

Species descriptions and miscellaneous notes on the genus
Pseudolucia (Lepidoptera: Lycaenidae)

Zs. Bálint, D. Benyamini and K. Johnson

Species descriptions and miscellaneous notes on the genus *Pseudolucia* (Lepidoptera: Lycaenidae)

— Three polyommata lycaenids *Pseudolucia kechico* sp. n. (Chile, Reg. Aysen), *Pseudolucia henyah* sp. n. (Chile, Reg. Metropolitana) and *Pseudolucia arauco* sp. n. (Chile, Reg. Araucania) are described. A lectotype for *Pseudolucia andina* (Bartlett-Calvert, 1893) is designated. The male of *Pseudolucia magellana* Benyamini, Bálint et Johnson, 1995 and the female of *Pseudolucia patago* (Mabille, 1899) are recorded and figured for the first time. The type locality of *Pseudolucia charlotte* Bálint et Johnson, 1993 is corrected and restricted. With 35 original figures.

Key words: Neotropics, Argentina, Chile, Polyommata, *Pseudolucia*.

INTRODUCTION

The butterfly fauna of Chile recently received thorough study (Peña & Ugarte 1997). In the introduction to that study, Lamas (1997: 18) suggested there might be little chance for discovering additional new species. However, as field work reached into hitherto unexplored areas of Chile, and more material became available from this geographically complex region, the peculiarity of the genus *Pseudolucia* Nabokov, 1945 in Chile became more and more obvious. Across South America's southern cone, the genus reveals a high diversity of species, mirroring the highly specialized niches available in the region's orear biome because of microclimatic and edaphic conditions. This phenomenon also typifies the Holarctic lycaenid fauna where the genera *Aricia* Reichenbach, [1819], *Plebejus* Kluk, 1780 and *Polyommatus* Latreille, 1804 show similar high diversity in the orear biome of the Northern Hemisphere.

As a further contribution to the knowledge of the orear lycaenid fauna of South America we have prepared this paper for (1) description of three new species, (2) supplementary descriptions of two species hitherto known from a single sex, and (3) designation of a (i) lectotype for *Pseudolucia andina* (Bartlett-Calvert, 1893) and (ii) type locality restriction for *Pseudolucia charlotte* Bálint et Johnson, 1993. These latter serve nomenclatural stability and taxonomic clarity.

MATERIALS AND METHODS

Capitalized colour names in the descriptive texts are taken from Maerz & Paul (1950). Terminology herein for both external and morphological features follows our previous papers on *Pseudolucia* (Bálint *et al.* 2000, Bálint & Benyamini 2001) using the terms given by Scott (1990, cf. Figs 10–17).

The following abbreviations for institutes and museums are used in the text listed here in alphabetical order: BMNH = The Natural History Museum, London (UK), FMNH = Field Museum of Natural History, Chicago (USA), HNHM = Hungarian Natural History Museum, Budapest (Hungary), IML = Instituto Miguel Lillo, Tucumán (Argentina), MHNP = Museum Histoire d'Naturelle, Paris (France), MNHN = Museo Nacional de Historia Natural, Santiago (Chile). The acronym ICZN is used for the most recent edition of the International Code of the Zoological Nomenclature (International Commission of Zoological Nomenclature 1999).

TAXONOMY

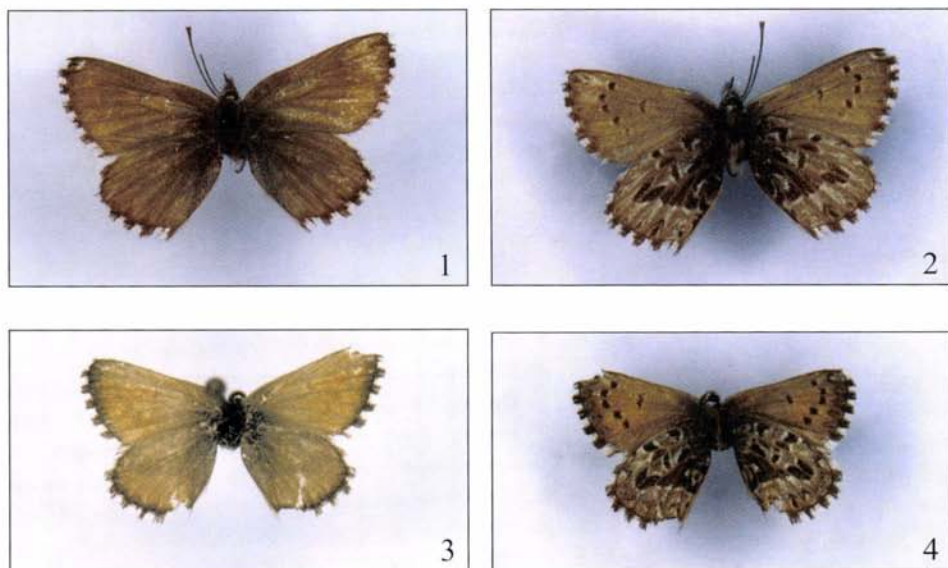
***Pseudolucia kechico* sp. n.**

(Figs 1–4, 29–30)

