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REASSESSMENT OF *PARAPEDALIODES* FORSTER AND *NEOPEDALIODES* VILORIA, L. D. MILLER & J. Y. MILLER, WITH DESCRIPTIONS OF NEW TAXA (NYMPHALIDAE: SATYRINAE)

Ángel L. Viloria¹, Lee D. Miller^{2,†}, Jacqueline Y. Miller², and Tomasz W. Pyrcz³

¹Centro de Ecología, Instituto Venezolano de Investigaciones Científicas
Apartado Postal 20632, Caracas 1020-A, Venezuela. e-mail: aviloria@ivic.ve

²Florida Museum of Natural History, McGuire Center for Lepidoptera & Biodiversity
PO Box 112710, Gainesville, FL 32611-2710, U.S.A. e-mail: jmliller@flmnh.ufl.edu

³Muzeum Zoologiczne Uniwersytetu Jagiellońskiego, Ingardena 6, 30-060 Kraków, Poland
e-mail: tpyrcz@yahoo.com

ABSTRACT: Upon comparative analysis, the satyrine genera *Parapedaliodes* Forster and *Neopedaliodes* Viloria, L. D. Miller & J. Y. Miller are reassessed, redefined and revised. There are a few fundamental morphological homologies between these two genera. Two species and six subspecies of *Neopedaliodes* are described as new: *N. lafebreae*, and *N. michaeli*, **new species**; *N. juba jubilosa*, *N. margaretha allyni*, *N. michaeli citrica*, *N. michaeli innupta*, *N. nora stepheni*, and *N. proculeja malaga* **new subspecies**. One new combination is established. Synonymies and descriptions are accompanied by brief bionomical comments on each taxon and data on its distribution.

KEY WORDS: Andean, Colombia, distribution, Ecuador, *Muscopedaliodes*, neotropical, *Panyapedaliodes*, *Pedaliodes*, Peru, *Physcopedaliodes*, *Pronophila*, Pronophilina, taxonomy.

RESUMEN: Después de un análisis comparativo se reevalúan, redefinen y revisan los géneros de mariposas satirinas *Parapedaliodes* Forster y *Neopedaliodes* Viloria, L. D. Miller & J. Y. Miller. Entre ambos géneros existe pocas homologías morfológicas

[†] Deceased, 5 April 2008.

fundamentales. Se describen como nuevas dos especies y seis subespecies de *Neopedaliodes*: *N. lafebreae* y *N. michaeli*, **especies nuevas**; *N. juba jubilosa*, *N. margaretha allyni*, *N. michaeli citrica*, *N. michaeli inupta*, *N. nora stepheni* y *N. procleja malaga* **subespecies nuevas**. Se establece una nueva combinación. Se acompañan las sinonimias y descripciones de cada taxón con comentarios bionómicos breves y datos sobre su distribución.

PALABRAS CLAVE: andino, Colombia, distribución, Ecuador, *Muscopedaliodes*, neotropical, *Panyapedaliodes*, *Pedaliodes*, Perú, *Physcopedaliodes*, *Pronophila*, *Pronophilina*, taxonomía.

INTRODUCTION

Based on similarities of the male genitalic structures, Forster's (1964) taxonomic arrangement of a considerable number of genera of the neotropical Satyrinae is in general rather concise and acceptable, a fact that has been subsequently acknowledged by several authors (*e. g.*, Miller, 1968; Adams & Bernard, 1977, 1979, 1981; Adams, 1986; etc.). The current validity of most of the genera in his monograph of the Bolivian satyrine fauna (Forster, 1964) is an excellent example of the use of comparative morphology as a systematic tool when appropriately interpreted. Workers on satyrine butterflies in the Americas may assert that the taxonomy of the lower categories has certainly improved dramatically from what can be called the pre-Forsterian period of satyrine systematics.

Among others, Forster (1964: 153) established the genus *Parapedaliodes* with *Pronophila parepa* Hewitson, originally described from Ecuador as its type-species, and included three more taxa: *Pedaliodes milvia* Thieme (Peru), *Pronophila parrhoebia* Hewitson and *Pronophila phintia* Hewitson (Ecuador). Later, Adams (1986: 278-281) described three Colombian species of *Parapedaliodes*, both superficially and structurally related to *P. phintia* and *P. parrhoebia*, and also recognized that the Ecuadorian '*Pedaliodes*' *cyrene* (Grose-Smith) also belonged to this group of *Parapedaliodes*.

Upon review, we have concluded that the group of species referred to above is not truly congeneric with the type-species of *Parapedaliodes*. This realization became evident after analyzing homologies of the male genitalic structures and wing patterns within the group. Forster (1964) did not maintain a constant scale in his genitalia drawings; therefore, some subtle fundamental differences cannot be appreciated in certain instances. For example, *Parapedaliodes parepa* (Hewitson) and *P. milvia* (Thieme), are represented incorrectly as smaller than those of the rest of his '*Parapedaliodes*'. Thus, the major differences we found among the lengths of the aedeagi (= phallus, penis) are not represented.

Additionally, there is only superficial similarity between *Parapedaliodes parepa*, *P. milvia* (which in fact, were discovered to be conspecific by G. Lamas in 1979), and the rest of the taxa involved in this study. As these butterfly species are neither true *Parapedaliodes* nor *Pedaliodes* Butler, we have had to revise the character system of the former and redefine its parameters, and have determined that it is a monospecific genus, with possible affinities with the less speciose group of the *Pedaliodes* generic complex (*e.g.*, *Physcopedaliodes* Forster), while the remainder of the species previously treated under *Parapedaliodes* represent a separate generic entity. The genus *Neopedaliodes*, proposed by three of us (Viloria *et al.*, 2004), has proven to embrace not only several new Colombian, Ecuadorian and Peruvian taxa (described here), but also three species previously believed to belong in *Pedaliodes* (*Pedaliodes entella* Thieme, not considered

by Forster, *Pedaliodes proculeja* Thieme, and *Pedaliodes chingazaensis* Torres & Le Crom), and the ubiquitous taxon *Pronophila phoenicusa* Hewitson, repeatedly transferred by other authors to *Pedaliodes*, *Muscopedaliodes* Forster, *Panyapedaliodes* Forster, and *Parapedaliodes*.

In this paper we deal with the sole species of *Parapedaliodes* and 13 species of the recently erected genus *Neopedaliodes*, all of which differ from the members of the genus *Pedaliodes* in two basic aspects of the male genitalia: they do not have a globular saccus (as in the majority of *Pedaliodes*), but a tubular or semiconical one, and their aedeagi are not as robust and strongly contorted as in the *Pedaliodes*.

Eight new taxa are described in this work: two species and six subspecies; two genera are redefined and revised; and one new combination is proposed.

Abbreviations

MGCL: McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville, U.S.A. (includes collections of Allyn Museum of Entomology (**AME**), formerly in Sarasota, now integrated into the Florida Museum of Natural History; **NHM**: The Natural History Museum, London, Great Britain; **FWL**: forewing length; **GRM**: private collection of Gabriel Rodríguez, Medellín, Colombia; **JFLC**: private collection of Jean-François Le Crom, Bogotá, Colombia; **MUSM**: Museo de Historia Natural de La Universidad Nacional Mayor de San Marcos, Lima, Perú; **MIZA**: Museo del Instituto de Zoología Agrícola, Facultad de Agronomía, Maracay, Venezuela; **MNHN-UN**: Museo del Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá; **MZUJ**: Zoological Museum of the Jagiellonian University, Cracow, Poland; **PB**: private collection of Pierre Boyer, Le Puy Sainte Réparate, France; **TWP**: private collection of Tomasz Pyrcz, Warsaw, Poland (to be incorporated into MCUJ); **ZMHB**: Zoologisches Museum, Humboldt Universität, Berlin, Germany; **ZSBS**: Zoologisches Staatssammlung München, Germany.

TAXONOMY

Parapedaliodes Forster, 1964

Type species: *Pronophila parepa* Hewitson, 1862, by original designation.

Parapedaliodes Forster, 1964: 153 (in part misidentified).

Parapedaliodes Forster; Miller, 1968: 116; Adams, 1986: 278, 317; Vilorio & Pyrcz, 1994: 345, 347, 349; Pyrcz, 1999b: 351, 354; 2004a: 295; 2004b: 537, 572 (all, in part misidentified); Vilorio, 2002: 176, 177, 178; 2007: 1, 4, 9, 60; Piñas Rubio, 2004: 3; Lamas *et al.*, 2004: 211.

Generic diagnosis. Butterflies of medium size (FWL: 20-25.5 mm), not dimorphic. Antennal club gradually formed. Eyes hairy. Forewing subtriangular, apex and tornus only slightly rounded, outer margin smooth; hindwing rounded, outer margin slightly scalloped. Androconial patches always broadly entering the outer third of dorsal forewing. Ocellar elements variable in number, rudimentary, but always present on postdiscal region of ventral hindwing. Orange markings on wings, when present, always in submarginal position (instead of postdiscal as in *Neopedaliodes*). Hindwing veins Rs, M₁, M₂ and M₃ relatively long compared to *Neopedaliodes*, but discal cell does not

exceed half length of wing. Male genitalia: tegumen flat-domed; uncus well developed, shorter than tegumen, more or less straight; subunci short; saccus as long as tegumen + uncus, tubular; aedeagus very long (two to three times length of saccus) and straight, apically produced; valvae subrectangular to subfusiform, dorsally devoid of tooth-like processes, but ampullar process present subapically. This genus is defined more or less as it was by Forster in the original description and later, but with the elimination of all species save the type-species and its subspecies as mentioned below.

Distribution. This monobasic genus is found in Ecuador and Peru mostly at low to middle elevations, but also at high montane elevations. Its single species has a second subspecies in western/central Peru. Both races overlap north of Lima, where intergrading wing patterns are evident and so far the only example of this phenomenon known within the *Pedaliodes* generic complex.

***Parapedaliodes parepa parepa* (Hewitson, 1862)**

Figs. 1 (wing venation), 4 (♂), 5 (♀), 34 (♂ genitalia)

Pronophila parepa Hewitson, 1862: 2, pl. 1, figs. 1, 2.

Pronophila parepa Hewitson; Herrich-Schäffer, 1865: 66; Kirby, 1879: 114; Pyrcz, 1999: 354; 2004b: 572; Viloría, 2002: 177.

Pedaliodes parepa (Hewitson); Butler, 1867: 267; 1868: 178; Kirby, 1871: 105; Scudder, 1875: 243; Dognin, 1891: 34; Thieme, 1905: 120; Weymer, 1912: 261, pl. 55, row e; Gaede, 1931: 494; d'Abrera, 1988: 860, figs.; Pelz, 1997: 41-44, figs. 1-2 (early stages, habitat, and adults); Moreno *et al.*, 2000: 153; Viloría, 2002: 177; Piñas Rubio, 2004: 10, 63 figs. 579, 580 (female), 581-584 (male); Pyrcz, 2004b: 457.

Parapedaliodes parepa (Hewitson); Forster, 1964: 153, 155, fig. 189 (male genitalia); Viloría & Pyrcz, 1994: 349; Moreno *et al.*, 2000: 154; Pyrcz & Viloría, 2005: 264; 2007: 19, 60.

Parapedaliodes parape [sic] (Hewitson); Forster, 1964: pl. 35, figs. 7, 8.

Parapedaliodes parepa parepa (Hewitson); Lamas, 1979: 56; Viloría, 2002: 177, 188, 189; 2007: 4, 60; Lamas *et al.*, 2004: 211; Pyrcz, 2004b: 572-573, 583.

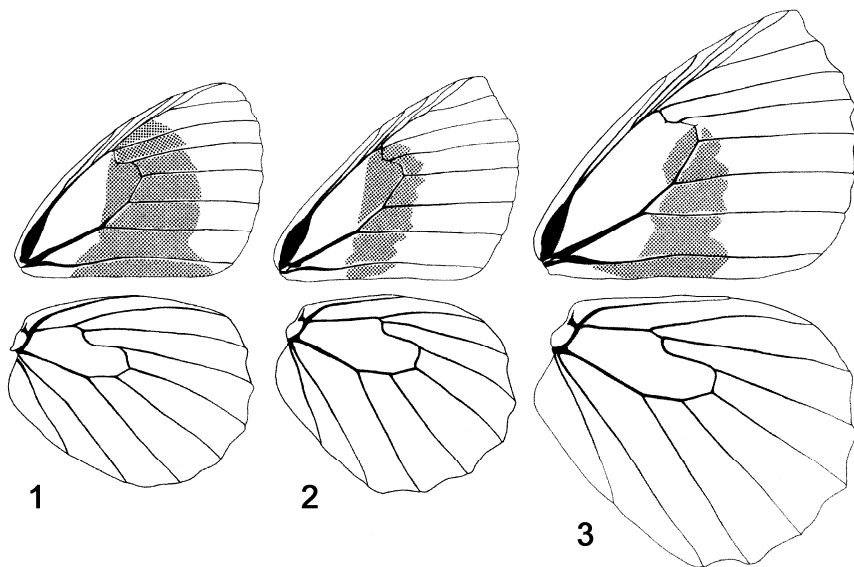
Type locality: Guayaquil [Ecuador].

Diagnosis. Ground color brown; readily recognized by the presence of submarginal, orange bands on the upperside of both wings; the outer margin of the band usually indented on hindwing. A paler but distinct band is also found in the same position on the underside of the forewing. Hindwing underside lacking orange markings, but with a wider light brown postdiscal-submarginal band.

