



Taxonomy of five neglected South American species of *Dargida* Walker (Lepidoptera: Noctuidae)

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Abstract

The taxonomy of five South American species of *Dargida* Walker currently allocated in *Leucania* Ochseneheimer (four species) and in *Lasionycta* Aurivillius (one species) is revised. *Leucania roseilinea* (Köhler, 1947), *Leucania phaeoneura* Hampson, 1913, *Leucania mocoides* Dognin, 1897, *Leucania alboradiata* (Hampson, 1905) and *Lasionycta radiata* (Köhler, 1966), are here combined with the genus *Dargida* Walker for the first time (**comb. nov.**). Two new synonyms are proposed, *Leucania roseilineoides* Poole, 1989 is an objective junior synonym of *Borolia roseilinea* Köhler, 1947 (**syn. nov.**) (ICZN 51.4), and *B. lilloana* Köhler, 1947 is a subjective junior synonym of *Leucania phaeoneura* Hampson, 1913 (**syn. nov.**). Lectotype for *Borolia lilloana* is designated to ensure nomenclatural stability and recognizability of the taxon. All species are redescribed and discussed, and the habitus and male and female genitalia (when available) are given, as well as an updated geographical map.

Key words: Andes, Atlantic Forest, Chaco, *Leucania*, morphology

Introduction

Dargida Walker is a genus of American noctuids encompassing 56 species (Rodríguez & Angulo 2005). In the past 30 years, the group underwent an improvement in diversity by the combination of species previously classified in a myriad of unrelated genera. Before the Lepidoptera Catalogus of Noctuidae (Poole 1989), *Dargida* comprised four species, including its type species *D. grammivora* Walker. Poole (1989) combined with *Dargida* 33 species hitherto placed in Holarctic genera, justifying these new combinations by virtue of their remote resemblance to a monophyletic grouping. More recently, Rodríguez & Angulo (2005) redefined *Dargida* by adding *Faronta* Smith and *Strigania* Hampson as synonyms. *Faronta* and *Strigania* were treated by Poole (1989) as valid genera, with 13 and three species, respectively.

The expansions of *Dargida* during the last decades predicate that members of the group may be spread among other genera of Noctuidae. Study of South American *Leucania* Ochseneheimer revealed that some of the included species are wrongly combined with that genus based on the morphology of its type species, *L. comma* (Linnaeus). In fact, four species currently in *Leucania* and one described by Köhler (1966) in *Lasiestra* Hampson, currently a synonym of *Lasionycta* Aurivillius (Lafontaine *et al.* 1986; Crabo & Lafontaine 2009), share diagnostic states of characters of *Dargida* such as the uncus distal half flattened dorso-ventrally (pointed in *Leucania* and in part of *Lasionycta*, although it is also flattened in some species of the latter); cucullus produced beyond remaining valva as a pedicel-like long and narrow projection (“neck”), anvil-shaped posteriorly (cucullus is generally more fused with

remaining valva in *Leucania* and *Lasionycta*, although a pedicel-like base of cucullus is also found in *Leucania*, but never as narrow and anvil-shaped as in *Dargida*); strong setae forming a dense uniseriate corona (the corona is also uniseriate in *Leucania* as well as in part of *Lasionycta*, however, it is never too densely arranged as in *Dargida*); female genitalia with corpus bursae bearing equidistant lines of signa, each composed by double plates with micro spines (signum is absent in *Leucania* and present as three signa in most of *Lasionycta* species, except those belonging to the *Lasionycta secedens* species-group with a single ventral signa). Images of the above-cited structures can be found in Pogue (2009, Figs 7, 17, 18, 25) for *D. grammivora*, Cabro & Lafontaine (2009, Figs 1–3, 136, 194) for *Lasionycta skraelingia* (Herrich-Schäffer) and Franclemont (1951, Figs 4, 4a, 29) for *Leucania comma*.

Based on the diagnostic characters of *Dargida* listed above (Rodríguez & Angulo 2005), the objective of this paper is to transfer and to re-describe some species of *Dargida* currently combined in *Leucania* and *Lasionycta*.

Material and methods

The specimens analyzed during this study are deposited in the following collections: **CAL**: Albert Legrain Collection, Oupeye, Belgium; **CLAM**: Alfred Moser Collection, São Leopoldo, Rio Grande do Sul, Brazil; **DZUP**: Padre Jesus Santiago Moure Entomological Collection, Curitiba, Paraná, Brazil; **IFML**: Instituto y Fundación Miguel Lillo, Tucumán, Argentina; **IADIZA**: Instituto Argentino de Investigaciones de las Zonas Áridas, CCT—CONICET Mendoza, Mendoza, Argentina; **IPCN**: former Instituto Patagónico de Ciencias Naturales—collection loaned to the IADIZA; **MCTP**: Museu de Ciência e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil; **NHMUK**: Natural History Museum, London, UK; **UNLPam**: Entomological collection of the Facultad de Ciencias Exactas y Naturales, Universidad Nacional de La Pampa, La Pampa, Argentina; **USNM**: National Museum of Natural History, Washington, D.C., USA; **VOB**: Vitor O. Becker Collection, Camacan, Bahia, Brazil; **ZSBS**: Zoologische Sammlung, Munich, Germany.

Dissected specimens had their abdomen detached and soaked in 10% potassium hydroxide solution in a test tube heated in bain-marie in a beaker filled with water for approximately 5–10 minutes; after that, the abdomen was dissected and the genitalia was cleaned for posterior analysis. The genitalia were examined under a stereoscopic microscope, and images were taken with a digital photographic camera attached to the stereoscopic microscope, by focus stacking system.

Despite the high similarity between sexes, the diagnoses and redescriptions were based on males, and only distinct features of the females are mentioned. The terminology used for sense organs on the antennae follows Castrejón-Gómez *et al.* (1999). The structures of the male genitalia are named according to Pierce (1909), except in the use of term saccus rather than vinculum (Pierce 1914) and futura inferior rather than juxta (Niculescu 1973). The terminology of the female genitalia follows Klots (1970).

Distribution maps were prepared in SimpleMappr (Shorthouse 2010) from data of examined specimens and literature.

Results and discussion

Dargida radiata (Köhler, 1966) **comb. nov.**

(Figs 1–4, 29, 34, 39, 43)

Lasiestra radiata Köhler, 1966: 109, fig. 2.6.—Poole 1989: 569.

Scriptania radiata (Köhler); Angulo & Olivares 1999: 24.

Diagnosis. *Dargida radiata* **comb. nov.** and *D. roseilinea* (Köhler, 1947) **reinst. nom., comb. nov.** are the only species of the genus with the forewing almost completely beige and veins covered by brown to reddish-pink scales. *Dargida radiata* is readily distinguished from *D. roseilinea* by the dorsal forewing whitish-beige ground color; vivid reddish-pink thick stripes restricted to veins; absence of reddish-pink stripes crossing discal cell; disco-cellular median (dcm) and inferior (dci) beige; and no spot in M_1 – M_2 near forewing discal cell. The male uncus of *D. radiata* is slightly shorter and distally broader than in *D. roseilinea*; the corona does not reach the cucullus ventral margin; and the third dorso-lateral diverticulum of the vesica bears thicker cornuti than in *D. roseilinea*. The female sterigma of

D. radiata is broader than in *D. roseilinea*; the appendix bursae is longer; and lines of signa are well developed in *D. radiata*, whereas in *D. roseilinea* they are distinctively less developed.

Redescription. *Head*: uniformly whitish-beige; antennae filiform, dorsally white; labial palpi reaching the height of compound eyes, first segment short, second segment twice longer than first, third segment short and rounded; compound eyes hairy.

Thorax: uniformly whitish-beige including patagia, tegulae and legs; epiphysis as long as half of foretibia; midtibiae smooth, with a distal pair of spurs, outer spur half of the inner; metatibiae smooth, with two pairs of spurs, one at middle length and one distal, outer spur half of the inner.

Forewing: male 15.8–16.3 mm (n=6), female 16.8–17.7 mm (n=5); triangular, longer than wide; costal margin straight; apex not projected, rounded; outer margin slightly convex; tornus obtuse; anal margin slightly convex.

Dorsal: ground color uniformly whitish-beige with vivid reddish-pink scales covering all veins except on end of discal cell, thicker on M_3 , CuA_1 and CuA_2 ; fringe whitish-beige. *Ventral*: uniformly whitish-beige.

Hind wing: about 1.5 times longer than wide; costal margin about straight; apex obtuse; outer margin convex between apex and M_1 , slightly concave in M_2 then convex; tornus rounded; anal margin slightly convex. Uniformly translucent white; fringe whitish-beige.

Abdomen: uniformly whitish-beige.