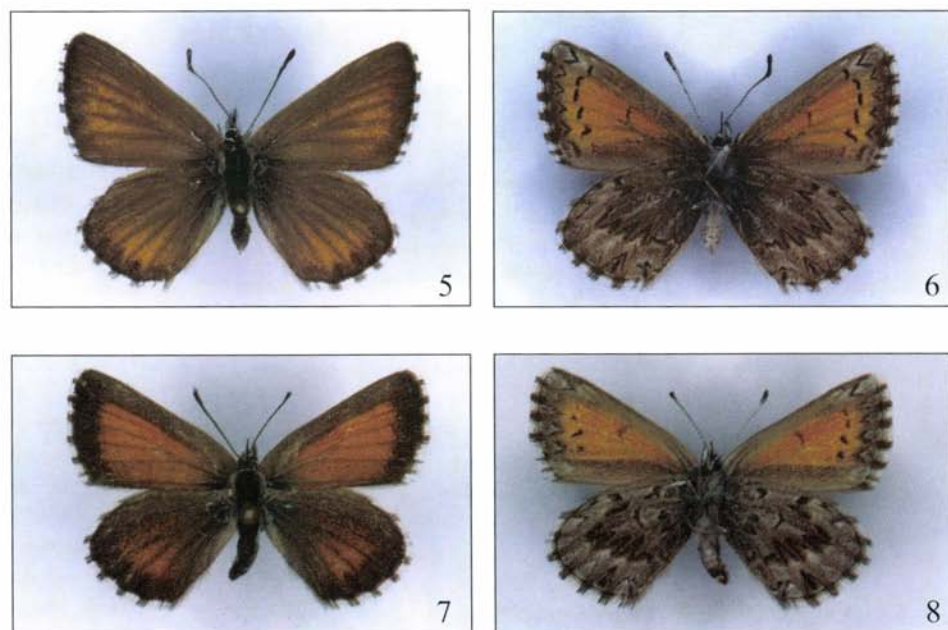
Type material — Holotype: male, deposited in MNHN: “Chile, Chico, Prov. Aysen, 24,31. Dic. 1960, Coll.: L. E. Peña” gen. prep. Bálint no. 625. Fore wing costal length: 10.5 mm; in relative good condition, the tip of left antenna's bulb and half of the right antenna are missing, the abdomen is dissected (Figs 1–2). Paratype: female, deposited in MNHM: “Chile-Chico, Aysen, 27. I. 1960, Leg. L. Peña G; *Pseudolucia*, nov. sp., det: L.E. Peña '94”, gen. prep. Bálint no. 626 (Figs 3–4). Paratype: male, deposited in MNHM, with the holotype data, gen. prep. Bálint, no 764 (abdomen partly eaten by insects). Paratype: male, with holotype data, deposited in FMNH. Paratype: male with holotype data in collection Benyamini (Bet Arye, Israel).

Diagnosis — The species is closest to *P. nequeniensis*, but smaller and with the median band of the hind wing ventrum less ruptive and comprised by extended and arc-edged spots (these are arrow-head shaped on all congeners). Anal-postbasal, costal-postmedian and submedian spots are coalescent, creating a K-shaped mark which typifies the new species. The postbasal spot in cell Sc+R1 on the hind wing ventrum is boomerang-shaped, unique among all species of the group. Genitalia generally resemble other members of the *andina*-group; however, in the female the henia, which is generally large and oblong in this species group, is instead quadrant-shaped in all aspects and extremely small, comprising cca. 0.33 length of ductus seminalis.

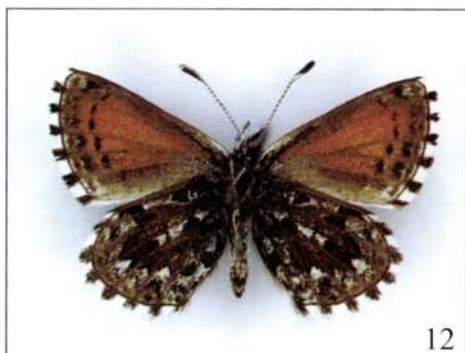
Description — Male: dorsal fore wing, dorsal hind wing ground colour Collie, fringe chequered. Ventral fore wing ground unicolorous Acorn with somewhat lighter apical and subapical area. Median discoidal line and postmedian spots brown with beige crescents. Ventral hind wing ground colour somewhat lighter than in fore wing. Postbasal spot near to costa boomerang-shaped, postbasal spot in discal cell large and lineal, postbasal spot near to anal margin reaching postmedian marks. Postmedian spots large and extended, with arc-shaped edges and merging with subbasal anal spots into a K-shaped mark; submarginal area



