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A NEW SPECIES OF EURYBIA (LEPIDOPTERA: RIODINIDAE: EURYBIINI) FROM NORTHEASTERN BRAZIL

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ABSTRACT

A new species of Eurybia [Illiger], 1807 (Lepidoptera: Riodinidae: Eurybiini), Eurybia gonzaga sp. nov., is described from the state of Pernambuco, Northeastern Brazil and compared with its closest ally, Eurybia pergaea (Geyer, 1832). Taxonomic comments, illustrations of the adults and male genitalia are provided.

Key Words: taxonomy, Atlantic forest, Pernambuco.

RESUMO

Uma nova espécie de Eurybia [Illiger], 1807 (Lepidoptera: Riodinidae: Eurybiini), Eurybia gonzaga sp. nov., é descrita do estado de Pernambuco, Nordeste do Brasil e comparada com sua espécie mais próxima, Eurybia pergaea (Geyer, 1832). Comentários taxonômicos, ilustrações dos adultos e das genitálias dos machos são fornecidas.

Palavras Chave: taxonomia, Floresta Atlântica, Pernambuco.
Eurybia larvae produce substrate-borne sounds by oscillating its head laterally, scraping small teeth that cover the cervical membrane against epicranial granulations (Devries 1991; Travassos et al. 2008).

The aim of this study is to describe a new species from the northeastern Brazil (state of Pernambuco), Eurybia gonzaga sp. nov., and to provide distinction from its closest ally.

**Material and Methods**

In the drawings, full lines represent sclerotized structures; thin lines, membranous structures; and dotted lines, structures visible through transparency. Habitus of the adult are pictured in actual size and scale bars are provided for other figures; to highlight iridescent scales of the holotype, an additional source of light was positioned directed to the specimen at an angle of roughly 45 degrees. Higher taxonomy follows Hall (2003) and Callaghan & Lamas (2004); the terminology of Kristensen (2003) is employed for structures of the genitalia. Dissected specimen was marked with an asterisk in the type material section. Specimens from the following collections were studied and the collection acronyms used throughout the text are listed below:

DZUP – Coleção Entomológica Pe. Jesus Santiago Mourê, Curitiba, Paraná, Brazil.

MGCL – McGuire Center for Lepidoptera and Biodiversity, Gainesville, Florida, USA.

**Eurybia gonzaga sp. nov.**

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(Figs. 1-2, 7, 9)

**Diagnosis**

_Eurybia gonzaga sp. nov._ can be distinguished from the majority of the species of _Eurybia_ by the absence of an eyespot at the end of the discal cell on the forewing (Fig. 1). It can be distinguished from other species of the genus without eyespots, namely _E. halimedea_ (Hübner, [1807]), _E. albiseriata_ Weymer, 1890 and _E. elvina_ Stichel, 1910, by the shape of the hindwing outer margin, angled at M1-CuA, in _E. gonzaga sp. nov._ and rounded in the above cited species. Only two species have a hindwing outer margin angled as in _E. gonzaga sp. nov._: _E. carolina_ Godart, [1824] and _E. pergaea_ (Geyer, 1832), however, it differs from the former by its smaller size and the absence of whitish and reddish markings on the upper side of the wings (Fig. 1); and from the latter chiefly by the presence of a purplish iridescence on the upper side of the wings (Figs. 3-6); the shape of the forewing apex, only slightly pointed; and the absence of any markings or lines on both sides of the wings, except by the marginal ocelli (Figs. 1 and 2). The marginal ocelli on the wings of the new species are larger than in either _E. pergaea_ and _E. carolina_. The male genitalia differs from _E. pergaea_ by the larger development of the inferior portion of the valva in lateral view (Figs. 7 and 8).

**Male**

Head: mostly gray; 2 yellow lines around the eyes; chaetosema gray, with creamy white scaling; yellow scales ventrally and posterior to the eyes; eyes dark green, with short setae; antenna about three fourths of the length of the costal margin; mostly dark gray, with white scales at the base of each segment, club yellow; labial palpus mostly gray, thin and long, with bristle-like scales inside of the first and second segment; first segment short; second segment long, about four fifths the length of the palpus, with yellow and dark yellow tipped scales; third segment shorter than the first, conical, with yellow scales posteriorly.

Thorax: uniformly dark gray dorsally; creamy white ventrally, legs also creamy white.

Forewing, length and shape: 23.65 mm (n = 4) (holotype: 24.6 mm); triangular, costal margin convex, convexity sharper after the origin of R3, apex slightly pointed, projecting slightly from the line of the outer margin; outer margin nearly straight; tornus rounded, connecting outer and inner margins almost in a right angle; inner margin straight.

