New species of genus *Breyeriana* Orfila, 1957 (Lepidoptera: Cossidae: Hypoptinae) from Argentina

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**Abstract**

A new species of Cossidae from southern Argentina is described and illustrated: *Breyeriana patagonica* Penco, Yakovlev & Naydenov sp. nov. The status of the genus *Breyeriana* Orfila, 1957, has been confirmed.

**Key words:** Cossidae, new species, taxonomy, Neotropics, carpenter moths.

**Introduction**

Orfila (1957) described a new genus and species, *Breyeriana cistransandina* based on a series of 30 specimens from southern Argentina and Chile (Neuquén, Río Negro and Mendoza provinces in Argentina, and Río Maule in Chile).

Gentili (1989) made a diagnosis of *B. cistransandina* among others Cossidae from Patagonia, and add Chubut province in the geographical distribution. Also described his fly period (since endings of december to meddle february) and characterized the phytogeographical region where it dwell, which comprises the patagonian steppe and transition into patagonian forest. Schoorl (1990) mentioned genus *Breyeriana* Orfila, 1957 as a synonym of *Hypopta* Hübner, 1818 based on apomorphies of thoracic structures, a feature not reliable which has been a problem across Schoorl’s work (Edwards et al. 1999; Yakovlev 2007; Davis, Gentili-Poole & Mitter 2008; Penco, Yakovlev & Witt 2016). Later, Donahue (1995) recognized *Breyeriana* separated of *Hypopta*, not accepting Schoorl's view.

Herein we describe one new species of *Breyeriana*.

**Materials and methods**

The new species was found in the collections of the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (MACN) and the Instituto de Microbiología y Zoología Agrícola (INTA), Laboratorio de
Diagnóstico y Biología de Artrópodos Plaga/Museo Entomológico, Hurlingham, Buenos Aires (IMZA). The specimens were compared with the type material of *B. cistransandina* deposited in the collections of Museo de La Plata (MLP), MACN, Zoologische Staatssammlung, Munich (ZSM), and Natural History Museum, London (NHMUK). The pictures were made with camera Sony DSLR-A100K and edited with Adobe Photoshop CS. The dissection of genitals was performed using Digital Microscope U500X, 1.3 MPx. After making the images, the genitals were conserved in small vials pinned, attached with the specimens.

**Taxonomical part**

*Breyeriana* Orfila, 1957: 124–128

Type species: *Breyeriana cistransandina* Orfila, 1957

(Figs. 1, 2, 5, 8)

Illustrated specimens: paratype, male, Argentina, Neuquén, Catan-Lil, 25.i.1963, Leg. Schajovskoi (NHMUK) (Fig. 1); Argentina, Confluencia Traful, Prov. Neuquén, 13.ii.1956, leg. Fleiss (ZSM) (Figs. 2, 5)

*Breyeriana patagonica* Penco, Yakovlev & Naydenov **sp. nov.**

(Figs. 3, 6, 8)

**Material.** Holotype 1 ♂, Argentina, Chubut, Comodoro Rivadavia, 21.ii.1953, Col. “V. O.” (Prep. Gen. INTA Nº1 F. C. Penco), (IMZA) (Figs. 3, 6).

49 Paratypes: 3 ♂, Argentina: Neuquén, Zapala, 25.x.1962, Leg. Schajovskoi (MACN); 4 ♂, Los Catutos, 15.xii.1961, Leg. M. Gentili (MACN); 2 ♂, Covunco (usina), 24.xi.1964, Leg. Schajovskoi (MACN); 1 ♂, Pucará (630 m), iii.1968, Leg. Schajovskoi (MACN); 12 ♂, Las Lajitas, 14.xii.1969, Leg. Schajovskoi (MACN); 1 ♂, Pampa Pilmatue, 25.xii.1964, Leg. Schajovskoi (MACN); 1 ♂, Catan-Lil, 25.i.1965, Leg. Schajovskoi (MACN); 10 ♂, Loncopué, 05.xii.1959, Leg. M. Gentili (IMZA); 7 ♂, 14 Nov 1959, Leg. M. Gentili (IMZA); 1 ♂, Rio Negro, Paso Limay, 09.xi.1967, Leg. Schajovskoi (MACN); 1 ♂ (IMZA); 1 ♂, 13.xii.1937, Col. “V. O.” (IMZA); 1 ♂, 22.i.1938, Km 27, Col. “V. O.” (IMZA); 1 ♂, 19.ii.1938, Col. “V. O.” (IMZA).