Figs 1–4. *Pseudolucia kechico* sp. n. – 1–2: holotype (MNHN); 1: dorsum, 2: ventrum – 3–4: paratype female (MNHM); 3: dorsum, 4: ventrum



Figs 5–8. *Pseudolucia henyah* sp. n. – 5–6: holotype (MNHN); 5: dorsum, 6: ventrum – 7–8: paratype female with holotype data (coll. Benyamini); 7: dorsum, 8: ventrum



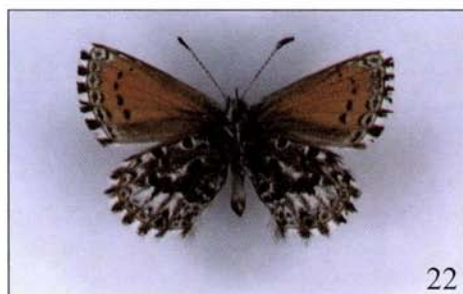
Figs 9–12. *Pseudolucia arauco* sp. n. – 9–10: holotype (MNHN); 9: dorsum, 10: ventrum – 11–12: paratype (coll. Benyamini); 11: dorsum, 12: ventrum



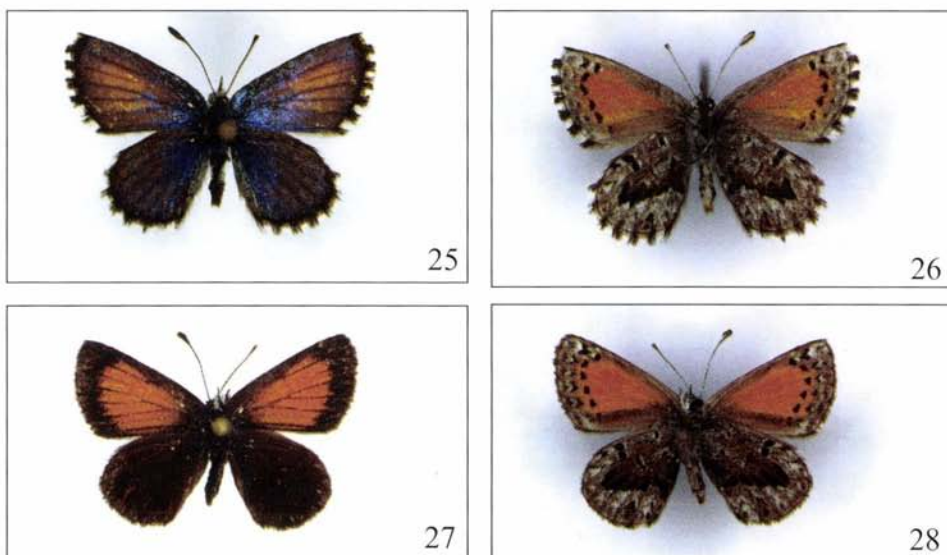
Figs 13–16. *Pseudolucia andina* (Bartlett-Calvert, 1893), topotype specimens (coll. Benyamini); – 13–14: male – 13: dorsum, 14: ventrum; 15–16: female – 15: dorsum, 16: ventrum



Figs 17–20. *Pseudolucia magellana* Benyamini, Bálint et Johnson, 1995; – 17–18: holotype female (MNHM), 17: dorsum, 18: ventrum; – 19–20: male, Chile, Magallanes, La Última Esperanza (coll. Benyamini); 19: dorsum; 20: ventrum



Figs 21–24. *Pseudolucia patago* (Mabille, 1899), Chile, Chico (coll. Benyamini); – 21–22: male – 21: dorsum, 22: ventrum; 23–24: female – 23: dorsum; 24: ventrum



Figs 25–28. *Pseudolucia charlotte* Bálint et Johnson, 1993, Chile, Araucania, Volcano Villarica (coll. Benyamini); – 25–26: male – 25: dorsum, 26: ventrum; 27–28: female – 27: dorsum, 28: ventrum.

with suffusive markings and a prominent spot in cell CuA2. Fore wing costal length: 11.2 mm ($n = 3$). Genitalia (Fig. 29): typical of *andina*-group: valvae with robust horseshoe-shaped uncus; tegumen heavily sclerotized and with appendix angularis; juxta with arms longer than appendix angularis; valvae with anal terminus longer than costa and anal edge inclined from midpoint; aedeagus with sagum robust; vesica with cca 0.5 aedeagal length.

Female: similar to male but fore wing with Russet Brown hue, ventral markings and coloration more contrasted. Fore wing costal length: 9.5 mm ($n = 1$). Genitalia (Fig. 30): typical of the *andina*-group but with sclerotized henia very small (see below) and with a relatively quadrant-shaped tube showing rounded corners from all views; central tube of henia apically widened in ventral view and with edges appearing parallel in the dorsal/ventral aspect but relatively quadrant-shaped in lateral view; ductus seminalis elongate (length three-times that of the diminutive henia).