Male genitalia (Figs 29, 34): tegumen short, triangular, ventral arm of tegumen about half the length of valva, followed by a strong constriction leading to an expanded and setose peniculus. Dorsal arm of saccus shorter and narrower than ventral arm of tegumen. Saccus triangular, laterally spherical. Uncus cylindrical, slightly shorter than tegumen, anterior half upturned, smooth and curved, distal half flattened dorso-ventrally, as an elongated drop, gradually wider then tapering to a rounded end, straight and downturned, densely covered by setae both dorsally and ventrally. Subscaphium with two strongly sclerotized lateral bands on basal third, then fused in a ventral rectangular plate, slightly sclerotized. Transtilla strongly sclerotized, smooth, distal third tapering to a point, not fused together. Valva about six times as long as wide (at widest part), wider at the base then slightly narrower, dorsal margin strongly concave at the middle, ventral margin slightly convex, disto-ventral margin rounded, dorsal limit with cucullus with a shallow indentation; sacculus with meso-dorsal margin rounded and extending beyond base of costa and transtilla; costa uniformly narrow, dorsal margin strongly concave; costal process reduced, slightly sclerotized, not projected beyond apex of valva, fused with digitus; ampulla spear-shaped, smooth, perpendicular to valva, margins wavy, 2/3 as long as cucullus, base wide tapering to a pointed end; clasper a small triangular projection at base of ampulla; digitus parallel to valva, shape and width similar to ampulla, but 1.3 times longer than ampulla and with straight margins; sensory plate as a small circular weak sclerotized area at the dorsal half near limit with remaining valva; cucullus 1/3 the length of valva, dorsal margin concave, ventral margin near straight, proximal half narrow, increasing in width distally, distal half spoon-shaped, width as at the mid length of valva, corona uniseriate, composed by mid-sized spine-like setae which do not reach the cucullus ventral margin, setae at the near ventral margin slightly shorter. Fultura inferior as an inverted club, base equilatero-shaped, as wide as uncus, followed by a uniformly narrow prolongation. Aedeagus thick, as long as valva, sinuous in lateral view, straight in dorsal view; opening of the ejaculatory bulb about half the aedeagus length; carina smooth, about 1/4 the aedeagus length, distal margin oblique in lateral view, dorsally with a short, pointed projection; ventral projection of aedeagus smooth, slightly sclerotized and shorter than carina; vesica tube like, slightly widened in the middle, smooth on basal third then minutely spiculated, with a dorso-lateral conic diverticulum near base, 1/4 as long as aedeagus, minutely spiculated on posterior half and smooth on anterior half, a second small ventral diverticulum, minutely spiculated, and a third dorso-lateral diverticulum, just posterior to the basal one and slightly bigger, bag-like, with a group of about 20 cornuti, 15 thick, remaining narrower, cornuti without sclerotized basal area.

Female genitalia (Fig. 39): papilla analis rhomboid, twice as high as long, posterior apophysis three times longer than papilla, narrow and straight, with a small expanded area near insertion to papilla. Tergum VIII rectangular, broader than papilla; anterior apophysis narrow, 3/4 as long as posterior apophysis. Sterigma rhomboid-shaped, slightly wider than long, tapered anteriorly and posteriorly. Bursa copulatrix about seven times the length of sterigma; ductus bursae sclerotized, as long as 1/2 bursa copulatrix length, posterior half narrow as the width at the anterior margin of sterigma, anterior half slightly swollen; appendix bursae raising ventrally, at the middle length of the bursa copulatrix, from ductus bursae anterior half, as long as corpus bursae length, coiled, turning 1 and 1/4 clockwise, distal 3/4 membranous, uniformly coated with minute spicules internally; corpus bursae uniformly spherical, as long as half the length of bursa copulatrix, internally coated with minute spicules arranged on longitu-

dinal narrow bands, bearing four lines of signa, one dorsal, one ventral and one per side, each one with five aligned small plates as two fused circles with a short keel at the middle, internally serrated.

Etymology. Although not mentioned in the original description, the name probable refers to the color pattern of the dorsal forewing.

Distribution. *Dargida radiata* is distributed along the east margin of southern South America, from few sites of southern Brazil above 700 m of elevation, where the Araucaria Forest encounter the natural grasslands (states of Santa Catarina and Rio Grande do Sul), to the sea level in the province of Buenos Aires, Argentina (type locality) (Fig. 43).

Type material. The description of the species was based on the holotype, allotype and on an unknown number of paratypes, all from the type locality. The holotype male and allotype female of *Dargida radiata* are deposited at IFML and have the following labels: / HOLOTIPO / 18.2.[19]58 Vila Gessel Buenos Aires [Province, Argentina] / Ex Colección P. Koehler / *Lasiestra radiata* K DET KOEHLER // ALOTIPO / 12.2.[19]50, Villa Gessel Buenos Aires [Province, Argentina] / Ex Colección P. Koehler / *Lasiestra radiata* K DET KOEHLER /.

Additionally, a slide containing a male genitalia under the code 954 used for the illustration presented in the original description of *L. radiata* is deposited at the IFML and probably belongs to a paratype.

Analyzed material. ARGENTINA: Buenos Aires: **Villa Gessel**, 1♂ (holotype), 18.II.1958, Petrowsky leg. (IFML), 1♀ (allotype), 12.II.1950, Petrowsky leg. (IFML). BRAZIL: Rio Grande do Sul: **Barracão**, 1♂, 1♀, 1.II.2001, A. Specht leg. (MCTP 11220, 11221); **São Francisco de Paula** (Pró-Mata), 9♂, 6♀, 20.XII.2000, A. Specht leg. (MCTP 11174, 11176, 11179, 11180, 11181, 11182, 11183, 11184, 11187, 11173, 11175, 11177, 11178, 11185, 11186). Santa Catarina: **Monte Castelo**, 3♂, 4♀, 1.II.1993, V. Becker leg. (VOB 87032, USNM); **Urubici** (Serra do Panelão), 1300 m, 1♂, 14–17.III.2007, A. Moser leg. (CLAM).

Comments. *Dargida radiata* is a rare and poorly known species, despite being one of the most distinctive member of *Dargida*. *Dargida radiata* most similar species is *D. roseilinea*, as they are the only members in the genus to have a forewing almost completely beige with all longitudinal veins covered by brown to reddish-pink scales. The male and female genitalia of these species are only slight different suggesting that they are related closely. *Dargida radiata* is immediately distinguished from *D. roseilinea* by the absence of forewing intervenal brown to pale reddish-pink stripes, as well as the absence of a circular spot just after the end of the discal cell in M_1 – M_2 . The forewing diagnostic characters of *D. radiata* are stable in the series of 27 specimens examined (15 males and 12 females), although the reddish-pink stripes of the forewing type's series are slightly thinner than those from populations of southern Brazil. Furthermore, these species are likely allopatric, with *D. radiata* restricted to areas along the eastern portion of southern South America, either in low (Argentina) and mid elevations (southern Brazil), whereas *D. roseilinea* distribution is related to the Sierras Pampeanas of Argentina.

Köhler (1966) expressed doubt about the generic placement of *L. radiata*, stating a series of divergent morphological details in the male genitalia between this and the type species of *Lasiestra* Hampson. In fact, *Lasiestra* was erected to accommodate Nearctic and Palaearctic species, and Poole (1989) considered the nine South American species originally assigned to this genus as *Lasiestra* "of authors". At that time, however, the genus was already being considered a junior synonym of *Lasionycta* Aurivillius, but without counting on the South American taxa (Lafontaine *et al.* 1986; Crabo & Lafontaine 2009). Later, Angulo & Olivares (1999) transferred *Lasiestra radiata* along with *Lasiestra plumbica* Köhler to *Scriptania* Hampson based on genitalia characters. In the recent phylogenetic assessment of *Scriptania*, however, Rodríguez & Angulo (2008) removed the aforementioned species without mentioning their generic placement, thus returning them to their previous combinations, i.e., *Lasionycta* (= *Lasiestra*).

The combination of *L. radiata* with *Dargida* as proposed here and of *L. castanea* Köhler with *Chabuata* Walker (León *et al.* 2005), reduce to seven the South American species historically assigned to *Lasiestra*. Based on the general morphological aspects none of these species belongs to *Dargida* and their generic placement still needs to be determined.

***Dargida roseilinea* (Köhler, 1947) reinst. nom., comb. nov.**

(Figs 5–9, 30, 35, 40, 43)

Borolia roseilinea Köhler, 1947: 100.—Poole 1989: 585.

Leucania roseilineoides Poole, 1989: 585; **syn. nov.**, ICZN, Article 59.4.