Forewing, upper side: ground color gray, with purplish iridescent scales covering most of the wing, except along the outer margin; one small black submarginal ocellus surrounded by yellowish scales in each space between R5 and 2A along the outer margin, 2 ocelli on CuA1-2A; fringe gray. The iridescence is only visible when the wing is viewed at an angle.

Forewing, underside: similar to the upper side, but lighter and without iridescence; with a narrow androconial patch along 2A, from its base to the half of its length (Fig. 9).

Hindwing, shape: outer margin angled at M1-CuA; costal margin convex; apex rounded; outer margin convex and angled; tornus rounded and obtusely angled; inner margin slightly convex.

Hindwing, upper side: coloration similar to the forewing upper side; ground color gray, with purplish iridescent scales covering most of the wing, except along the costal, outer and inner margins; one small black submarginal ocellus surrounded by yellowish scales in each space between Rs and 2A, 2 almost completely fused ocelli on CuA1-2A; fringe gray. The iridescence is only visible when the wing is viewed at an angle, iridescence brighter than in forewing, in the area between the discal cell and M1 and 2A.
Hindwing, underside: similar to the upper side, but lighter and without iridescence.

Abdomen: uniformly dark gray dorsally; creamy white ventrally.

Genitalia: tegumen slightly longer than the uncus, laterally rectangular, with a broad ventral lobe, ventrally constricted by a posterior indentation dorsal to the ventral projection of the tegumen; uncus distally bilobed in dorsal view, with a ventrolateral indentation close to the gnathos; lateral narrow membranous areas between the tegumen and uncus; gnathos “c” shaped, anterior part large and flattened, beneath the tegumen; ventral projection of tegumen dorsally lobed, tapering and ventrally fused with the dorsal projection of the saccus which runs obliquely; anterior projection of the saccus short and thin; fultura superior small and thin; fultura inferior not connected to the saccus, but connected with and covering the anterior quarter of the aedeagus; valva with 2 distinct parts, divided by a small indentation: superior part of the valva laterally flattened,

Figs. 1-6. Habitus of species of Eurybia [Illiger], 1807. (1-2) Eurybia gonzaga sp. nov., holotype male (DZUP); (1) Dorsal, right wings illuminated by an additional source of light directed to the specimen at an angle of roughly 45 degrees; (2) Ventral; 3–6; Eurybia pergaea; (3 and 4) Male from Rio de Janeiro, Rio de Janeiro, Brazil (DZUP); (3) Dorsal; (4) Ventral; (5 and 6) Female from Rio de Janeiro, Rio de Janeiro, Brazil (DZUP); (5) Dorsal; (6) Ventral. Scale bar = 1cm.
thin, long—about half the size of the aedeagus—and posteriorly projected, curved dorsally and distally pointed, base of this projection slightly wider with a small dorsal projection; inferior part of the valva stout, somewhat rounded but irregular shaped, larger dorsoventrally, dorsally lobed and smaller, ventrally more or less rounded and larger; aedeagus cylindrical, almost straight, 3 times longer than tegumen and the uncus combined; anterior opening of the aedeagus small and circular; posterior opening of the aedeagus dorsal and long, about one third the size of the aedeagus; vesica without cornuti.

Female - Unknown.

Distribution

The species is only known from a limited series of 4 specimens collected in the Atlantic forest areas of the state of Pernambuco, Brazil. This area is considered one of the major threatened areas within the Atlantic forest, and it is currently represented only by small and isolated fragments (MMA 2007). The holotype was collected in one of such areas, a private protected area in good condition of preservation.

Etymology

This species honors Luiz Gonzaga (1912-1989), a Brazilian composer and musician popularly known as the “king of baião” (a folk rhythm from northeastern Brazil) born in the state of Pernambuco, region of all known specimens.

Type Material

HOLOTYPE with the following labels: / HOLOTYPE / 6-7.II.2006, RPPN [Reserva Particular do Patrimônio Natural, Private Reserve of the Natural Heritage] Frei Caneca, Jaqueira, Pernambuco, BRAZIL], 650m Mielke & Casagrande leg. / DZ 28.339 / HOLOTYPUS Eurybia gonzaga Dolibaina, Dias, Mielke & Casagrande det. 2013 / (DZUP).


Remarks

Eurybia gonzaga sp. nov. is morphologically similar to E. pergaea (Figs. 3-6), a common and widespread species from southern and southeastern Brazil. However, it is not known if these 2 species occur sympatrically as the record of E. pergaea provided by Paluch et al. (2011) to the
municipality of Caruaru, Pernambuco, may in fact represent E. gonzaga sp. nov. These 2 species are very distinct based on characters of shape and coloration of the wings. The rarity of E. gonzaga sp. nov. deposited in collections possibly reflects the small number of samplings in this Brazilian region (Santos et al. 2008).

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