Type locality — Chile, Province Aysen. The town Chile Chico is located on the southern shores of Lake Buenos Aires (Argentina) or Lake General Carrera (Chile), about 120 km south of Coihaique, XI. Region de Campo in southern Chile on the border with Argentina.

Etymology — Named after the type locality and the characteristic K-shaped mark on the ventral hind wing (“chico” also means “little” in Spanish, referring to the small size of the species compared to its relatives).

Note — This species has not been collected in the last 40 years. Benyamini did not find it during two visits to the region in the late 1990s. The species’ taxonomic features, along with the relative distribution of congeners in the region, obviate the possibility that some size-related features in this taxon represent allometry.

***Pseudolucia henyah* sp. n.**

(Figs 5–8, 31–32, 34)

Type material — Holotype: male, deposited in MNHN: “Cuesta la Dormida, Chacabuco, Metrop. Reg. Chile, 1150 m, 4.XI.1995, leg. D. Benyamini”. Fore wing length: 13.5 mm, in excellent condition (Figs 5–6). Paratype: female, with holotype data, deposited in coll. Benyamini (Figs 7–8). Paratypes: one male and two females with holotype data, deposited in HNHN, gen prep. Bálint no. 640 (male, partly destroyed by *Anthrenus*), 641 and 710 (females). Paratypes in collection Benyamini (Bet Arye, Israel): 2 males, 1 female with holotype data; 5 males “Cuesta la Dormida 1200 m, Chacabuco, 3.XI.1995, leg. Ugarte”. Further two female paratypes, deposited in MNHN: “Las Viacachas, Limache, 27–XII–1936” (in bad condition, wings broken, antennae and abdomen missing) and “Principal, II.1898, leg. Izquierdo” (in moderate condition, right antenna and abdomen missing) (Fig. 34). Paratypes in the Concepción University Collection (Chile): 1 male, Huentelaugen, sea level, 37 km N. Los Vilos, Coquimbo, 5.X.1947., (leg. Wagenknecht).

Diagnosis — Large, as in somewhat similar *P. asafi*, but fore wing dorsum with more vivid Gold Brown orange coloration than that species and with ventral fore wing anal area conspicuously dark (this area extremely light in *P. asafi*). Dark hind wing ventrum unique compared to all other species of the group. Male genitalia generally resembling *P. nequensiensis* Bálint et Johnson, 1995, but ductus seminalis of the female genitalia with outstanding heavy sclerotization forming a flattened tube more than two-times the length of the central tubal element of the sclerotized henia. In other species sclerotization of the ductus seminalis is either entirely absent or only vaguely present at the base of the structure.

Description — Male: dorsal fore wing, dorsal hind wing ground colour Bronze Lustre with submedian Gold Brown intercellular suffusion; fringe chequered. Ventral fore wing Gold Brown with costal, submarginal and anal areas Sandy Beige. Median discoidal line indistinct, postmedian markings lineal and distinctive, submargin with intercellular arrowhead-shaped markings and shaded antemarginal spots. Ventral hind wing ground colour Ormond with Kasha Beige suffusion along some scales. Postbasal and median markings reduced, discocellular line invisible, postmedian spots lineal and narrow, submarginal area with arrowhead-shaped marking and antemarginal spot in cell CuA2 and cell 1A+2A. Fore wing costal length: 13.3 mm (n = 9). Genitalia (Fig. 31): typical of the *andina*-group, valvae with robust, horseshoe-shaped uncus, heavily sclerotized tegumen with appendix angularis, and juxta with arms longer than appendix angularis; valvae anal terminus longer than costal, and with valve's anal edge declined from the midpoint; aedeagus with sagum robust, vesica cca 0.5 aedeagal length.

Female: similar to male but wings' ground colour entirely Gold Brown with Castor costal and submarginal areas, ventrum similar to male but with all ground colours more prominent and overlaid markings more highly contrasted. Fore wing costal length: 13.0 mm (n = 2). Genitalia (Fig. 32): typical of the *andina*-group but with sclerotized henia comprised of an oblong tube showing rounded edges in lateral view; central tube of henia apically widened in ventral view with edges appearing slightly curved in the dorsal/ventral aspect and slightly oblong in lateral view; ductus seminalis distinctive with entire structure prominently sclerotized.

Type locality — Chile, region Metropolitana, Chacabuco, Cuesta la Dormida. The type locality is a mountain pass crossing “Cordillera de la Costa” (see Bálint & Benyamini 2001, type locality of *Pseudolucia ugartei* sp.n.).

Etymology — Named after the mother of Dubi Benyamini, Henyah Benyamini. “Henyah” means “Yes God” in Hebrew.