Material examined: ECUADOR: 1 male, Ecuador, Hewitson Coll. BM 79-69, BM Type No. Rh. 6251 [LECTOTYPE of *Pronophila parepa* Hewitson, herein designated, bearing a red label, with the following printed information: *Pronophila parepa* / Hewitson, 1862 / Lectotype ♂ / designated by A. L. Viloría, / L. D. Miller & / J. Y. Miller, 2002]; 3 males, same data [PARALECTOTYPES of *Pronophila parepa* Hewitson, herein designated, bearing a blue label, with the following information: *Pronophila parepa* HEWITSON, 1862 / PARALECTOTYPE ♂ [hand-written] / A. L. Viloría [printed], L. D. Miller / J. Y. Miller 2001 [hand-written]]; 1 male, 2 females, Environs de Loja, Abbé Gaujón, 1885, Joicey Bequest BM 1934-120; 1 male, same data, 1891; 1 male, same data, 1892; 1 male, same data, 1893; 1 male, Loja, 67. 20, Ex Coll. Ed Brabant 1920, Joicey Bequest BM 1934-120; 1 male, Calamayo, Mar. '86, 32-21, Ex

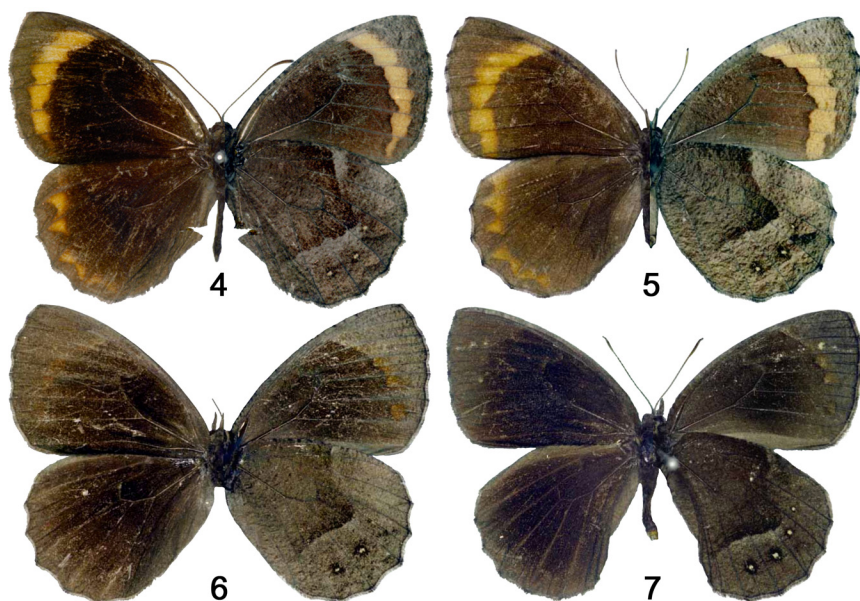
Coll. Dognin 1921, Joicey Bequest BM 1934-120; 1 male, Loja, Dec. 1892 (P. Dognin), 1915-209; 1 male, Santa Rosa de Guallabal [*sic*], 10 m-100 m, Joicey bequest BM 1934-120; 1 male, 1 female, Ecuador, Ex Grose-Smith 1910, Joicey Bequest BM 1934-120; 1 male, Sarayacu [false locality], E side of Ecuador, C. Buckley, 1879, Ex Oberthür Coll. BM 1927-3; 1 male, Guayaquil, pur. from Stevens, 55-48 [Hewitson coll.?]; 2 males, Ecuador, Druce Coll., Godman & Salvin Coll. BM 1904-1; 1 male, same data, C. Buckley; 1 male, Ecuador, Buckley Coll. 72-15; 3 males, Granadillas, E Ecuador, Buckley, Godman & Salvin Coll. BM 1904-1; 7 males, Zamora, 3-4000 ft, (O. T. Baron), Rothschild Bequest BM 1939-1, 1 male, Provincia de Azuay, W of Cuenca, Río Mazán, 2900 m, 16-viii-1986, M. J. & J. Adams, BM 1986-344; 1 female, Ecuador, Buckley, Joicey Bequest BM 1934-120; 1 female, Loja, Joicey Bequest BM 1934-120; 1 male, Macas, Buckley, Godman & Salvin Coll. BM 1904-1; 1 female, Zamora, Ex Coll. Dognin, Joicey Bequest BM 1934-120; 1 male, 1 female, Loja, 3° 58' S, Long. 79° 13' W, 2080 m, cultivated temp. zone, 15-xii-1974, R. Bristow, BM 1975-75; 1 male, Cuenca, 2° 55' S, 78° 69' W, 2560 m, scrubland, semiarid temp. zone, 20-viii-1974, R. Bristow, BM 1974-549; 1 male, 3 km E of Cuenca, 2° 54' S, 78° 58' W, 2470 m, meadow + scrubland, 21-viii-1974, R. Bristow, BM 1974-549; 1 male, nr. Charasol, km S of Azogues, 2° 46' S, 78° 50' W, 2480 m, scrubland, semiarid temp. zone, 19-viii-1974, R. Bristow, BM 1974-549; 1 male, km 3, E of Gualaceo, 2° 54' S, 78° 45' W, 2320 m, cultiv. warm temp. zone, 26-iii-1975, R. Bristow, BM 1975-206; 1 female, Macuchi, 45 km ENE of Quevedo, 0° 56' S, 79° 3' W, 1500 m, cultiv. semitrop. zone, 25-iii-1975, R. Bristow, BM 1975-206; 1 female, Baños, 8 km WSW of Cuenca, 2° 55' S, 79° 04' W, 2680 m, rough pasture, 20-viii-1974, R. Bristow, BM 1974-549 [NHM]; 3 males, 1 female, Zamora-Chinchiipe, Loja-Zamora, 1500 m, 8-xi-1996, S. Attal; 2 males, Zamora-Chinchiipe, route Loja-Zamora, km 40, 1500 m, 29-v-1996, S. Attal, I. Aldás; 11 males, 2 females, Prov. Loja, Guayquichuma, 1800 m, 28-v-1996, S. Attal, I. Aldás; 1 male, Loja, xi-1995, [A. Jasiński]; 1 male, no data [Ecuador]; 2 males, 1 female, Loja, Yangana, ii-1996; 1 male, route Catamayo-Porto Velho [*sic*], 500 m après bifurcation, 2000 m, 9-ii-1993, B. Mery, S. Attal; 1 male, *Podocarpus* N. P., Qda. S. Francisco, 2250-2400 m, 16-v-1996, A. Jasiński; 3 males, Zamora-Chinchiipe, Río Sabanilla, 1500-1600 m, 08-xi-1996, A. Neild; 1 female, Loja-Cajanuma, 2500-2700 m, 17-v-1996, A. Jasiński; 2 males, same data, 14-v-1996; 1 female, Loja, route de Catamayo, km 19, 2250 m, 23-v-1996, S. Attal, I. Aldás; 1 female, Zamora-Chinchiipe, Vallée du Río Zamora, via El Monje, 1900 m, 13-xii-1993; S. Attal, B. Mery; 1 male, Prov. Cotopaxi, Pilaló, > 2500 < 3000 m, 7-viii-1996, I. Aldás [TWP]; 2 males, Environs de Loja, 1892 [ZMHB]; 1 male, Guishapa [ZSBS]; 1 female, Chimborazo: Atazatapungu, 4140 m [probably a false locality], v-vii-1976, R. de Lafebre, A. C. Allyn Acc. 1976-8; 18 males, 6 females; Chillares, Bolívar, 3100 m, xi-1975, R. de Lafebre, A. C. Allyn Acc. 1976-2; 11 males, 5 females, Laguna San Marcos, w. Slope Volcán Cayambe, 3600 m, vi-1971, R. de Lafebre, A. C. Allyn Acc. 1971-27 [MGCL]; PERU: 1 male, Pérou, Ex de Mathan, Ex Oberthür coll. BM 1927-3; 5 males, 2 females, Dept. Amazonas (Chachapoyas), M. de Mathan, 1889, Ex Oberthür Coll. BM 1927-3; 2 males, Carobas [*sic*], 2500 ft, xii-99, (Simons), Rothschild Bequest BM 1939-1; 1 male, Pebas, Felder Colln., Rothschild Bequest BM 1939-1; 1 male, Cajabamba, N Peru, 9500 ft, O. T. Baron, Godman & Salvin Coll. BM 1904-1; 1 male, 1 female, Manchara, N Peru, 7000 ft, Sept. 1912, A. & E. Pratt, Joicey Bequest BM 1934-120; 1 male, N Peru, Krause, Godman & Salvin Coll. BM 1904-1; 1 male, W slopes of the Andes, N Peru, 10000 ft, June 1912, Pratt, Joicey Bequest BM 1934-120; 4 males (1 wing prep. No. 19 + genitalia prep. ALV067-96), 2 females, River Tabaconas, N Peru,

6000 ft, E. & F. Pratt, 1912, Joicey Bequest BM 1934-120; 1 male, Dept. Amazonas (Chachapoyas), M. de Mathan, 1889, Ex Oberthür Coll. BM 1927-3; 1 female, Chachapoyas, E Peru, Farrio, Godman & Salvin Coll. BM 1904-1; 1 female, Rentena Falls, Upper Marañón, N Peru, 1000 ft, A. E. & F. Pratt, Joicey Bequest BM 1934-120; 1 female, Peru, Ex Coll. C. J. Grist 1920, Joicey Bequest BM 1934-120 [NHM]; 3 males, 2-8 km NE Hda. Monteseo, CA, 1200-1400 m, 12/22-xi-1978, G. Lamas; 3 males, Qbda. Tallal, CA, 1500 m, 08-x-1974, G. Lamas; 1 male, Río Jequetepeque, CA, 10.000', 28-v-1969, P. Hocking; 2 males, Santo Toribio, AN, 3000 m, 28-iv-1978, P. Hocking; 2 males, entre Abra Barro Negro y Abra Chanchilla, AM, 2170 m, 27-ii-1976, G. Edblom; 1 male, 5 km W de Pomacochas, AM, 2000 m, 18-ii-1978, G. Lamas; 1 male, 11 km E de Chachapoyas, AM, 1850 m, 23-ii-1978, G. Lamas; 1 male, Pomacochas, AM, 2200 m, 11-iii-1985, G. Lamas; 1 female, Hda. Udimá, CA, 13/18-xi-1978, 2400 m, G. Lamas; 2 females, Caraz, AN, 2400 m, 27-iv-1978, P. Hocking; 2 females, Huaylas, AN, 2900 m, 19-vi-1979, P. Hocking [MUSM]; 1 male, Tabaconas, Vallée du Río Tabaconas, viii/ix-1995, I. Aldás [TWP]; 3 males, bei Abra Parculla (Westl. Andenseite) in 1600-2144 [m], 11-iv-1953, Koepcke, (1 Präparat Nr. SA 402); 1 male, bei Yámar, 8° 37' S, 77° 52' W, 2600-2800 m, 14-xi-1954, Koepcke; 1 male, bei Luján, bei Lima, 9-iii-1952, Koepcke [ZSBS]; 16 males, 2 females, Cajamarca: Sta. Rosa, 3000 m, i/iii-1998, ex M. Simon, Allyn Museum Acc. 1998-8 [MGCL].



Figures 1-3. Examples of wing venation and androconial patches in the genera *Parapedaliodes* Forster and *Neopedaliodes* Vilorio, L. D. & J. Y. Miller. Images to scale; **1**) *Parapedaliodes parepa parepa* (Hewitson); **2**) *Neopedaliodes nora nora* (Adams); **3**) *N. phoenicusa* (Hewitson).

Distribution. Widely distributed along both slopes of the Andes of Ecuador south of Carchi. Its distributional space goes south to the main Andean Cordillera in northern Peru (Amazonas, Cajamarca), with records on the western slopes of the Andes in the Department of Ancash (north of Río Fortaleza). From 350 to around 4000 m.a.s.l.



Figures 4-7. Adult specimens of *Parapedaliodes* (left dorsal, right ventral). Images not to scale; **4)** *Parapedaliodes parepa parepa* (Hewitson): PARALECTOTYPE of *Pronophila parepa* Hewitson, male, Ecuador, Hewitson coll., NHM type No. Rh 6251 [NHM]; **5)** *P. parepa parepa* (Hewitson): female, Pérou, Dép. Amazonas (Chachapoyas), M. de Mathan 1889, Ex Oberthür coll. Brit. Mus. 1927-3 [not a type, NHM]; **6)** *P. parepa milvia* (Thieme): HOLOTYPE of *Pedaliodes milvia* Thieme, female, Chosica, 850 m, Peru, Jan. [19]00 (Simons), Rothschild Bequest B.M. 1939-1 [NHM]; **7)** *P. parepa milvia* (Thieme): male, Peru, Surco; Adams Bequest B. M. 1912-399 [body reaffixed after removal and dry dissection, T. G. Howarth] [not a type, NHM].

***Parapedaliodes parepa milvia* (Thieme, 1905)**

Figs. 6 (♂), 7 (♀), 35 (♂ genitalia)

Pedaliodes milvia Thieme, 1905: 120-121, pl. 3, fig. 34.

Pedaliodes parepa (Hewitson) form *milvia* Thieme; Weymer, 1912: 261.

Pedaliodes parepa (Hewitson) var. *milvia* Thieme; Gaede, 1931: 494.

Parapedaliodes milvia (Thieme); Forster, 1964: 153, 155, fig. 190 (male genitalia), pl. 35, figs. 9, 10; Viloría & Pyrcz, 1994: 349.

Pedaliodes milvia Thieme; Hayward, 1964: 188, 189, fig. 120 (male genitalia); d'Abrera, 1988: 860, fig.; Viloría, 2002: 177.

Parapedaliodes parepa milvia (Thieme); Lamas, 1979: 56 (status revised); Viloría, 2002: 177, 188; Lamas *et al.*, 2004: 211; Pyrcz, 2004b: 573.

Type locality: Chosica, 850 m, Peru.

Diagnosis. Differs from the nominotypical subspecies in lacking the orange bands on the dorsal surface of both wings; faint postdiscal-submarginal orange markings, and one white subapical dot on ventral forewing.

This taxon is conspecific with *P. parepa* based on its facies and genitalia (see above for comments on the distribution of the genus).

Material examined: PERU: 1 female, Chosica, 850 m, Jan. '00, Simons, Rothschild Bequest BM 1939-1, genitalia vial M-9294 female, L. D. Miller [*Holotype*]; 2 males, Surco, Adams Bequest BM 1912-399; 1 male, Morococha-Cordillera, 14500 ft, Fritsch. Don. '63, Zell. Coll. 1884, BM 1884-37, Genitalia prepared ALV068-96; 1 female, Callao [wrong locality], Walker, Godman & Salvin Coll. BM 1904-1 [NHM]; 1 male, Surco, LI, 2000 m, 26-v-1974, G. Lamas; 1 male, Santa Eulalia, LI, 1000 m, 31-iii-1974, G. Lamas; 1 male, Tornamesa, LI, 1510 m, 05-viii-1969, G. Lamas; 2 males, same data, 20-iv-1969; 4 males, Chontay, LI, 700 m, 24-iii-1979, G. Lamas & N. Medina; 2 males, 1 female, Cocachacra, LI, 1400 m, 07-iv-1974, G. Lamas; 1 female, Surco, LI, 2000 m, 25-v-1975, G. Lamas [MUSM]; 2 males, Lima, 1924, Heyne; 1 male, von Dr. Lück, 1923, Coll. v. Rosen, Präparat Nr. SA 403; 1 male, S. Eulalia, 18-iii-1962 [ZSBS].

Distribution. This subspecies of *P. parepa* has so far been found within the western part of the Peruvian territory, in the central mountains of the Department of Lima, commonly between 700 and 2000 m. There are very few records from higher elevations.

Parapedaliodes parepa, natural hybrid (*parepa* × *milvia*)

Diagnosis. Individuals examined are all distinguished by orange marks on wing upperside. However, these marks are never as wide and continuous as in nominotypical *P. parepa*. The extent of markings varies widely from one specimen to another.

Material examined: PERU: 3 males, Río Fortaleza, Raquia, AN, 2150 m, 08-x-1982, G. Lamas & J. E. Pérez; 2 males, 1 female, 15 km NE de Sayán, LI, 900 m, 29-vii-1975, G. Lamas; 1 male, 1 female, Huayopampa, LI, 1950 m, 29-vii-1985, J. E. Pérez [MUSM].

Distribution. The geographical races of *Parapedaliodes parepa* hybridize within an area recorded from Río Fortaleza (Department of Ancash), and some localities in the Department of Lima north of the capital. Altitudinal range: 900-2150 m.a.s.l.

Neopedaliodes Viloría, L. D. Miller & J. Y. Miller, 2004

Type species: *Pronophila philotera* Hewitson, 1868, by original designation

[*Parapedaliodes*] Forster, 1964: 153 (in part misidentification).

[*Parapedaliodes* Forster]; Miller, 1968: 116; Adams, 1986: 278, 317; Viloría & Pyrcz, 1994: 345, 347, 349 (in part misidentification).

[*Pedaliodes* Butler]; d'Abrera, 1988: 847-868; 2001: 185-186 (both in part misidentification).

[*Neopedaliodes*] Viloría, 2002: 177, 178; Lamas *et al.*, 2004: 210 (as a synonym) *nomen nudum*]

Neopedaliodes Viloría, L. D. Miller & J. Y. Miller, 2004: 284.

