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Some telochromatic Tortricidae from Western South America (Lepidoptera: Tortricidae)

J. Razowski & J. Wojtusiak

Abstract

Eleven species of brightly coloured Tortricidae from the western part of South America are listed. Five species (*Tinacrusis atopa* Razowski & Wojtusiak, sp. n., *Idolatteria mimica* Razowski & Wojtusiak, sp. n., *Idolatteria ops* Razowski & Wojtusiak, sp. n., *Idolatteria bichroma* Razowski & Wojtusiak, sp. n., *Pseudatteria molybdophanes* Razowski & Wojtusiak, sp. n.) are described as new. The examined species belong to three tribes and two subfamilies (Atteriini, Archipini both of Tortricinae and Polyorthini of Chlidanotinae). Two main types of pattern occur in two different tribes (type "a" and type "b" in Archipini and Polyorthini), type "a" in all three tribes.

KEY WORDS: Lepidoptera, Tortricidae, new species, South America.

Algunos Tortricidae telocromáticos del oeste de Sudamérica (Lepidoptera: Tortricidae)

Resumen

Se presenta un listado de once especies de Tortricidae de la parte oeste de Sudamérica, todas ellas presentando un patrón de coloración brillante. Se describen cinco nuevas especies (*Tinacrusis atopa* Razowski & Wojtusiak, sp. n., *Idolatteria mimica* Razowski & Wojtusiak, sp. n., *Idolatteria ops* Razowski & Wojtusiak, sp. n., *Idolatteria bichroma* Razowski & Wojtusiak, sp. n., *Pseudatteria molybdophanes* Razowski & Wojtusiak, sp. n.). Las especies examinadas pertenecen a tres tribus y dos subfamilias (Atteriini, Archipini ambos de Tortricinae y Polyorthini de Chlidanotinae). Dos tipos de coloración aparecen en dos tribus diferentes (tipo "a" y tipo "b" en Archipini y Polyorthini) y tipo "b" en las tres tribus.

PALABRAS CLAVE: Lepidoptera, Tortricidae, nuevas especies, Sudamérica.

Introduction

An artificial group of species from western part of the South American continent is discussed. We include in it the brightly coloured (telochromatic) taxa with orange or rust orange ground colour and dark, usually black or brown or leaden bluish markings. Apart of them there are many species with different composition of colours or refractive colouration. They also belong to various tribes. Their biology is little known but we suppose that all of them, at least partially, are day flying.

To this group one can include Oriental/Palaearctic Ceracini which characterize with similar colouration. This tribe was revidied by KAWABE (1991) who illustrated 19 species in colour. OBRAZTSOV (1966a, 1966b) devoted to the Neotropical brightly coloured Tortricidae two papers. He included in them two genera, *Idolatteria* Walsingham, 1913 (Archipini) and *Pseudatteria* Walsingham, 1913 (included in his newly established Polyorthini). *Pseudatteria* has not been previously separated from Atteria but Obraztsov did not included in this group any species of the present Atteriini. We documented that the following taxa constitute this group in Neotropic:

Atteriini (*Tinacrusis* Powell, 1986, 1 species), Archipini (*Idolatteria*, 11 species) of Tortricinae and Polyorthini (*Pseudatteria*, 24 species). The systematic arrangement of species follow that in the above mentioned papers by Obraztsov.

OBRAZTSOV (1966b) distinguished in *Pseudatteria* two subgenera and realised four types of markings. In the present material we also find same colour types but we stressed our attention to their distribution throughout the group. We suppose that all those types of colouration originate from the general type of Tortricidae pattern (RAZOWSKI, 2003).

The most interesting is that the two types (a - series of transverse dark spots on "orange" ground colour; b - refractive bluish fasciae across forewing) occur in two unrelated tribes (belonging to different subfamilies), Atteriini and Polyorthini. Type "a" is widely distributed in all three tribes.

All specimens observed and collected by junior author were flying during the day. Their flight was straight with no erratic turns as it is often seen when night active Tortricidae are accidentally disturbed when resting. In an area of Rio Hollin in Cordillera Huancamayos in Ecuador specimens of *Pseudattera dognini* Obraztsov were observed when crossing forested mountain ridge at its lowest point and flying southwards with wind.

