

Notes on Mimallonidae (Lepidoptera: Mimallonoidea, Mimallonidae) of the Neotropical Pacific coast, with the description of two new species of *Cicinnus* BLANCHARD, 1852

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Abstract: Two new species of *Cicinnus* BLANCHARD, 1852, are described from Pacific coastal regions of Central and South America. *Cicinnus floris* sp. n. (holotype male in NHMUK) is described from Taboga Island, Panama, and *C. giustii* sp. n. from Buenaventura, Valle del Cuaca, Colombia (holotype male in USNM). Both species are compared to similar species in the genus. Additional records of *Mimallonia amilia* (CRAMER, 1780) and *Lacosoma oyapoca* SCHAUS, 1928 from nearby localities in Panama and Colombia are provided in order to strengthen the currently weak understanding of Mimallonidae inhabiting regions of the Pacific Coast of the Neotropics.

Key words: Colombia, *Lacosoma*, *Mimallonia*, Panama.

Anmerkungen über Mimalloniden (Lepidoptera: Mimallonoidea, Mimallonidae) von der neotropischen Pazifikküste, mit der Beschreibung zweier neuer Arten der Gattung *Cicinnus* BLANCHARD, 1852

Zusammenfassung: Zwei neue Arten der Gattung *Cicinnus* BLANCHARD, 1852 werden aus pazifischen Küstenregionen von Mittel- und Südamerika beschrieben. *Cicinnus floris* sp. n. (Holotypus Männchen in NHMUK, London) kommt von der Insel Taboga, Panama, und *C. giustii* sp. n. von Buenaventura, Valle del Cuaca, Kolumbien (Holotypus Männchen in USNM, Washington). Beide neuen Arten werden mit ähnlichen Verwandten verglichen. Zusätzlich werden neue Verbreitungsangaben von *Mimallonia amilia* (CRAMER, 1780) und *Lacosoma oyapoca* SCHAUS, 1928 aus Lokalitäten nahe zu den neuen Arten in Panama und Kolumbien geliefert, um die noch generell sehr lückenhaften Angaben über Mimallonidae von der neotropischen Pazifikzone zu verbessern.

Introduction

Mimallonidae have only recently undergone extensive taxonomic study, and current work has resulted in the description of many new species and genera in the past several years. All published work dealing with Mimallonidae have focused on taxa present on the mainland of the New World, or in the Caribbean. The Mimallonidae fauna of Pacific coastal regions has not been well sampled and thus information is severely lacking in regards to their abundance and diversity in this region.

St. LAURENT & DOMBROSKIE (2016) reported *Menevia luca-ra* (SCHAUS, 1905) from Esmeraldas, a coastal province of Ecuador, but from a locality well inland within the province. Additionally, SCHAUS (1928) listed *Cicinnus felderia* SCHAUS, 1928 from western Mexico and El Salvador. Apart from these records, I am unaware of any other published Mimallonidae reports from the Pacific coast, suggesting that this family is either not well represented there, or has been overlooked. Therefore, the

present study reports new locality records of Mimallonidae from the Gulf of Panama, including one new species of *Cicinnus* BLANCHARD, 1852 so far known only from Taboga Island, Panama, and another new *Cicinnus* from coastal Colombia.

Materials and methods

Dissections were performed as in LAFONTAINE (2004). Terminology follows KRISTENSEN (2003). Figures were manipulated with Adobe's Photoshop CS4 software from 2008. The map was created with SimpleMappr (SHORTHOUSE 2010).

The following abbreviations were used in the present work:

NHMUK Natural History Museum, London, U.K.

FW Forewing.

HT Holotype.

HW Hindwing.

PT Paratype.

USNM National Museum of Natural History, Washington D.C., USA.

Systematics

Cicinnus floris sp. n.

Figs. 3, 4, 6, 8, 9.