Diagnosis. *Dargida roseilinea* most similar and closest ally is *D. radiata* from which it is distinguished by the dorsal forewing yellowish-beige ground color; paler and narrower brown to pale reddish-pink stripes, placed on and among veins; brown to pale reddish-pink stripe crossing forewing discal cell, distally bifid; forewing disco-cellular median (dcm) and inferior (dci) brown to pale reddish-pink; and a rounded brown to pale reddish-pink spot between M_1 – M_2 , just after the end of discal cell. The genital features distinguishing *D. roseilinea* from *D. radiata* are given under the diagnosis of the latter.

Redescription. *Head:* uniformly yellowish-beige; antennae dorsally beige, male with tiny ventral chemoreceptive trichoid sensilla, 1/5 as long as antennal segment width, covering ventral surface of the antenna, and with four transversal rows of lateral chemoreceptive trichoid sensilla (fascicles), almost 2/3 as long as antennal segment width; female with ventral chemoreceptive trichoid sensilla only; labial palpi and eyes as in *D. radiata*.

Thorax: uniformly yellowish-beige, including patagia, tegulae and legs; epiphysis and pattern of spurs of mid and metatibiae as in *D. radiata*.

Forewing: male 13.8 mm (n=1), female 14.2 mm (n=1); shape as in *D. radiata*. *Dorsal:* ground color uniformly yellowish-beige, with brown or pale reddish-pink stripes covering all veins and interveinal areas, including one along half of discal cell, forked apically; circular brown or pale reddish-pink spot in M_1 – M_2 near end of discal cell; fringe yellowish-beige. *Ventral:* uniformly yellowish-beige, paler than dorsally.

Hind wing: shape as in *D. radiata*. Uniformly translucent white both dorsally and ventrally, with a weak infusion of brown at the end of veins on dorsal surface; fringe whitish-beige.

Abdomen: uniformly yellowish-beige.

Male genitalia (Figs 30, 35): as in *D. radiata*, but uncus longer and distally narrower. Valva with base of clasper almost reaching its ventral margin; corona extending to cucullus ventral margin. Aedeagus with a dorso-lateral diverticulum near base, club like in lateral view, 1/4 as long as aedeagus, smooth, and a second small ventral diverticulum, slightly differentiable, minutely spiculated, and a third dorso-lateral diverticulum, just posterior to the basal one, 1/3 as long as aedeagus, minutely spiculated, bearing thinner cornuti than in *D. radiata*, cornuti without sclerotized basal area.

Female genitalia (Fig. 40): as in *D. radiata* but sterigma narrower; appendix bursae longer; corpus bursae shorter, line of signa less developed, dorsal line with five signa, two well developed and three weakly developed, ventral line with only two well developed signa, and lateral lines with six signa, anterior three well developed and posterior three weakly developed.

Etymology. Although not stated by the author, the name most likely is a reference to the dorsal forewing pale reddish-pink stripes on and among veins.

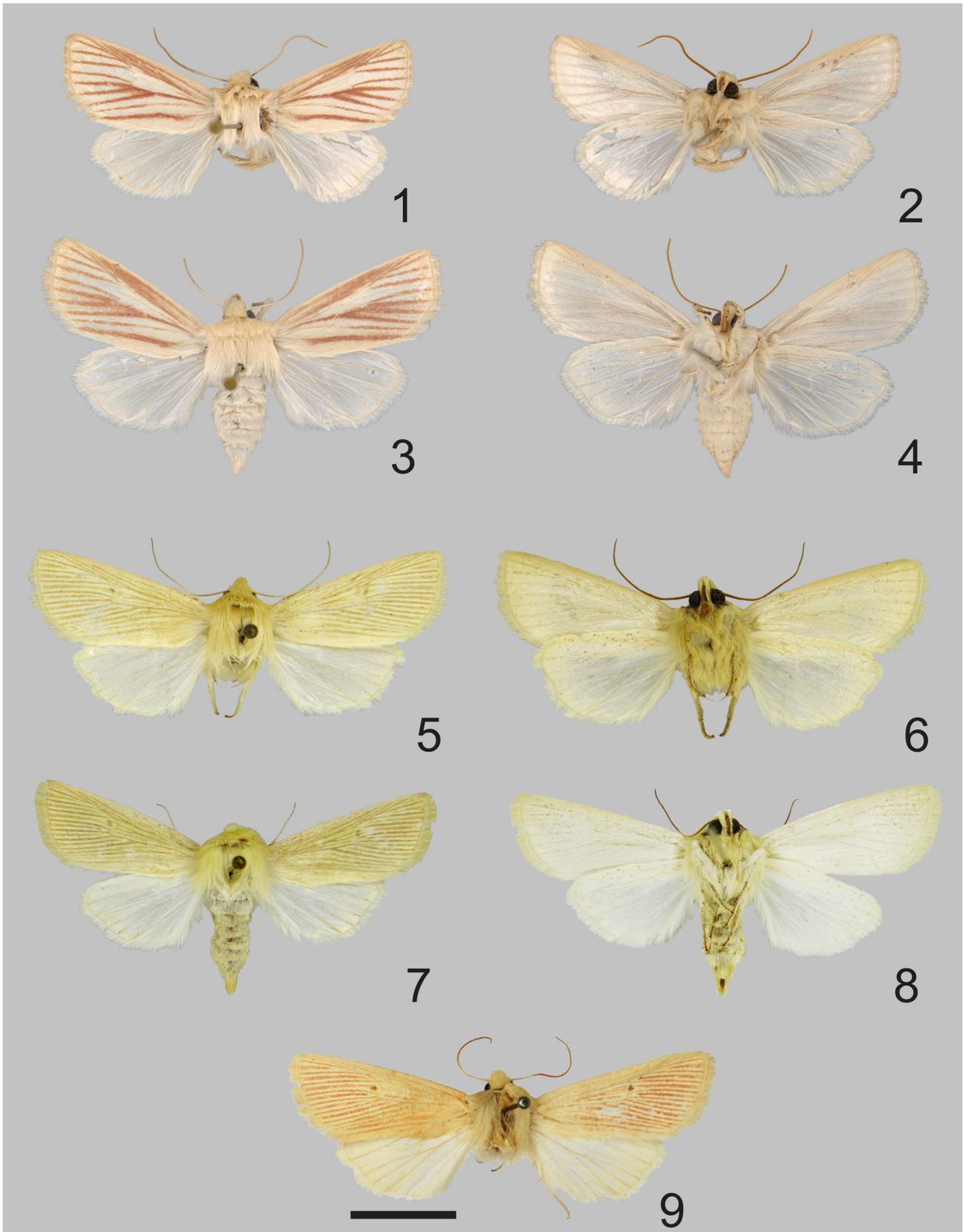
Distribution. *Dargida roseilinea* is known based on few records from the Sierras Pampeanas mountain ranges, specifically from the eastern side of the Aconquija foothills, Tucumán province, and from the Sierra Grande foothills, Córdoba province, Argentina (Fig. 43).

Type material. The holotype female of *Borolia roseilinea* Köhler, 1947 and *Leucania roseilineoides* Poole, 1989 is deposited at the ZSBS, with abdomen removed, without genital label, and with the following labels: / Holotypus [female symbol] *Borolia roseilinea* Koehler / SIAMBON FEB[ruary]. 1931 / ARGENTINA Prov[ince]. Tucuman Siambón II.1931 Schreiter leg. Coll. P. Koehler / *Borolia roseilinea* Khl. DET KOEHLER /.

Analyzed material. ARGENTINA: Córdoba: **Copina** (2 km NO, 31°33'37.51''S, 64°42'30.40''W), 1471 m, 1♂ 1♀, 10.II.2016, GSB, A. Zapata & H. Beccacece leg. (UNLPam). Tucumán: **Siambón**, 1♀, II.1931, Schreiter leg. (holotype, ZSBS).

Comments. *Dargida roseilinea* was described in *Borolia* and later combined with *Leucania* by Poole (1989), rendering it to a junior secondary homonym of *Leucania roseilinea* Walker, 1862. Consequently, Poole (1989) proposed *Leucania roseilineoides* as a replacement name for the species. However, the general pattern of the wings and the morphology of the male and female genitalia support *B. roseilinea* as a member of *Dargida* (**comb. nov.**), which makes *Leucania roseilineoides* its new objective junior synonym (ICZN 59.4).

This species is distributed along Sierras Pampeanas mountain ranges. The localities of Siambón belong to the Calchaquies foothills in the province of Tucumán and Copina to the Sierra Grande foothills in the province of Córdoba. The latter belongs to the Dry Chaco ecoregion, but specimens of Sierra Grande were found on the top of the foothills which are dominated by high-altitude grassland. Martínez *et al.* (2017) through a track analysis concluded that Córdoba high-altitude grasslands are related to grasslands of Aconquija and Calchaquies foothills based on vascular plants and vertebrates, and this relationship is also supported by the distribution of *D. roseilinea*.



