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Contribution to the knowledge of the genus *Corematura* Butler, 1876 in Peru, with the report of a new synonym (Lepidoptera: Erebidæ, Arctiinae, Arctiini, Ctenuchina)

J. Grados, J. J. Ramírez, J. Farfán & J. Cerdeña

Abstract

The genus *Corematura* Butler, 1876 currently comprises two species: *Corematura chrysogastra* (Perty, 1833) and *Corematura postflava* (Guérin-Ménéville, 1844), historically confused in one taxon. Descriptions of the adults of both species and their geographic distributions in Peru are given: *C. chrysogastra* occurring in the northern Amazon and *C. postflava* in the southern Amazon. The characters that can differentiate them are mentioned, mainly in the male genitalia. A new combination and synonym are included.

KEY WORDS: Lepidoptera, Erebidæ, Arctiinae, Arctiini, Ctenuchina, Amazon, new combination, new synonym, Peru.

Contribución al conocimiento del género *Corematura* Butler, 1876 en Perú, con la relación de una nueva sinonimia (Lepidoptera: Erebidæ, Arctiinae, Arctiini, Ctenuchina)

Resumen

El género *Corematura* Butler, 1876 consta en la actualidad de dos especies, *C. chrysogastra* (Perty, 1833) y *C. postflava* Guérin-Ménéville, 1844), históricamente confundidas en un solo taxón. Se proporcionan las descripciones de los adultos de ambas especies y sus distribuciones geográficas en Perú: *C. chrysogastra* se encuentra en el norte de la Amazonía y *C. postflava* en el sur de la Amazonía. Se mencionan los caracteres diagnósticos que pueden diferenciarlos, fundamentalmente en la genitalia del macho. Se incluye una nueva combinación y nueva sinonimia.

PALABRAS CLAVE: Lepidoptera, Erebidæ, Arctiinae, Arctiini, Ctenuchina, Amazonia, nueva combinación, nueva sinonimia, Perú.

Introduction

The genus *Corematura* Butler, 1876 currently consists of two species: *Corematura chrysogastra* (Perty, 1833) and *Corematura postflava* (Guérin-Ménéville, 1844). Both of diurnal habits. However, historically it has taken some difficulties to differentiate them, mainly due to lack of material from different places and the study of the type material. The history of the nominal taxa of the genus has curiosities: they were considered as a single species (HAMPSON, 1898; TRAVASSOS, 1952) for more than 50 years and, described twice by the same author, with material from different places, in two different genera (WALKER, 1856, 1864). Both species can be easily confused. In some cases, it is necessary to dissect the genitalia in order to make a correct identification.

The objective of this work is to provide the differences among the morphological characters of the adults, the male genitalia and the patterns of geographical distribution in Peru for the two species of *Corematura*. Redescription of males of both species is provided. For now, it has not been possible to register females for any of the two species. A new synonym and new combination are reported.

Materials and methods

The specimens for the present study have been collected as part of our studies in Systematics and Biogeography of the Neotropical Arctiinae (JG), through some trips to the Amazon region. The specimens have been collected with insect nets. A good number of specimens were collected during the day, with *Heliotropium* sp. bait.

The information symbology of the types is the following: ascending bar (/) was used to separate information from different labels and, semicolon (;) to separate information from the lines within the same label.

The acronyms used follow HEPPNER & LAMAS (1982). The collections consulted were the following: Deutsches Entomologisches Institut, Müncheberg, Deutschland (DEIM); Museum of Comparative Zoology, Harvard University, Cambridge, United States (MCZ); Muséum National d'Histoire Naturelle, Paris, France (MHNP); Natural History Museum, London, United Kingdom (NHMUK); University Museum, Oxford University, Oxford, United Kingdom (UMO); Zoologisches Museum, Humboldt Universität, Berlin, Deutschland; (ZSBS) Zoologisches Sammlungen des Bayerischen Staates, Munich, Deutschland (ZMHB). The specimens have been deposited in the MUSM, except those indicated in the respective text. The terminology used for venation follows COMSTOCK & NEEDMAN (1898, 1899), MILLER (1970), WOOTTON (1979) and COMMON (1990); genitalia follows SIBATANI *et al.* (1954), KUZNETSOV (1967) and KLOTS (1970). Genitalia of specimens was dissected and prepared using a KOH solution (10%) in a water bath. Photographs of the adults were taken with a Nikon D80 camera and those of the genitalia with a Canon EOS Rebel T6 camera and a Canon MP-E 65 mm macro.