Holotype ♂ with the following labels (separated by transverse bars): Taboga Island, gulf of Panama. Bred from larva No. 17. Emerged 16. 10. [19]24., St. George Expedn., C. L. COLLENETTE/ Brit. Mus. 1925-488./ Holotype ♂ *Cicinnus floris* St LAURENT, 2017 [red, handwritten label]/ NHMUK-010354549/ St LAURENT diss.: 9-27-16:1/ (NHMUK).

Paratypes (in total 2 ♂♂, 1 ♀), **Panama:** Gulf of Panama, Taboga Island: 1 ♀, 1924, L. E. CHEESEMAN, NHMUK-010354552, St. LAURENT diss.: 9-27-16:5 (NHMUK); 2 ♂♂, Bred from larva No. 17, emerged 15. 10. [19]24, 20. 10. [19]24, St. George Expedn., C. L. COLLENETTE, NHMUK-010354550, NHMUK010354551, St LAURENT diss.: 9-27-16:2, Brit. Mus. 1925-488 (NHMUK). – All paratypes with the following yellow label: "Paratype ♂/♀ *Cicinnus floris* St LAURENT, 2017".

Etymology. All known specimens of this species originate from Taboga Island, also known as "The Island of Flowers", thus the specific name is in reference to a flower (*floris*, Latin).

♂ (Fig. 3). FW length: 20–22 mm, avg. 21 mm, wingspan: 43–45 mm, n = 2. Head: Straw-coloured, with salmon-pink scales at top of frons and base of antenna, overall interspersed with dark brown petiolate scales, eyes very large comprising roughly half of head area, eyes bordered posteriorly by dark brown scales, labial palpi very small, not extending beyond base of frons, seg-

ments weakly defined, salmon coloured. Antenna bipectinate to tip with pectinations much shorter along distal quarter, scape and pedicel tufted. Thorax: Overall mostly grey to light brown, but with salmon-pink scales concentrated on prothorax, generously sprinkled with dark brown petiolate scales. Legs: Vestiture thin, scales long, coloration mostly as for thorax, but salmon-pink scales more widely distributed, darker petiolate scales present. Tibial spurs short, indistinct, covered in scales. Forewing dorsum: Triangular, elongated, apical quarter of outer margin slightly concave, remainder of wing margin nearly straight. Ground colour pale grey, overall lightly speckled by dark brown, essentially black, petiolate scales. Discal spot marked by small, fused B-shaped hyaline patch, bisected by M_2 , hyaline patch outlined by darker grey scales. Antemedial line well-developed (for *Cicinnus*), dark brown, wavy. Postmedial line very dark brown, appearing nearly black, line straight, or weakly curved toward wing apex. Postmedial line angled sharply toward costa near apex, dark suffusion continues on toward apex with pale, salmon-pink suffusion overlaid near apical postmedial line curve. Postmedial line outwardly suffused with pale chestnut brown, submarginal area darker grey than medial area, but still lighter than immediately along postmedial line, especially near margin where submarginal area light as in medial area. Forewing ventrum: More homogeneously coloured than forewing dorsum, without clear distinction between medial and submarginal areas, antemedial line absent, postmedial line reduced to curved traces, petiolate scaling more profuse, salmon-pink suffusion present medially, red suffusion near apex well defined, somewhat rectangular. Hindwing dorsum: Squared margin, following similar colouration and patterning as forewings but hyaline discal mark nearly absent, antemedial line absent. Hindwing ventrum: Following similar pattern as forewing ventrum but lighter grey overall, pink suffusion absent save for pink colouration along veins. Abdomen: Barely extending beyond anal margin of hindwing, depth equal to that of thorax, truncated to slightly upturned posterior tip, coloration a continuation of grey thoracic colour, although slightly browner dorsally.