FIGURES 1–9. Adults of species of *Dargida*, in dorsal and ventral views. Figs 1–4. *D. radiata* **comb. nov.**, 1–2. Male from São Francisco de Paula, Rio Grande do Sul, Brazil (MCTP), 3–4. Female from the same locality as male above (MCTP). Figs 5–9. *D. roseilinea* **reinst. nom., comb. nov.**, 5–6. Male from Copina, Córdoba, Argentina (UNLPam), 7–8. Female from the same locality as male above (UNLPam), 9. Male holotype (ZSBS). Scale bar: 1cm.

***Dargida phaeoneura* (Hampson, 1913) comb. nov.**

(Figs 10–16, 31, 36, 41, 43)

Leucania phaeoneura Hampson, 1913: 601.—Poole 1989: 584.

Borolia lilloana Köhler, 1947: 101; **syn. nov.**

Leucania lilloana (Köhler); Poole 1989: 581.

Diagnosis. *Dargida phaeoneura* **comb. nov.** is a species distributed through high-elevation grassland from southern Peru to central Argentina. Its color pattern is similar to other congeners, but from those, it is only sympatric with two: *D. albilinea* (Hübner) and *D. amoena* Draudt. *Dargida phaeoneura* has light brown forewing ground color, with brown strike at both sides of the CuA and with veins R₄–CuA₂ surrounded by a thin white band, while in the other two species the strike is restricted to the posterior length of the CuA and the veins are not distinctly surrounded by white. In *Dargida phaeoneura* the male costal process of valva is reduced, not projected beyond apex of valva and the two ventral most setae of the corona are tooth-like, whereas in *D. albilinea* the costal process is large, projected beyond the apex of valva, and the ventral setae of the corona are slightly thicker than the others, but never tooth-like. The vesica of aedeagus of *D. phaeoneura* bears strong cornuti on the medial dorso-lateral diverticulum, while that of *D. albilinea* shows cornuti but not in a differentiated diverticulum. The female bursa copulatrix bears four dorsal signa in *D. phaeoneura*, but seven signa in *D. albilinea*. *Dargida amoena* male and female genitalia were not analyzed, remaining unknown.

Redescription. *Head:* from light brown to brown, slightly darker ventrally; antennae dorsally light brown, male with tiny ventral chemoreceptive trichoid sensilla, 1/5 as long as antennal segment width, covering antenna ventrally and with four transversal rows of lateral chemoreceptive trichoid sensilla (fascicles), almost 1/2 as long as antennal segment width; labial palpi and eyes as in *D. radiata*.

Thorax: patagia slightly darker than head; tegulae, thorax, and legs gradually turning light brown posteriorly; legs as in *D. radiata*.

Forewing: male 14.9–15.8 mm (n=4), female 16.9 mm (n=1); wing shape as in *D. radiata*. *Dorsal:* ground color light brown, with grayish brown scales covering all veins; brown stripes on anal margin, at both sides of the CuA and extended apically from just anterior to M₂ to just posterior to CuA₂, and as arrows projected basally from apical margin and placed between R₄–R₅ and R₅–M₁, veins between R₄–CuA₂ surrounded by a thin white band; basal dash black, thin, extending to half of discal cell; a row of tiny black rounded postdiscal spots between R₅ and anal margin (not all evident on all specimens); fringe light brown on basal half, with two black lines, apical half whitish. *Ventral:* grayish-brown with veins surrounded by a thin whitish band; fringe grayish-brown, with a thin light brown basal line.

Hind wing: wing shape as in *D. radiata*. *Dorsal:* translucent brown basally, turning opaque brown toward apical margin; fringe light brown with a median brown line. *Ventral:* similar to dorsal.

Abdomen: brown, with a black thin line along pleura.

Male genitalia (Figs 36, 41): tegumen, ventral tegumen arm, saccus, subscaphium and transtilla as in *D. radiata*. Uncus cylindrical, slightly longer than tegumen, anterior half upturned, smooth and curved, distal half flattened dorso-ventrally, as an elongated drop, gradually wider then tapering to a rounded end, 0.6 times as long as wide, straight and downturned, densely covered by setae dorsally and ventrally. Valva about six times as long as wide (at widest part), wider at the base then slightly narrower, dorsal margin strongly concave at the middle, ventral margin slightly convex, disto-ventral margin rounded, dorsal limit with cucullus with a deep indentation; sacculus with meso-dorsal margin slightly squared and extending beyond base of costa and transtilla; costa uniformly narrow, dorsal margin slightly concave; costal process reduced, slightly sclerotized, not projected beyond apex of valva, fused with digitus; ampulla spear-shaped, with short hair-like setae on dorsal margin of apical half, parallel to valva, margins straight, half as long as cucullus, base wide tapering to a pointed end; clasper a small triangular projection at base of ampulla; digitus perpendicular to valva, with wide base, abruptly narrowed, then rectangular, lateral margins slightly concave and round ended, dorso-ventrally flattened, as long as ampulla; sensory plate as a small circular weak sclerotized area at the dorsal half near limit with remaining valva; cucullus 1/3 the length of valva, dorsal and ventral margins strongly concave, proximal half narrow, increasing in width distally, distal half anvil-shaped, twice as wide as the mid width of valva, corona uniseriate, extended throughout apical margin, with the four ventral setae wider than the others and strongly sclerotized, two ventral most setae tooth-like. Fultura inferior as an inverted club, base equilatero-shaped, slightly wider than uncus, followed by a uniformly narrow prolongation. Aedeagus thick, as

long as valva, sinuous in lateral view, straight in dorsal view; opening of the ejaculatory bulb about anterior fourth of the aedeagus length; carina smooth, about 1/4 the aedeagus length, distal margin oblique in lateral view, dorsally with a short, pointed projection; ventral projection of aedeagus slightly sclerotized, slightly shorter than carina, covered by minute spines; vesica tube-like, slightly widened in the middle, smooth on basal third then minutely spiculated, with a dorso-lateral diverticulum near base, kidney like, 1/3 as long as aedeagus, minutely spiculated on posterior half and smooth on anterior half, a second small ventral diverticulum, minutely spiculated and a third dorso-lateral diverticulum just posterior to the basal one, slightly smaller, with 10 large cornuti and about 30 smaller or thinner ones, all cornuti with sclerotized basal area, which gives the diverticulum a marbled appearance.

Female genitalia (Fig. 41): papilla analis rhomboid, as high as long, posterior apophysis 1.5 times as long as papilla, narrow and straight, with an expanded area near insertion to papilla. Tergum VIII rectangular, broader than papilla, ventrally divided; anterior apophysis 3/4 as long as posterior apophysis. Sterigma rhomboid-shaped, 3/4 as long as wide, rounded anteriorly and posteriorly. Bursa copulatrix about seven times the length of sterigma; ductus bursae as long as 2/3 of bursa copulatrix length, posterior 2/3 sclerotized and narrow as the width at the anterior margin of sterigma, anterior 1/3 sclerotized on left 1/4 and right 3/4 membranous and half-sac shaped; appendix bursae raising at the left side at anterior 1/3 of the ductus bursae as long as corpus bursae length, coiled, turning basal 1/2 dorsally and distal 1/2 clockwise, distal 3/4 membranous, uniformly coated with minute spicules internally; corpus bursae uniformly spherical, 2/5 as long as bursa copulatrix length, internally coated with minute spicules arranged on longitudinal narrow bands, spicules smaller and less evident than those of the appendix bursae, bearing four lines of signa, dorsal line with four signa, ventral line with two signa, and lateral lines with three, signa shape as in *D. radiata*.

Etymology. Although not mentioned in the original description (Hampson 1913), *Leucania phaeoneura* is probably a reference to the grayish aspect of the forewing veins of this species. The name *Borolia lilloana* was dedicated to Miguel Lillo, founder of the Instituto Miguel Lillo at Tucumán, Argentina (Köhler 1947).

Distribution. *Dargida phaeoneura* is an Andean species ranging in high-elevation grassland areas above 2000 m from Peru, Bolivia to the Sierras Pampeanas of Argentina. In Argentina it is distributed on both sides of the Aconquija foothills in the provinces of Catamarca and Tucumán, and in the Sierra Grande foothills in the province of Córdoba (Fig. 43).

Type material. The holotype male of *Leucania phaeoneura* Hampson, 1913 is deposited at the NHMUK with the following labels: / Type H.T. / Acopampa S. Peru 11500ft Jan to March 10 / 1912–477. / *Leucania phaeoneura* type [female symbol]. Hmpsn. / NHMUK 010914868 /.