Note — This species was first recognized by Ureta (1949: 122), who described it as “*Scolitantides andina* f. *HORSTI* nov. f. (hembra)”, noting it as a “notable forma de hembra” of *Pseudolucia andina*. According to the newest edition of the Code (International Commission of Zoological Nomenclature 1999: 9, Art. 10.2 and 49, Art. 45.5) the name *horsti* is therefore not available as authored by Ureta. In addition, the name “horsti” has not become available through any subsequent use in the literature. We prefer not to use Ureta’s name, because if we diagnose the taxon as *horsti* it can later cause confusion should workers think that name should be attributed to Ureta, in spite of the Code’s apparent clarity on this point (International Commission of Zoological Nomenclature 1999: 9). We have examined two of the specimens mentioned by Ureta as “types”; we also select them as paratypes (see above), because they represent the species and they have been traditionally curated as types in the MNHN (Fig. 34). The other two Ureta specimens, one female from “Zorillas cuesta de Ovalle” taken by Wagenknecht and an other from “Chillan” taken by Izquierdo, were not locatable by us.

***Pseudolucia arauco* sp. n**

(Figs 9–12, 33)

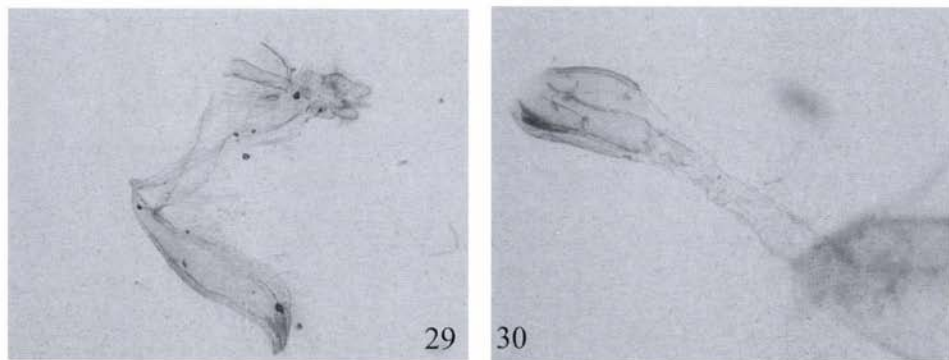
Type material — Holotype: male, deposited in MNHN: “Nahuelbuta, Arauco, Dic-1993, leg. Peña/Ugarte; *Pseudolucia*, nov. sp.; det. L.E. Peña 94;” gen. prep. Zs. Bálint, no. 629, in excellent condition (Figs 9–10), however the genital organ was partly destroyed by *Anthrenus* or *Dermestid* larvae. Paratype male, coll. Benyamini, Chile, Reg. Araucania, Volcano Villarica, 1407 m, 28.XII.1999., leg. D. Benyamini (Figs 11–12), gen. prep. Zs. Bálint no. 958 (Fig. 33).

Diagnosis — The species resembles *P. hazeorum* but has a vivid Brittany dorsal ground colour with a much narrower, but still distinctive, black margin. Hind wing ventral markings differ from *P. hazeorum* in having postbasal, median and submedian spots coalescent in as large Castor L-shaped spots, amongst which only the postbasal in cell Sc+R1 and the spot in the cells Sc+R1 and Rs are separated. Male genitalia show an amalgam of characters typical of the *plumbea*-group but none particularly unique. Female genitalia, more typically diagnostic in this group, are not available.

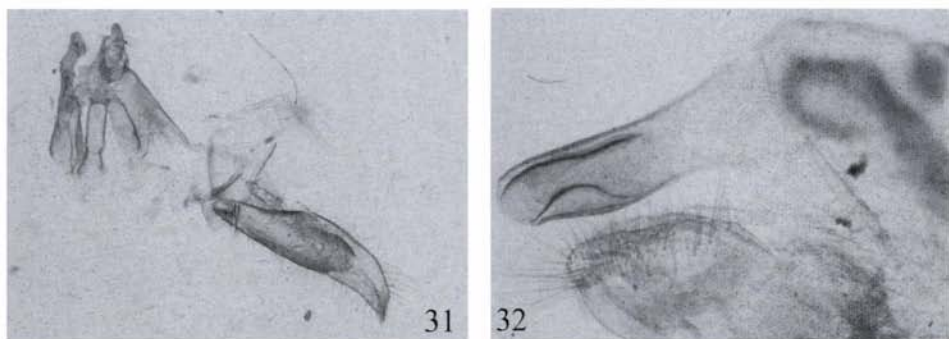
Description — Male: dorsal fore wing, dorsal hind wing ground colour Brittany blue with suffusive black margin, fringe chequered. Ventral fore wing Gold Brown, costally and anally Sandy Beige, median discoidal line absent, postmedian markings suffused and not equal in size, submargin with intercellular arrowhead-shaped markings and shaded antemarginal spots well visible. Ventral hind wing ground colour basally Acorn and submedianly Woodash. Postbasal, median and submedian spots Castor and completely suffused, only postbasal spot in cell Sc+R1 and submedian spots in cells Sc+R1 and RS independent, discocellular line almost invisible, submarginal area with faint arrowhead-shaped marking and antemarginal spot located intercellularly, markings in cell CuA2 and cell 1A+2A distinctive with black arrowhead-shaped marks and antemarginal spots. Fore wing costal length: 11.3 (n = 2). Genitalia (Fig. 33) with valvae shape elongate and with robust costal edge angulation and a terminal hook; aedeagus with long vesica and membranous sagum typical for the *plumbea*-group of the genus.

