the National Insect Collection, Instituto de Biología, Universidad Nacional Autónoma de México, México City (coden CNIN).

Hemicaecilius cuzcoensis n. sp. (♂).

Color (in 80% ethyl alcohol). Body dark chocolate brown. Compound eyes black, ocelli hyaline, with ochre centripetal crescents. Maxillary palps more pigmented than



Figures 1-5. *Hemicaecilius cuzcoensis* n. sp. (♂). 1. Front view of head. 2. Apex of lacinia. 3. Fore- and hind- wings. 4. Hypandrium and claspers. 5. Clunium, paraprocts and epiproct. Scales in mm.

rest of the body. Antennae and legs dark brown. Wings dark brown, opaque. Abdomen with dark, reddish brown, transverse subcuticular rings, less pigmented ventrally.

Morphology. Ocelli present, lateral ones much larger than median one (Fig. 1). Lacinial tips bifid, outer cusp bidentate, larger than inner one (Fig. 2). Head vertex obtusely concave; epicranial sulcus without lateral arms. Compound eyes slightly below level of vertex; epistomal sulcus well defined. Five distal inner labral sensilla, a central placoid, flanked at a distance by a pair trichoid-placoid. Forewing with small setae along margin and veins, pterostigma wider posteriorly, areola postica wide, almost triangular; Rs-M veins joined by a crossvein (Fig. 3). Hindwing with

row of small setae along margin in cell R3 (Fig. 3), Rs-M veins fused for a distance (Fig. 3). Pretarsal claw with one prapical denticle and slender pulvillus. Hypandrium small, fused on the sides to claspers; proximal halves of these, robust, setose, distal halves slender, elongate, straight, preapically dilated, terminally acuminate (Fig. 4). Paraprocts elongate, with a mesal, sickle-shaped prong: "handle" short, truncate, and distal half basally wide, narrowing to end, acuminate (Fig. 5); sensory fields circular, with 10 trichobothria issuing from basal rosettes and a marginal one without basal rosette (Fig. 5). Epiproct with a slender, straight, posterior truncate projection (Fig. 5). Phallic apodemes not observed (see Type material).

Measurements. FW: 2087, HW: 1697, F: 356, T: 672, t1: 212, t2: 100, ctt1: 17, Mx4: 89, f1: 184, f2: 171, f3: 148, f4: 116, f5: 72, f6: 69, f7: 69, f8: 67, f9: 58, f10: 59, f11: 70, IO: 323, D: 159, d: 98, IO/D: 2.03, PO: 0.61.

Type material. PERU. Cuzco. Aguascalientes, near Machu Picchu, on ravine above thermal baths, beating vegetation with dead leaves (13°09.291'S: 72°31.381'W), 8.VIII.2005. A. N. García Aldrete. Holotype ♂. Head, right side wings and legs and genitalia dissected and mounted on a slide. Phallosome lost in preparation. Remains of body preserved in 80% alcohol.

Etymology. The specific name refers to the Peruvian Department of Cuzco, where the holotype was collected.

DISCUSSION

The specimen here described and illustrated risks the eventual creation of a synonymy with one of the described species, known only from females; it was assigned to *Hemicaecilius* because the fore- and hind- wings are strikingly similar to the fore- and hind- wings of *H. bogotanus* Enderlein, and of *H. venezolanus* García Aldrete & Mockford; the membrane of the forewing is glabrous, without areas differentially pigmented, which excludes the possibility of assigning the specimen to *Nadleria*. Also, the male genitalia in species of *Nadleria* is virtually identical to the male genitalia in species of *Lachesilla* in the group *pedicularia*, and in the specimen studied the distal halves of the claspers are extremely long, this and the peculiar paraproctal prongs also exclude the possibility of the specimen belonging in *Nadleria*. The morphology of the male *Hemicaecilius cuzcoensis* n. sp., confirms the views of García Aldrete & Mockford (1997), concerning the position of *Hemicaecilius* in the subfamily Lachesillinae: it is close to *Nadleria* on basis of the Rs-M crossvein in the forewing; similar hypandrium-claspers plan, although in *Hemicaecilius* the distal halves of the claspers are extremely long and distally acuminate; epiproct with a posterior projection, and paraprocts with an acuminate, mesal prong (for male terminalia of *Nadleria*, see Mockford, 1985 and García Aldrete, 1996). These characters in *Hemicaecilius*, other than the Rs-M crossvein in the forewing, and the long, distal halves of the clasp-

ers, are also shared with species group *pedicularia* of *Lachesilla*, which is closest to *Nadleria*. It is likely that eventually *Lachesilla* will have to be restricted to species group *pedicularia*, with the pair *Hemicaecilius-Nadleria* as sister group.

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