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A NEW SPECIES OF THE GENUS *LEPIDIELLA* ENDERLEIN (DIPTERA: PSYCHODIDAE) FROM COLOMBIA¹

Sergio Ibáñez-Bernal²

ABSTRACT: *Lepidiella larryi* sp. nov., is described and illustrated based on male and female characteristics. Specimens of this new species were captured in Magdalena Province, Colombia, and constitute the first species of this genus recorded in Colombia.

KEY WORDS: Taxonomy, Psychodinae, Pericomiini, *Lepidiella*, new species, Colombia

There are 10 species of *Lepidiella* Enderlein, 1937 (formerly *Syntomoza* Enderlein, 1937) (Collantes and Hodkinson, 2003) all from the Neotropical Region with records from Brazil, Bolivia, Costa Rica, Mexico, Nicaragua, Panama, Peru, and St. Lucia (Windward Islands) (Bravo, 2005; Collantes and Hodkinson, 2003; Ibáñez-Bernal, 2008). Bejarano (2006) presented an updated list of the Psychodidae of Colombia, but there are no species of *Lepidiella* included. *Lepidiella larryi* sp. nov., is described and illustrated based on male and female specimens captured by the Colombian Arthropod Project (CAP) in Magdalena Province, and is the first record of the genus for Colombia.

METHODS

Specimens were collected with a Malaise trap, and stored in 70% ethanol until slide mounting. They were treated with NaOH (10%), dehydrated with ethanol (70, 96, 100%), diaphanized with clove oil, and mounted with Euparal in microscope slides. Morphological terminology is essentially the same used by Bravo (2005). All measurements are given in millimeters.

Lepidiella larryi Ibáñez-Bernal sp. nov.

Male. Head as long as broad; upper frons height 2.75X the eye-bridge width, vertex protuberant, both with an evenly spaced patch of setal alveoli on nearly all their surface, but leaving a very thin median line and a pair of semi-lunar bare areas near the cornicula base; corniculum with three branches densely covered with dark elongated scales; eye-bridge separated by 3.3 facet diameters, with four rows of facets; interocular suture inverted “Y”-shaped, dark and conspicuous; lower frons with an oval setae alveoli patch that extends dorsally reaching the interocular suture; clypeus as long as broad, with an undivided patch of setal alveoli; palpus nearly as long as head high, relative palpomere proportions: 2.5: 3.0: 3.5: 3.7; antenna with 14 flagellomeres; scape cylindrical, without internal protuberance,

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nearly as long as 2.0X the length of globular pedicel; flagellomere 1 fusiform, not notably longer and similar in shape to other flagellomeres; a pair of simple digitate ascoids on flagellomeres 2-11, and a rosette-like sensillum at apical 0.25 of flagellomeres 2-12; apical flagellomere with a well-developed apiculus.

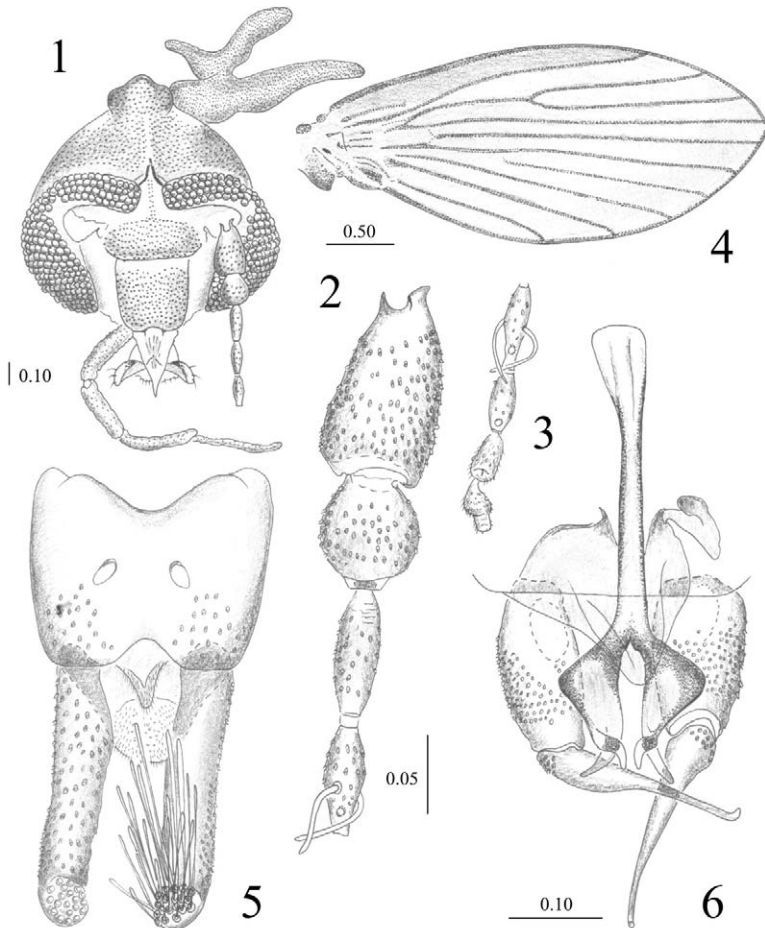
Wing 2.4X as long as broad, veins stout and wing membrane brown-yellowish, costal cell darker; radial fork near the center of wing, placed distal in relation to medial fork and before the end of CuA_2 ; base of M_2 weak; R_4 ending just in front of the apex.