♂ **genitalia** (Fig. 6). $n = 2$. Very complex; vinculum box-like, with more ovoid central ring, ventral corners of vinculum accentuated as small, rounded, backward angled knobs (apophyses). Uncus extends beyond sacular edge of valves and is angled perpendicularly to vinculum in natural pose, uncus dull blade-like, somewhat triangular ventrally, highly truncated distally. Gnathos somewhat trapezoidal, consisting of two lateral arms bent inward toward each other, but not meeting mesally, mesally unfused. Valves mostly membranous, relatively short, extending beyond base of uncus, apically blunt, bent upwards at base of uncus, sclerotized mesally at base, sclerotization projecting outward as robust, triangular tooth-like process, mesal sclerotization smooth along dorsal margin of valve. Saccus upturned mesally. Thin, curved, arms extend inward but do not

meet, arms with slight bend mesally along length, arms angled outward away from center of genital capsule. Arms originate from base of vinculum. Juxta fused to both phallus and inner ring of vinculum; pair of well sclerotized, setae covered, creased structures extend from juxta dorsally over phallus, forming connection with vinculum. Phallus short, tubular, constricted near base, slightly splayed basally, phallus cannot be excised from genitalia capsule without damaging juxta-vinculum complex. Tubular vesica elongated, longer than phallus.

♀ (Fig. 4). FW length: ca. 23 mm; wingspan ca. 46 mm, $n = 1$ [measurements rough, wing tips damaged]. Head: As in male but slightly broader, antenna smaller overall, particularly pectinations. Thorax: As in male but salmon-pink scales less evident prothoracically. Legs: As in male though pink coloration hardly evident. Forewing dorsum: As in male but slightly broader, outer margin convex except just before apex, antemedial line absent, postmedial line fainter than in male with outer shading weaker. B-shaped hyaline discal spot broader than in male. Forewing ventrum: More homogeneously coloured than on dorsum, without clear distinction between medial and submarginal areas, postmedial line reduced to curved traces, petiolate scaling more profuse and diffuse, salmon-pink suffusion present medially, but very faint, red diffusion near apex well defined. Hindwing dorsum: As in male but broader, outer margin convex, maculation fainter. Hindwing ventrum: Following similar pattern as forewing ventrum but greyer overall. Abdomen: As in male but stouter, ventrum of segment VII with pair of small, longitudinal sclerotized bands.

♀ **genitalia** (Fig. 8) $n = 1$. Robust; tergite of VIII broad, somewhat trilobed two lateral lobes wrinkled interally. Apophyses anteriores slightly shorter than apophyses posteriores, but apophyses anteriores more robust. Lamella antevaginalis wide, not robust, wrinkled. Lamella antevaginalis a narrow bar, bent mesally, either side of lamella antevaginalis each with distinct, rounded protuberances covered in very short setae, left protuberance (viewed ventrally) larger than that of right. Ductus bursae short, corpus bursae not preserved. Papillae anales with three well-defined lobes on either half of papillae, papillae anales covered in long, fine setae, setae much shorter basally.

Diagnosis

Cicinnus floris sp. n. belongs to a group of similar *Cicinnus* widely known from the Neotropics: *C. bahamensis* ST. LAURENT & MCCABE, 2016 (Bahamas), *C. falcoargenteus* ST. LAURENT & MCCABE, 2016 (Venezuela), *C. packardii* GROTE, 1865 (Cuba) (Fig. 1), *C. felderia* (Mexico) (Fig. 2), *C. hansenii* HERBIN & MONZÓN, 2015 (Guatemala), *C. conlani* HERBIN & C. MIELKE, 2015 (Brazil) and *C. despecta* (WALKER, 1855) (central South America). *Cicinnus floris* sp. n. can be recognized from among these species by the usually smaller size combined with the narrower, straighter-margined triangular forewings, and the

squared margins of the hindwings. Additionally, this is one of the few species of *Cicinnus* with a particularly well-defined antemedial line. *Cicinnus felderia* and *C. hanseni* are the most similar species externally but *C. felderia* is larger, with red rather than brown postmedial shading and broader wings with convex outer margins. Apart from the paler grey coloration of *C. hanseni*, *C. floris* can also be recognized by the male genitalia. Although male genitalia are rather homogenous in this group of *Cicinnus*, the male genitalia of *C. floris* sp. n. have a trapezoidal gnathos, which is unfused mesally. Similar species figured in ST. LAURENT & McCABE (2016: figs. 19–21) and HERBIN & MONZÓN (2015: figs. 19, 20) as well as *C. felderia*, have a mesally fused gnathos.