Results

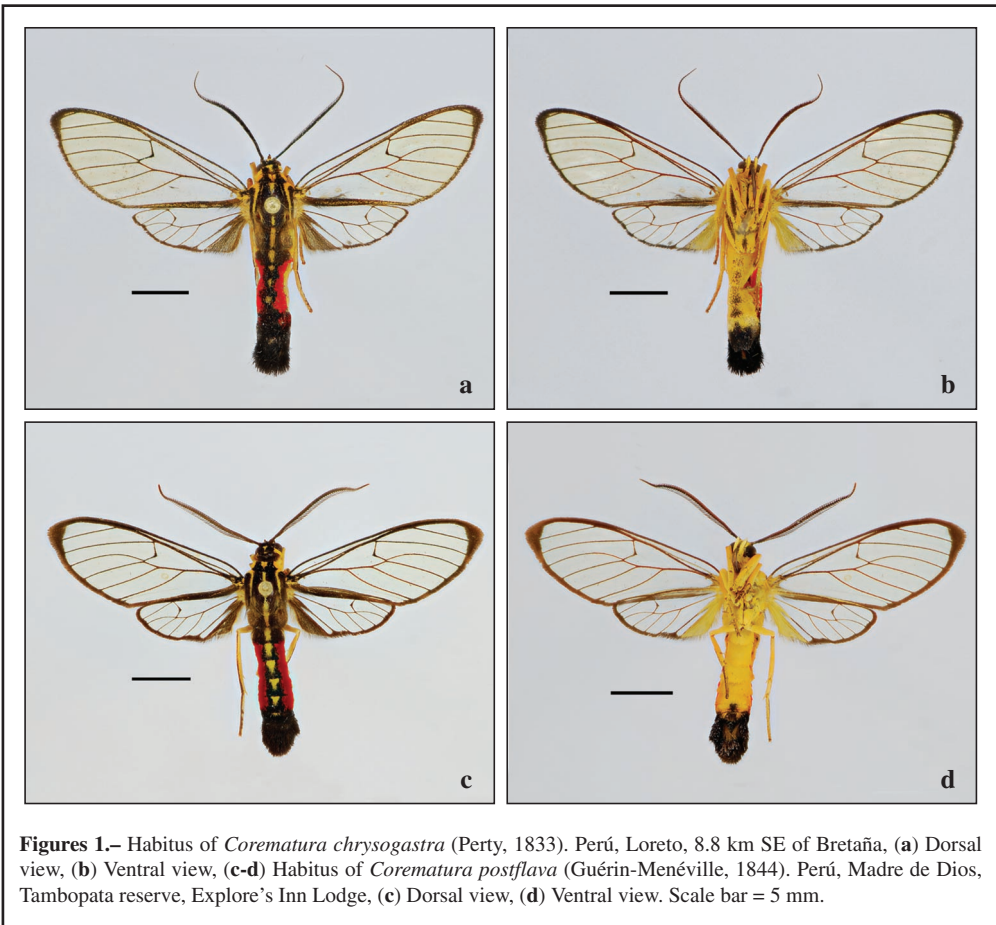
Corematura Butler, 1876

Corematura Butler, 1876. *Journ. Linn. Soc. Lond.*, **12**: 403

The genus *Corematura* was proposed by BUTLER (1876), with *Glaucoptis chrysogastra* (Perty, 1833) as type species. PERTY (1833) described the species with specimens from “*Brasilia aequatorialis*” [Brazil], collected during the scientific expedition carried out by Johan Baptist Von Spix (1781-1826) and Friedrich Philipp Von Martius (1794-1868). He had been hired by Maximilian Joseph I, King of Bavaria to install the Academy's Zoology Cabinet. Both arrived to Brazil in 1817 with Archduchess Maria Leopoldina of Austria. The scientists stayed in São Paulo, Minas Gerais, Bahia, Pernambuco, Maranhão and Pará (MOREIRA, 1994; FITTKAU, 2001; BASTOS & ROMERO, 2011; HEIZER, 2018).

Later HAMPSON (1898), considered two species within the genus: *C. chrysogastra* (Perty, 1833) and *C. aliaría* (Druce, 1890), providing a diagnosis of the genus, based on external morphological characters and venation. On the other hand, he considered *C. postflava* as a synonym of *C. chrysogastra*. The works of ZERNY (1912) and DRAUDT (1915) followed HAMPSON's criteria (1898).

TRAVASSOS (1952) provided a redescription of the genus *Corematura*, with some corrections to an earlier work where he considered *C. aliaría* (Travassos, 1938) and distinguishing between *C. chrysogastra* and *C. postflava*. He provided the differences in the characters of the male genitalia and in their geographical distributions. Years later (TRAVASSOS, 1953) created the new genus *Riccia* for the species *C. aliaría* (Druce), arguing that it had morphological characteristics different from *Corematura*.



Figures 1.– Habitus of *Corematuration chrysogastra* (Perty, 1833). Perú, Loreto, 8.8 km SE of Bretaña, (a) Dorsal view, (b) Ventral view, (c-d) Habitus of *Corematuration postflava* (Guérin-Ménéville, 1844). Perú, Madre de Dios, Tambopata reserve, Explore's Inn Lodge, (c) Dorsal view, (d) Ventral view. Scale bar = 5 mm.

Corematuration chrysogastra (Perty, 1833) (Figs 1a, b)

Glaucoptis chrysogastra Perty, 1833. *Delect. Anim. Artic.*: 157, pl. 31, fig. 10

LT: Brasilia aequatorialis

Eunomia abdominalis Walker, 1856. *List Lep. Ins. Br. Mus.*, **7**: 1617-1618

LT: Valley of the Amazon

Lagaria abdominalis Walker, 1864. *List Lep. Ins. Br. Mus.*, **31** (Supplement): 89

LT: Archidona

Glaucoptis tricolor Packard, 1869. *Rep. Peabody Acad.*, **1**: 62, **new synonym**

LT: Napo and Maranon rivers

Material examined: LORETO: Tres Fronteras, Río Putumayo (00°06'S / 75°14'W), 220 m, 1 ♂, XII-2010, J. J. Ramírez leg.; Picuroyacu (03°39'S / 73°15'W), 110 m, 1 ♂, 07-I-2012, J. J. Ramírez leg.; Peña Negra, Carr. Iquitos-Nauta km. 11 (03°52'S / 73°20'W), 130 m, 1 ♂, 07-XI-2008, J. J. Ramírez leg.; Agua Blanca (03°56'S / 73°28'W), 130 m, 1 ♂, 13-I-2015, J. J. Ramírez leg.; San Regis, Albergue La Posada (04° 30'30"S / 73°54'30"W), 130 m, 1 ♂, 21-IX-2002, J. J. Ramírez leg.; Boca del río Samiria (04°40'S / 74°18'W), 120 m, 1 ♂, 16-VIII-1990, H. Lequerica leg.; 1.83 km ENE de Bretaña, Canal de Puinahua (05°14'46"S / 74°19'39"O), 106 m, 1 ♂, 28-29-IV-2013, P. Sánchez leg.; idem except, 1 ♂, 24-25-X-2012; 8.8km SE de Bretaña, Canal de Puinahua (05°20'10.7"S /