Terminalia with basiphallus somewhat spatulate at the anterior end, 2.0X longer than distiphallus; distiphallus rhomboidal, divided at middle and ending in a pair of curved laterally directed long shafts, and with a pair of shorter curved paramere shafts near midline with the apex posteriorly directed. Posthypandrial plate triangular; gonocoxite nearly cylindrical, as long as 2.0X its own diameter, with a large patch of setal alveoli; gonostylus a little longer than gonocoxite, the basal 0.33 inflated and with a patch of setal alveoli, and the distal 0.66 very thin and bare, its apex curved. Tergite 9 nearly quadrate, with the anterior and posterior margins concave at middle, with a pair of posterolateral patches of setal alveoli and a pair of pseudospiracular openings; tergite 10 triangular and fused with sternite 10; cercus cylindrical, 1.25X as long as tergite 9, and with about 18-22 apical tenacula.

Measurements (in millimeters). Head height: 0.60 ± 0.036 (0.56-0.68) $n=10$; proboscis length: 0.15 ± 0.009 (0.14-0.17) $n=10$; palpus length: 0.014 ± 0.014 (0.74-0.78) $n=9$; antenna length: 1.09 ± 0.068 (1.0-1.15) $n=4$; wing length: 3.48 ± 0.11 (3.3-3.67) $n=10$; wing width: 1.453 ± 0.069 (1.28-1.50) $n=10$; cercus length: 0.295 ± 0.01 (0.28-0.32) $n=10$; tergite 9 length at middle: 0.18 ± 0.01 (0.17-0.20) $n=10$; gonostylus length: 0.23 ± 0.015 (0.21-0.26) $n=10$; aedeagus length: 0.40 ± 0.015 (0.39-0.43) $n=10$; gonocoxite length: 0.165 ± 0.007 (0.15-0.17) $n=10$.

Female. As male, except for the following characteristics: Upper frons and vertex with an evenly spaced patch of setal alveoli on all their surface; cornicula absent; eye-bridge separated by 4.0X facet diameters; palpus just longer than head height, relative palpomere proportions: 2.2: 2.8: 3.2: 4.3; terminalia with subgenital plate trapezoidal and crescent-shaped apical lobes; lobes of subgenital plate setose with rounded external margin and separated from each other by a shallow concavity; setal sclerite distinct, somewhat elongate with eight setae, connected with a dark body anteriorly; both, the setal sclerite and the anterior dark body, separated by a pair of dark ovoid structures of the membranous plate; spermathecal complex oval, with long lateral bar, a short dorsal bar over the anterior half, and a longitudinal bar along the spermathecal complex; ovipositor as long as 2.0X the length of subgenital plate.

Measurements (in millimeters, $n=2$). Head height: 0.54 – 0.56; proboscis length: 0.17; palpus length: 0.74 – 0.76; antenna length: incomplete; wing length: 3.30 – 3.38; wing width: 1.34 – 1.43; cercus length: 0.41 – 0.42; subgenital plate length (with lobes): 0.21 – 0.22; subgenital plate width: 0.29 – 0.32.

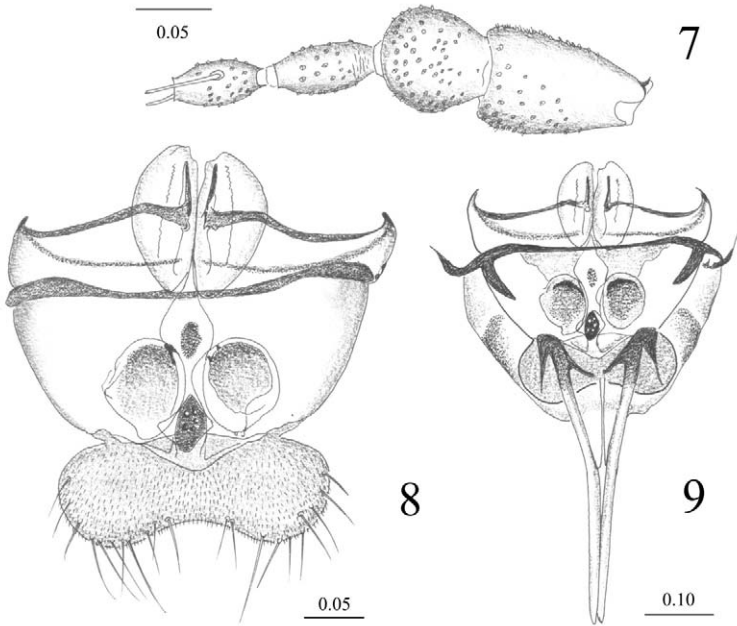


Figs. 1-6. *Lepidiella larryi*, sp. nov. Male. 1) Head, frontal view; 2) Antennal scape, pedicel and two basal flagellomeres; 3) Antennal apical flagellomeres; 4) Wing; 5) Tergites 9, 10 and cercus; 6) Gonocoxites, gonostyli, posthypandrial plate and aedeagus. Scales in millimeters.