Note: ST. LAURENT & McCABE (2016) were unclear in saying that the gnathos is “absent” in this group, they were referring to the absence of mesal gnathos protuberances/distal arms as are usually present in most mimallonid genera. The base of the gnathos is present however, as it is in the two species described here. Additionally, in this new species, the vincular arms are less clearly curved inward toward each other, due to the presence of mesal bends that angle the arms somewhat apart. Furthermore, this is the only examined species from the group that has only one well defined mesal valve tooth, whereas in the others there is a smaller secondary tooth along the dorsal margin of the sclerotized base of the valve (as in *C. giustii* sp. n. described below). Female genitalia differ from those of similar species by having smaller apophyses and very well defined setae covered lobe-like protuberances on either side of the lamella postvaginalis, which are less distinctly shaped in other species.

Geographical distribution

Cicinnus floris sp. n. is so far known only from Taboga Island, Panama (Fig. 9). However, it is unlikely that this species is endemic to such a small island located only 10 km from mainland Panama. Additional sampling along coastal Panama may eventually reveal additional specimens of this species.

Biology

All males of this new species were “bred from larva”, but unfortunately host plant data was not provided. Considering that two similar Caribbean species, *C. bahamensis* and *C. packardii*, both feed on *Psidium* L. (Myrtaceae), *P. longipes* BERG (McVAUGH) and *P. guajava* L. respectively, it is possible that this species may also be found on this host genus (ST. LAURENT & McCABE 2016, BARRO & LARRAMENDI 2011 and FERNÁNDEZ-TRIANA, pers. comm.).

Cicinnus giustii sp. n.

Figs. 5, 7, 9.

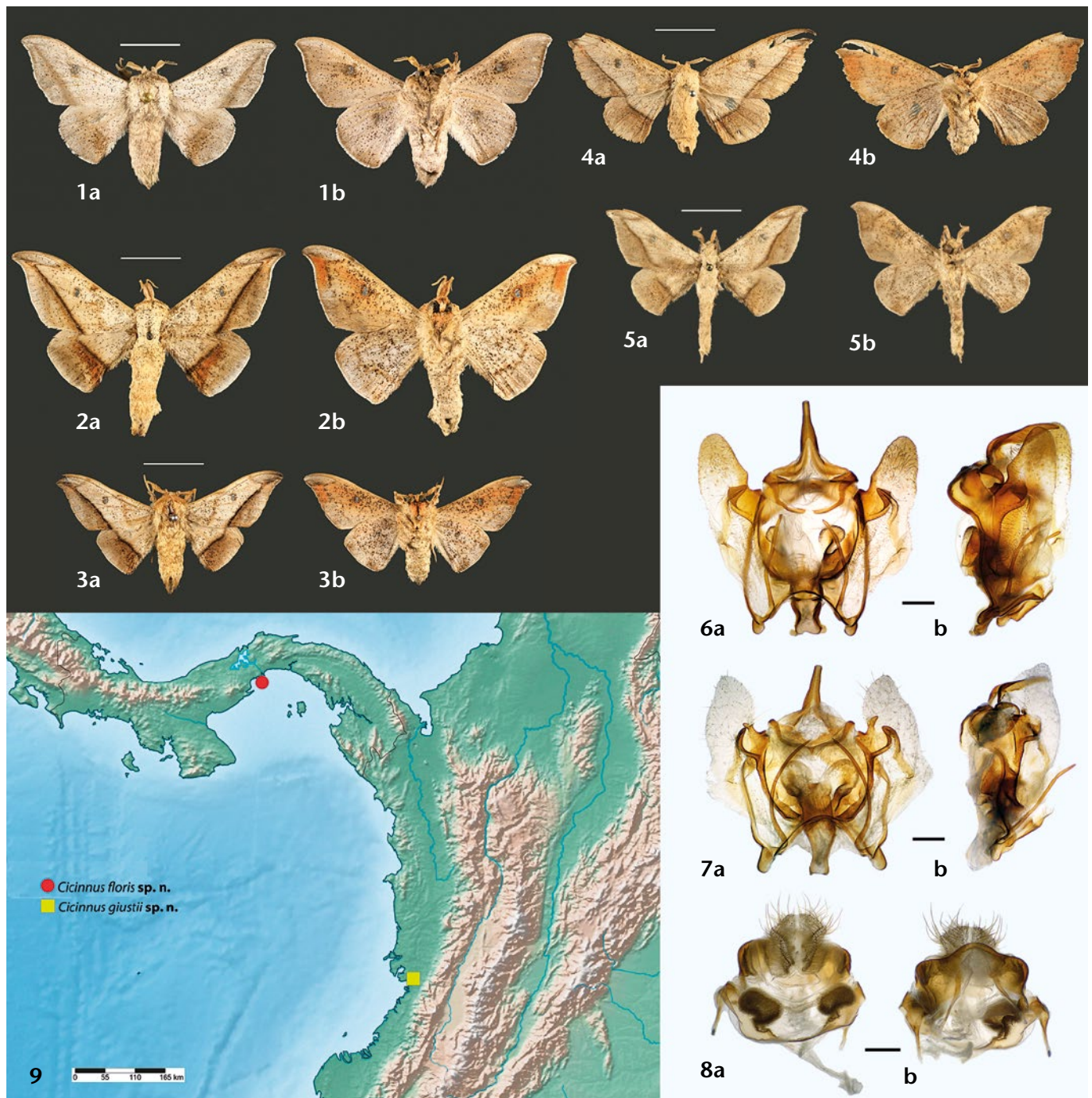
Holotype ♂ with the following labels (separated by transverse bars): Colombia: Buenaventura, M. Chapman/ USNM-Mimal: 2472/ Holotype ♂ *Cicinnus giustii* ST LAURENT, 2017/ ST LAURENT diss.: 9-27-16:3/ (USNM).