Female: Unknown.

Type locality — Chile, Region Araucania, Nahuelbuta. The type locality is a montane,



Figs 29–30. *Pseudolucia kechico* sp. n., genital organs. – 29: male; 30: female



Figs. 31–32. *Pseudolucia henyah* sp. n., genital organs. – 31: male; 32: female

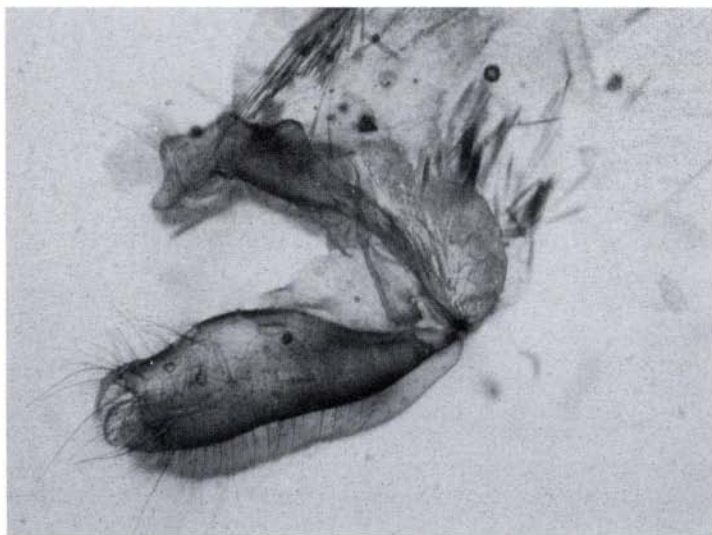


Fig. 33. *Pseudolucia arauco* sp. n., male genital organ

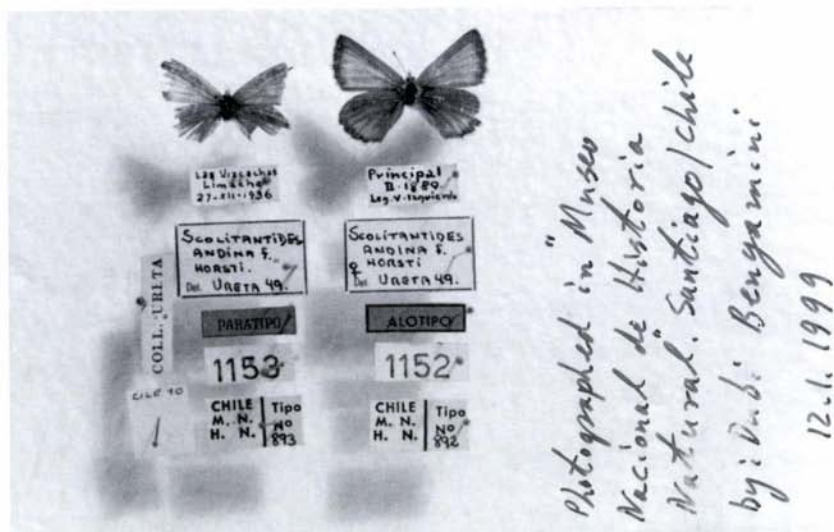


Fig. 34. Historical specimens of "*Scolitantides andina f. horsti*", in MNHM paratypes of *Pseudolucia henyah sp. n.*, recorded *in situ* by Benyamini

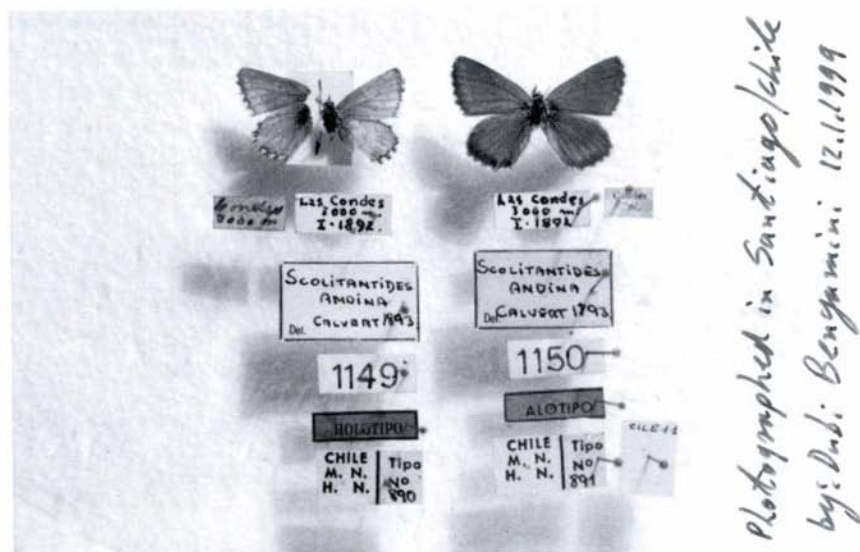


Fig. 35. MNHM syntypes of "*Scolitantides andina*", recorded *in situ* by Benyamini

forested National Park, located 100 km south of Concepción and about 500 km south of Santiago.