It might be supposed that those brightly coloured and day active Tortricidae are engaged in some kind of mimetic relationship with other members of Lepidoptera commonly known of their unpalatability. The most logical is a supposition that a batesian model of mimicry may be involved, as it is often seen in relations between unpalatable models and their mimics. The possibility that one of these groups of moths are unpalatable themselves, also cannot be rejected. More behavioural data are needed for making convincing conclusions.

Because of observed variation of species of the discussed tribes we completed the distributional data with the illustrations of the adults and their genitalia to make the future comparisons possible.

The present paper is based on the material collected by the junior author in Ecuador, Colombia and Peru in 1998 - 2000 preserved in the Zoological Museum of the Jagiellonian University, Cracow (MZUJ). Some specimens from old Staudinger material have been kindly lend by Dr. Matthias Nuss from Staatliche Naturhistorische Sammlungen, Museum für Tierkunde, Dresden, Germany.

Systematic part

Tortricinae
Atteriini

Tinacrusis atopa Razowski & Wojtusiak, sp. n. (Fig. 1, 14a, b)

Holotype male: "Colombia, Cauca valley, Stauding. & Bang Haas, Dresden Ankauf 1961"; GS 604 MZUJ.

Diagnosis. This species is related to *T. consobrina* (Busck, 1914) but differs from it in yellow orange ground colour of wings with dark brown maculation, large median part of transtilla, curved aedeagus, and short uncus.

Etymology. The specific epithet refers to its separate position; Greek: atopos - not on its own place.

Description. Wing span 30 mm. Head and thorax dark brown, abdomen with weak orange rings; eye/labial palpus = 0.62/2.08 mm. Ground colour of forewing orange yellow, whiter along costa. Markings dark brown consisting of 9 large costal blotches, row of smaller terminal blotches and 7 incomplete transverse series of variably sized blotches. Cilia worn. Hindwing pale yellow orange with dark brown spots along wing edge, at base of wing, in anal area, and along median cell from base to termen. Cilia brown.

Male genitalia (Fig. 14a, b). Terminal part of tegumen with very broad latero-posterior socii

finely scaled posteriorly; uncus long, slender; arms and terminal plate of gnathos slender; valva large, rather weakly sclerotized except for costa and along middle of disc, rounded terminally; sacculus slender basally, broadest postmedially, with claw-shaped termination; dorsum of transtilla in form of large, wedge-shaped process, rather pointed apically; juxta proportionally small, extending dorsally; aedeagus slender, curved postmedially; coecum penis equally slender.

Female not known.

Archipini

Idolatteria mimica Razowski & Wojtusiak, sp. n. (Fig. 2, 15a, b)

Holotype male: "Peru, Prov. Amazonas, Molinopampa-Granada, 27-VI-1998, 2400 m, leg. J. Wojtusiak & T. Pyrcz"; GS 602 MZUJ.

Diagnosis. Very close to Bolivian *I. fasciata* Obratzsov, 1966 and *I. cantharopisca* Obratzsov, 1966 from which *mimica* differs in much longer uncus, broader, shallow postmedian incision of valva, and much longer, slenderer aedeagus.

Etymology. The name refers to external similarity to members of *Pseudatteria*; Latin: *mimica* - imitator.

Description. Wing span 23 mm. Eye/labial palpus = 0.5/1.66, thorax and abdomen black, tegula pale orange. Ground colour of forewing pale orange. Markings blackish with slight greenish blue shine consisting of two almost parallel edged fasciae, submedian and postmedian and oval subterminal blotch; two costal and one or two median spots at base of wing; three spots along terminal part of costa; eight small spots along termen. Cilia concolorous with ground colour probably (worn) with small blackish grey divisions at terminal spots. Hindwing orange with dark brown basal and median parts divided at costa medially accompanied by subterminal blotch and two spots near apex of wing. Cilia brown at markings orange otherwise.

Male genitalia (Fig. 15a, b). Uncus long, slender; dorsal portion of valva broadly convex with broad postmedian concavity and subtriangular terminal part; sacculus sinuate to before middle; lateral lobes of vinculum tapering terminally, with irregular spines posteriorly; aedeagus fairly long, slender with zone about three times shorter than the posterior part.

Female not known.

Idolatteria ops Razowski & Wojtusiak, sp. n. (Fig. 3, 16a, b)

Holotype male: "Peru, Prov. Amazonas, Molinopampa-Granada, 27-VI-1998, leg. J. Wojtusiak & T. Pyrcz"; GS 600 MZUJ.