74°16'59.44''W), 90 m, 1 ♂, 31-VII-01-VIII-2014, C. Espinoza leg.; Victoria, Canal de Puinahua (05°40'S / 74°40'W), ca. 130 m, 1 ♂, 21-XI-1969, P. Hocking leg. SAN MARTÍN: Puente Aguas Verdes (05°41'S / 77°39'W), 950-1150 m, 1 ♂, 25-XI-2002, I. I. Wynne leg.; Rioja (06°04'S / 77°10'W), 800 m, 1 ♂, II-1939, G. Klug leg. HUÁNUCO: La Roca (09°07'S / 76°01'W), 600 m, 2 ♂♂, 18-XII-1966, P. Hocking leg.; Tingo María (09°18'S / 75°59'W), 670 m, 1 ♂, III-1997, M. Büche leg.; idem except, 2 ♂♂, IV-1997; Estación Biológica Panguana (09°38'36''S / 74°54'55''W), 230 m, 1 ♂, 08-IX-2014, J. Monzón leg. (Heliotropium bait, day); idem except, 1 ♂, 11-IX-2014; idem except, 12-IX-2014; idem except, 3 ♂♂, VI-2015, R. Van der Merghel leg. JUNÍN: La Merced (11°03'S / 75°20'W), 800 m, 1 ♂, 04-VI-1970, P. Hocking leg.; Río Perene; 2 ♂♂, 06-VI-1996, P. Hocking leg.; 5 km SE de Satipo (11°17'05''S / 74°40'53''W), 620 m, 1 ♂, 24-V-1979, G. Lamas leg.; Chanchamayo, 1 ♂, Tamm leg. (ZMHB); Chanchamayo, 1 ♂, Müller leg. (ZMHB).

Diagnosis: Wings transparent, head and thorax black with yellow spots. Tergum black, with red spots on the medial tergites; sternum yellow to the sixth sternite. Vesica short, with cornutus large and very sclerotized in the dorsal part.

Redescription of male (Figs 1a, b): Forewing span: 19 mm-23 mm (n = 28). Head: Black. Frontoclypeus with a yellow edge at the sides and its upper part. A yellow spot at the center of the vertex. Occiput and postgena yellow. Labial palpi short. First segment with yellow scales somewhat elongated. Second and third segments at the front part yellow. Black at the lateral side of the second segment, narrow at the proximal part, widening towards the distal part so that it comprises all the posterior part of the distal end, with a yellow spot on the inside. Antenna bipectinated, black, with some yellow scales at the scape and pedicel. The flagelomeres reach their greatest length at the end of the first half, diminishing in size towards the distal part. Proboscis dark brown. Thorax: Black with some bluish reflection. Patagia black with a narrow yellow spot towards the mesal margin and a larger one towards the anterior part of the ectal margin. The latter covers almost a third of the area. Tegula black, with a yellow spot at its base and a yellow line almost at the center of its entire length. A yellow line on the mesoscutum and mesoscutellum. Posterior part of the metascutum with black and yellow scales. Pleura yellow. Legs yellow. Prothoracic legs: femur with the internal and ectal side with black scales and at the distal part, a black spot; tibia with a black line at the distal end; tarsus with scattered black scales. Epiphysis light brown. Mesothoracic legs: coxa at the ectal part brown; femur with black spots at the ends; tibia with a black line in the proximal part; tarsus with scattered black scales. Metathoracic legs: coxa at the ectal part brown; femur with black spots at the ends; tibia with black scales at both ends; tarsus with black scales forming a continuous line throughout the length. Forewing (dorsal): Transparent with a certain yellowish hue. Veins covered with black scales. Two small yellow spots on the base of the wing. Posterior margin and termen, black. The black area of the termen becomes wider at the apex. Forewing (ventral): Yellow scales at the base. Retinaculum blackish. Veins covered with black scales. Grayish-white scales up to the middle of the extension of the posterior margin. Hindwing (dorsal): Transparent with veins covered with black scales. Costal margin and termen black. The area between A1 and the posterior margin, covered by black scales. Hindwing (ventral): Transparent with veins covered with black scales. Costal margin black, with a few yellow scales. Termen black, from the apex to the A1. The area between A1 and the posterior margin, covered with yellow scales. Abdomen: First tergite black with a bluish hue, with a thin yellow line at the central part. Yellow scales on the lateral parts of the tympanic hood. Second tergite black with a bluish hue, with a red spot towards the latero-posterior part, which becomes narrower towards the dorsal part. Third, fourth and fifth tergites, red, leaving black areas somewhat triangular at the dorsal part and presenting small yellow spots at the central part of these. Sixth to eighth tergites black, presenting black piliform scales. Black spots on the side of the second to fifth tergite. Second to sixth sternites yellow. Seventh and eighth ones black; the last one presents black piliform scales.

Male genitalia (Figs 3a, b, c) (Genitalia # JGA-470) (Z. R. Allpahuayo-Mishana, Agua Blanca, July 13, 2006. J. J. Ramírez): Tegumen short and wide, with sclerotized extensions at the lateral parts. Uncus wide and divided into two branches. Towards the distal part of each branch, a short subdivision. Valvae wide at the base, narrowing towards the distal part, ending in sharp, sclerotized ends heading

towards the internal part. Aedeagus elongated and somewhat sinusoidal, wider towards the distal part. Vesica short with spicules at the basal part and, large and very sclerotized cornutus at the dorsal part.