Etymology — Named after the region of the type locality, Araucania.

Note — Peña, Ugarte and Benyamini have visited the type locality several times, but were unable to collect additional specimens. Subsequently, Benyamini located an additional population on the slopes of Volcano Villarica, 180 km SE of Nahuelbuta.

***Pseudolucia andina* (Bartlett-Calvert, 1893)**

(Figs 13–16, 35)

Material examined — Chile, Bio Bio, Araucania Region, Vc. Longimay, 22. Nov. 1990, leg. L. Peña; gen. prep. Bálint no. 816 (1 male, AMNH). Chile, Vs. Del Flaco, Cord. Talca, 29. Nov. 1957, Coll: L.E. Peña (1 female, AMNH). Same data (1 female, coll. Benyamini from Peña coll.). Argentina, Parque Provincial Aconcagua, Mendozam Los Horcones, 15.XII.1999, leg. Benyamini (1 male). Argentina, Prov. Mendoza, Valle de Las Leñas, ca. 7000', 3.XII.1989, leg. A.M. Shapiro (1 male, 1 f, AMNH). Argentina, Prov. Mendoza, Valle de las Leñas, 2100 m, 19.XII.1999, leg. D. Benyamini (1 male, 1 f, coll. Benyamini).

Hitherto *P. andina* was recorded from the following Chilean regions: Metropolitan (Cordillera Santiago, Parc Nacional El Morado) and Maule (Cordillera Talca) (Benyamini, 1995, table 9) and also from Argentine territories bordering the Metropolitan area and from the Argentine Province Mendoza (Bálint & Johnson 1995: 4). The Bio Bio data is the most southerly record for the species and, apparently from material provided unmounted in bulk by Peña, since its label is a recently generated computer printed label, not one printed by hand in Peña's traditional method.

The species was described from an unstated number of male and female specimens from "Condes above Santiago at 3000 m". One male and one female syntype specimens were found in the BMNH (Bálint 1999: 12) and an other syntype pair is existing in the MNHN (Fig. 35). The BMNH syntypes represent the taxon as it was redescribed most recently (Bálint & Johnson 1993: 19). However, the MNHM syntype material is not conspecific, because the "Alotipo" represents a male specimen of *Pseudolucia asafi* whilst the "Holotipo" male is *andina*. For stabilizing the status of the taxon this "Holotipo" is hereby designated as lectotype of *Pseudolucia andina*. We add the following label: "Lectotypus // *Pseudolucia* // *andina* [%] designated by // Zs. Bálint // Budapest, 2001.VI.13." (red bordered, word Lectotypus red printed, rest handwritten). The BMNH syntypes are designated as paralectotypes and labelled accordingly.

The *andina*-group of *Pseudolucia* revealed an unexpected diversity from the Atacama region to Tierra del Fuego and representative of additional populations can probably be expected from the eastern side of the Andes, which is far less explored. Since the titular species of the group is *Pseudolucia andina*, its identity must be fixed objectively; the action of the Lectotype designation serves this purpose.

Note — The populations from the Cordillera Talca (Chile) and Las Leñas (Argentina) seem to differ somewhat from the typical *andina* and are, in some ways, reminiscent of *P. asafi* Benyamini, Bálint et Johnson, 1995 (type locality: Chile, Coquimbo, 20 km north of Caren Illapel, 2800 m) and/or *P. avishai* Benyamini, Bálint et Johnson, 1995 (type locality: Chile, Coquimbo, Illapel, Los Pelambres, 2900 m). Accordingly, the status of Cordillera Talca and Las Leñas populations will be further examined in a forthcoming revision of the entire *andina*-group (Bálint & Benyamini *in prep.*).

***Pseudolucia magellana* Benyamini, Bálint et Johnson, 1995**
(Figs 17–20)

Material examined — Rio Baquales, 350 m, 4.12.1998, La Ultima Esperanza, Magallanes, Chile (1 male, coll. Benyamini).

The species was described on the basis of the MNHN holotype female from Rio Baquales, Torres de Paine, Magallanes, Chile collected by A. M. Shapiro (Figs 17–18). Subsequently one male specimen was taken by D. Benyamini and figured here for the first time (Figs 19–20). The specimen, which is in only moderately good condition, matches the original diagnosis: relatively small (fore wing costal length: 11.5 mm) compared to sister taxa, ventral hind wing possessing strongly marked jagged spots compromising the submedial band.