Paratypes (in total 2 ♂♂), Colombia: Valle del Cuaca: Buenaventura: 2 ♂♂, M. CHAPMAN, USNM-Mimal: 2471, 2473, ST LAURENT diss.: 9-27-16:4 (USNM). — Both paratypes with the following yellow label: “Paratype ♂ *Cicinnus giustii* ST LAURENT, 2017”.

Etymology. This species is named for Alessandro GIUSTI of the NHMUK for his continuous support in my work with Mimallonidae, including the present article.

♂ (Fig. 5). FW length: 19–20 mm, avg. 19.3 mm, wingspan: 36.0–38.5 mm, n = 3. Head: Grey-brown, overall interspersed with dark brown petiolate scales, eyes very large comprising roughly half of head area, eyes bordered posteriorly by dark brown scales, labial palpi very small, not extending beyond base of frons, segments weakly defined. Antenna bipectinate to tip with pectinations much shorter along distal quarter, scape and pedicel tufted. Thorax: Overall mostly grey-brown, generously sprinkled with dark brown petiolate scales. Legs: Vestiture thin, scales long, coloration as for thorax, tibial spurs short, indistinct, covered in scales. Forewing dorsum: Triangular, rather short, broad, apical quarter of outer margin strongly concave resulting in falcate apex, remainder of wing margin convex, especially mesally. Ground colour pale grey to light brown, overall lightly speckled by dark brown, essentially black, petiolate scales. Discal spot marked by fused, B-shaped hyaline area, bisected by M_2 , hyaline patch outlined by darker grey scales and somewhat variable in width. Antemedial line essentially absent. Postmedial line greyish brown, line bent inward mesally. Postmedial line angled sharply toward costa near apex, becoming diffuse, dark suffusion continues on toward apex. Postmedial line outwardly suffused with pale brown, submarginal area slightly darker grey-brown than medial area, but still lighter than immediately along postmedial line. Forewing ventrum: More homogeneously coloured than on dorsum, without clear distinction between medial and submarginal areas, postmedial line reduced to curved traces, petiolate scaling more profuse, darker brown as well as lighter grey suffusions present apically. Hindwing dorsum: Rounded, following similar colouration and patterning as forewings but hyaline discal mark nearly absent, postmedial line reduced, not reaching anterior wing margin. Hindwing ventrum: Following similar pattern as forewing ventrum but lighter grey overall. Abdomen: Large relative to stout wings, extending well beyond anal margin of hindwing, depth equal to that of thorax, truncated to slightly upturned posterior tip, coloration a continuation of grey thoracic colour, although slightly browner dorsally.