Variation: The yellow spots at the tergum can occur at the first two tergites, at all three, and in others, up to the sixth or seventh. The black dots at the lateral part of the abdomen, can be only at the two or three first segments. The red lateral spots of the third to fifth tergites can surround the black spots present, but in some specimens, the red spots do not surround the black dots completely. The sixth tergite may present red scales on the dorsolateral part; in some specimens, the scales form a marked red spot, as in the third, fourth and fifth segments.

Distribution (Fig. 4): In the departments of Loreto, San Martín, Huánuco and Junín.

Remarks: WALKER (1856, 1864) described the same species twice, in different genera: *Eunomia abdominalis* Walker 1856 and *Lagaria abdominalis* Walker 1864. The first was described from an unspecified number of specimens belonging to the W. W. Saunders collection (1809-1879) (NATURE, 1879). Part of the Saunders collection was acquired by Frederick William Hope (1797-1862) and is housed at the Oxford Museum (SMITH, 1986). In it exists a specimen which would be the Holotype, from Amazonas (Type Lep: No 159 / *Eunomia abdominalis* Walker / Hope Dept. Oxford; 619; 384; Amaz).

The genus *Lagaria* Walker, 1854 was created as a subgenus within *Glaucopis*, with *Lagaria erythrarchos* as type species. However, *Lagaria* Walker, 1854 is a junior synonym of *Lagaria* Dallas, 1852, for a group of Hemiptera.

The genus *Corematura* Butler, 1876, taking as type species *G. chrysogastra* Perty, 1833. BUTLER (1876) placed the species *Eunomia abdominalis* as synonymous with *G. chrysogastra*, mentioning also that WALKER (1864) described the same species in his Supplement. He mentions that he revised material collected by H.W. Bates from St. Paulo [São Paulo de Olivença] and of Stevens, this last material from *Archidona* (Ecuador). WALKER (1864) had described the species *Lagaria abdominalis* based on material from *Archidona* (Ecuador). In the NHMUK there is only one copy of *Archidona*, which would be the Holotype (*Lagaria abdominalis*; Type; *Archidona* / III & IV 57./58-12; Kb-Dia-Nr./691/B. Kreusel dok.; BMNH (E 1379031). The species *Lagaria abdominalis* is a junior synonym of *Eunomia abdominalis*, recognized as such by TRAVASSOS (1952).

The species *Eunomia abdominalis* was considered by HAMPSON (1898) as synonymous with *G. chrysogastra*. In regards to *Lagaria*, he refers to *Lagaria erythrarchos*, the type species of the genus, considering it as synonymous with the genus *Cosmosoma* Hübner, [1823]. There is not any mention of the species *Lagaria abdominalis* Walker, 1864. The later works of ZERNY (1912) and DRAUDT (1915-1917) follow only HAMPSON (1898).

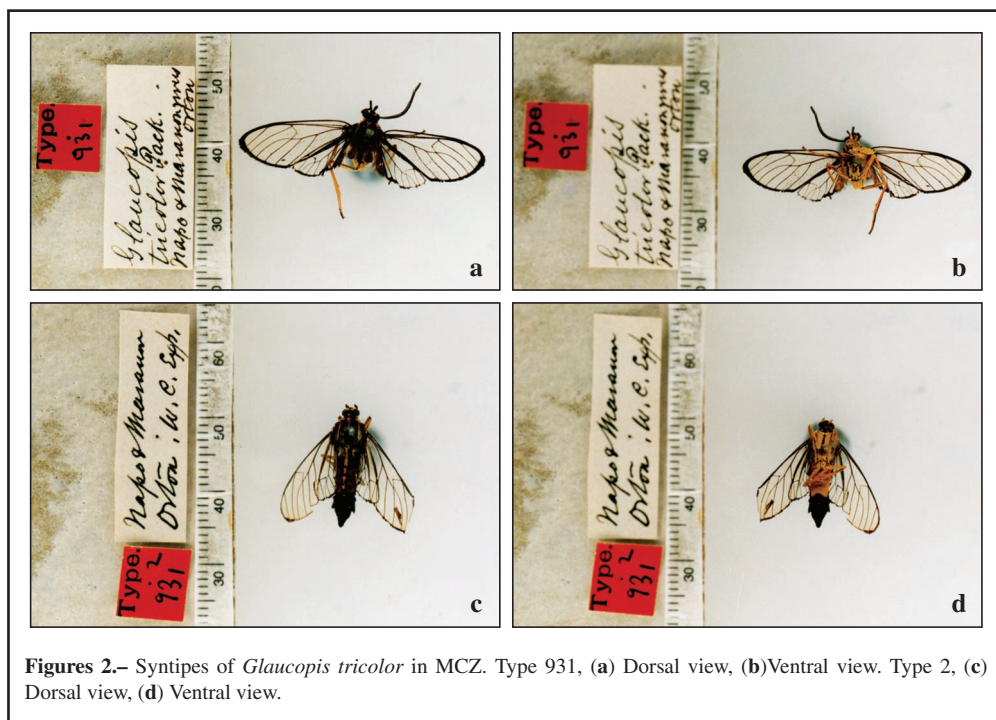
PACKARD (1869) described the species *Glaucopis tricolor* with an unspecified number of specimens that were collected on the route from the Napo River to the Marañón River ([Amazon]). The samples were never revised for the species to be valid. In the Museum of Comparative Zoology, Harvard University, Cambridge, there are two specimens (Syntypes) from the Napo and Marañón, collected by James Orton.

1. (Type, 931 / *Glaucopis*, tricolor Pack.; Napo and Marañón rivers; Orton). Without abdomen (Figs 2a, b)

2. (Type, 2,931 / Napo and Marañón, Orton; W. C. Exp.) (Figs 2c, d).