Diagnosis. Externally comparable with Ecuadorian *I. maon* (Druce, 1901) known from single female but *ops* with broad fasciae of forewing fusing subcostally and broad transverse fasciae of hindwing.

Etymology. The name refers to the general appearance of the moth; Greek: *ops* - specimen, face.

Description. Wing span 21 mm. Head, thorax and abdomen black brown; eye/labial palpus = 0.5/1.45 mm; thorax with slender orange marks. Ground colour of forewing yellow orange in form of several spots and incomplete fasciae. Markings blackish with bluish gloss consisting of 9 costal blotches connected with transverse fasciae subcostally, and subterminal fascia. Cilia concolorous with markings. Hindwing pale orange with dark brown base, two transverse fasciae, one costal spot, and a few smaller posterior spots. Cilia concolorous with markings.

Male genitalia (Fig. 16). Uncus slender, somewhat broadening basally; postmedian incision of valva narrow, terminal part triangular; ventral convexity of sacculus postmedian; lateral lobes of vinculum with some minute thorns; aedeagus moderate, slender.

Female not known.

***Idolatteria bichroma* Razowski & Wojtusiak, sp. n. (Fig. 4, 17a, b)**

Holotype male: “Ecuador, Prov. Carchi, Res. Forest. Golondrinas, West Cordillera, 28-30-I-2005, 2000 m, leg. J. Wojtusiak”; GS 491 MZUJ.

Diagnosis. Close to *ops* but *bichroma* with dark orange rust ground colour of forewing; broader, orange hindwing with large dark brown margin, more convex postmedian edge of sacculus, shorter aedeagus, and subtriangular lateral lobe of vinculum.

Etymology. The specific name refers to the colouration of hindwing; Greek: bi - double, chroma - colour.

Description. Wing span 17 mm. Head and thorax blackish brown, vertex pale ochreous; scape of antenna ochreous brown; legs greyish brown. Eye/labial palpus = 0.45/1.04 mm. Ground colour of forewing dark orange rust. Markings brownish black consisting of row of costal blotches, indistinct spots of remaining area of wing and rudimentary subterminal fascia. Cilia brownish black. Hindwing orange with broad dark brown terminal area; cilia dark brown. Underside blackish brown but costa of forewing and divisions between costal blotches orange; orange surface of hindwing larger than on upperside.

Male genitalia (Fig. 17a, b). Uncus slender, slightly broadening basally; dorsopostmedian incision of valva narrow; convexity of sacculus postmedian; lateral lobes of vinculum tapering terminad, with some minute thorns apically; aedeagus slender; coecum penis short.

Female not known.

Chlidanotinae
Polyorthini

Pseudatteria dognini Obraztsov, 1966 (Fig. 5, 19)

Material. One female specimen from Ecuador, Napo Province, Rio Hollin, 8-IX-2003, 1400 m. Described from Loja Province, Ecuador. Female genitalia (Fig. 19). GS 607 MZUJ.

Pseudatteria chrysanthema (Meyrick, 1912) (Fig. 6, 20)

Material. One female specimen from Ecuador, Napo, Rio Hollin, 8-IX-2003, 1400 m. Leg Wojtusiak & Pyrcz.; Female genitalia (Fig. 20). GS 195 MZUJ. Described from Colombia; known also from Venezuela, British Guiana, Ecuador (Loja Province), Peru, Bolivia, and Brazil (OBRAZTSOV, 1966a).

Pseudatteria pantherina (Felder, 1875) (Fig. 7, 21)

Material. Eight females from Colombia, Cauca valley. Staudinger & Bang Haas, Dresden, Ankauf 1961. Female genitalia (Fig. 21). *P. pantherina* was described from Bogota, Colombia. OBRAZTSOV (1966a) examined further 6 specimens from same locality and Pacho, Cundinamarca, 2200 m and mentioned some variation in the number and shape of black spots of both pairs of wings. The examined example characterise with sparse maculation and somewhat longer sclerites of ductus bursae. GS 605, 905 MZUJ.

Pseudatteria cladodes Walsingham, 1914 (Fig. 8, 22)

Material. Two females from Western Cordillera in Colombia, Tambito Forest Reserve, 28-II / 6-III-1997, leg. Wojtusiak, GS 606, 902 MZUJ, differing from one another in colouration of forewing especially in large, white subterminal area. Female genitalia (Fig. 22). The genital differences are slight.