Etymology. This species is named in honor of the late Dr. Laurence (Larry) W. Quate in recognition to his contributions to the knowledge of the family Psychodidae, and for his help at the beginning of my psychodid studies.

Type locality. Colombia, Magdalena Prov. PNN Sierra Nevada de Santa Marta, San Lorenzo (10° 48'N, 73° 39'W, 2,200 m).

The vegetation type is Subandine Forest, characterized by the presence of *Habracanthus malacus*, *Gunnera tayrona*, *Pouteria arguacoensium*, *Pouteria spiniae*, *Trianea neovisae*, *Monochaetum magdalenense*, *Salvia libanensis*, *Tillandsia acuminata*, *Tillandsia caloura*, *Tillandsia Sanctae-martae*, *Tillandsia ultima*, *Bromelia fragilis*, *Huilaea kirkbridei*, *Tropaelum pellucidum*, *Liabum falcatum*,



Figs. 7-9. *Lepidiella larryi*, sp. nov. Female. 7) Antennal scape, pedicel and two basal flagellomeres; 8) Subgenital plate, membranous plate, and spermathecae; 9) female terminalia with cercus. Scales in millimeters.

Paragynoxys undatifolia, and *Ceroxylum cereiferum*. There are abundant water resources with three river basins (Guachaca, Buritaca and Don Diego) and high atmospheric moisture, with fog nearly all year (Carbono and Lozano-Contreras, 1997). Average temperature is between 16 and 23° C with rainfall between 1000 and 4000 mm/year (FCU, 2002).

Material examined. Holotype male: Colombia, Magdalena Prov. PNN Sierra Nevada de Santa Marta, San Lorenzo (10° 48'N, 73° 39'W, 2,200 m), 30-VI- 15-VII-2000, J. Carrillo coll. (M366). Paratype female: same data as holotype. Paratypes: 9 males and 1 female: same data as holotype.

Male holotype and two male and one female paratype are deposited in the Museo de Historia Natural, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá, Colombia (UNCB), three male paratypes are deposited in the Natural History Museum of Los Angeles County (LACM), and three male paratypes are deposited in the Entomological Collection of Instituto de Ecología, A.C. (IEXA), Mexico.

Comments. Members of tribe Pericomiini are recognized by their normal wings, which are not narrowed and are as long as 2-3 times their width, fusiform antennal flagellomeres, with the apical three not reduced, and the male genitalia being symmetrical to slightly asymmetrical, with the anterior gonocoxal apodemes not plate-like and not forming a keel between them and the aedeagus. In

the Americas, only the genera *Pericoma* Walker *s. l.* and *Lepidiella* Enderlein have been recorded. *Pericoma* probably constitutes a compound genus, but more collections and studies are needed to solve the phylogenetic relationships of its members (Duckhouse, 1975). Males of *Lepidiella* have a pair of multilobed and densely setose sensory lobes on the head (secondarily lost in some species), in both sexes the vertex is dorsally expanded and arrow-shaped, the antennal scape usually is more than 2X the length of pedicel (especially in males), the wing has vein R₄ ending at wing tip and vein Rs not pectinate, and with more than one tenaculum in the male cercus.

Lepidiella larryi sp. nov., belongs to a group of species in which the males have the antennal scape unmodified, without an inner protuberance: *L. niveitarsis* (Enderlein, 1937), *L. matagalpensis* (Collantes and Martínez-Ortega, 1998), *L. hansonii* (Quate, 1996), *L. spinosa* (Bravo, 2005), and *L. lanuginosa* Enderlein, 1937. These species, except *L. hansonii*, have the aedeagal apodeme as long or longer than the gonocoxite as *L. larryi* (Quate, 1996). *Lepidiella lanuginosa* differs in the male by the length of scape, which is more than 2.5X the length of pedicel and by the posthypandrial plate with two apices; the female is unknown, and *L. niveitarsis* differs in the male by the simple cornicula with only two terminal branches and the annular shape of the base of distiphallus, and in the female by the laterally curved longitudinal posterior struts (Quate, 1963). *Lepidiella matagalpensis* differs in the male by the short gonocoxite and the four asymmetrical distal pieces of distiphallus and in the female by the presence of diagonal sclerotized struts of the internal genital complex (Collantes and Martínez-Ortega, 1998). The male of *Lepidiella spinosa* can be separated by the short gonocoxite, the presence of two parameres and distiphallus with four shafts, two of them branching from distiphallus base, and the female by the absence of dark ovoid structures of the internal genital complex (Bravo, 2005).

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