The specimens used by Packard for his description were collected on the first expedition of James Orton (1830-1877), who made three trips to South America, being his priority the exploration of Peruvian territory (NÚÑEZ, 1989, 2013). The first one was carried out with a team of five people, two of them from Williams College. Their first stop was Paita, then they continued to Guayaquil and Quito, reached the Napo River, navigated it downstream to Pebas, on the Marañón, and then to Pará (ORTON, 1870). When ORTON (1870) mentions the Marañón River, he actually refers to the Amazon River. This implies that the *tricolor* specimens were collected between the place where they embarked on the Napo River and Pebas (Amazon River).

HAMPSON (1898) considered *Glaucopis tricolor* as a species within the genus *Argyrooides* Butler, emphasizing that it was not known to him. ZERNY (1912), was not sure of the exact location of



Figures 2.— Syntypes of *Glaucoptis tricolor* in MCZ. Type 931, (a) Dorsal view, (b) Ventral view. Type 2, (c) Dorsal view, (d) Ventral view.

the species, mentioning in his work, “huius generis?”. Quite the opposite happens with DRAUDT (1915), who makes no mention about it, following HAMPSON (1898). For sure, like HAMPSON (1898), neither Zerny nor Draudt did come to revise specimens of *tricolor*.

According to the original description and to the revision of the *tricolor* syntypes, deposited in the Museum of Comparative Zoology, being the morphological characters unmistakable, we consider *Glaucoptis tricolor* Packard, 1869 a junior synonym of *Corematura chrysogastra* (Perty, 1833).

Corematura postflava (Guérin-Ménéville, 1844) (Figs 1c, d)

Glaucoptis postflava Guérin-Ménéville, 1844. *Icon. Règne Animal*, Ins.: 501

LT: Bolivia

Material Examined: CUSCO: Segakiato, Urubamba (11°48'S / 72°52'W), 330 m, 1 ♂, 02.X-1997, J. Grados leg. (Diurnal Collection); idem except, 1 ♂, 05-X-1997; idem except, 1 ♂, 12-X-1997; 2 males, Quebrada Bienvenida (12°54'S / 71°25'W), 560 m, J. Grados leg. (Heliotropium bait day); Atalaya, Alto río Madre de Dios (12°54'S / 71°22'W), 505 m, 1 ♂, G. Lamas (Diurnal collection); Valle del Urubamba, 2 ♂♂, IX-X, W. Schnuse leg. (identified as *C. chrysogastra* by E. Strand) (DEIM). MADRE DE DIOS: CICRA, Río Los Amigos (12°33'S / 70°06'W), 280 m, 1 ♂, 05-I-2006, A. Asenjo leg. (Heliotropium bait); idem except, 1 ♂, 28-X-2006; idem except, 1 ♂, 06-XI-2006 (Heliotropium bait day); CICRA, Río Los Amigos (12°33'S / 70°06'W), 280 m, 4 ♂♂, 23-VIII-15-IX-2008, S. Carbonel leg. (Heliotropium bait day); Infierno, Río Tambopata (12°44'S / 69°14'W), 200 m, 1 ♂, J. Grados leg. (Diurnal collection); Albergue Pantiacolla, Río Alto Madre de Dios (12°47'S / 71°13'W), 450 m, 30-IX-03-X-1998, J. Grados leg. (Heliotropium bait day); 30 Km SW Puerto Maldonado, Reserva de Tambopata (12°50'14''S / 69°17'35''W), 300 m, 1 ♂, 16-22-X-1983, C. V. Covell leg.; Albergue Explorer's Inn, Río Tambopata (12°50'14''S / 69°17'35''W), 250 m, 1 ♂, 11-XI-1997, J. Grados leg. (Heliotropium bait day); idem except, 1 ♂, 15-XI-1997; idem except, 5 ♂♂, 18-XI-1997; idem except,

8 ♂♂, 19-XI-1997; idem except, 1 ♂, 20-XI-1997; Boca Río La Torre, Río Tambopata (12°50'11"S / 69°17'43"W), 300 m, 1 ♂, 16-VII-1980, G. Lamas leg.; idem except, 1 ♂, 27-VII-1980; idem except, 1 ♂, 18-X-1983; idem except, 1 ♂, 29-X-1983; Pampas del Heath (12°52'27"S / 68°52'42"W), 200 m, 1 ♂, 05-18-XII-2011. E. Huamaní leg.; Tambopata Research Center, Río Tambopata (13°08'S / 69°36'W), 300 m, 1 ♂, 06-II-1998, J. Grados leg. (Pyrrolizidina bait day); idem except, 1 ♂, 11-V-2003; idem except, 1 ♂, 14-V-2003.

Diagnosis: Transparent wings, head and thorax black, with yellow spots. Tergum black, with red spots on almost all segments. Sternum yellow up to the seventh segment. Valvae with an evaginated structure in the medial part, directed towards the internal part. Vesica directed towards the dorsal part, with a cornutu sclerotized in the distal part and, cornuti in the dorsal part.