**Figures 1–4.** *Breyeriana* and *Hypopta*, adults: 1. *B. cistransandina* Orfila, 1957, paratype, male, Argentina: Neuquén, Catan-Lil, 25.1.1963, Leg. Schajovskoi (NHMUK); 2. *B. cistransandina* Orfila, 1957, male, Argentina, Confluencia Traful, Prov. Neuquén, 13.ii.1956, leg. Fleiss (ZSM); 3. *B. patagonica* **sp. nov.** holotype, male, Argentina, Chubut: Comodoro Rivadavia, 21.ii.1953, Col. “V. O.” (IMZA); 4. *Hypopta ambigua* Hübner, 1818, Argentina, Tornquist, 22.ii.93 J.R (MWM).
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Description. Male. Head: forehead and vertex ash grey; color of antenna rod and palpi scaling grey with scattered black scales; tips of palpi darker, antenna bipectinate, crest process four times longer than antenna rod diameter. Thorax covered with long ash grey hairs, mixed with scarce creamy and black hairs; patagia grey with blurr black thin lines; terminal portion of scutellum II with black hairs forming a defined transverse and curved band which separates thorax from abdomen chromatically; postnotum II with short creamy white hairs; firsts two segments of abdomen ends with long dark hairs mixed with grey dorsally, forming two blurr transverse bands; both sides of abdomen with long white hairs, the rest of abdomen grey with scarce brown hairs; anal tuft short, darker than the rest of abdomen, with grey and black hairs; ventral surface whiter than dorsum, uniform, in the same white tone of hind wings; fore femur and tibia uniformly grey with long hairs; tarsal segments intercalated in creamy-grey and black. Wingspan: 36 mm; Fore wing: length from base to apex: 16–17 mm, ground color whitish with some disperse dark scales basally and discally, turning grey postdiscal, with three dark blurr stripes, formed by sparse grey scales, dark hazel brown and black scales: one parallel to costa, from the base on Sc and R1+R2 and to the end of the cell, the second parallel to the dorsum, joining 1A and not reaching the postdiscal area. The third blurr band lighter than the others, curved lightly inwards, begin at end of the cell from M3 to the subapical area and reaching the vein R5. Veins marked with black; medial veins with a white thin fringe at both sides, interspaces of veins ash grey, darkening at the apex. The marginal end of veins from R3 to Cu1A widening in triangular shape. The cilia are long and interleave by grey and white fringes, being the grey ones at the end of the veins, continuing the size of the wider side of the triangular marks. Ventral view: White from base to medial area, ash grey from cell to apex. The only band repeated from the dorsal view is the blurr one until the subapical area, blurr band widening and be defined over the veins; veins marked in black and ended in a triangular shape on margin; cilia ash grey; Hind wing: triangular, uniform white with nacarated reflex; veins and margin marked with thin hazel brown color; edge with long white cilia. Ventral View: uniformly white at base and cell, clear grey the rest of the wing with marked veins in black.

Figures 5–7. Breyeriana and Hypopta, male, genitalia: 5. B. cistransandina Orfila, 1957, Argentina, Confluencia Traful, Prov. Neuquén, 13.i.1956, leg. Fleiss (ZSM); 6. B. patagonica sp. nov. holotype, male, Argentina, Chubut: Comodoro Rivadavia, 21.i.1953, Col. “V. O.” (Prep. Gen. INTA Nº1 F. C. Penco), (IMZA); 7. Hypopta ambigua Hübner, 1818, Argentina, Tornquist, 22.ii.93 J.R (GenPr-Heterocera MWM 26.729).
Male genitalia (Fig. 6). Uncus long, thin, apically strongly curved, apex uncinately bent; tegumen of medium size; gnathos arms of medium length, not fused; valve apically rounded, abdominal and dorsal edges almost smooth; mastoid harpe in medium third of valve; small distinctly sclerotized tubercle in medium third of saccus; saccus long, narrow; juxta robust, with wide lamellar lateral processes; phallus of medium length, strongly curved in distal third.

Female unknown.

**Distribution.** Argentina: Rio Negro, Neuquén and Chubut provinces (Fig. 8), found in the phytogeographic provinces of low monte and patagonian steppe (Burkart et al. 1999).

![Figure 8. Distribution map of Breyeriana Orfila, 1957](image)

**Diagnosis.** *B. patagonica* is well distinguished from *B. cistransandina* by its smaller size and wing pattern (in *B. patagonica*, cell is white coloured with few sparsed grey and brown scales, in *B. cistransandina*, it is ash grey with dark black and brown cuneiform bands at the cell and interspaces of veins) and by the genital structures (in *B. patagonica*, the valve is apically rounded, its abdominal and dorsal edges are almost smooth; there is a mastoid harpe in the medium third of the valve, there is a small strongly sclerotized tubercle in the medium third of the saccus, while in *B. cistransandina*, there is a strong cut in the medium third of the abdominal edge of the valve, and no harpe). Additionally, it is obvious that the genus *Breyeriana* Orfila, 1957 is not a synonym to *Hypopta* Hübner, 1818 (type species – *Hypopta ambigua* Hübner, 1818) (Fig. 4, 7). In the type species of the genus *Hypopta*, male genitals have significant distinctive characters: the robust lamellar transtilla processes with jagged abdominal edge, also the phallus in *Hypopta ambigua* is tubular and straight.

**Etymology.** The name refers to be native of the patagonian region, in southern Argentina.
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