Neopedaliodes Viloría, L. D. Miller & J. Y. Miller; Lamas *et al.*, 2004: 210-211; Viloría, 2007: 9; Pyrcz & Rodríguez, 2007: 467-468.

Generic diagnosis. Butterflies of small to medium size (FWL: 22-36 mm) not sexually dimorphic. Antennal club formed gradually. Eyes hairy. Forewing subtriangular, apex truncated and/or excavated (rounded in *Parapedaliodes*); outer margins slightly undulated; androconial patches present on forewing discal area, never extending to the

outer third of the wing. Ocellar elements present, but reduced in size, especially on ventral postdiscal area of wings, more developed on hindwing. Colored bands (orange or white) present on both wings, always postdiscal (instead of submarginal as in *Parapedaliodes*); hindwing band system (if present) always bent in right angle. Hindwing veins Rs, M₁, M₂, and M₃ relatively shorter than in *Parapedaliodes*; discal cell longer than half wing. Male genitalia: tegumen robust, flat-domed; uncus shorter or as long as tegumen, strong but more stylized than in *Pedaliodes*, and slightly curved downwards; subunci well developed, thin and always longer than half uncus; saccus subconical and very broad; aedeagus always longer than four times saccus, relatively thin and slightly asymmetrical, slightly contorted (never as much as in *Pedaliodes*), slightly curved downwards, bearing a small spiny process at distal extremity; valvae semirectangular, dorsally finely serrate, ampullar process variable, rudimentary to well developed, always subapical.

Distribution. The genus is restricted to the uppermost cloud forest of the Andes, from the Cordillera Oriental of Colombia (Chingaza region, Eastern Cordillera) to southern Peru (Urcos, Cuzco).

Artificial Key for the Separation of *Neopedaliodes* Species

The following dichotomous key is proposed for ready separation of the known species of *Neopedaliodes* (including the new ones described in this paper), and is based on superficial features of the wing pattern. We suspect additional, undescribed taxa, may be discovered in the future, primarily from certain poorly collected areas of the Andes of southern Colombia (Cordilleras Occidental and Central).

1. Dorsal surface unmarked; no postdiscal bands2
- 1'. Dorsal surface with postdiscal spots or bands present on at least forewing3
2. Ventral hindwing with two large white postdiscal spots in M₃-Cu₁ and Cu₁-Cu₂*N. zipa* (Adams)
- 2'. Ventral hindwing scrawled brown, rust and yellow, but with no large white postdiscal spots4
3. Ventral hindwing with a distinct yellow spot in the anterior portion of discal cell*N. proculeja* (Thieme), **new combination**
- 3'. Hindwing discal cell with no distinct markings.....*N. entella* (Thieme)
4. Dorsal surface with postdiscal bands of fore- and hindwings solid white*N. margaretha* (Adams)
- 4'. Spots or bands other than white5
5. Dorsal postdiscal bands above pale yellowish orange.....6
- 5'. Dorsal postdiscal upperside spots or bands darker orange to brick red.....7
6. Band of dorsal forewing strongly diverted basad anterior of M₁, extending to costa more basad*N. lafebreae*, **new species**
- 6'. Band of dorsal forewing only slightly diverted basad near costa*N. philotera* (Hewitson)

7. Postdiscal spots or bands deep brick red8
 7'. Postdiscal spots or bands orange9
8. Postdiscal spots extended towards submarginal area; forewing apex excavated; forewing margin scalloped; hindwing discal cell dorsally unmarked
 *N. juba* (Staudinger)
- 8'. Postdiscal spots not extended towards submarginal area; forewing apex not excavated; forewing margin not scalloped; one dorsal spot on distal extremity of hindwing discal cell*N. yeyo* Pyrcz & Rodríguez
9. Dorsal forewing orange spots or band diffuse, only between R_3 and Cu_1
 *N. chingazaensis* (Torres & Le Crom)
- 9'. Dorsal forewing orange band well defined10
10. Dorsal forewing orange band ends anterior at origin of radial veins
 *N. nora* (Adams)
- 10'. Dorsal forewing orange band continues to or near costa11
11. Dorsal forewing band diverted basad anterior to Cu_1 *N. phoenicusa* (Hewitson)
- 11'. Not as above.....12
12. Medial edge of dorsal forewing band strongly diverted basad anterior to M_3
 *N. michaeli*, new species
- 12'. Medial edge of dorsal forewing band highly irregular in outline
 *N. parrhoebia* (Hewitson)

Neopedaliodes chingazaensis (Torres & Le Crom, 1997)

Figs. 8 (♂), 36 (♂ genitalia)

Pedaliodes chingazaensis Torres & Le Crom, 1997: 213-218, figs. 1 (male genitalia), 3-4 (male holotype).

[*Neopedaliodes chingazaensis* Torres & Le Crom]; Vilorio, 2002: 177, 189 *nomen nudum* *Neopedaliodes chingazaensis* (Torres & Le Crom); Lamas *et al.*, 2004: 210.

Type locality: Parque Nacional Natural de Chingaza, 3150 m, Cordillera Oriental, Cundinamarca, Colombia.

Diagnosis. This is the only species known within this genus with very diffuse orange markings on the dorsal forewing (between R_3 and Cu_1). This character distinguishes *N. chingazaensis* from the more distinct, oval, brick reddish marks on the forewing of *N. juba* and *N. yeyo* (see table of differences between *N. chingazaensis* and *N. juba* in Torres & Le Crom, 1997). Genitalia is illustrated in Figure 36, it shows more stylized valvae and more pronounced dorso-ventral bending of the aedeagus, when compared with *N. juba* and *N. parrhoebia*.

Material examined: COLOMBIA: 1 male, Parque Nacional Natural de Chingaza, Cundinamarca, alrededores estación Golillas, 3150 m, 17-v-1992 [*Paratype*] [JFLC]; 1 male, same data [*Paratype*] [TWP].

Distribution. Only known from the type locality, a cloud forest area located northeast of the city of Bogotá.

Remarks. As pointed out by Torres & Le Crom (1997: 213) the morphological relationships between this species, *N. juba* (Staudinger) and *N. parrhoebia* (Hewitson) are evident when comparing wing patterns and genitalia. They considered all of them as members of the genus *Pedaliodes* Butler. Based on the generic diagnosis and characters presented, we differ from that opinion and place this species in *Neopedaliodes*.

Neopedaliodes chingazaensis is clearly a distinct species. Its wing pattern is unique in the genus (see diagnosis). We should note that the colour pattern is strongly reminiscent of the microsympatric *Altapedaliodes nebris*. Pycrz *et al.* (in prep.) and consider it as a possible case of mimicry based resemblance.

***Neopedaliodes entella* (Thieme, 1905)**

Figs. 9 (♂), 10 (♀), 37 (♂ genitalia)

Pedaliodes entella Thieme, 1905: 106, pl. 2, fig. 16.

Pedaliodes entella Thieme; Weymer, 1912: 259; Gaede, 1931: 490; d'Abrera, 1988: 857, fig.; Moreno *et al.*, 2000: 153.

[*Neopedaliodes entella* (Thieme)]; Vilorio, 2002: 177, 188, 189 *nomen nudum*

Neopedaliodes entella (Thieme); Lamas *et al.*, 2004: 210.

Type locality: Baños, Ecuador.

Diagnosis. *Neopedaliodes entella*, *N. proculeja* and *N. zipa* are the only species in this genus with the dorsal surface uniformly brown. The ventral hindwing of *N. zipa* presents an anal suffusion of orange, and two distinct (1.5 mm diameter), postdiscal-submarginal white dots (in cells M_3 and Cu_1). In contrast, ventral hindwings of *N. entella* and *N. proculeja* present a full postdiscal yellow band in which only vestigial ocelli are found. However, *N. entella* lacks any distinctive marking inside the discal cell, and that separates it easily from *N. proculeja*.

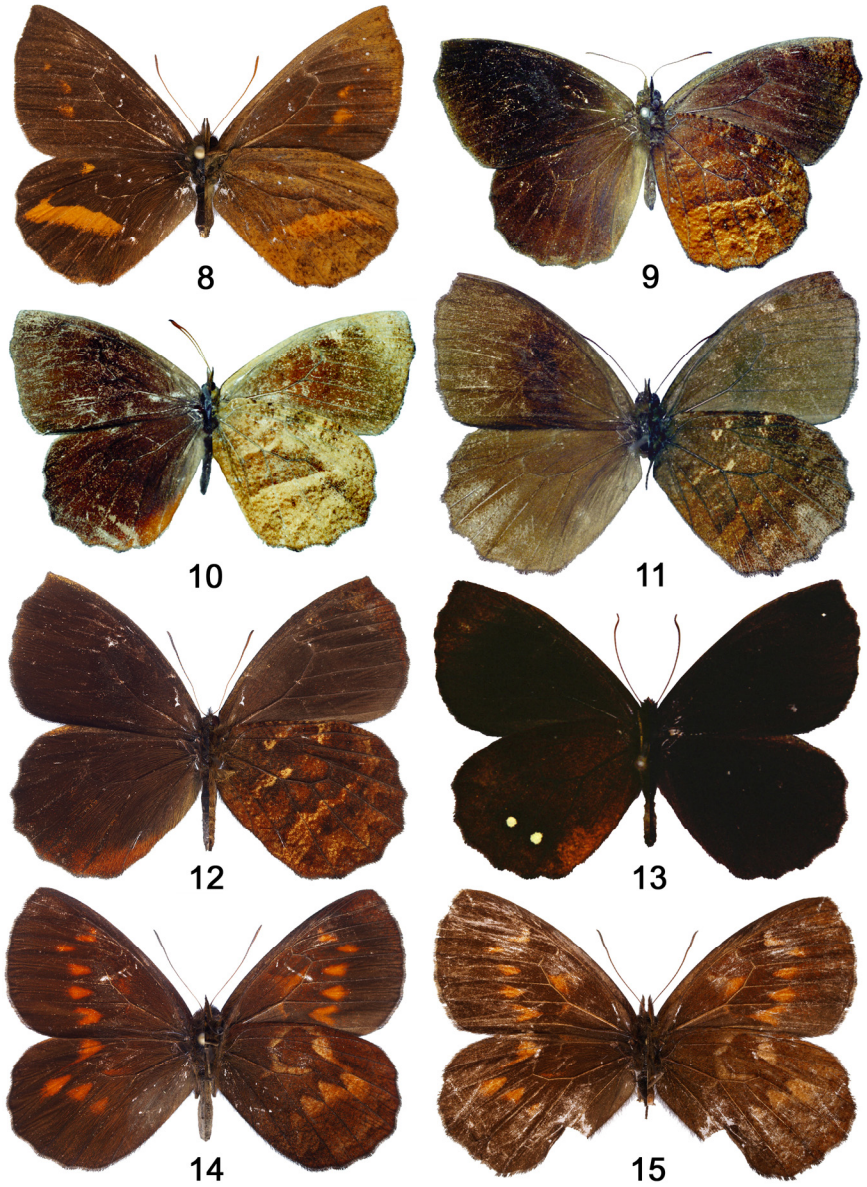
Material examined: ECUADOR: 2 males, Baños, Rio Pastaza, E. Ecuador, 5-7,000 feet, M. G. Palmer, Joicey Bequest, B. M. 1934-120 [NHM]; 1 male, Tungurahua: Runtún, 2000 m, 9-i-1939, F. M. Brown, Allyn Museum Acc. 1972-1 [MGCL]; 2 males, Runtun, above Baños, Tungurahua volcano, 2600-3000 m, I. Aldás leg.; 1 male: Cajanuma, Podocarpus NP., Loja, 2600-2800 m, 15.VII.1998, T. Pycrz [TWP]; PERU: 1 female, Manchara, N. Peru, 7,000 ft.; Sept. 1912, A. & E. Pratt, Joicey Bequest, B. M. 1934-120 [NHM]; 1 male: Tabaconas, Cajamarca, Peru, I. Aldás leg. [TWP].

Distribution. This species is rather rare in collections. Judging from the few records available, it ranges, at around 2600-3000 m, from the Río Pastaza valley on the eastern slopes of the Ecuadorean Andes between Tungurahua (south of Pastaza) and northern Peru (northern Cajamarca, north of the Huancabamba deflection).

Remarks. *Neopedaliodes entella* was originally described by Thieme as a species of *Pedaliodes*. Although it is larger in size than most of the species of *Neopedaliodes* [in fact, larger than all of them except for *N. phoenicusa* (Hewitson)], its morphology fits well with all of the diagnostic characters of the genus *Neopedaliodes*. Wing shape and underside pattern, as well as male genitalia, are particularly distinctive in relation to members of *Pedaliodes* (*sensu stricto*).

The type series of this species (5 males from Baños, Ecuador, Haensch coll.) has not been located yet. It may have been deposited in the personal collection of Otto Thieme. After his death (1907), Thieme's collection was bought by K. Beuthan, who happened to be the director of a local historical museum at Weissenfels (Germany). Then, it was

auctioned in 1963. There were 20 drawers of preserved insects from the Beuthan collection present in the Weissenfels Heimatnaturgarten, when one of us (A. L. V.) visited the place in 2003. However, within this collection there are very few butterflies from the Neotropical Region, and none represents type material.



Neopedaliodes proculeja proculeja (Thieme, 1905), **new combination**

Figs. 11 (♂), 38 (♂ genitalia)

Pedaliodes proculeja Thieme, 1905: 52, 57-58, pl. 3, fig. 27.

Pedaliodes proculeja Thieme; Weymer, 1912: 259; Gaede, 1931: 502; d'Abrera, 1988: 858, fig.; Vilorio, 2002: 188; Lamas *et al.*, 2004: 213.

Type locality: Urcos, Peru.

Diagnosis. Dorsal surface uniform dark brown with a complete yellow postdiscal band in which there are only vestigial ocelli.

Redescription. Male: FWL: 26.50-27.50 mm; mean = 27 mm; (n = 4). Eyes chocolate brown, finely covered by black hairs. Palpi twice as long as head, brown, covered laterally by numerous light brown hairs and scales. Antennal length one-half costa, shaft and club dorsally medium brown, ventrally light brown. Forewing subtriangular, tornus moderately rounded, outer margin sinuous, convex, strongly excavated in apical region. Hindwing suboval, outer margin crenulate. Thorax dorsally blackish brown, covered by brown hairs, ventrally blackish brown, hairy including leg femora. Abdomen dorsally and laterally blackish brown, ventrally light brown. Wings, dorsal ground color medium brown to dark coffee brown; fringes brown, very short; ventral forewing underside ground color pale brown; a faint, whitish postdiscal streak from costa to vein M₂, not apparent in some individuals; apex, subapex, and outer margin finely dusted with dark chesnut and yellow scales. Ventral hindwing ground color chocolate brown, dusted with yellow scales, somewhat denser along inner edge of median and distal edge of postdiscal line, and along inner margin; a sinuate submarginal line defines a dark brown marginal area; a series of faint, dark postdiscal dots in cells Rs-M₁, M₁-M₂ (sometimes also in M₂-M₃), M₃-Cu₁, and Cu₁-Cu₂, respectively.

Male genitalia as illustrated (Fig. 38).

Female: Unknown.

Material examined: PERU: 1 male, Urcos, viii-1900, (Garlepp), (genitalia vial M-9293 male, L. D. Miller), LECTOTYPE of *Pedaliodes proculeja* Thieme, herein designated by L. D. Miller [labelled as such in 1989] [NHM]; 1 male, P. N. Manu, Acjanaco, CU, 3500 m, 10-vii-1991, M. Medina [MUSM]; 3 males, below Acjanaco Pass, Acjanaco – Pillcopata road, Cuzco, 3400-3450 m, 27-v-2003, T. Pycrz leg. [TWP].