WALSINGHAM (1914) supposed that the holotype labelled “Central America” might originate from Panama. However, OBRAZTSOV (1966a) examined two specimens from Peru and suggested that a confusion has occurred in the labelling of the original series (*cladodes* is externally similar to Central American *P. volcanica* (Butler, 1872)).

Pseudatteria buckleyi (Druce, 1901) (Fig. 9, 23)

Material. Two females from Ecuador, Prov. Loja, Podocarpus N. P., Cajanuma, 2850 m, 15-20-VII-1998. leg. T. Pyrcz & J. Wojtusiak. Female genitalia (Fig. 23). GS 403 MZUJ. This species was described from Intag, Ecuador and its synonym, *Atteria purpurea* Dognin, 1904 from the vicinity of Loja. Further specimens examined are also Ecuadorian (OBRAZTSOV 1966a).

***Pseudatteria molybdophanes* Razowski & Wojtusiak, sp. n. (Fig. 10, 24)**

Holotype female: "Peru, Prov. Chachapoyas, Peña Blanca, 2-VII-1998, leg. Wojtusiak & Pyrcz". GS 599 MZUJ. Paratype female: Environs de Molinopampa (Amazonas), Peru, November 2000, leg. Benigno Calderon, GS 598 MZUJ.

Diagnosis. Facies similar to Bolivian *Pseudatteria cantharopa* (Meyrick, 1909) and its Peruvian subspecies *P. cantharopa pulchra* Obraztsov, 1966 but *molybdophanes* with slender distal part of ductus bursae, slender sclerite of antrum and long sclerite of subterminal portion of ductus bursae.

Etymology. The name refers to the colouration of forewing: Greek: molybdon - lead, phaino - I shine.

Description. Wing span 30 mm. Head black, shining bluish, eye/labial palpus = 0.7/1.87 mm. Ground colour of forewing orange. Markings leaden grey shining bluish under stronger light in form of two transverse fasciae, postbasal and median, accompanied by rounded subapical blotch and some small blotches along edges of wing. Edges of all these marks and some blotches edged black; some small blotches along wing edges black. Cilia orange. Hindwing orange, tinged yellow costally; wing base, spots along edges and across middle of wing black; cilia orange, black at blotches.

Variation. In paratype markings broader, different in shape; subapical blotch extending to costa; black terminal spots confluent. In hindwing black basal area separate from almost complete submedian fascia.

Male not known.

Female genitalia (Fig. 24). Sterigma short, weakly sclerotized subbasally, with membranous proximal portion and submembranous medioposterior area; sclerite of antrum moderate with folded lateral parts; distal third of ductus bursae with some delicately sclerotized parts, several small, strong sclerites and large median sclerite folded in middle longitudinally; signum a small proximally emarginate plate.

Pseudatteria cantharopa pulchra Obraztsov, 1966 (Fig. 11, 25)

Material. One female from Peru, Amazonas, Prov. Chachapoyas, Peña Blanca, Rio Chido, 2450 m, 16-IX-1999. Leg. P. Calderon. Female genitalia (Fig. 24). GP 601 MZUJ. One female from Peru, Amazonas, Molinopampa-Granada, 27-VI-1998, 2400 m, leg. J. Wojtusiak. One female from Peru, Prov. Chachapoyas, Peña Blanca, 2850 m, 28-VI-1998. leg. J. Wojtusiak & T. Pyrcz. Female genitalia (Fig. 25).

OBRAZTSOV (1966b) described Peruvian specimens (ca 10 examples from Chachapoyas, Department of Amazonas) as a distinct subspecies. The nominate subspecies is Bolivian (collected in Yungas, Chulumani at the altitudes of 1500 - 2000 m). Our specimens differ from the originally illustrated female in distinctly longer sclerite of subterminal part of ductus bursae and smaller number of spines at base of sterigma.

Pseudatteria heliocausta (Dognin, 1912) (Fig. 12, 13, 18a, b, 26)

Material. Six males and four females from Colombia, Cauca valley, Staudinger & Bang-Haas, Dresden, Ankauf 1961. Male genitalia (Fig. 26a, b). Female genitalia (Fig. 25). GP 603, 903, 904. MZUJ. Known from several localities in Colombia; collected at the altitudes of 240 - 2000 m.

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