Borolia lilloana Köhler, 1947 was described from an unstated number of specimens of both sexes from at least the following two Argentinian localities: Siambón, Tucumán province, and Barranca Larga, Belén, Catamarca province, all collected by Schreiter. Two males syntypes (both labeled as cotypus) are deposited at the IFML and ZSBS. The specimen at the IFML is here designated lectotype of *Borolia lilloana* in order to ensure the identity and to permit the recognizability of the species among other sibling noctuids; it bears the following labels: / COTYPUS / Barranca Larga, Belén, II.1937 / Ex. Colección P. Koehler / *Borolia lilloana* Khlr /. The specimen at the ZSBS is labeled similarly to the specimen at the IFML, and it is here designated paralectotype of *Borolia lilloana*. These specimens will be labeled accordingly.

Analyzed material. ARGENTINA: Catamarca: **Barranca Larga**, 1 ♂ (lectotype), II.1937, Schreiter *leg.* (IFML); 1 ♂ (paralectotype), I.II.1937, Schreiter *leg.* (ZSBS). Córdoba: **La Trinidad** (2.5km S, Parque Nacional Quebrada del Condorito, 31°42'34.72"S, 64°50'52.58"W), 2111 m, 4♂, 9.II.2016, GSB, A. Zapata & H. Becacece *leg.* (UNLPam). Tucumán: **Colalao**, 1 ♀, II, ex. coll. Köhler (ZSBS); **Tafí del Valle** (near, 26°48'19"S, 65°43'18"W), 2550 m, 1 ♂, 27.III.2017, A. Legrain *leg.* (CAL). BOLIVIA: La Paz: P.D. Murillo 1♀ (IADIZA).

Comments. *Dargida phaeoneura* forewing narrow, long, and with a simplified color pattern, and the morphology of the male and female genitalia, point it close to most species previously placed by Poole (1989) in *Faronta*, one of the junior subjective synonyms of *Dargida*. Based on the aforementioned shared characters, *D. phaeoneura* is here combined with *Dargida* for the first time (**comb. nov.**).

In the same work, Köhler (1947) described *Cirphis lilloana* and in the following page *Borolia lilloana*. These two species were later combined with *Leucania* by Poole (1989), who considered the latter a secondary junior homonym of the former. However, aware about these species most probably belong to distinct genera, Poole (1989) did not propose a replacement name for *B. lilloana*. In fact, while *Cirphis lilloana* is unquestionably a member of the genus *Leucania*, *B. lilloana* belongs to *Dargida*. Although the genitalia of the types of *L. phaeoneura* and *B. lilloana*

were not analyzed, their external color pattern are unique and cannot be mistaken for any other species in the genus, at the same time they are identical with each other; they represent the same species. *Borolia lilloana* (**syn. nov.**) is here considered a junior subjective synonym of *L. phaeoneura*. The new taxonomic change increases the distribution of *D. phaeoneura* throughout the Andes of Peru, Bolivia, and Sierras Pampeanas of Argentina.



FIGURES 10–16. Adults of *Dargida phaeoneura* **comb. nov.**, in dorsal and ventral views. Figs 10–11. Male holotype (NH-MUK). Fig. 12. Male paralectotype of *Borolia lilloana* Köhler, 1947 (new synonym of *D. phaeoneura*) (ZSBS). Figs 13–14. Male from near Tañi del Valle, Tucumán, Argentina (CAL). Figs 15–16. Female from La Paz, Bolivia (IADIZA). Scale bar: 1cm.

There are some uncertainties regarding the sex of the type of *Leucania phaeoneura* and whether the species was proposed based on a single or multiple specimens. Hampson (1913) started the description with the female symbol, which was also handwritten supposedly by Hampson himself, in the type's label following the name of the

species. However, the end of the description mentions that the species was based on a single type male from Aconpampa, Peru. Poole (1989) considered that the description of *L. phaeoneura* was based on a male holotype, and this information was confirmed after a personal study of the type at the NHMUK during October of 2017 (DRD, pers. comm.). Additionally, no specimen of *L. phaeoneura* other than the holotype was found at the NHMUK, supporting that the female symbol in the original description must likely be a mistake.

Three decades later, *Borolia lilloana* was proposed by Köhler (1947) based on an unspecified number of individuals of both sexes from two localities in Argentina, Siambon, Tucumán province and Barranca Larga, Belen, Catamarca province. There is a male specimen at the IFML and other at the ZSBS, both labeled as cotypus of *B. lilloana*. These specimens agree both with the description and with one of the type localities, and they are here considered as syntypes, the IFML specimen herein designated lectotype and the ZSBS specimen herein designated paralectotype. No additional specimens belonging to the type series of *B. lilloana* were located at both IFML and ZSBS.

In Argentina this species inhabits the Sierras Pampeanas mountain ranges, specifically the Aconquija foothills in the provinces of Catamarca and Tucumán and Sierra Grande foothills in Córdoba. The latter belongs to the Dry Chaco ecoregion, but as mentioned for *D. roseilinea*, specimens of Sierra Grande were found on the top of the foothills where high-altitude grassland dominates. Localities of Aconquija foothills are also high-altitude grassland. Martínez *et al.* (2017) through a track analysis concluded that Córdoba high-altitude grasslands are related to grasslands of Aconquija and Calchaquies foothills based on vascular plants and vertebrates, and this relationship is also supported by *D. phaeoneura*.

***Dargida mocoides* (Dognin, 1897) comb. nov.**

(Figs 17–22, 32, 37, 41, 43)

Leucania mocoides Dognin, 1897: 245.—Hampson 1905: 554.—Poole 1989: 582.

Cirphis mocoides (Dognin); Draudt 1924: 168, pl. 24, fig. i[4].

Diagnosis. *Dargida mocoides* **comb. nov.** slightly resembles *D. phaeoneura* and its ally species mentioned in the diagnosis above. *Dargida mocoides* can be easily distinguished by its ochre forewing ground color, with grayish-silver areas through the costal area, first 1/4 of 2A, and outer margin extending proximally over veins R_5 , M_1 , CuA_1 and CuA_2 . In *D. phaeoneura* and ally species the forewing ground color is light brown, with areas of different coloration, but never grayish-silver. The male genitalia of *D. mocoides* is very similar to *D. phaeoneura*, differentiated by a cucullus of 2/5 the length of valva and point-ended digitus, whilst in the latter the cucullus has a length of 1/3 the length of valva and the digitus is rounded ended.

Redescription. *Head*: densely covered by pale ochre scales; antennae light brown dorsally; labial palpi and eyes as in *D. radiata*.

Thorax: patagia rust-brown; tegulae, thorax, and legs ochre, gradually lighter posteriorly; legs as in *D. radiata*.

Forewing: male 14.5 mm (n=2), female 15.8 mm (n=1); wing shape as in *D. radiata*. *Dorsal*: ground color ochre, paler along discal cell and M_1 extending to last 1/3 of R_5 and along CuA_2 –2A, below anal fold; costal area and first 1/4 of 2A light grayish-silver; outer margin with a continuous grayish-silver band extending over veins R_5 , M_1 , CuA_1 and CuA_2 , followed proximally by a discontinuous black stripe between R_5 and 2A; rust-brown stripes on R_4 – R_5 , R_5 – M_1 (surrounding first 2/3 of R_5), bordering anteriorly CuA , from origin of CuA_2 to M_2 – M_3 , and bordering posteriorly CuA , from base to near origin of CuA_2 , vanishing along CuA_2 , and at about the center of the anal area (between 2A–anal margin); basal dash just posterior to the origin of CuA_2 ; postmedial arch-shaped row of black rounded spots between R_5 and anal margin; outer line rust-brown; fringe pale yellow basally and apically, pale rust-brown medially. *Ventral*: ground color lustered brown, darker at center; outer line narrower than dorsally; fringe lighter than dorsally.