Distribution. The nominate subspecies of *N. proculeja* is known so far exclusively from the Acjanaco area in the Department of Cuzco, Peru.

Figures 8-15. Adult specimens of *Neopedaliodes* (left upperside, right underside, except when indicated the opposite). Images not to scale; **8)** *Neopedaliodes chingazaensis* (Torres & Le Crom): PARATYPE of *Pedaliodes chingazaensis* Torres & Le Crom, male, Colombia, Parque Nacional de Chingaza, 3150 m, 17-v-1992, J. F. Le Crom [TWP]; **9)** *N. entella* (Thieme): male, E. Ecuador, Rio Pastaza, Banos [sic], 5-7000 feet, M. G. Palmer, Joicey Bequest [not a type, NHM]; **10)** *N. entella* (Thieme): female, Manchara, N. Peru, 7000 ft., Sept. 1912, A. & E. Pratt; Joicey Bequest Brit. Mus. 1934-120 [not a type, NHM]; **11)** *N. proculeja proculeja* (Thieme), **new combination:** LECTOTYPE of *Pedaliodes proculeja* Thieme, male, Peru, Urcos, viii-1900, (Garlepp) (genitalia vial M-9293 male, L. D. Miller), herein designated by L. D. Miller [labelled as such in 1989] [NHM]; **12)** *N. proculeja malaga* Pycrz, **new subspecies:** HOLOTYPE, male, Peru, above Carrizales, Ollantaytambo-Alfamayo, 3300-3400 m, iii-2005 [ex. MZUJ, in MUSM]; **13)** *N. zipa* (Adams) (left underside, right upperside): HOLOTYPE of *Parapedaliodes zipa* Adams, male, Colombia, Departamento de Cundinamarca, between Zipaquirá and Pacho, 3150 m, 25-viii-1982, M. J. Adams [NHM]; **14)** *N. yeyo* Pycrz & Rodríguez: PARATYPE, male, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m, 23/24-ii-2006, G. Rodríguez leg. [TWP]; **15)** *N. yeyo* Pycrz & Rodríguez: PARATYPE, female, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m, 23/24-ii-2006, G. Rodríguez leg. [TWP].

Remarks. *Neopedaliodes proculeja* is closely related to *N. entella*, a species found in central and southern Ecuador. The presence of any member of *Neopedaliodes* between Cuzco and the northern portion of Peru has not been confirmed. The intensity of sampling for high elevation satyrines carried out by Gerardo Lamas, Miriam Medina Hay-Roe, and more recently by T. Pyrcz throughout northern (Pyrcz, 2004) and central Peru (Pyrcz *et al.*, in prep.) indicates that this genus is probably absent from or represented only by a scarce, unknown species in this vast Andean region.

***Neopedaliodes proculeja malaga* Pyrcz, new subspecies**

Figs. 12 (♂), 39 (♂ genitalia)

Description. Differs from nominotypical subspecies in the slightly smaller size, a slightly darker brown dorsal ground color, the presence of a brick reddish suffusion on the hindwing dorsal tornus, and a somewhat darker hindwing ventral ground color.

Type Material. HOLOTYPE male, PERU: above Carrizales, Ollantaytambo-Alfamayo, 3300-3400 m, iii-2005 [ex. MZUJ, in MUSM]; PARATYPES: 62 males, above Carrizales, Ollantaytambo-Alfamayo, 3300-3400 m, iii-iv-2005, J. Bottger leg.; 9 males, 1 female, Abra Malaga vers Quillabamba, 13/14-v-2003, P. Boyer leg.; 5 males, same locality, 13-v-2003, T. Pyrcz leg. [TWP]; 1 male, same data but 14-v-2003; 1 male, 1 female, same data but 18-v-2003; 1 male, 1 female, same data but 20-v-2003 [TWP] (some paratypes to be deposited in major museums).

Etymology. The specific epithet *malaga* refers to the geographic name of the Abra where some individuals of this subspecies were collected by our friend and fellow lepidopterist, Pierre Boyer.

Distribution. So far only known in the type locality, the road Abra Malaga – Alfamayo in the Rio Lucumayo Valley, a tributary of the Urubamba River in Peru.

Remarks. This subspecies is locally common in the uppermost cloud forests of the Lucumayo valley. The populations of *N. proculeja* occurring in the valleys of Acjanaco (river Madre de Dios basin) and Lucumayo (river Ucayali basin) differ at the subspecific level. A comprehensive zoogeographical comparison of the two areas, underlining the importance of the Cordillera de Vilcanota in shaping the pronophiline faunas is currently in progress by Pyrcz (in prep.).

***Neopedaliodes zipa* (Adams, 1986)**

Figs. 13 (♂), 40 (♂ genitalia)

Parapedaliodes zipa Adams, 1986: 239, 280-281, figs. 6 (male genitalia), 37.

Pedaliodes zipa (Adams); d'Abrera, 1988: 866, fig.[male holotype]; 2001: 185, 340 pl. 40, fig. 34 [male holotype].

Parapedaliodes zipa Adams; Vilorio & Pyrcz, 1994: 349; Vilorio, 2002: 177.

[*Neopedaliodes zipa* (Adams)]; Vilorio, 2002: 177, 189 *nomen nudum*

Neopedaliodes zipa (Adams); Lamas *et al.*, 2004: 211.

Type locality: 3150 m, Eastern Cordillera of Colombia.

Diagnosis. Dorsal ground color, uniform, lustrous, dark brown. Ventral forewing uniform brown, lighter and chestnut in subapical and apical regions. Ventral hindwing dark chestnut with an orange suffusion in anal region; two creamy-white spots respectively in cells Cu₁ and M₃ in the postbasal submargin.

Material examined: COLOMBIA: 1 male, Departamento de Cundinamarca, between Zipaquirá and Pacho, 3150 m, 25-viii-1982, M. J. Adams [*Holotype*] [NHM]; 5 males, 1 female, Cundinamarca, El Tablazo, 3200 m, 17-x-1993 [J. F. Le Crom] [TWP].

Distribution. Northern region of the Cordillera Oriental of Colombia. Known from the upper cloud forests and pastures surrounding Bogotá (3150-3200 m).

Remarks. This species is easily recognizable by the uniform brown color of the wings. Adams (1986: 281) stated that the males of *N. zipa* lack a scent patch on the forewing, which is not a diagnostic character for *Neopedaliodes*. We have found that this is not accurate as the males of *N. zipa* do have androconial patches on the forewing, although they are inconspicuous. Morphology of this taxon appears to be closer to that of *N. michaeli* and *N. philotera*, in which the dorsal processes of the male genitalia are not as well developed.

***Neopedaliodes yeyo* Pýrcz & Rodríguez, 2007**

Figs. 14 (♂), 15 (♀), 41 (♂ genitalia)

Neopedaliodes yeyo Pýrcz & Rodríguez, 2007: 467-468, 479, 481, 486 figs. 6 (male), 8 (female), 489 figs. 21 (female genitalia), 22 (male genitalia).

Type locality: Colombia, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m.

Diagnosis. The wing pattern of *Neopedaliodes yeyo* is reminiscent of that of *N. juba juba*; it is characterized by a design of reddish (male) and orange-reddish (female) discal and postdiscal spots, but it can be distinguished from the latter by its larger size and rounded wings (truncation of the forewing apex almost absent).

Material Examined: COLOMBIA: 1 male, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m, 23/24-ii-2006, G. Rodríguez *leg.* HOLOTYPE [GRM, to be deposited in MNHN-UN]. 1 female, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m, vii-2006 ALLOTYPE; 3 males, 1 female, Antioquia, Bolívar, Farallones de Citará, 3700-3820 m, 23/24-ii-2006, G. Rodríguez *leg.*; 1 male, same locality, 3000 m, vii-2006 [GRM]; 1 male, 1 female, same data, but 23/24-ii-2006 [TWP] (PARATYPES).

Distribution. This is an endemic species in the páramo (highlands) of the Colombian Cordillera Occidental. It has only been found in the rocky ridges of the Citará massif, to nearly 4000 m.

Remarks. This is a very interesting species from the systematic and biogeographic point of view. Its morphological characters match well the diagnosis of the genus *Neopedaliodes*. Its wing pattern is similar to that of *N. juba*, and structural similarities between both taxa suggest that they might be sister species. *N. juba* inhabits the mountains of central and northern Ecuador, on both slopes of the Andes, as well as in the south of Colombia (Nariño). It only occasionally penetrates the open páramo above the tree line. *N. yeyo* inhabits the highest habitats available in the Cordillera Occidental of Colombia, and thus far, it is the only species of *Neopedaliodes* found exclusively in the open grasslands or páramos. Other species of this genus dwell in the upper cloud forests or in the forest-páramo ecotone, usually occupying a narrow altitudinal band (between 2800-3200 m).

Neopedaliodes juba juba (Staudinger, 1887)

Figs. 16 (♂), 17 (♂, variation), 42 (♂ genitalia)

[Pronophila parrhoebia] Hewitson, 1872: pl. 28, figs. 47, 50 (in part).*Pedaliodes juba* Staudinger, 1887: 233, pl. 83.*Pedaliodes cyrene* Grose-Smith & Kirby, [1895]: 13 [Type locality: Ecuador], figs. 7, 8; Thieme, 1905:130; Weymer, 1912: 262 (synonymy given); Gaede, 1931: 491; Gabriel, 1932: 13 (all as a synonym of *P. juba* Staudinger).*Pedaliodes juba* Staudinger; Thieme, 1905: 130; Weymer, 1912: 262-263, pl. 56, row b; Gaede, 1931; Gabriel, 1932: 13; Lewis, 1973: 61, 234, fig. 16; Salazar, 1996: 19; Torres & Le Crom, 1997: 213, 214, 215, 217 fig. 2 (male genitalia), 218 figs. 5-6 (male); Moreno *et al.*, 2000: 130, fig., 153; Viloría, 2002: 177.*Pedaliodes juba* Staudinger ab. *triquetra* Thieme, 1905: 130; Gaede, 1931: 491.*Pedaliodes juba* Staudinger form *triquetra* Thieme; Weymer, 1912: 263; d'Abrera, 1988: 863, figs.; Salazar, 1996: 16.*Parapedaliodes cyrene* (Grose-Smith & Kirby); Adams, 1986: 279; Viloría & Pyrcz, 1994: 349; Viloría, 2002: 177.*[Pedaliodes juba* Staudinger]; d'Abrera, 1988: 863, fig. (misidentification of *N. juba jubilosa* Viloría, L. D. Miller & J. Y. Miller, ssp. nov.).*Parapedaliodes juba* (Staudinger); Viloría & Pyrcz, 1994: 349; Piñas Rubio, 2004: 9, 61 figs.555-560.*[Neopedaliodes juba juba*(Staudinger)]; Viloría, 2002: 177, 189 *nomen nudum**[Neopedaliodes triquetra* (Weymer)*[sic]*]; Viloría, 2002: 177, 189 *nomen nudum**Neopedaliodes juba juba* (Staudinger); Lamas *et al.*, 2004: 210; Pyrcz & Viloría, 2006: 435; Pyrcz & Rodríguez, 2007: 467, 468.*Neopedaliodes triquetra* (Weymer) *[sic]*; Lamas *et al.*, 2004 : 210.**Type locality:** Quito, Ecuador.

Diagnosis. This species is distinguished by five to six distinct oval spots of brick reddish color in the postdiscal area of the dorsal forewing. These marks never fuse to form a reddish or yellow band (as in *N. michaeli*, **new species**, *N. nora*, *N. parrhoebia*, *N. philotera*, and *N. phoenicusa*) or are as diffuse as in *N. chingazaensis*. It is a variable species. Some individuals with a very distinctive brown triangle, surrounded by yellow bands in discal position on the ventral hindwing were thought aberrant by Thieme. He then proposed the name “ab. *triquetra*” for those individuals. For subspecific differences see the taxon below.

Material examined: COLOMBIA: 2 males, Nariño-Pasto, ver. Calvario, 2800-2900 m, 26-ii-1997, J. Wojtusiak; 1 male, Pasto, 2800 m, 26-ii-1997, J. Wojtusiak [TWP]; ECUADOR: 1 male, Ecuad[dor], Ex Grose-Smith 1910, presented by J. J. Joicey 1931-291 [LECTOTYPE of *Pedaliodes cyrene* Grose-Smith & Kirby, herein designated;labelled in red, [hand-written]: *Pedaliodes cyrene* / Grose-Smith & Kirby, [1895] ♂ /. [printed]: LECTOTYPE / designated by / A. L. Viloría, 1997]; 1 male, Quito, Ex Grose Smith [PARALECTOTYPE of *P. cyrene* Grose-Smith & Kirby, herein designated; labelled in light blue [hand-written]: *Pedaliodes cyrene* / Grose-Smith & Kirby, [1895] /. [printed]: PARALECTOTYPE ♂ / A. L. Viloría, [hand-written] L. D. Miller / J. Y. Miller, 2001]; 3 males, Ecuador, Hewitson coll. (one dissected in vial No. 3962); 2 males, Ecuador, Hewitson coll. BM 79-69 (.1, .3) [*syntypes* of *Pronophila parrhoebia* Hewitson];1 male, 7 km W of San Antonio, N of Pichincha, 0° 2' N, 78° 31'

W, 3050 m, cultivated temp. zone (scrub), 9-i-1975, R. Bristow, BM 1975-75, (genitalia prep. ALV058-96); 4 males, Provincia de Provincia [sic!], West above Las Casas, Quito, 3250 m, 30-viii-1986, M. J. & J. Adams, BM 1986-344; 1 male, Baños, 1937, BM 1969-293, genitalia prepared ALV057-96 [NHM]; 3 males, Imbabura, S de Otavalo, 3000-3300 m, 08/09-i-1971, L. E. Peña [MUSM]; 1 male, Quito, Hoffman [*Holotype* of *Pedaliodes juba* Staudinger]; 1 male, Ecuador, 3000 m [ZMHB]; 2 males, Cochapata, Azuay, 3750 m, vi-1972, R. de Lafebre, A. C. Allyn Acc. 1972-54; 2 males, Minza Chica, Vol. Tungurahua, Tungurahua, 3200 m, 8-iv-1938, F. M. & H. H. Brown, AME Acc 1972-1; 7 males, Hda. San Rafael, Río San Pedro, Pichincha, 3000 m, 8/12-xi-1938, F. M. & H. H. Brown, AME Acc. 1972-1; La Viudilla, Vol. Antisana, Pichincha, 3800 m, vii-1971, R. de Lafebre, A. C. Allyn Acc. 1972-54; 1 male, Pichincha: La Viudilla, 3500 m, vii-1971, R. de Lafebre, A. C. Allyn Acc. 1971-31; 2 males, Cerro Pasachoa, Pichincha, 3300 m, 12-xi-1938, F. M. & H. H. Brown, AME Acc. 1972-1; 1 male, Uyumbicho, Río San Pedro, Pichincha, 2650 m, 5-xi-1938, F. M. & H. H. Brown, AME Acc. 1972-1; 4 males, Río Mulatos, Cotopaxi, 3800 m, iv-1971, R. de Lafebre, A. C. Allyn Acc. 1972-2; 4 males, 1 female, same data, A.C. Allyn Acc. 1972-18; 2 males, Papallacta, Napo, 4000 m, xi-1971, R. de Lafebre, A. C. Allyn Acc. 1972-2; 1 male, same data, A. C. Allyn Acc. 1972-13; 1 female, Carchi: Tufiño, 3500 m, xii-1973, R. de Lafebre, A. C. Allyn Acc. 1974-17 [MGCL].