Redescription of male (Figs 1c, d): Forewing span: 19 mm-22 mm (n = 41). Head: Black, with a yellow edge around the frontoclypeus. A yellow spot in the center of the vertex. The occiput yellow. Labial palpi short, the first segment with somewhat elongated scales. The second and third ones yellow at the front, black at the lateral sides of the second segment, narrow at the proximal part, widening towards the distal part, covering the entire distal end, leaving a yellow spot at the inside. Antenna black bipectinated, with some yellow scales at the scape and pedicel. The flagelomeres reach their greatest length towards the end of the first half, decreasing in size towards the distal part. Proboscis dark brown. Thorax: Black with some bluish reflection. Patagia black with a narrow yellow spot at the mesal margin and a larger one towards the ectal margin. The latter covering almost a third of the area. Tegula black, with a yellow spot at its base and a yellow line almost at the middle of its entire length. A yellow line on the mesoscutum and mesoscutellum. Back of the metascutum with black and yellow scales. Pleura yellow. Legs yellow. Prothoracic legs: coxa with its mesal side black; femur with its internal part black and on its ectal side black scales scattered throughout its length; tibia with black scales on its proximal part; distal tarsi with black scales. Epiphysis light brown. Mesothoracic legs: femur with a black spot at the distal end; tibia with a black line at the proximal part; tarsi with black scales, notorious at the distal ones. Metathoracic legs: femur with a small black spot at the distal end and black scales scattered at its ectal side; tibia with black scales scattered at its ectal side; tarsus with black scales forming a continuous line throughout its whole length. Forewing (dorsal): Transparent. Veins covered with black scales. Two yellow spots at the base of the wing. Costal margin and termen black. The black area that rises through the termen slightly wider towards the apex. Forewing (ventral): Yellow scales at the base. Retinaculum blackish. Veins covered by black scales. Posterior margin with grayish-white scales up to the middle of its extension. Hindwing (dorsal): Transparent. Veins covered with black scales. Costal margin and termen black. Area between A1 and the posterior margin, covered by black scales. Hindwing (ventral): Transparent. Veins covered with black scales. Costal margin black, with a few yellow scales. Termen black, from the apex to A1. Area between A1 and the internal margin, covered with yellow scales. Abdomen: First abdominal tergite black with a bluish hue and a thin line of yellow scales in the central part and yellow scales on the lateral part of the tympanic hood. Second tergite black with a bluish hue and a red spot towards the latero-posterior part, which becomes narrow towards the dorsal part. An antero-lateral yellow spot and another small one at the anterior part. Third to the sixth tergites red, leaving black areas at the dorsal part, somewhat wider at the posterior part. Small yellow spots on the front of the black spots, somewhat triangular and wider at the front. Seventh tergite black with a small yellow spot on the antero-dorsal part. Eighth tergite black with black piliform scales. Second to seventh sternite, yellow. Towards the lateral parts of the seventh, the yellow spots become narrower towards the caudal part. Eighth segment black with yellow scales on the anterior margin.

Male genitalia (Figs 3d, e, f) (Genitalia # JGA-467) (Reserva de Tambopata, Explorer's Inn, 18-XI-1997, J. Grados leg): Tegumen, wide and short, with sclerotized extensions at the lateral parts. Uncus wide and divided in two branches towards its distal end. Valvae elongated, with an evaginated structure at the medial part, directed towards the internal part. Distal end of the valvae, sharpened. Aedeagus elongated and sinusoidal. Vesica directed towards the dorsal part, with a sclerotized cornutu at the distal part and cornuti at the dorsal part.

Variation: In some specimens, the postero-lateral red spot of the second segment, can cover almost the entire anterior-posterior segment.

Distribution (Fig. 4): According to Guérin-Ménéville's description (1844), the species occurs in Bolivia. In Peru, it occurs in the Amazonian forests of the departments of Cusco and Madre de Dios.

Remarks: HAMPSON (1898) considered *G. postflava* as a synonym of *G. chrysogastra*. The treatment for the species was similar in the works of ZERNY (1912) and DRAUDT (1915). In a work on the genus, TRAVASSOS (1938) considered *G. postflava* also as a synonym of *G. chrysogastra*, based on specimens from "Alto Amazonas, São Paulo de Olivença and Rio Preto". Years later, TRAVASSOS (1952) made a redescription of the genus and was able to distinguish two very similar species, with similar morphological characters and chromatic patterns, but different morphologies in the genitalia and geographical distribution. The second species, *G. postflava*, he related to the description provided by GUÉRIN-MENÉVILLE (1844), with material from Bolivia.

Discussion

The two species of *Corematura* have been frequently confused because they have an external morphology and very similar color pattern. Both species occur in Peru, with diurnal habits and having as characteristic feature that the most important differences are at the level of internal morphology (genitalia of males) and geographical distribution (TRAVASSOS, 1938). According to our results, the species have an allopatric distribution. *C. chrysogastra* occurs in the northern Amazon, while *C. postflava* occurs in the southern Amazon.

However, it is necessary to make more evaluations in the south of the departments of Junín and Ucayali, and north of Cusco, to know if there is a geographical barrier between both species or perhaps there are areas where it is possible to find both species. Only more fieldwork can give us more evidence for this and other species.

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BIBLIOGRAPHY

- BASTOS, F. & ROMERO, M., 2011.— The scientist as historian: Paulo Vanzolini and the origins of zoology in Brazil.— *História, Ciências, Saúde-Manguinhos*, **8**(4): 1021-1038.
- BUTLER, A. G., 1876.— Notes on the Lepidoptera of the Family Zygaenidae, with descriptions of new genera and species.— *Journal of the Linnean Society of London (Zoology)*, **12**(60-62): 342-407, pls. 27-28.
- CANNON, G., 1937.— A new biological stain for general purposes.— *Nature*, **139**: 549.
- CANNON, G., 1941.— On Chlorazol black E and some other new stains.— *Journal of the Royal Microscopical Society*, **61**: 88-95.
- CARAYON, J., 1969.— Emploi du noir chlorazol en anatomie microscopique des insectes.— *Annales de la Société entomologique de France (N. S.)*, **5**(1): 179-193.
- COMMON, I. F. B., 1990.— *Moths of Australia*: 535 pp. E. J. Brill, Leiden - New York - København - Köln.
- COMSTOCK, J. H. & NEEDMAN, J. G., 1898.— The wings of insects.— *American Naturalist*, **32**(373): 43-48; (374): 81-89; (376): 231-257; (377): 335-340; (378): 413-424; (380): 561-565; (382): 769-777; (384): 903-911.