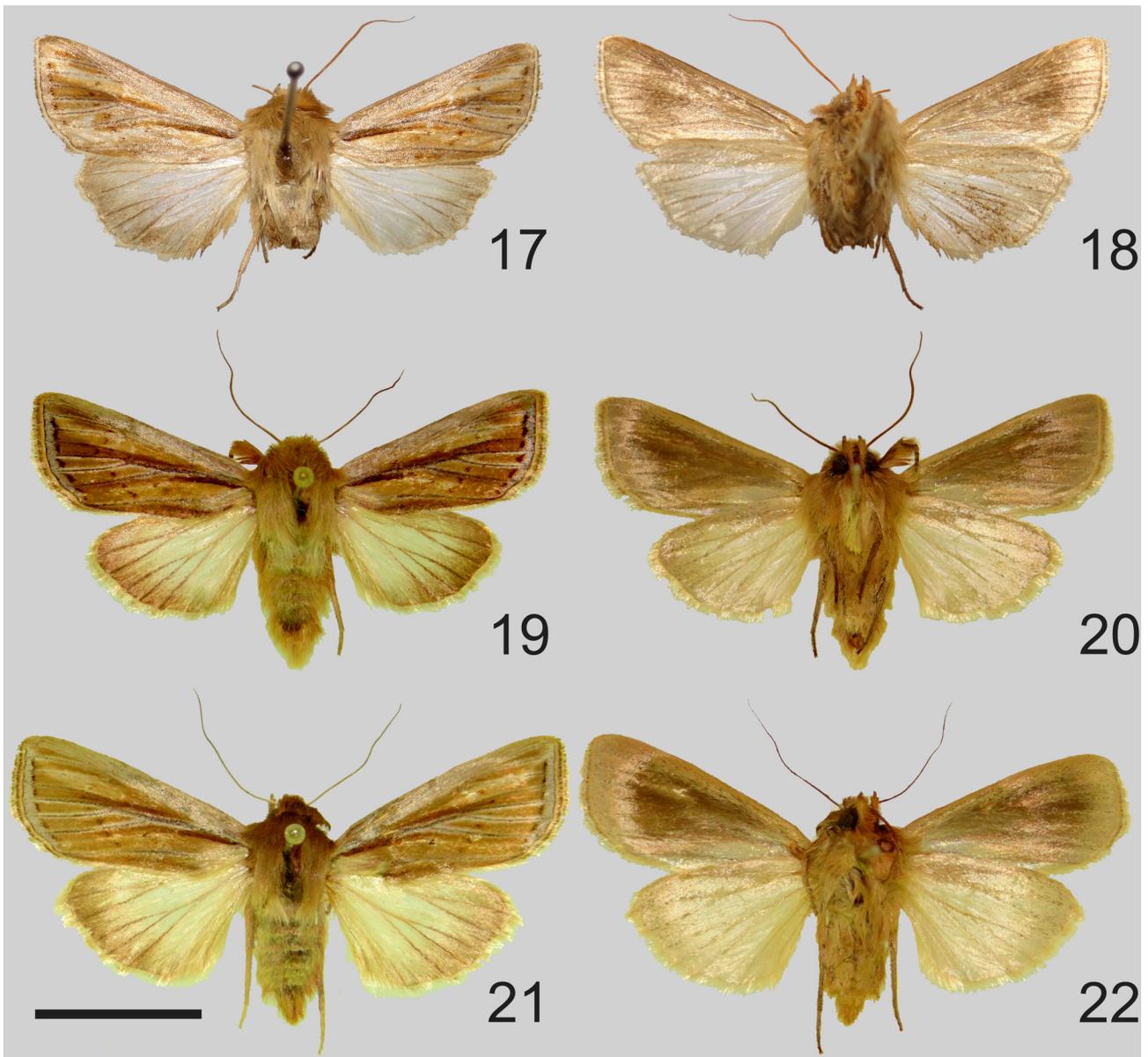
Hind wing: wing shape as in *D. radiata*. *Dorsal*: mostly translucent pearly cream, suffused by light brown scales along costal and outer margins; fringe as in dorsal forewing but with median rust-brown line reduced. *Ventral*: similar to dorsal but more uniformly pearly cream.

Abdomen: ochre, slightly darker than dorsal thorax, with a black thin line along pleura.

Male genitalia (Figs 32, 37): tegumen, ventral tegumen arm, dorsal projection of saccus, saccus, uncus, sub-

scaphium and transtilla similar to *D. phaeoneura*. Valva about six times as long as wide (at widest part), wider at the base then slightly narrower, dorsal margin strongly concave at the middle, ventral margin slightly convex, disto-ventral margin angled; sacculus with meso-dorsal margin about angled and extending beyond base of costa and transtilla; costa uniformly narrow, dorsal margin strongly concave; costal process reduced, slightly sclerotized, not projected beyond apex of valva, fused with digitus; ampulla spear-like, curved proximally, margins straight, about 1/3 as long as cucullus, base wide tapering to a pointed end; clasper as a small triangular projection at base of ampulla; digitus perpendicular to valva, about straight, as long as ampulla, base wide narrowing distally to a pointed end; sensory plate not observed; cucullus 2/5 the length of valva, dorsal margin convex, proximal 2/3 narrow, increasing in width distally, distal half triangular, about twice as wide as the mid width of valva, disto-ventral projection longer and narrower than disto-dorsal projection, corona uniseriate, extended throughout apical margin, four ventral setae wider, strongly sclerotized, the two ventral most setae tooth-like. Fultura inferior broken (cannot be observed). Aedeagus thick, shorter than valva, slightly arched ventrally (the distal part of the aedeagus broken apart); vesica not completely distended, apparently bearing two groups of cornuti.

Female genitalia: not analyzed (the only two known females could not be dissected).



FIGURES 17–22. Adults of *Dargida mocoides* **comb. nov.**, in dorsal and ventral views. Figs 17–18. Male holotype (USNM). Figs 19–20. Male from Maldonado, Carchi, Ecuador (VOB). Figs 21–22. Female from the same locality as male above (VOB). Scale bar: 1cm.

Etymology. Although not mentioned by the author, the name probably is a rearrangement of the letters of *Leucania commoides* Guenée, a species compared by the author with *D. mocoides* in the original description (Dognin 1897).

Distribution. *Dargida mocoides* is another Andean member of the genus, only known from a few specimens collected in the Ecuadorian province of Carchi in the north, at 3200 m of elevation, and Loja (type locality) in the south, at around 2200 m (Fig. 43).

Type material. The holotype male of *Leucania mocoides* is deposited at the USNM with the following labels: / Environs de loja Equateur 1890 / Dognin Collection / TypeNo 31970 U.S.N.M. / *Leucania mocoides* Dgn. Type [male symbol] / Mamestrinae *Leucania mocoides* Dgn. Hmpsn. [indistinguishable letters and/or numbers] / [indistinguishable text] 96 / mihi[?] in Berlin [indistinguishable] 1891 / [male symbol] Genitalia Slide: USNM/225 J.G. Franclemont / Genitalia slides m Franclemont USNM 33237 /; the following labels are glued on the genitalia slide of the holotype: / USNM 33,237 / NO. USNM / 225 *Leucania mocoides* Type Dognin Loja, Ecuador DATE 7 Apr 1950 J. G. FRANCLEMONT /.

Analyzed material. ECUADOR: Carchi: **Maldonado**, 3200 m, 1 ♂ and 2 ♀, 11.I.1993, V. O. Becker leg. (VOB 105352). Loja: **Loja**, 1 ♂ (holotype), 1890 (USNM).

Comments. This rare species is only known from a handful of specimens collected in the northern and southern Andes of Ecuador, above 2000 m of elevation. *Dargida mocoides* was described by Dognin (1897) in *Leucania*, combined with *Cirphis* Walker by Draudt (1924), and returned to *Leucania* by Poole (1989) where it is currently. However, the wing pattern and the morphology of the male genitalia point it to as a member of *Dargida* (**comb. nov.**).

***Dargida alboradiata* (Hampson, 1905) comb. nov.**

(Figs 23–28, 33, 38, 42–43)

Cirphis alboradiata Hampson, 1905: 536, pl. 93, fig. 15.—Draudt 1924: 166, pl. 24, fig. g[2].

Leucania alboradiata (Hampson); Poole 1989: 576.

Diagnosis. *Dargida alboradiata* **comb. nov.** has one of the southernmost distributional ranges in the genus, and the available data suggest it is endemic of the Argentinean Patagonia. *Dargida alboradiata* most resembles the widespread *D. albilinea*, the most similar and sympatric congener. The former is immediately recognized by its brownish-gray aspect, orbicular and claviform spots undifferentiated, and standing-out white lines in median dorsal thorax and tegulae and anterior margin of legs, while *D. albilinea* has a light-brown aspect, with both spots differentiated, and, while it shows light lines in similar places, they never stand out as much as in *D. alboradiata*. It is important to note that some specimens of *D. albilinea* are almost as grayish as *D. alboradiata*. Thus, the decisive character to differentiate these two species is the rectangular costal process and small cornuti in the vesica of *D. alboradiata*; whilst *D. albilinea* has a falciform costal process and cornuti at least thrice as long as those of *D. alboradiata*. The female genitalia of *D. alboradiata* include a corpus bursae bearing four dorsal signa, whereas seven signa are present in *D. albilinea*.

Redescription. *Head*: uniformly whitish-beige; slightly darker ventrally; male antennae with tiny ventral chemoreceptive trichoid sensilla, 1/3 as long as antennal segment width, covering antenna ventrally and with four transversal rows of lateral chemoreceptive trichoid sensilla (fascicles), slightly longer than antennal segment width, female only with ventral chemoreceptive trichoid sensilla; labial palpi and eyes as in *D. radiata*.

Thorax: dorsally brownish with a median whitish line; patagia whitish, with median brown line, posterior 1/3 with light brown long piliform scales; tegulae light brown, with a median whitish line edged dorsally by a blackish thin line; ventral side light brown, slightly darker anteriorly; legs slightly darker than thorax, with an anterior whitish line, epiphysis and spurs as in *D. radiata*.