♂ **genitalia** (Fig. 7). Very complex; vinculum box-like, rectangular, with more circular central ring, ventral corners of vinculum accentuated as rounded, backward angled knobs (apodemes). Uncus does not extend beyond saccular edge of valves and is angled perpendicularly to vinculum in natural pose, uncus tubular, somewhat triangular ventrally, highly truncated distally. Gnathos somewhat U-shaped, consisting of two lateral arms bent inward toward each other, joining mesally, forming a small downward point. Valves mostly membranous, broad,



Figs. 1–5: Specimens and types of *Cicinnus* spp.; **a** = dorsal view, **b** = ventral view. Scale bars = 1 cm approximate; specimens approximately to the same size = natural size. — **Fig. 1:** *Cicinnus packardii* ♂, Cuba, Matanzas, Cienga de Zapata, nr. Playa Larga, 3 m (USNM). — **Fig. 2:** *Cicinnus felderia* ♂, Mexico, Morelos, Cuernavaca (USNM). — **Fig. 3:** *Cicinnus floris* HT ♂, Panama, Taboga Island (NHMUK). **Fig. 4:** *Cicinnus floris* PT ♀, Panama, Taboga Island (NHMUK). — **Fig. 5:** *Cicinnus giustii* HT ♂, Colombia, Valle del Cuaca, Buenaventura (USNM). — **Figs. 6–8:** Genitalia of *Cicinnus* spp.; **a** = ventral view, **b** = lateral view (for Fig. 8b = dorsal view). Genitalia scale bars: 1 mm, not all to the same scale. — **Fig. 6:** *Cicinnus floris* HT ♂ genitalia, Panama, Taboga Island (NHMUK). — **Fig. 7:** *Cicinnus giustii* HT ♂ genitalia, Colombia, Valle del Cuaca, Buenaventura (USNM). — **Fig. 8:** *Cicinnus floris* PT ♀ genitalia, Panama, Taboga Island (NHMUK). — **Fig. 9:** Distributions of *Cicinnus floris* sp. n. and *C. giustii* sp. n. in Panama and Colombia, respectively.

relatively short, barely extending beyond base of uncus, rather pointed apically, bent upwards at base of uncus, sclerotized mesally at base, sclerotization projecting outward as two, robust, sharp tooth-like processes, tips of paired teeth curve toward each other, dorsal valve edge process smaller than mesal tooth. Saccus upturned mesally. Thin, curved, arms extend inward but do not meet, arms angled outward away from center of genital capsule. Arms originate from base of vinculum. Juxta fused to both phallus and inner ring of vinculum; pair of

large well sclerotized, setae covered, creased structures extend from juxta dorsally over phallus, forming connection with vinculum, paired structures filling nearly entire region circumscribed by inner vincular ring. Phallus short, tubular, strongly constricted near base, slightly splayed basally, phallus cannot be excised from genitalia capsule without damaging juxta-vinculum complex. Vesica elongated, longer than phallus, tubular.

♀. Unknown.

Diagnosis

Cicinnus giustii sp. n. belongs to the same group of species as *C. floris* sp. n., with strongest affinity to *C. packardii* (Fig. 1). This new species can be recognized by the somewhat smaller size, inwardly bent FW postmedial line, and more homogenously coloured postmedial regions. In *C. packardii*, the postmedial lines are usually strongly shaded with brown on the outer side and/or are straighter. The male genitalia are large for this group, and overall very broad and robust. Valve structure is more pointed than in related species, and with both mesal valve teeth well defined (unlike in *C. floris* sp. n.). The creased, paired juxtal structures are also very large in comparison with related species, wherein they nearly fill the entire region circumscribed by the inner vincular ring.