- COMSTOCK, J. H. & NEEDMAN, J. G., 1899.– The wings of insects.– *American Naturalist*, **33**(386): 117-126; (391): 573-582; (395): 843-860.
- DALLAS, W. S., 1852.– *List of the specimens of Hemipterous insects in the collection of the British Museum. Part II*: 369-592, pls. XII-XV. London.
- DRAUDT, M., 1915-1917.– Familie Syntomidae.– In A. SEITZ (Ed.). *Die Gross-Schmetterlinge der Erde*, **6**: 33-230. A. Kernen, Stuttgart.
- HAMPSON, G. F., 1898.– *Catalogue of the Syntomidae in the collection of the British Museum*, **1**: xxii+559 pp. London.
- HEIZER, A., 2018.– Os jovens naturalists Spix e Martius numa Aventura científica ao Brasil: 23-38.– In A. HEIZER & P. ORMINDO. *Natureza, ciência e arte na Viagem pelo Brasil de Spix e Martius (1817-1820)*: 100 pp. Andréa Jakobsson, Rio de Janeiro.
- HEPPNER, H. B. & LAMAS, G., 1982.– Acronyms for World Museum Collection of Insects, with an Emphasis on Neotropical Lepidoptera.– *Bulletin Entomological Society of America*, **28**(3): 305-315.
- FITTKAU, E. J., 2001.– Johann Baptist Ritter von Spix: first zoologist of Munich and the first researcher of Brazil.– *História, Ciências, Saúde-Manguinhos*, **8** (Suplemento): 1109-1135.
- GUÉRIN-MENÉVILLE, F. E., 1844.– *Iconographie du règne animal de G. Cuvier, ou représentation d'après nature de l'une des espèces les plus remarquables et souvent non figures de chaque genre d'animaux. Avec un texte descriptive mis au courant de la science. Ouvrage pouvant servir d'atlas a tous les traités de zoologie. Insectes*: 576 pp. J. B. Baillière, Paris.
- KLOTS, A. B., 1970.– Lepidoptera: 97-111.– In S. L. TUXEN (Ed.). *Taxonomist's Glossary of Genitalia in Insects*: 359 pp. Munksgaard, Copenhagen.
- KUZNETSOV, N., 1967.– *Lepidoptera. Fauna of Russia and adjacent countries*, **1**: 305 pp. Israel program for Scientific Translations, Jerusalem.
- MILLER, L. D., 1970.– Nomenclature of wings veins and cells.– *Journal of Research on the Lepidoptera*, **8**(2): 37-48.
- MOREIRA, L., 1994.– Naturalistas viajantes.– *História, Ciências, Saúde-Manguinhos*, **1**(2): 7-19.
- NATURE, 1879.– William Wilson Saunders.– *Nature*, **20**(518): 536-537.
- NÚÑEZ, E., 1989.– *Viajes y viajeros extranjeros por el Perú*: 751 pp. Consejo Nacional de Ciencia y Tecnología (CONCYTEC). Lima.
- NÚÑEZ, E., 2013.– *Viajes y viajeros extranjeros por el Perú. Apuntes documentales con algunos desarrollos histórico-biográficos*: 713 pp. Universidad Ricardo Palma. Lima.
- ORTON, J., 1870.– *The Andes and the Amazon; or, across the continent of South America*: 356 pp. Harper & Brothers, Publishers, New York.
- PERTY, J. A. M., 1833.– *Delectus animalium articulorum, quae in itinere per Brasiliam annis MDCCCXVII-MDCCCXX Jussu et auspiciis Maximiliani Joseph I. Bavariae Regis Augustissimi peracto collegerunt Dr. J. B. de Spix et Dr. C. F. Ph. de Martius*: 224 pp., 40 pls. Monachii.
- PACKARD, A. S., 1869.– Report of the curator of articulata: 52-69. In *First Annual report of the Trustees of the Peabody Academy of Science*, **1**: 103 pp. Printed for the Academy, Salem.
- SIBATANI, A., OGATA, M., OKADA, Y. & OKAGAKI, H., 1954.– Male genitalia of Lepidoptera: Morphology and nomenclature. I. Division of the valvae in Rhopalocera, Phalaenidae (= Noctuidae) and Geometridae.– *Annals of the Entomological Society of America*, **47**: 93-106.
- SMITH, A. Z., 1986.– *A history of the Hope Entomological collection in the University Museum Oxford, with a list of archives and collections*: 172 pp. Clarendon Press, Oxford.
- TRAVASSOS, L., 1938.– Contribuição ao conhecimento dos Euchromiidae. Genero *Corematura* Butler, 1876 (Lepidoptera).– *Memórias do Instituto Oswaldo Cruz*, **33**(2): 259-262 + 5 est.
- TRAVASSOS, L., 1952.– Redescricao de *Corematura* Butler, 1876 e de suas duas espécies (Lepidoptera Ctenuchidae).– *Archivos de Zoologia*, **8**(3): 89-108.
- TRAVASSOS, L., 1953.– Riccia, novo gênero para *Corematura aliaria* (Druce, 1890) e descrição do alótipo dessa espécie (Lep. Ctenuchidae).– *Papéis Avulsos do Departamento de Zoologia*, **11**(17): 279-288.
- WALKER, F., 1854.– *List of the specimens of Lepidopterous insects in the collection of the British Museum, Part I.– Lepidoptera Heterocera*: 278 pp. London.
- WALKER, F., 1856.– *List of the specimens of Lepidopterous insects in the collection of the British Museum, Part VII.– Lepidoptera Heterocera*: 1808 pp. London.
- WALKER, F., 1864.– *List of the specimens of Lepidopterous insects in the collection of the British Museum, Part XXXI, Supplement*: 706 pp. London.