Distribution. Originally described from Quito (both as *juba* by Staudinger and as *cyrene* by Grose-Smith & Kirby), nominotypical *N. juba juba* flies along the main Andes of Ecuador, north of the Baños region (Río Pastaza, Amazonian slopes). It is also recorded in the locality of Volcán Galeras (3700 m, Nariño, Colombia) by Salazar (1996:19) and Torres & Le Crom (1997: 214), and was found in 1997 by Dr. J. Wojtusiak near Pasto, in the same Department (see record above). Altitudinal range: 2800-4000 m.

Remarks. This is a rather common species in collections. It is also a very common butterfly in its habitat, which corresponds to the uppermost forests and lower paramo near the timberline. It frequently occurs in secondary successional areas, recently burnt grassland and well-drained pastures. Thieme's aberration *triquetra* is merely an individual variation of *N. juba*. The two morphological phenotypes intergrade in all of the sampled populations. The two forms are microsympatric, and their occurrence ratio is generally close to 50%. For the same reasons discussed under *N. entella* (Thieme), we declined to name a neotype for *N. triquetra* (Weymer).

***Neopedaliodes juba jubilosa* Vitoria, L. D. Miller & J. Y. Miller, new subspecies**

Figs. 18 (♂), 43 (♂ genitalia)

[*Pedaliodes juba* Staudinger]; d'Abrera, 1988: 863, fig. (misidentification).

[*Neopedaliodes juba* (ssp. nov.)]; Vitoria, 2002: 177 *nomen nudum*

[*Neopedaliodes juba jubilosa* Vitoria, L. D. Miller & J. Y. Miller]; Vitoria, 2002: 189 *nomen nudum*

Neopedaliodes juba [n. ssp.] Vitoria, L. D. Miller & J. Y. Miller, MS; Lamas *et al.* 2004: 210.

Type locality: Environs d'Ambato, Ecuador.

Description. Male: FWL: 25.5 mm (n = 1). Differs from nominotypical subspecies in the following characters: Forewing apex more excavated; dorsal brown ground color slightly paler and more opaque; brick-reddish postdiscal spots all brighter and larger

(further extending towards distal region), particularly that on hindwing cell M_2 - M_3 . Ventral forewing brown ground color paler and more uniform, without any distinct lighter areas in the apical region; brick-reddish spots enlarged as above. Ventral hindwing thickly dusted with dark brown and reddish scales, resulting in darkening (“dirty”) portions that are yellow in the nominotypical subspecies; the five submarginal white spots in cells M_1 to Cu_2 , respectively, are well defined and larger in general. Male genitalia do not show significant variation when compared to the nominotypical subspecies (see Figs. 42-43).

Type Material: HOLOTYPE male: ECUADOR, Env. d'Ambato, R. P. Irenée Blanc, Oberthür Coll. BM 1927-3, (genitalia prep. ALV059-96) [NHM]; PARATYPES: 3 males: Quebrada Chacras, Papallacta, Napo, 3300-3350 m, 16-19.I.2004, baited traps, T. Pyrcz leg., [TWP]. 1 male: Runtun, above Baños, Tungurahua volcano, Tungurahua, 2600-3000 m, 06-viii-1998, T. Pyrcz leg.; 3 males, Morogacho, above Baños, Tungurahua, 3400-3500 m, ix-2004, O. Velástegui leg., [TWP].

Etymology: The specific epithet *jubilosa*, refers to the Spanish adjective for jubilant, meaning glad.

Distribution. Based on the material in the collection of one of the authors (TWP), nominotypical *N. juba* occurs from southern Colombia (Nariño) to south-central Ecuador (Bolívar) on the western slopes of the Andes. *Neopedaliodes juba jubilosa* is found on the eastern slopes of the Andes from Papallacta to Tungurahua (south of Pastaza) and most probably further south to the Guamote-Macas road area (Sangay).

In our experience the locality “environs d'Ambato” of Irenée Blanc is very vague and definitely refers to different places situated on both slopes of the Andes in central Ecuador. In this particular case it probably refers to an area situated south-east of the town of Ambato, along the old Baños road, where this subspecies actually occurs.

Remarks. Due to the superficial (color) and structural (male genitalia, Figs. 42, 43) similarities between *N. juba juba* and *N. juba jubilosa*, and with no evidence for overlapping distributions between them, we conclude that they are subspecies of the same taxon.

***Neopedaliodes michaeli* Viloría, L. D. Miller & J. Y. Miller, new species**

Figs. 19 (♂), 44 (♂ genitalia)

[*Pedaliodes* ? sp.; d'Abrera, 1988: 863, figs. (row 2, both)].

[*Neopedaliodes* sp. nov.]; Viloría, 2002: 177 *nomen nudum*

[*Neopedaliodes michaeli michaeli* Viloría, L. D. Miller & J. Y. Miller]; Viloría, 2002: 189 *nomen nudum*

Parapedaliodes phintia (Hewitson); Piñas Rubio, 2004: 9, 60 figs. 553, 554 (misidentification)

Neopedaliodes [n. sp.] [n. ssp.] Viloría, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004: 210.

Type locality: Río Mazán, Azuay, Ecuador.

Description. Male. FWL: 22.5-25 mm; mean: 23.5 mm; (n = 3). Eyes reddish brown, covered with fine black hairs. Palpi approximately twice as long as head, dark brown, with sparse, light creamy-brown, pale brown and dark brown hairs. Antennae extend to one-half costa, orange-brown, with the ventral surface lighter. Body dorsally dark brown, densely covered with very bright hairs; ventrally, olivaceous brown, lighter

towards abdominal region. Forewing, subtriangular, tornus slightly rounded, outer margin slightly sinuous, and slightly convex, with apex strongly excavate. Hindwing rounded, outer margin moderately crenulate. Wing dorsal ground color coffee brown, with distal third of forewing chestnut; both wings with narrow, irregular, postdiscal orange bands, and sectioned by veins, more or less parallel to outer margin in forewing; right-angled in hindwing, the latter from discal region of costa to submarginal region in cell M_2-M_3 , from there extending along postdiscal region, progressively tapering (sometimes broken) to cell Cu_2-2A ; distal and proximal margins of bands noticeably jagged. Ventral forewing ground color chestnut brown, except for distal third and costal margin, which are brown dusted with reddish and light brown scales, especially towards apical region; orange band as on dorsal surface but broader, lighter (particularly near costa). Hindwing ventral ground color bright brown, dusted with pale brown scales, particularly in submargin but decreases in the discal cell and an irregular whitish line (sometimes discontinuous) dividing postbasal and discal region, never reaching inner margin; a whitish to ochraceous narrow straight band extends from discal region of costa towards submarginal portion of cell M_2-M_3 , where it broadens, bending in postdiscal region to follow parallel to outer margin and terminates near anal margin, but never touching it. This band is sectioned into separate lunate spots in one of the specimens; however, it is always speckled with chestnut and brown; a postdiscal-submarginal series of tiny, rounded white dots, encircled with brown, in cells $Rs-M_1$ to Cu_2-2A , respectively. Male genitalia as illustrated (Fig. 44).

Female: unknown.

Type Material: Holotype male: ECUADOR: 1 male, Provincia de Azuay, W of Cuenca, Río Mazán, 3400 m, 14-viii-1986, M. J. & J. Adams, BM 1986-344 [NHM]; PARATYPES: “Ecuador”, Ex Grose-Smith 1910, Joicey Bequest BM 1934-120, (genitalia prep. ALV060-96); 1 male, same data as holotype, 3200 m (genitalia prep. ALV062-96) [NHM]; 1 male, Barabón, 1-v-1994, F. Piñas [TWP]; 22 males: Girón, Azuay, 3000 m, v-1997, I. Aldás leg.; 2 males: Sigsig via Chiguinda, 3100-3150 m, 16-ix-2004, T. Pyrcz leg. (these two males differ slightly in having somewhat wider and more intense orange markings on the upperside) [TWP].

Etymology. We offer the name of this beautiful new species for our friend Dr. Michael Jan Adams, a modern-day pioneer of the study of the pronophiline butterflies, and source of inspiration in our research. He and his wife also are the collectors of part of the type series.

Distribution. Western slopes of the main Andes in southern Ecuador (3400 m).

Remarks. There are two distinct morphological forms of this taxon, one with a continuous band on the hindwing and another with this band discontinuous or “broken”. We have dissected the male genitalia of both phenotypes, and find no distinct differences.

Neopedaliodes michaeli is externally more reminiscent of *N. parrhoebia* (Hewitson) (which also has two different forms), but the valvae in the male genitalia of the former has a less developed ampullar process on the dorsal surface; in this respect it is closely aligned to *N. entella* and *N. philotera*, from which it can be readily separated by major differences in the wing pattern (see accompanying key in this paper).

Neopedaliodes michaeli citrica Vilorio, L. D. Miller & J. Y. Miller, **new subspecies**

Figs. 20 (♂), 21 (♂, variation), 45 (♂ genitalia)

[*Pronophila parrhoebia*] Hewitson, 1872: pl. 28, figs. 47, 50 (in part misidentification).

[*Pedaliodes* ? sp.]; d'Abrera, 1988: 863, fig. (row 3).

[*Neopedaliodes* sp. nov. (2 spp. nov.)]; Vilorio, 2002 : 177.

[*Neopedaliodes michaeli citrica* Vilorio, L. D. Miller & J. Y. Miller]; Vilorio, 2002 : 189
nomen nudum

[*Neopedaliodes michaeli innupta* Vilorio, L. D. Miller & J. Y. Miller]; Vilorio, 2002 : 189 (misidentification) *nomen nudum*

Neopedaliodes [n. sp.] b) [n. ssp.] Vilorio, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004 : 210.

Neopedaliodes [n. sp.] c) [n. ssp.] Vilorio, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004 : 210 (misidentification).

Type locality: Gun, Cañar, Ecuador.

Description. Male. FWL: 23-24 mm; mean = 23.36 mm; (n = 7). Differs from nominotypical subspecies in having a very discontinuous and/or diffuse orange band in hindwing upperside, particularly in its posterior portion. Ventral hindwing much darker, and less dusted with pale brown; transverse postbasal-discal line absent; right-angled band reduced to diffuse shadow, sometimes very discontinuous or even vestigial; diffuse whitish overscaling always remains in postdiscal portion of anterior third of wing; postdiscal white dots almost non-existent, except for those in Rs-M₁ to M₂-M₃, respectively. Genitalia do not differ from *N. michaeli michaeli*.

Female: Unknown.

Type Material. HOLOTYPE male: ECUADOR: "Ecuador", Ex Grose-Smith 1910, Joicey Bequest BM 1934-120; PARATYPES: 1 male, Granadillas, E Ecuador, Buckley, Godman & Salvin Coll. BM 1904-1; 1 male, "Ecuador", Hewitson Coll. BM 79-69, (*syntype* of *Pronophila parrhoebia* Hewitson); 4 males, same data as Holotype (1 genitalia prep. ALV061-96); 1 male: 10 km N of Gun, 2° 22' W, 79° W, 3080 m, scrubby temp. zone, 30-viii-1975, R. Bristow, BM 1975-206, (genitalia prep. ALV066-96) [NHM]; 12 males, Gun, Zhud, Cañar, 3000 m, v-1999, I. Aldás leg.; 17 males, same locality, 3000 m, 14-v-1999, P. Boyer leg. [TWP].

Etymology. The specific epithet *citricea* refers to the orange markings of this subspecies.

Distribution. Known only reliably from Gun, where most newly collected material is derived.

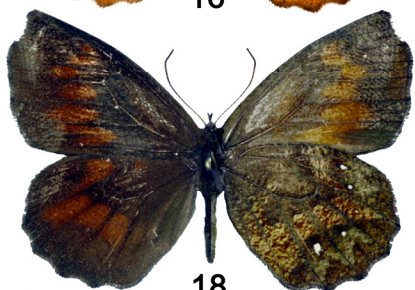
Figures 16-23. Adult specimens of *Neopedaliodes* (left dorsal, right ventral). Images not to scale; **16)** *N. juba juba* (Staudinger): HOLOTYPE of *Pedaliodes juba* Staudinger, male, [Ecuador], Quito, Hoffmann [ZMHB]; **17)** *N. juba juba* (Staudinger) (extreme variation, named ab. *triquetra* by Thieme): male, Ecuador, Provincia de Provincia [sic], W. above Las Casas, Quito, 3250 m, 30-viii-1986; M. J. & J. Adams, BM 1986-344 [not a type, NHM]; **18)** *N. juba jubilosa* Vilorio, L. D. & J. Y. Miller, **spp. nov.**: HOLOTYPE, male, Equateur, Env. d'Ambato, R. P. Irénée Blanc, Ex Oberthür coll., Brit. Mus. 1927-3 [NHM]; **19)** *N. michaeli michaeli* Vilorio, L. D. Miller & J. Y. Miller, **new species**: HOLOTYPE, male, Ecuador, Provincia de Azuay, W of Cuenca, Río Mazán, 3400 m, 14-viii-1986, M. J. & J. Adams, BM 1986-344 [NHM]; **20)** *N. michaeli citrica* Vilorio, L. D. Miller & J. Y. Miller, **new subspecies**: HOLOTYPE, male, "Ecuador", Ex Grose-Smith 1910, Joicey Bequest BM 1934-120 [NHM]; **21)** *N. michaeli citrica* Vilorio, L. D. Miller & J. Y. Miller, **new subspecies** (extreme variation): PARATYPE, male, Ecuador, 10 km N of Gun, 2° 22' W, 79° W, 3080 m, scrubby temp. zone, 30-viii-1975, R. Bristow, BM 1975-206, (genitalia prep. ALV066-96) [NHM]; **22)** *N. michaeli innupta* Pyrcz, **new subspecies**: HOLOTYPE male: Ecuador, Gualaceo – Limón road, curva del Zorrillo, west of the pass, 3150-3200 m, 19-viii-2003, T. Pyrcz leg. [MZUJ]; **23)** *N. michaeli innupta* Pyrcz, **new subspecies**: PARATYPE, female, Ecuador, Gualaceo vers Limón, km 24 (Azuay) 3300/3400 m, 06-xii-2002, P. Boyer leg. [MZUJ].



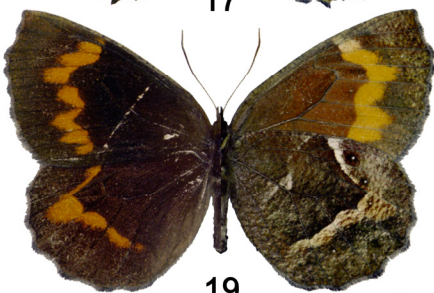
16



17



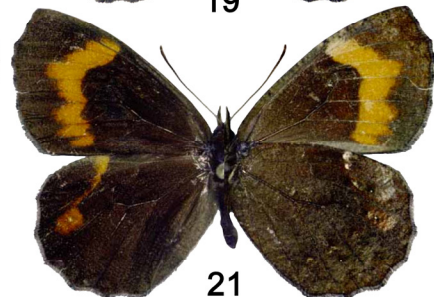
18



19



20



21



22



23

Remarks. The main differences between *N. michaeli citrica* and *N. michaeli michaeli* are in the hindwing dorsal orange band. It is not only shorter and often discontinuous in *citraca* but also has a completely different shape. We state here, however, that the dorsal markings in the populations of *N. michaeli* are fairly variable (including one morphotype previously identified as a different subspecies in Viloría, 2002 and Lamas *et al.*, 2004), and in some specimens of the nominotypical subspecies, the hindwing dorsal band tends to fade away.