This species is the most austral of lycaenid species in the world, occurring at the highest recorded latitude in the Southern Hemisphere for the family Lycaenidae.

The etymology of the original description stated that the name signified the region of the type locality in two ways, 1) politically, as in the Province Magallanes of Chile and 2) biotically as the Magellanic Inter-oceanic Biotic Province. Since, as pointed out in the original description, the spellings of the two regions differ, we consider *magellana* is to be the correct original spelling (not an incorrect original spelling as per ICZN, Article 32).

***Pseudolucia patago* (Mabille, 1899)**
(Figs 21–24)

Material examined — Chile, Chile-Chico, 250 m, 1.5 km, W of Chile–Argentina border, 8.I.1999, Aisen, Chile, leg. D. Benyamini, gen. prep. Bálint, no. 815 (1 male, HNHN). From the same locality, 9.I.1999., leg. D. Benyamini, gen. prep. Bálint, no. 816 (1 female, HNHN). From the same locality and with same data (3 males, 4 females, coll. Benyamini). Chile Chico, 24–31.XII., leg. Peña, gen. prep. Bálint, no. 788 (1 male, in coll. MNHN).

The species was described on the basis of the single MHNH holotype male collected in Santa-Cruz, Patagonia (in that time Chile, today in Argentina) and was recently reexamined, resulting in the combination *Pseudolucia patago*; this taxon was placed in the *plumbea*-group (Bálint & Johnson 1995: 20). Dubi Benyamini rediscovered the species during his most recent expedition in Chile, when both sexes were collected (Figs 21–24). The female possesses colouration and markings typical for the *plumbea*-group, and the genital morphology also supports this relationship. The female suggests distinctive character at the specific level: the ductus bursae being membranous and the henial sclerotization notably robust comparing with congeners.

***Pseudolucia charlotte* Bálint et Johnson, 1993**
(Figs 25–28)

Material examined — Chile, Reg. Araucania, Vn. Villarica, 1407 m, 28.XII.1999., (Refugio), leg. Benyamini (2 males, 2 ff, HNHN). Same data (1 male, 2 females, coll. Benyamini). Chile, Reg. Araucania, Pucon, Temuco, 12.XII.1995., leg. Peña et Ugarte (1 female, coll. Benyamini). Chile, Reg. Araucania, Vn. Longuimay, 1400 m, 20.XII.1994., leg. Peña et Ugarte (2 males, coll. Benyamini).

The identity of *P. charlotte* was recently overlooked as *Pseudolucia ugartei* (Bálint & Benyamini 2001) in the Polyommata synopsis of Benyamini (1995: 15–17). More

recent material reveals that *P. charlotte* indeed occurs in the territory of present day Chile (as well as in Argentina).

According to the original description, *Pseudolucia charlotte* was described on the basis of the AMNH holotype male from Valle de las Leñas, province Mendoza, Argentina collected by A. M. Shapiro, and the allotype female and five male and three female paratype specimens all from Pucará (Prov. Neuquén, Argentina), originating from various institutes and museums. The published diagnosis of *P. charlotte*, completed in Budapest, was based solely on representatives provided through the mail from Pucará, two of them figured on the photoplate of the original paper as Fig. "Q (m)" (male dorsum and ventrum) and "R (f)" (female ventrum and dorsum) but without any indication to their type status.

Subsequently, in recurating all the material available, it was discovered that the holotype data given in the original description was inadvertently in error. The data published for the holotype was not represented on any specimen the authors had investigated; the diagnosis and the description of the specimen clearly match the populations of the taxon found in Neuquén Province, bordering Araucania region of Chile; and, accordingly, the locality cited as the source of the type is not within the actual range of the taxon.

Consultation with a number of taxonomists confirms our view that, according to the Code, the figured and described holotype of *P. charlotte* is a valid holotype; also, the taxon itself is unambiguous. However, the type locality needs to be corrected according to ICZN Article 76., Recommendation 76A.2. Accordingly, we hereby restrict the type locality of *P. charlotte* to a locality from which the species is well known: as represented by specimens deposited in the HNHM, labelled as follows: "Vn Villarica, 1407 m, // 28.12.1999., (Refugio) // IX Reg. Araucania, Chile, Leg. Dubi Benyamini" (white paper, printed), "Hung. Nat. Hist. Mus. // coll. Lepidoptera // 2001 – 1 // don. Dubi Benyamini" (white paper, printed).

This restriction was further advised because as more material became available it turned out that *P. charlotte* and a sister species, *P. lanin*, comprise a taxonomically isolated sister pair within the genus. Moreover, *P. lanin* and *P. charlotte* appear to be sympatric and synchronic in certain localities; therefore the clear identities of these taxa have needed to be established.

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