WOOTTON, R. J., 1979.– Function, homology and terminology in insect wings.– *Systematic Entomology*, **4**: 81-93.
ZERNY, H., 1912.– Syntomidae.– In H. WAGNER (Ed.). *Lepidopterum Catalogus*, **7**: 179 pp. W. Junk, Berlin.

J. G.
Departamento de Entomología
Museo de Historia Natural
Universidad Nacional Mayor de San Marcos
Apartado 14-0434
Lima 14
PERÚ / PERU
E-mail: gradosjuan@hotmail.com
<https://orcid.org/0000-0002-2277-3616>

J. J. R.
Universidad Nacional de la Amazonía Peruana
Calle Sargento Lores, 385
Iquitos
PERÚ / PERU
E-mail: macrodontia@hotmail.com
<https://orcid.org/0000-0001-5760-5172>

*J. F.
Museo de Historia Natural
Universidad Nacional de San Agustín de Arequipa
Avenida Alcides Carrion, s/n
Arequipa
PERÚ / PERU
E-mail: jjackie4u@gmail.com
<https://orcid.org/0000-0001-5913-0756>

J. C.
Programa de Pós-graduação em Biologia Animal
Departamento de Zoologia
Instituto de Biociências
Universidade Federal do Rio Grande do Sul
Avenida Bento Gonçalves, 9500
91501-970 Porto Alegre, RS
BRASIL / BRAZIL
E-mail: cerdenajoseal@yahoo.es
<https://orcid.org/0000-0003-3930-6480>

*Autor para la correspondencia / *Corresponding author*

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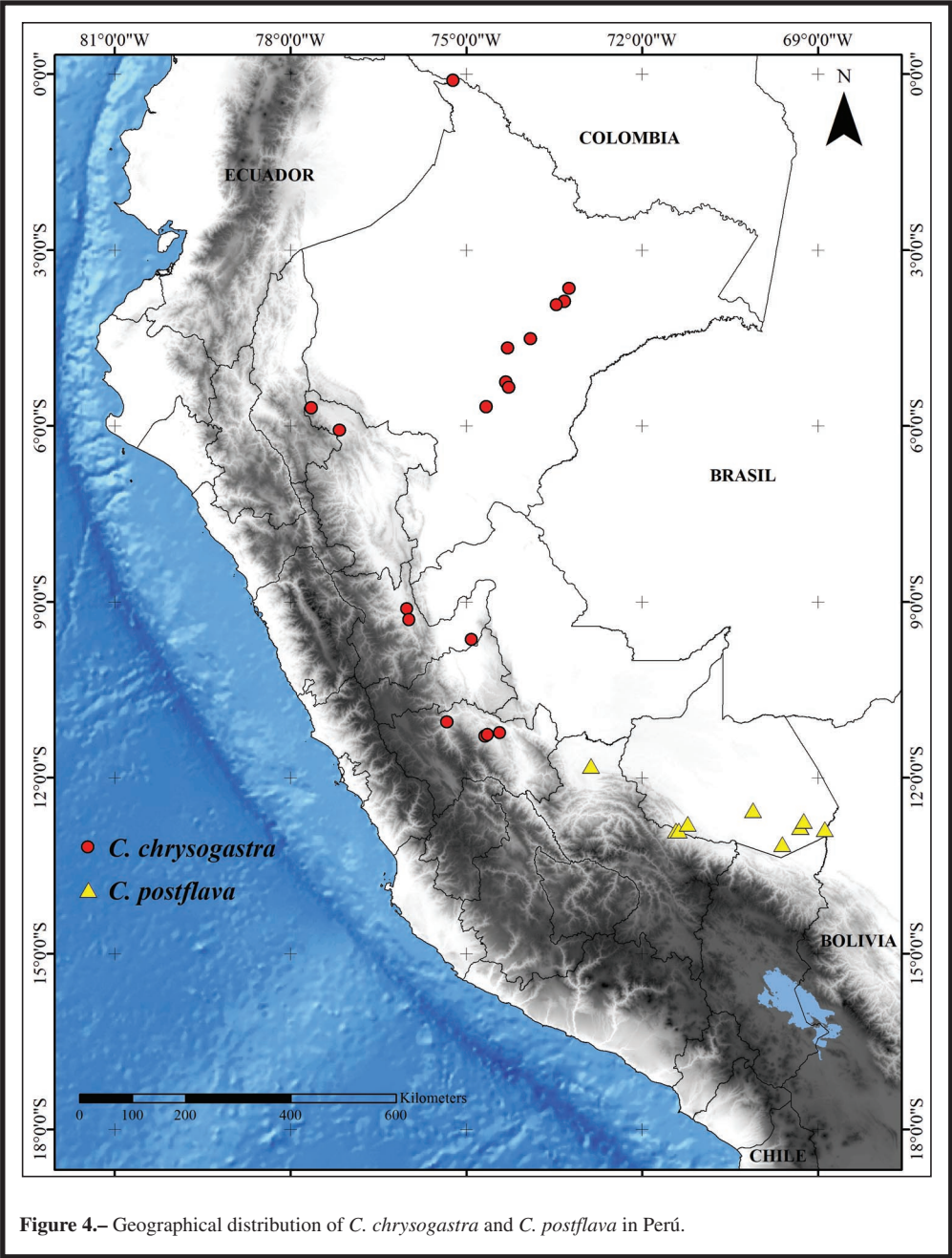


Figure 4.– Geographical distribution of *C. chrysogastra* and *C. postflava* in Perú.