This is a valid subspecies; male genitalia do not differ from those of *N. michaeli michaeli*.

***Neopedaliodes michaeli innupta* Pyrcz, new subspecies**

Figs. 22 (♂), 23 (♀), 46 (♂ genitalia)

Type locality: Curva del Zorrillo, Gualaceo – Limón road.

Description. Male: FWL: 24 mm; (n = 1). Differs from nominotypical and other subspecies in the particularly narrow forewing and hindwing dorsal orange band. It is the only subspecies in which the band on the forewing is discontinuous and broken along the vein M₃. Orange markings on the hindwing dorsal surface are broken into a series of spots from cell M₂-M₃ on, but extend into cell Cu₂-1A, similarly to some individuals of nominotypical subspecies, and unlike *citraca*, whose markings reach as far as vein M₃. Orange markings of the holotype are a shade darker than in most examined individuals of the other two subspecies.

Male genitalic structure does not differ from the other two subspecies (Figs. 44-46).

Female: General ground color (brown), paler than in male; orange markings similar, but not as bright as in male, with borders less distinct. Forewing apex truncation more pronounced.

Type Material: HOLOTYPE male: ECUADOR, Gualaceo – Limón road, curva del Zorrillo, west of the pass, 3150-3200 m, 19-viii-2003, T. Pyrcz leg. [MZUJ]; PARATYPES, 1 male, 3 females: ECUADOR, Gualaceo vers Limón, km 24 (Azuay) 3300/3400 m, 06-xii-2002, P. Boyer leg. [PB, 1 female in MZUJ].

Etymology. This species was originally known to us from a single male, therefore it have named it *innupta*, meaning single.

Distribution. Thus far known only from the area situated within the valley of Cuenca, on the western slopes of the Eastern Cordillera. *Neopedaliodes parrhoebia phintia* occurs on the opposite, eastern slopes of the Cordillera.

Remarks. A well differentiated subspecies, probably endemic to the north-eastern part of the Cuenca valley. This species is definitely uncommon. The type locality has been quite heavily sampled for satyrine butterflies throughout the year.

***Neopedaliodes parrhoebia parrhoebia* (Hewitson, 1872)**

Figs. 24 (♂), 47 (♂ genitalia)

Pronophila parrhoebia Hewitson, 1872: pl. 28, figs. 47, 50 (one figure shows the extreme variation).

Pronophila parrhoebia Hewitson; Hewitson, 1877: 91; Kirby, 1879: 112; Viloría, 2002: 177.

Pedaliodes parrhoebia (Hewitson); Kirby, 1877: 710; Grose-Smith & Kirby, [1895]: 13; Thieme, 1905: 123; Weymer, 1912: 261; Gaede, 1931: 494; d'Abrera, 1988: 862, fig.; Torres & Le Crom, 1997: 213; Vilorio, 2002: 177.

Pedaliodes parrhaeba [sic] (Hewitson); Godman & Salvin, 1891: 98.

Parapedaliodes parrhoebia (Hewitson); Forster, 1964: 153, 156, fig. 191 (male genitalia); Moreno *et al.*, 2000: 154; Vilorio, 2002: 177.

Parapedaliodes parrhaeba [sic] (Hewitson); Adams, 1986: 279, 280; Vilorio & Pyrcz, 1994: 349.

[*Pedaliodes parrhoebia* (Hewitson) form *phintia* (Hewitson); d'Abrera, 1988: 862 (right figure misidentification)].

Pedaliodes parrhaeba [sic] (Hewitson); Moreno *et al.*, 2000: 153.

[*Neopedaliodes parrhoebia parrhoebia* (Hewitson)]; Vilorio, 2002: 177, 189 *nomen nudum*

Neopedaliodes parrhoebia parrhoebia (Hewitson); Lamas *et al.*, 2004: 210; Pyrcz & Vilorio, 2006: 434.

Type locality: Galgalán, Ecuador.

Diagnosis: This species is characterized by the broad, continuous, dark orange postdiscal bands on the dorsal surface of both wings. In contrast, related species like *N. michaeli* (which possesses, more irregular, narrower bands, sometimes discontinuous in hindwing), *N. nora*, and *N. philotera* are distinguished by paler and brighter tones in the dorsal orange bands. For subspecific distinction within this species see next taxon.

Material examined: ECUADOR: 1 male, Galgalán, Buckley, Hewitson Coll. BM 79-69 (.4), BM Type No. Rh. 4011 [LECTOTYPE of *Pronophila parrhoebia* Hewitson, herein designated, see remarks below]; 3 males, Ecuador, Hewitson Coll. BM 79-69 (1 präparat Nr. 9A 453 Zoolog. Staatssammlung München; 1 genitalia prep. ALV 064-96) [PARALECTOTYPES of *Pronophila parrhoebia* Hewitson, herein designated, see remarks below]; 2 males, Ecuador, Ex Grose-Smith 1910, Joicey Bequest BM 1934-120 (1 Rhop. genitalia vial 3961) [NHM]; 1 male, Qda. Shillnian, Guamote – Macas Road, I. Aldás leg. [TWP].

Distribution. Godman & Salvin (1891: 98) mention two specimens obtained by E. Whymper of what they believed was this species. They came from a locality called Machachi (10,000 feet), which according to the map of Whymper (1892) is in the main ridge of the Andes, south of Quito and west of Volcán Antisana (and Volcán Sincholagua). This record probably represents a different taxon. Buckley's locality, Galgalán is situated in the Morona-Santiago province within the Sangay National Park. It is in the pass on the Guamote – Macas road, at around 3400 m. One of us (TWP) sampled there on two occasions and has not observed *P. parrhoebia*. However, one specimen was collected there by Ismael Aldás, and its wing pattern agrees with the original illustration of Hewitson.

Remarks. There are two forms of this species, and both were figured by Hewitson in the original description: some specimens show the hindwing underside postdiscal band sectioned in sagitate spots (pointing basad). *N. parrhoebia* (both the nominotypical and the subspecies below) is structurally more similar to *N. nora*, but the slender aedeagus of the former is similar to those of *N. juba*. They all share the same shape of the valvae, with a prominent tooth-like ampullar process, which is dorsal and subapical. The specimen illustrated (Fig. 24) compares favorably with Figures 47 and 50 of Hewitson (1872). The similarity of appearance has caused considerable taxonomic confusion in this group (see *N. parrhoebia phintia* (Hewitson) below), and to avoid further problems, the Lectotype of

Pronophila parrhoebia Hewitson is herein designated and labelled as follows: Red label [printed]: *Pronophila parrhoebia* / Hewitson, 1872 / LECTOTYPE ♂ / designated by / A. L. Viloría, / L. D. Miller & / J. Y. Miller, 2002. Light blue labels with the following format have been placed on each of the three Paralectotypes: [hand-written] *Pronophila parrhoebia* HEWITSON, 1872 / [printed] PARALECTOTYPE ♂ / A. L. Viloría, [hand-written] L. D. Miller / J. Y. Miller, 2001.

***Neopedaliodes parrhoebia phintia* (Hewitson, 1877)**

Figs. 25 (♂), 48 (♂ genitalia)

Pronophila phintia Hewitson, 1877: 91.

Pedaliodes phintia (Hewitson); Kirby, 1877: 845; Thieme, 1905: 123; Weymer, 1912: 262; Gaede, 1931: 498; Viloría, 2002: 177.

Pronophila phintia Hewitson; Kirby, 1879: 114; Viloría, 2002: 177.

Parapedaliodes phintia (Hewitson); Forster, 1964: 153, 156, fig. 192 (male genitalia); Adams, 1986: 279; Viloría & Pyrcz, 1994: 349; Viloría, 2002: 177; Piñas Rubio, 2004: 9, 60 figs. 553, 554 (misidentification of *N. michaeli michaeli* sp. nov.).

Pedaliodes parrhoebia (Hewitson) form *phintia* (Hewitson); d'Abrera, 1988: 862, figs. [only left figure; right figure is a misidentification of *N. parrhoebia parrhoebia* (Hewitson)].

[*Neopedaliodes parrhoebia phintia* (Hewitson)]; Viloría, 2002: 177, 189 *nomen nudum* *Neopedaliodes parrhoebia phintia* (Hewitson); Lamas *et al.*, 2004: 210.

Type locality: Gima [Azuay], Ecuador.

Diagnosis. This subspecies and the nominotypical *Neopedaliodes parrhoebia* are slightly but consistently different. Dorsal bands are usually narrower and darker, and crossed by brown veins in nominotypical subspecies. These characters are absent in *phintia*. Borders of these dorsal bands are less distinct in subspecies *phintia*, especially the basal ones. Hindwing dorsal orange band proximal margin can sometimes be indented basally. Ventral hindwing of *N. parrhoebia phintia* is crossed by a white, postbasal-discal, straight line, which does not reach the anal margin.

Material examined: ECUADOR: 1 male, Ecuador, Hewitson Coll. BM 79-69, BM Type No. Rh. 4013 [LECTOTYPE of *Pronophila phintia* Hewitson, herein designated, see remarks below]; 1 male, Ecuador, Ex Grose-Smith 1910, Joicey Bequest BM 1934-120, (präparat Nr. 1A 454 Zoolog. Staatssammlung München); 1 male, Macas, Buckley, Godman & Salvin Coll. BM 1904-1, (genitalia prep. ALV065-96) [NHM]; 7 males: above Cajanuma (altitudinal transect, all in baited traps), Podocarpus NP., Loja, 3000-3100 m, 14/16-vii-1998, T. Pyrcz & J. Wojtusiak leg.; 14 males: Saraguro, vía Las Antenas, Loja, 3100-3200 m, 15-ix-2004, T. Pyrcz leg.; 2 males: same data but 24-viii-2003; 1 male: same data but 02-ii-2004; 6 males: Cerro Toledo, Podocarpus NP., Loja, 3100-3150 m, 14-ix-2004, T. Pyrcz leg.; 1 male: Gualaceo – Limón, eastern slopes, Morona-Santiago, 2250 m [altitude data unreliable], A. Crosson-du-Cormier & S. Attal leg. [TWP].

Distribution. This subspecies is found in Morona-Santiago (Gualaceo road and southwards), and Macas is probably an incorrect locality record. It is distributed throughout southern Ecuador on the eastern slopes only. The most southerly known locality is Cerro Toledo in the southern Podocarpus National Park. It certainly occurs in

northern Cajamarca in Peru as well. *N. parrhoebia phintia* is locally common. It generally flies at 2800-3200 m.a.s.l.

Remarks. During our comparative studies of the male genitalic structures of this genus, it became evident that *parrhoebia* and *phintia* are conspecific (see Figs. 47-48). Affinities with other species of *Neopedaliodes* are mentioned in the remarks of the nominotypical subspecies.

Hewitson described this taxon in detail and noted the difference on the ventral surface among specimens from *N. parrhoebia parrhoebia* (Fig. 24) and *N. parrhoebia phintia* (Fig. 25). He also remarked that this subspecies “scarcely differs from *P. parrhoebia* on the upperside”. To provide further stability in the nomenclature of this group, a Lectotype is herein designated and the following red label has been placed on the specimen [printed]: *Pronophila phintia* / Hewitson, 1877 / LECTOTYPE ♂ / designated by / A. L. Vilorio, / L. D. Miller & / J. Y. Miller, 2002.

***Neopedaliodes lafebreae* Vilorio, L. D. Miller & J. Y. Miller, new species**

Figs. 26 (♂), 49 (♂ genitalia)

[*Parapedaliodes* sp. nov.]; Adams, 1986: 280.

[*Pedaliodes philotera* (Hewitson)]; d'Abreu, 1988: 862, figs. (“female” figure misidentification of a male of *N. lafebreae*).

[*Neopedaliodes* sp. nov.]; Vilorio, 2002: 177 *nomen nudum*

[*Neopedaliodes lafebreae* Vilorio, L. D. Miller & J. Y. Miller]; Vilorio, 2002: 189 *nomen nudum*

Neopedaliodes [n. sp.] Vilorio, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004: 210.

Type locality: Milimbanco, Cotopaxi, Ecuador.

Description. Male: FWL: 22.5-25.5 mm; mean = 24.43 mm; (n = 39). Eyes brown, hairy; palpi twice as long as head, brown, with some pale brown hairs; antennae brown, club gradually formed. Body very hairy, dorsally olivaceous brown, ventrally somewhat paler. Forewing subtriangular, tornus slightly rounded, outer margin smooth and convex, apex moderately truncate; hindwing subrhomboidal, outer margin moderately crenulate and produced at vein M₃. Wing upperside ground color bright olivaceous brown; forewing bears a postdiscal yellowish-white band, with irregular borders, extending from costa to anal margin, angled at cell M₂-M₃, and crossed by brown over vein R₄; hindwing bears a right-angled band of same color, this runs diagonally from discal region of costa towards submarginal portion of cell M₂-M₃, then approximately parallel to outer margin throughout postdiscal region, tapering to vein 2A near tornus. General ventral pattern very similar to dorsal, but less bright in color; forewing very light in apical region; an additional yellowish-white marking crossing discal cell at its distal third; distal third of hindwing light brown in general, with some submarginal creamy-white scales in cells M₃-Cu₁ and Cu₁-Cu₂; right angled band continuous in costal region, fused with a straight postbasal stripe, which runs from costa to near anal margin; four submarginal white dots, finely encircled in brown in cells Rs-M₁, M₁-M₂, M₃-Cu₁, and Cu₁-Cu₂, respectively; some brown speckling over the band; a diffuse subapical brown patch. Male genitalia as illustrated (Fig. 49).

Female: FWL: 24.5-26 mm, mean = 25.25 mm; (n = 2). Similar to male, but forewing pale yellow, postdiscal band slightly broader; hindwing postdiscal yellow band broader and paler proximad.

Type Material. HOLOTYPE male: ECUADOR, Cotopaxi: Milimbanco, 3600 m, i-1973, R. de Lafebre, A. C. Allyn Acc. 1973-9. PARATYPES: 18 males and 1 female, same data as Holotype; 7 males, same locality as Holotype, but 4090 m, xii-1970, A. C. Allyn Acc. 1971-7; 1 male and 1 female, same locality as Holotype, but ix-1971, A. C. Allyn Acc. 1971-46; 1 male, Bolívar: San Pablo, 3200 m, vii/viii-1975, A. C. Allyn Acc. 1976-2; 1 male, Chimborazo: Atzatapungu, 4160 m., v/vii-1976, A. C. Allyn Acc. 1976-8; 3 males, Chimborazo: Totorillos, 3800 m, vii-1973, A. C. Allyn Acc. 1973-43; 5 males, Bolívar: Alusana, 3000 m, ix-1975, A. C. Allyn Acc. 1972, all R. de Lafebre; 1 male, Loja: Villonaco, 3600 m, i-1973, R. de Lafebre; 1 male, Baños: Tungurahua, 3000 m, 19-viii-1998, R. Hesterberg, Allyn Museum Acc. 2000-13 [MGCL, in this series some elevation data are doubtful, particularly those giving values above 4000 m]; 1 male, E Ecuador, Baños, Rio Pastaza, 5-7000', M. G. Palmer, Joicey Bequest BM 1934-120 [NHM]; 44 males, El Tablón, above Baños (north of Pastaza), 3050-3100 m, 17-ii-2004, T. Pyrcz & R. Garlacz leg. [TWP]; 5 males, Morogacho, above Baños (north of Pastaza), 3200-3250 m, ix-2004, O. Velástegui leg.; 5 males: El Tablón, above Baños, 3000-3050 m, ix-2002, I. Aldás leg.; 2 males: El Tablón, Triunfo-Patate road, above Baños, 3000 m, 21-xi-1998, P. Boyer leg.; 1 male: Tungurahua, 2600 m [questionable data], 15.IX.1997, collector unknown [MZUJ].