Forewing: male 13.2–15.3 mm (n=4), female 13.0–14.7 mm (n=3); shape as in *D. radiata*. *Dorsal*: ground color uniformly brownish-gray, with brown scales covering all veins; whitish band on both sides of CuA, M₁, M₂ and CuA₁, some specimens have a thin whitish band at both sides of CuA₂ and 2A, and blackish stripes on posterior and/or anterior edge of the whitish CuA and 2A bands; light brown grayish scales over anal margin, inside cell, on some specimens extending apically between R₅ and M₁; orbicular and claviform spots undifferentiated, reniform spot reduced and brown; fringe brownish-gray, with a basal light brown band and medial light brown to whitish line.

Ventral: uniformly brownish-gray.

Hind wing: shape as in *D. radiata*. *Dorsal*: uniformly translucent brown with slightly darker scales over veins; discal spot slightly differentiated on some specimens; fringe whitish: *Ventral*: as dorsal.

Abdomen: uniformly brownish-gray.



FIGURES 23–28. Adults of *Dargida alboradiata* **comb. nov.**, in dorsal and ventral views. Fig. 23. Old picture of the male holotype of *Cirphis alboradiata* Hampson, 1905 (NHMUK). Fig. 24. Original illustration of *C. alboradiata*. Figs 25–26. Male from Fits-Roy, Santa Cruz, Argentina (IPCN). Figs 27–28. Female from Pampa Rahue, Neuquén, Argentina (IPCN). Scale bar: 1cm.

Male genitalia (Figs 33, 38): tegumen, ventral tegumen arm, dorsal projection of saccus, saccus, subscaphium, transtilla and fultura inferior as in *D. radiata*. Uncus cylindrical, slightly shorter than tegumen, anterior half upturned and smooth, distal half flattened dorso-ventrally, as an elongated drop, gradually wider then tapering to a rounded end, 0.6 times as long as wide, straight and downturned, laterally densely covered by setae both dorsally and ventrally, central area without setae. Valva about three times as long as wide (at widest part), wider at the base then slightly narrower, dorsal margin strongly concave at the middle, ventral margin slightly convex, almost straight, disto-ventral margin rounded, dorsal limit with cucullus with a deep indentation; sacculus with meso-dorsal margin slightly produced to a point, not extending beyond base of costa and transtilla; costa uniformly narrow, dorsal margin strongly concave; costal process strongly sclerotized, rectangular, short, dorsally produced and extended slightly beyond sensory plate, fused with digitus; ampulla spear-shaped, smooth, oblique to valva, margins straight, slightly shorter than cucullus, base wide tapering to a pointed end; clasper a small triangular projection at base of

ampulla; digitus perpendicular to ampulla, more or less ovoid, dorso-ventrally flattened, with half twist which gives the appearance of pointed end, half as long as ampulla; sensory plate as a small cylindrical horizontal weak sclerotized area at the dorsal half, near limit with remaining valva; cucullus 1/3 the length of valva, dorsal margin slightly concave, ventral margin deeply concave, proximal half narrow, increasing in width distally, distal half anvil-shaped, half as wide as valva maximum width, corona uniseriate, reaching the cucullus ventral margin, ventral fourth biseri-ate. Fultura inferior slightly wider than uncus. Aedeagus thick, as long as valva, sinuous in lateral view, straight in dorsal view; opening of the ejaculatory bulb about at anterior fourth of aedeagus; carina smooth, about 1/4 the aedeagus length, distal margin straight in lateral view, dorsally with a short, pointed projection; ventral projection of aedeagus heavily sclerotized, slightly longer than carina, densely covered by minute spines, apical spine larger than the others, tooth-like; vesica tube like, slightly narrowing distally, finely and minutely spiculated, with three small diverticula, two dorso-right conic diverticula 1/5 as long as aedeagus, an incipient dorso-left, and one ventral conic diverticulum 1/5 as long as aedeagus, diverticula without cornuti, vesica with dorsal area bearing numerous small cornuti extended from dorsal part of second dorso-right diverticulum to half of the vesica.

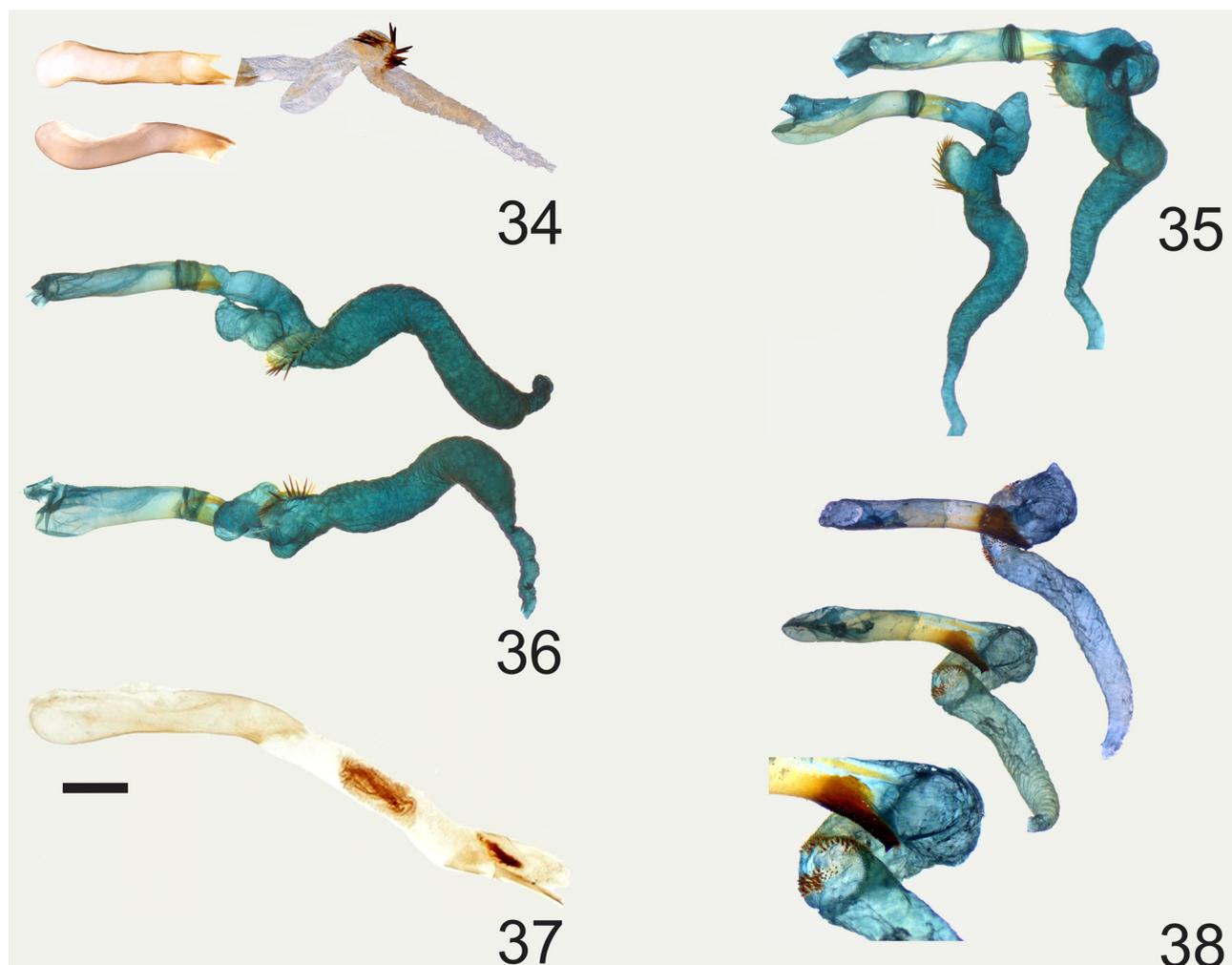


FIGURES 29–33. Male genitalia of species of *Dargida*. Fig. 29. *D. radiata* **comb. nov.** from Serra do Panelão, Urubici, Santa Catarina, Brazil (CLAM). Fig. 30. *D. roseilinea* **reinst. nom., comb. nov.** from Copina, Córdoba, Argentina (UNLPam). Fig. 31. *D. phaeoneura* **comb. nov.** from La Trinidad, Córdoba, Argentina (UNLPam). Fig. 32. *D. mocoides*, holotype (USNM). Fig. 33. *D. alboradiata* **comb. nov.** from Fits-Roy, Santa Cruz, Argentina (IPCN). Left to right: posterior view of the genitalia, and left view of the right valva's distal half. Scale bars: 1mm.