Geographical distribution

Cicinnus giustii sp. n. is so far known only from the type locality, Buenaventura on the Pacific coast of Colombia (Fig. 9).

Remarks

This new species is included in the present work because it shares a close affinity with *C. floris* sp. n. and related species, as well as being one of the few Mimallonidae so far known from the Pacific coast of South America.

Additional discussion

SCHAUS (1928) reported *Trogoptera rumina* DRUCE, 1894 from Taboga Island, Panama. While examining material in the NHMUK, I located an additional species from Taboga Island, Panama. The common, widespread species *Mimallo amilia* (CRAMER, 1780) was represented in the NHMUK by a single ♂ specimen with the following label data: "Taboga Island, Gulf of Panama, Bred No. 18., emerged 4. 10. [19]24, St. George Expedn., C. L. COLLENETTE." Additionally, a ♂ specimen of *Lacosoma oyapoca* SCHAUS, 1928 was present in the NHMUK, collected "at sea" in the Gulf of Panama (Taboga Island is located in the Gulf of Panama). Two additional specimens of *L. oyapoca* from Gorgona Island, Colombia, are also noteworthy as they represent additional coastal Pacific reports of Mimallonidae. Aside from these few records, and those of *C. floris* sp. n. and *C. giustii* sp. n. above, data is severely lacking for Mimallonidae of Pacific coastal regions.

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References

- BARRO, A., NÚÑEZ, R., & LARRAMENDI, J. (2011): Lepidópteros de Cuba. Patrocinado por Sartacus-säätiö y la Sociedad Cubana de Zoología. — Vasa, Finland (UPC Print), 230 pp.
- HERBIN, D., & MONZÓN SERRA, J. (2015): Description of four new species of Mimallonidae and four new species of Apatelodidae from the El Mirador Basin in northern Guatemala. — *Antenor*, Paris, 2 (2): 176–197.
- KRISTENSEN, N. P. (2003): Skeleton and muscles: adults. — Pp. 39–131 in: KRISTENSEN, N. P. (ed.), *Lepidoptera: moths and butterflies*, vol. 2. In: *Handbuch der Zoologie/Handbook of Zoology IV/36*. — Berlin, New York (Walter de Gruyter); doi: 10.1515/9783110893724.39.
- LAFONTAINE, J. D. (2004): Noctuoidea: Noctuidae (part). Noctuidae (part Agrotini). — In: DOMINICK, R. B., FERGUSON, D. C., FRANCLEMENT, J. G., HODGES, R. W., MUNROE, E. G. (eds.), *The moths of North America including Greenland*, Fascicle 27.1., 385 pp. — Washington (Wedge Entomological Research Foundation).
- SCHAUS, W. (1928): Familie Mimallonidae. — Pp. 635–672, pls. 86–88, in: SEITZ, A. (ed.) (1913–1940), *Die Gross-Schmetterlinge der Erde*. vol. 6. *Die amerikanischen Spinner und Schwärmer*. — Stuttgart (A. Kernen), 1452 pp., 186 pls.
- SHORTHOUSE, D. P. (2010): Simplemapp, an online tool to produce publication-quality point maps. — URL: www.simplemapp.net (last accessed: 6. x. 2016).
- ST. LAURENT, R. A., & DOMBROSKIE, J. J. (2016): Revision of the genus *Menevia* SCHAUS, 1928 (Lepidoptera, Mimallonoidea, Mimallonidae) with the description of 11 new species. — *ZooKeys*, Sofia, 566: 31–116; doi: 10.3897/zookeys. 566. 6982.
- , & McCABE, T. L. (2016): The Mimallonidae (Lepidoptera, Mimallonoidea) of the Caribbean Basin, with the descriptions of two new species. — *Zootaxa*, Auckland, 4084: 557–571; doi: 10.11646/zootaxa.4084.4.6.

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