Disposition of type-series: Holotype male, 32 male and 1 female Paratypes [MGCL], 2 male and 1 female Paratypes [NHM]; 2 male Paratypes [Pontificia Universidad Católica del Ecuador (Quito)]; 44 male Paratypes [TWP]; 13 male Paratypes [MZUJ].

Etymology. We name this species after Sra. Rosario de Lafebre, who collected the first known series of specimens, and also many Ecuadorian pronophiline species that are now deposited in the MGCL.

Distribution. An uncommon species found at relatively high elevations (reliably between 2800 and 3800 m), all along the Andes of Ecuador from south of Quito (Cotopaxi) to Loja. Most records come from central Ecuador.

Remarks. This is a distinctive species, whose closest relatives within the genus appear to be the Colombian *N. nora* (Adams), and *N. philotera* (Hewitson) from northern Ecuador and the extreme south of Colombia. Apart from the evident differences in wing patterns, they differ considerably in male genitalia; *N. lafebreae* and *N. nora* have similar valvae, but the latter has a slender, longer and less asymmetrical aedeagus, while *N. philotera* has valvae less stylized and shorter, but also an aedeagus basally compressed. The color of the upperside bands in some old specimens of *N. lafebreae* varies from yellow to whitish (due to natural fading or discoloration).

This is definitely not a "common" species. Several collectors (including one of us, TWP) have found it, during many years of intense field work in the Andes of Ecuador, exclusively in one locality, above Baños north of the Pastaza. We suspect that the difficulty in finding it is due mainly to its extremely short flight season. It also apparently occurs in small, localized populations. It occurs around 3000 m only in high elevation cloud forests alongside *Pedaliodes polusca* (Hewitson), *P. phaedra* (Hewitson), *P. phanoclea* (Hewitson), and *Lasiophila zarathustra* Thieme. The locality in Loja must be taken with extreme precaution. Some closely related, probable allopatric replacement of *N. lafebreae* might occur there. No doubt, this species is replaced further north by *N. philotera*, probably north of the Papallacta valley.

Neopedaliodes philoter (Hewitson, 1868)

Figs. 27 (♂), 50 (♂ genitalia)

Pronophila philoter Hewitson, 1868: pl. 36, figs. 16, 17.

Pronophila philoter Hewitson; Hewitson, 1869: 98; 1869a: 35; 1871: text of *P. alusana*; Kirby, 1879: 112; Viloría, 2002: 177.

Pedaliodes philoter (Hewitson); Butler, 1868: 179; 1871: 179; Kirby, 1871: 105; Weymer & Maassen, 1890: 20; Thieme, 1905: 123-124; Weymer, 1912: 262, pl. 55, row e; Krüger, 1924: 23 [misidentification of a female of *N. nora nora* (Adams)]; Gaede, 1931: 498; d'Abrera, 1988: 862, figs. [female is a misidentification of a male of *N. lafebreae* Viloría, L. D. Miller & J. Y. Miller]; Viloría, 2002: 177.

Pedaliodes philotaera [sic] (Hewitson); Fassl, 1911: 26 [misidentification of *N. nora nora* (Adams)].

Parapedaliodes philoter (Hewitson); Adams, 1986: 279, 280; Viloría & Pyrcz, 1994: 349; Viloría, 2002: 177.

[*Neopedaliodes philoter* (Hewitson)]; Viloría, 2002 : 177, 189 *nomen nudum*

Neopedaliodes philoter (Hewitson); Lamas *et al.*, 2004 : 210.

Type locality: Tulcán – La Bonita road, 3000 m, Ecuador.

Diagnosis. Upper band on forewing light orange, very bright, very regular in width, borders more or less parallel to distal margin; proximal border of dorsal angled band in hindwing distinct and smooth, without irregularities. Hindwing band (both dorsal and ventral) complete, from costa to anal margin near tornus. Ventral hindwing characterized by very pale whitish orange along entire costa; straight whitish line limiting postbasal and discal areas, not reaching anal margin. Very conspicuous series of five postdiscal white dots in cells R_5 to Cu_1 respectively.

Material examined: COLOMBIA: 1 male, Columb. [sic/. = Colombia]; 1 male, Llanos de San Martín, 3000 m [ZMHB]; ECUADOR: 1 male, Hewitson Coll., BM Type No. Rh. 4009 [LECTOTYPE of *Pronophila philoter* Hewitson, herein designated, see remarks below] [NHM]; 1 male: El Calvario, Tulcán – La Bonita road, 3000 m, xi-1997, I. Aldás leg. [TWP].

Distribution. To this date, the only reliable locality known for this species is in the road from Tulcán to La Bonita, in Ecuador, near the Colombian border. The Colombian record from the eastern slopes of the Cordillera Oriental, the Llanos [flatlands] de San Martín (on the foothills of that range, south of Villavicencio in the upper Rio Meta) needs further confirmation. *Neopedaliodes philoter* is probably replaced north of Pasto, by *N. nora*; the two species being closely related.

Remarks. There is only a single specimen of this species in the Hewitson collection, and it compares favorably with Figures 16 and 17 in Hewitson (1868). As indicated above, there are several species that are similar to it in appearance. To provide stability in the nomenclature a Lectotype is herein designated and the following red label has been placed on the specimen [printed]: *Pronophila philoter* / Hewitson, 1868 / LECTOTYPE ♂ / designated by / A. L. Viloría, / L. D. Miller & / J. Y. Miller, 2002.

Neopedaliodes philoter is very scarce in collections. We only know the lectotype, two other specimens deposited in the museum of the Humboldt University in Berlin, and one specimen in Warsaw (TWP) collected by Ecuadorian collector Ismael Aldás. Although similar to *N. nora*, its wing pattern is distinctive, as are the male genitalia. The valvae in the latter are characterized by an underdeveloped dorsal ampullar process

similar to *N. michaeli*. However, they differ in the size and shape of the aedeagus, which is less robust in *N. philotera*. The saccus is considerably smaller in *N. philotera* as compared with *N. michaeli*.

***Neopedaliodes margaretha margaretha* (Adams, 1986)**

Figs. 28 (♂), 51 (♂ genitalia)

[*Parapedaliodes margaretha*] Adams, 1983: 474, *nomen nudum*.

Parapedaliodes margaretha Adams, 1986: 239, 240, 279-280, 281, fig. 36.

Pedaliodes margaretha (Adams); d'Abrera, 1988: 866, 867, fig.[male holotype]; 2001: 186, 341 [pl. 141, fig. 4, male holotype].

Parapedaliodes margaretha Adams; Vilorio & Pyrcz, 1994: 349; Vilorio, 2002: 177.

[*Neopedaliodes margaretha margaretha* (Adams)]; Vilorio, 2002: 177, 189 *nomen nudum*

Neopedaliodes margaretha margaretha (Adams); Lamas *et al.*, 2004: 210.

Type locality: Tolima, 3100 m, Central Cordillera of Colombia.

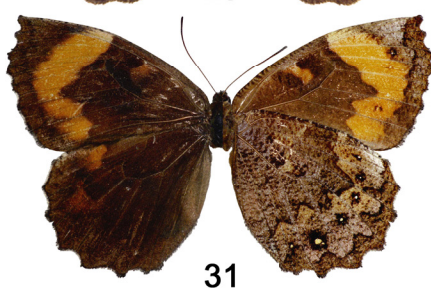
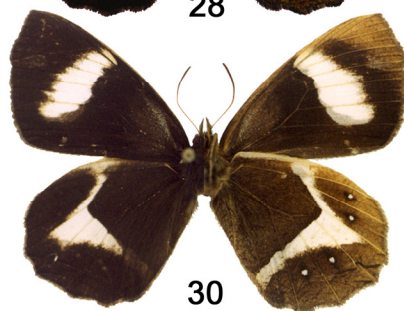
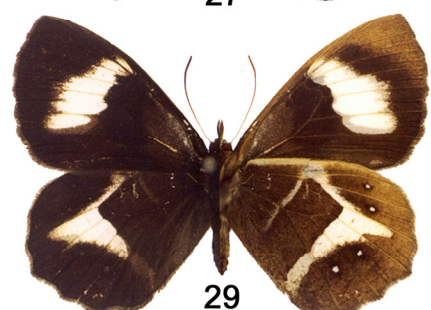
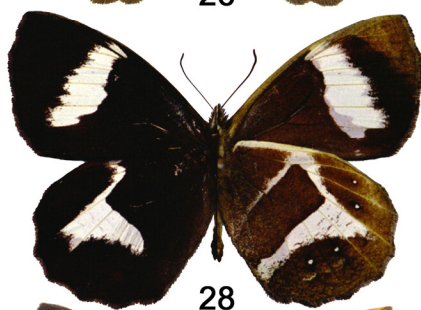
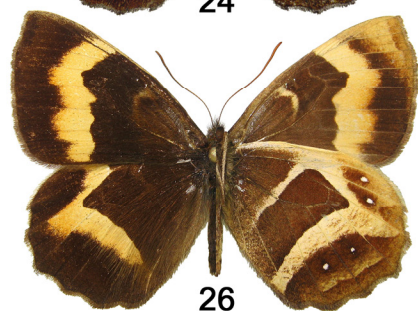
Diagnosis. This species is recognizable by its wing pattern of dark brown ground color and one pure white band on both sides of each wing. The forewing band is regular in thickness, and does not reach the anal margin as in *N. lafebreae* (but see below for slight differences between the other subspecies of *N. margaretha*). It always possesses a white, straight, postbasal line crossing the hindwing underside, which is absent in some individuals of *N. margaretha allyni*, **new subspecies**.

Material examined: COLOMBIA: 1 male, Departamento del Tolima, S above Cajamarca, 3100 m, 24-vii-1979, M. J. Adams [*Holotype*] [NHM].

Distribution. Known so far from type locality (Central Cordillera of Colombia).

Remarks. The single individual known was caught flying sympatrically with *N. nora nora* (Adams), but Adams (1986: 280) believes it replaces the latter parapatrically above 3100 m. A different subspecies flies in the Puracé massif (see below).

Figures 24-31. Adult specimens of *Neopedaliodes* (left dorsal, right ventral). Images not to scale; **24**) *N. parrhoebia parrhoebia* (Hewitson): LECTOTYPE of *Pronophila parrhoebia* Hewitson, male, Ecuador, Galgalán, Buckley, Hewitson Coll., BM Type No. Rh. 4011 [NHM]; **25**) *N. parrhoebia phintia* (Hewitson): LECTOTYPE of *Pronophila phintia* Hewitson, male, Ecuador, Hewitson Coll., Brit. Mus. Type No. Rh. 4013 [NHM]; **26**) *N. lafebreae* Vilorio, L. D. Miller & J. Y. Miller, **new species**: HOLOTYPE, male, Ecuador, Cotopaxi: Milimbanco, 3600 m, i-1973, R. de Lafebre, A. C. Allyn Acc. 1973-9 [MGCL]; **27**) *N. philotera* (Hewitson): LECTOTYPE of *Pronophila philotera* Hewitson, male, [no data], Hewitson Coll., Brit. Mus. Type No. Rh. 4009 (genit. prep. ALV394-98) [NHM]; **28**) *N. margaretha margaretha* (Adams): HOLOTYPE of *Parapedaliodes margaretha* Adams, male, Colombia, Departamento del Tolima, S. above Cajamarca, 3100 m, 24-vii-1979, M. J. Adams [NHM]; **29**) *N. margaretha allyni* Vilorio, L. D. Miller & J. Y. Miller, **new subspecies**: HOLOTYPE, male, Colombia, Cauca, Puracé Ntl. Pk., Páramo del Buey, 3000 m, 10-iii-1976, S. & L. Steinhäuser, A. C. Allyn Acc. 1976-9 [MGCL]; **30**) *N. margaretha allyni* Vilorio, L. D. Miller & J. Y. Miller, **new subspecies** (variation, without hindwing ventral postbasal band): PARATYPE, male, Colombia, Cauca, Puracé Ntl. Pk., Páramo del Buey, 3000 m, 10-iii-1976, S. & L. Steinhäuser, A. C. Allyn Acc. 1976-9 [MGCL]; **31**) *N. phoenicusa* (Hewitson): LECTOTYPE of *Pronophila phoenicusa* Hewitson, female, Ecuador, Hewitson Coll., NHM Type No. Rh. 4016 [NHM].



Neopedaliodes margaretha allyni Viloría, L. D. Miller & J. Y. Miller, **new subspecies**

Figs. 29 (♂), 30 (♂, variation), 52 (♂ genitalia)

[*Neopedaliodes margaretha* (ssp. nov.)]; Viloría, 2002: 177 *nomen nudum*[*Neopedaliodes* sp. nov.]; Viloría, 2002: 177 (misidentification) *nomen nudum*[*Neopedaliodes margaretha allyni* Viloría, L. D. Miller & J. Y. Miller]; Viloría, 2002: 189 *nomen nudum**Neopedaliodes margaretha* [n. ssp.] Viloría, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004: 210.*Neopedaliodes* [n. sp.] Viloría, L. D. Miller & J. Y. Miller, MS; Lamas *et al.*, 2004: 211 (misidentification)**Type locality:** Páramo del Buey, Puracé Ntl. Pk., Colombia.

Description. Male: FWL: 23.5-24.5 mm; mean = 24.03 mm; (n = 5). Dorsal forewing as in *N. margaretha margaretha*, but white band is broader and distally more diffuse; white band of dorsal hindwing narrowed to a single point distad in M₂-M₃ (band appears to have a double distal point in *N. m. margaretha*) under forewing band in Cu₂-2A, squared posteriad; ventral hindwing similar to the nominotypical subspecies, although two individuals examined lack the straight white line that extends over the postbasal-discal region (specimens wrongly referred to as a new species in Viloría, 2002 and Lamas *et al.*, 2004). Male genitalia of both phenotypes similar to nominotypical subspecies (Figs.50-51).

Female: unknown.

Type Material. HOLOTYPE male: COLOMBIA: Cauca, Puracé Ntl. Pk., Páramo del Buey, 3000 m, 10-iii-1976, S. & L. Steinhauser, A. C. Allyn Acc. 1976-9; PARATYPES: 1 male, same data as Holotype; 2 males, Cauca, Puracé Ntl. Pk., above Coconuco, 3000 m, (páramo), 30-i-1976, S. & L. Steinhauser, A. C. Allyn Acc. 1976-9; 1 male, same data, but 31-i-76 [MGCL].

Etymology. The name of this species is dedicated to the late Arthur C. Allyn (1913-1985), extraordinary lepidopterist and founder of the Allyn Museum of Entomology, with one of the most significant butterfly collections in America.

Distribution. We believe that this subspecies is restricted to the Volcán Puracé massif. (altitude: 3000 m and possibly above).

Remarks. Distinguished from nominotypical subspecies by the forewing pattern. Genitalic structure is similar in both subspecies. It is very peculiar to this taxon that two different phenotypes are found sympatrically, with no intergrade individuals so far discovered (Figs. 29-30). *Neopedaliodes margaretha allyni* flies sympatrically with *N. nora stepheni* **new subspecies**.