Female genitalia (Fig. 42): papilla analis triangular, as high as long, posterior apophysis as long as papilla, narrow and straight, with an expanded area near insertion to papilla. Tergum VIII rectangular, broader than papilla,

ventrally divided; anterior apophysis as long as posterior apophysis. Sterigma rhomboid-shaped, slightly wider than long, tapered anteriorly and rounded posteriorly. Bursa copulatrix about six times the length of sterigma; ductus bursae sclerotized, as long as $\frac{2}{3}$ of bursa copulatrix length, posterior half wide as the width at the anterior margin of sterigma, anterior half slightly swollen; appendix bursae raising at the ventral-left side, at the anterior half of ductus bursae, as long as corpus bursae length, coiled, turning basal $\frac{1}{2}$ counterclockwise and distal $\frac{1}{4}$ clockwise, distal $\frac{3}{4}$ membranous, uniformly coated with minute spicules internally; corpus bursae uniformly spherical, as long as half the length of bursa copulatrix, internally coated with minute spicules arranged on longitudinal narrow bands, spicules smaller and less evident than those of the appendix bursae, bearing four lines of signa, dorsal line with four signa, ventral line with three signa, and lateral lines with three to four signa, signa as in *D. radiata*.

Etymology. Although not stated in the original description, the name probably refers to the white lines present on thorax and dorsal forewing of this species.



FIGURES 34–38. Aedeagus and vesica of species of *Dargida* in dorsal (upper) and left lateral (bottom) views. Fig. 34. *D. radiata* **comb. nov.** Fig. 35. *D. roseilinea* **reinst. nom., comb. nov.** Fig. 36. *D. phaeoneura* **comb. nov.** Fig. 37. *D. mocoides* (lateral left view only). Fig. 38. *D. alboradiata* **comb. nov.** (with the magnified view of the tip of aedeagus). Specimens are from the same localities as mentioned for the figures 29–33.

Distribution. *Dargida alboradiata* is known from few sites of western part of Argentinean Patagonia. It is distributed from *Araucaria araucana* ((Molina) K. Koch) forests (northern part of Andean Patagonian Forest) to southern Patagonian steppe (Fig. 43).

Type material. The holotype male of *Cirphis alboradiata* Hampson, 1905 probably is deposited at the NHMUK (see comments below) with the following labels (based on an old image of the type' labels): / Type / Patagonia. Chubut. Andes. Valle Lago Blanco. 1904-26 / *Cirphis alboradiata* type [male symbol] Hmpsn /.



FIGURES 39–42. Female genitalia of species of *Dargida*, in lateral left (upper) and ventral (bottom) views. Fig. 39. *D. radiata* **comb. nov.** from Pró-Mata, São Francisco de Paula, Rio Grande do Sul, Brazil (MCTP 11.178). Fig. 40. *D. roseilinea* **reinst. nom., comb. nov.** from Copina, Córdoba, Argentina (UNLPam). Fig. 41. *D. phaeoneura* **comb. nov.** from La Paz, Bolívia (IADIZA). Fig. 42. *D. alboradiata* **comb. nov.** from Pampa Rahue, Neuquén, Argentina (IPCN). Scale bar: 1mm.

Analyzed material. ARGENTINA: Chubut: **Lepa**, 750 m, (42°35'S, 71°05'W), 1 ♀, 5.XI.1974, M. Gentili leg. (IPCN); **Valle del Lago Blanco**, 6 males (including the holotype) (NHMUK). Neuquén: **Caviahue**, 1650 m, (37°52'S, 71°04'W), 1 ♂, 17.I.1980, M. Gentili leg. (IPCN); **Confluencia** (T), 690 m, (40°44'S, 71°06'W), 1 ♂, 18.XI.1968, M. Gentili leg. (IPCN); **Pampa Rahue** (97), 1600 m, (39°24'S, 70°48'W), 1 ♀, 22.XII.1984, M. & P. Gentili leg. (IPCN). Santa Cruz: **Fitz-Roy** (85), 400 m, (49°21'S, 72°47'W), 3 ♂, 18.XI.1983, M. & P. Gentili leg. (IPCN).

Comments. *Dargida alboradiata* was proposed in the genus *Cirphis* Walker (Hampson 1905), and later considered a member of *Leucania* (Poole 1989), where it is currently. However, the general aspects of the wings shape and the characteristic morphology of the male and female genitalia, unquestionably support it as a species of *Dargida* (**comb. nov.**) in the current concept (Rodríguez & Angulo 2005).

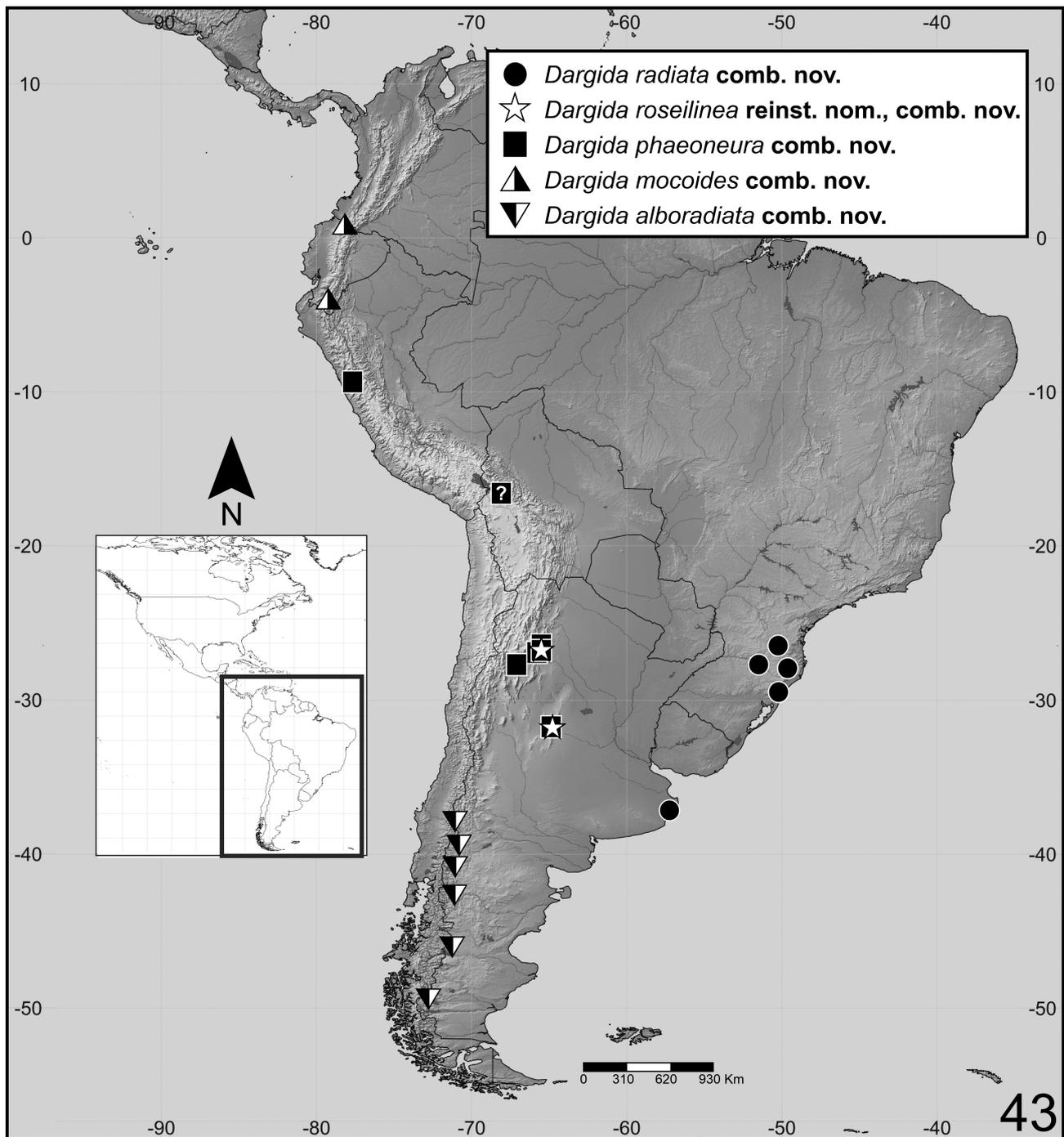


FIGURE 43. Geographic distribution of *Dargida* species.

Hampson (1905) proposed *Cirphis alboradiata* based on a single male [holotype] deposited at the NHMUK (Poole 1989) from Valle del Lago Blanco, Chubut, Patagonia, Argentina. An old image of the holotype of *C. alboradiata* (Fig. 23) was taken at the NHMUK; however, the specimen was not located in a recent visit at the collection (DRD, pers. comm.). In the small box of *C. alboradiata*, there are five males all from the type locality. Although conspecific, none of them fit exactly the holotype specimen of *C. alboradiata*. Moreover, there is a short note informing: “Type with Martin Honey. A. Giusti Nov. 2008”, even though the type presumably still is housed at the NHMUK.

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