Neopedaliodes nora nora (Adams, 1986)

Figs. 32 (♂), 54 (♂ genitalia)

[*Pedaliodes philotaera* [sic] (Hewitson); Fassl, 1911: 26 (misidentification)].[*Pedaliodes philotera* (Hewitson); Krüger, 1924: 23 (misidentification)].[*Parapedaliodes nora*] Adams, 1983: 474, *nomen nudum*.*Parapedaliodes nora* Adams, 1986: 239, 240, 278-279, 280, 281, figs. 5 (male genitalia), 35.

Pedaliodes nora (Adams); d'Abrera, 1988: 862, fig., 866, 867, fig. [male holotype]; 2001: 186, 341 [pl. 141, fig. 5 male holotype]; Salazar, 1996: 18.

Parapedaliodes nora Adams; Vilorio & Pyrcz, 1994: 349; Pyrcz, 1999a: 224; 1999b: 354; Vilorio, 2002: 177.

[*Neopedaliodes nora nora* (Adams)]; Vilorio, 2002: 177, 189 *nomen nudum*
Neopedaliodes nora nora (Adams); Lamas *et al.*, 2004: 210.

Type locality: 2600-3200 m, Central Cordillera of Colombia.

Diagnosis. A species characterized by its broad orange band on the forewing upperside. The inner edge of this band is almost parallel to the outer margin of the wing, but its outer edge is distally extended in cells M_2 , Cu_1 and the anterior portion of Cu_2 . Similar in facies to *N. philoter* and *N. parrhoebia* but differs from the first in having a darker band, with a more indented distal edge on forewing and is lighter in color than the second, which also has a narrower band on the hindwing upperside.

Description of female. FWL: 25 mm; (n = 1). Similar to male, but upperside markings duller, postmedian orange bands shading paler proximad; ventral hindwing lacking straight tan band across cell, rendering median, basal brown patch quadrangular; hindwing postdiscal spots lacking in M_3 - Cu_1 and Cu_1 - Cu_2 .

Pyrcz (1999b: 354) refers to two males and one female from the Central Cordillera of Colombia (Combeima, 2700 m, and Cucarronera, 2800-3200 m) deposited in the Eugen Krüger's collection of butterflies in the Museum and Institute of Zoology of the Polish Academy of Sciences (Warsaw, Poland). He only mentions that the female is paler than the male in color, but here, we have provided some other differences.

Material examined: COLOMBIA: 1 male, Departamento del Tolima, S above Cajamarca, 2900 m, 23-viii-1979, M. J. Adams [*Holotype*]; 4 males, same data, 3050 m; 3 males, same data, 3100 m, 24-vii-1979, Adams/Hardy, BM 1987-319 (1 genitalia dissected ALV063-96); 1 male, same data, 25-vii-1979; 1 male, same data, 26-vii-1979 (wing prepared ALV No. 18); 1 male, Tolima District, 1916, W. K. Pomeroy, BM 1935-598 [*Paratypes*] [NHM]; 1 female, Valle, Upper Calima, vii-1985 [MGCL].

Distribution. Found from 2700 to 3200 m, in the Cordillera Central of Colombia, both on the western slopes (Cucarronera, south of Nevado del Tolima, (see Pyrcz, 1999b: 371) and the eastern ones (Combeima, northwest of Ibagué, and Cajamarca, southwest of Ibagué, Department of Tolima). There is also an isolated record in the MGCL, from the upper Calima (= Darien [?]), Department of Valle del Cauca, which is a locality of the biogeographic Chocó, on the western slopes of the Cordillera Occidental. This is not an impossible record but must be taken with some reservation.

Remarks. As mentioned by Adams (1986: 279) this is a species more related to *N. philoter* (with which Eugen Krüger confused it, see also Pyrcz, 1999b). However, they have different genitalia (valvae and aedeagus) as can be seen in our figures. Genitalic features of *N. nora* place it closer to *N. parrhoebia*.

Neopedaliodes nora stepheni Vilorio, L. D. Miller & J. Y. Miller, **new subspecies**

Figs. 33 (♂), 55 (♂ genitalia)

[*Neopedaliodes nora stepheni* Vilorio, L. D. Miller & J. Y. Miller]; Vilorio, 2002 : 189 *nomen nudum*

Neopedaliodes nora [n. ssp.] Vilorio, L. D. Miller & J. Y. Miller; Lamas *et al.*, 2004: 210.

Type locality: Páramo del Buey, Puracé Ntl. Pk, Colombia.

Description. Male. FWL: 23-24 mm; mean = 23.5 mm; (n = 12). Differs from nominotypical subspecies in the following characters: Forewing upperside orange band more regular, and narrower in its anterior portion. Hindwing upperside orange band also narrower towards its distal portion and more angled in its vertex in cell M_2 - M_3 . Both wings on ventral surface with bands reduced in thickness; therefore, hindwing brown discal area is more rectangular (rather than triangular as in nominotypical *N. nora nora*); forewing apical region notably paler, ochraceous yellow; forewing base dusted with grayish scales within discal cell; an orange spot within second third of discal cell. Ventral hindwing distinct, dusted with yellow scales over submarginal region. Genitalia similar to that of nominotypical subspecies, but aedeagus more contorted.

Female. FWL: 24.5 mm; (n = 1). Retains the same differences from *N. nora nora* as the male, but generally colors are paler and the ventral hindwing with straight tan band present in discal basad.

Type Material: HOLOTYPE male: COLOMBIA: Cauca, Puracé Ntl. Pk., Páramo del Buey, 3000 m, 10-iii-76; S. & L. Steinhauser, A. C. Allyn Acc. 1976-9; PARATYPES: 1 male, same data as Holotype; 1 male, Cauca, Puracé Ntl. Pk., above Coconuco, 3000 m, (páramo), 30-i-1976, S. & L. Steinhauser, A. C. Allyn Acc. 1976-9; 9 males, 1 female, same data, 30-i-1976 [MGCL].

Disposition of type series: Holotype male, 10 males and one female paratypes [MGCL]; one male paratype [NHM].

Etymology. This subspecies was first discovered by the late Stephen Steinhauser (1921-2007), whose presence and companionship were essential for our careers and for the development of the Allyn Museum as an institution. We dedicate the name of this beautiful butterfly to the memory of Steve, as a gesture of appreciation.

Distribution. As in *N. margaretha allyni*, this subspecies appears to be restricted to the Puracé region in Colombia.

Remarks. For affinities see account of *N. nora nora* herein.



Figures 32-33. Adult specimens of *Neopedaliodes nora* (left dorsal, right ventral). Images not to scale; **32)** *N. nora nora* (Adams): HOLOTYPE of *Parapedaliodes nora* Adams, male, Colombia, Departamento del Tolima, S. above Cajamarca, 2900 m, 23-viii-1979, M. J. Adams [NHM]; **33)** *N. nora stepheni* Vilorio, L. D. Miller & J. Y. Miller, **new subspecies**: HOLOTYPE, male, Colombia, Cauca, Puracé Ntl. Pk., Páramo del Buey, 3000 m, 10-iii-76; S. & L. Steinhauser, A. C. Allyn Acc. 1976-9 [MGCL].

***Neopedaliodes phoenicusa* (Hewitson, 1868)**

Figs. 31 (♀), 52 (♂ genitalia)

Pronophila phoenicusa Hewitson, 1868: pl. 36, figs. 18, 19.

Pronophila phoenicusa Hewitson; Kirby, 1879: 113; Viloría, 2002: 177.

Pedaliodes phoenicusa (Hewitson); Butler, 1868: 178; Kirby, 1871: 105; Thieme, 1905: 125; Weymer, 1912: 262; Gaede, 1931: 498; d'Abrera, 1988: 863, figs.; Viloría, 2002: 177

Muscopedaliodes phoenicusa (Hewitson); Forster, 1964: 154, fig. 188 (male genitalia, referred as *M. phoenicussa* [sic]); Viloría, 2002: 177.

Panyapedaliodes phoenicusa (Hewitson); after Adams, 1986: 275, 317; Viloría, 1990: 184; 2002: 177.

Parapedaliodes phoenicussa [sic] (Hewitson); Viloría & Pyrcz, 1994: 349.

Pedaliodes phoenicussa [sic] (Hewitson); Salazar, 1996: 18; Pyrcz, 1999b: 366.

[*Neopedaliodes phoenicusa* (Hewitson)]; Viloría, 2002: 177, 189 *nomen nudum*

Neopedaliodes phoenicusa (Hewitson); Lamas *et al.*, 2004: 210; Pyrcz & Viloría, 2006: 434; Pyrcz & Rodríguez, 2007: 467.

Type locality: Ecuador.

Diagnosis. Almost twice as large as other orange-banded species within the genus; female even larger. This character alone separates it from the rest of the *Neopedaliodes*. The dorsal forewing band extends obliquely in relation to outer margin from costa to vein Cu₁, where it bends to parallel outer margin. This feature makes *N. phoenicusa* distinguishable by a markedly angled forewing band. Hindwing ventral surface peculiar: pale postbasal band with sinuous borders, limited by dark brown lines; a series of six ocellar white dots (cells R₅ to Cu₂ respectively), encircled with dark brown, largest in Cu₁.

Material examined: COLOMBIA: 1 male, Colomb.[ia], N. Granada, Ex Grose-Smith 1910, Joicey Bequest, Brit. Mus. 1934-120 [possibly wrong data] [NHM]; ECUADOR: 1 female, "Ecuador", Hewitson Coll., NHM type No. Rh. 4016 [LECTOTYPE of *Pronophila phoenicusa* Hewitson, herein designated, see remarks below]; 1 male, 1 female, no data, Hewitson Coll. 79-69; 1 male, Ecuador, Hewitson Coll. 79-69 [PARALECTOTYPES of *Pronophila phoenicusa* Hewitson, herein designated]; 2 males, Environs de Loja, 1890, 32. 21 Ex Coll. Dognin 1921, Joicey Bequest Brit. Mus. 1934-120 (1 präparat Nr. sA 459, Zoolog. Staatssammlung München; 4 males, 1 female, Ecuad[or], Ex Grose-Smith 1910, Joicey Bequest Brit. Mus. 1934-120 (1 male wing prep. A. Viloría 24-x-1996; Genit. prep. No. ALV050-96); 1 male, Granadillas, E. Ecuador, Buckley, Godman-Salvin Coll. 1904-1, B.M.(N.H.) Rhopalocera vial number 4065; 3 males, 1 female, Zamora, Ecuador, 3-4000 ft. (O. T. Baron), Rothschild Bequest B. M. 1939-1 [NHM]; 29 males, 4 females, Cerro Toledo, Podocarpus NP., Loja, 3200-3250 m, 14-ix-2004, T. Pyrcz leg.; 9 males, 4 females, "El Basurero", Loja – Zamora road pass, 2800-2850 m, different dates and collectors (T. Pyrcz, I. Aldás, S. Attal) [TWP].

Distribution. All specimens recently obtained, with reliable data were collected on the ridge of the Cordillera de los Andes in southern Ecuador, in the Podocarpus National Park, and in Morona-Santiago. The single record from Colombia seems unreliable, but not impossible.

Neopedaliodes phoenicusa is very local but can be very abundant. It occurs in the uppermost cloud forest near or at the timberline.

Remarks. *Neopedaliodes phoenicusa* is far larger in size than the rest of the species of the genus. The decision to place this taxon within this genus is strongly supported by the conformity of its morphological characters with those diagnosed for the genus including wing shape, homologies of wing pattern, androconial pattern, and male genitalia. This is by no means a member of *Pedaliodes* for the reasons explained in the introduction in defense of the distinction and validity of *Neopedaliodes*. However, this species together with *N. entella* and *N. proculeja* are superficially the least characteristic of *Neopedaliodes*.

Comparisons of the potential type specimens derived from the Hewitson collection with Figures 18 and 19 on *Pronophila* plate III were made, and based on the locality data "Ecuador" and wing maculation features of the dorsal and ventral surfaces, a specimen was selected. A Lectotype is herein designated and the following red label has been placed on the specimen [printed]: *Pronophila phoenicusa* / Hewitson, 1868 / LECTOTYPE ♀ / designated by / A. L. Vilorio, / L. D. Miller & / J. Y. Miller, 2002. A light blue label has been placed on each of the three (two males and one female) Paralectotypes, with the following legend:[hand-written] Pronophila phoenicusa HEWITSON, 1868 / [printed] PARALECTOTYPE [sign for gender] / A. L. Vilorio, [hand-written] L. D. Miller / J. Y. Miller, 2001.

Comments on the Distribution of the Species of *Neopedaliodes*

The species of *Neopedaliodes* in Ecuador are generally allopatric. The only exceptions are *N. phoenicusa* and *N. entella*, both loosely related to other taxa. The following taxa replace each other allopatrically along the eastern slopes of the Andes, from north to south: *N. philotera* – *N. lafebreae* – *N. parrhoebia parrhoebia* – *N. parrhoebia phintia*. *Neopedaliodes juba* is predominantly a western slopes species, which penetrates only marginally on the eastern slopes, as the subspecies *N. juba jubilosa*, in upper Papallacta and Pastaza valleys. It has never been observed to occur sympatrically or parapatrically with *N. lafebreae*, *N. philotera* or *N. parrhoebia*. *Neopedaliodes michaeli* can be considered the allopatric replacement on the western slopes for *N. parrhoebia*, which is certainly restricted to the southwestern part of the country. These two species are never sympatric. *N. michaeli* is also the southern allopatric replacement for *N. juba* on the western slopes.

In southern Colombia, the situation is similar with *N. juba juba* inhabiting the western, and *N. philotera* the eastern slopes. The sympatry of *N. nora* and *N. margaretha* is possibly secondary due to a late expansion of their geographic ranges after allopatric divergence, and they might have followed the mechanism of speciation by isolation suggested by Adams (1985) .

The apparent absence of representatives of the genus *Neopedaliodes* from the Andes in central and northern Peru seems difficult to explain from a biogeographical point of view. If this discontinuity is not an artifact of undersampling, then historical events might be responsible for a wide scale local extinction in that area.

Table 1. Differences between *Parapedaliodes* Forster and *Neopedaliodes* Viloria, L. D. & J. Y. Miller

<i>Parapedaliodes</i>	<i>Neopedaliodes</i>
a. Forewing apex always rounded	a. Forewing apex always truncate and/or excavate
b. Orange bands or spots of both wings always submarginal	b. Orange or white bands of both wings always postdiscal
c. Hindwing orange sagital spots always pointing distad	c. Hindwing orange sagital spots always pointing basad
d. Androconial patches always exceeding discal area, broadly entering postdiscal region (Fig. 1)	d. Androconial patches never beyond discal region (Fig. 2)
e. Hindwing band system never angled	e. Hindwing band system (if existing) always bent in right angle
f. Antennae shorter than half costa, usually reaching to 2/5 its length	f. Antennae always reaching half of length of costa
g. Body moderately hairy	g. Body very hairy
h. Hindwing veins Rs, M ₁ , M ₂ and M ₃ relatively long, but discal cell does not exceed half the length of the wing	h. Hindwing vein Rs, M ₁ , M ₂ and M ₃ relatively shorter than in <i>Parapedaliodes</i> ; discal cell longer than half of the wing
i. Chamber of forewing Vogler's organ (at base of vein A ₂) relatively more inflated than in <i>Neopedaliodes</i>	i. Chamber of forewing Vogler's organ (at base of vein A ₂) only moderately inflated

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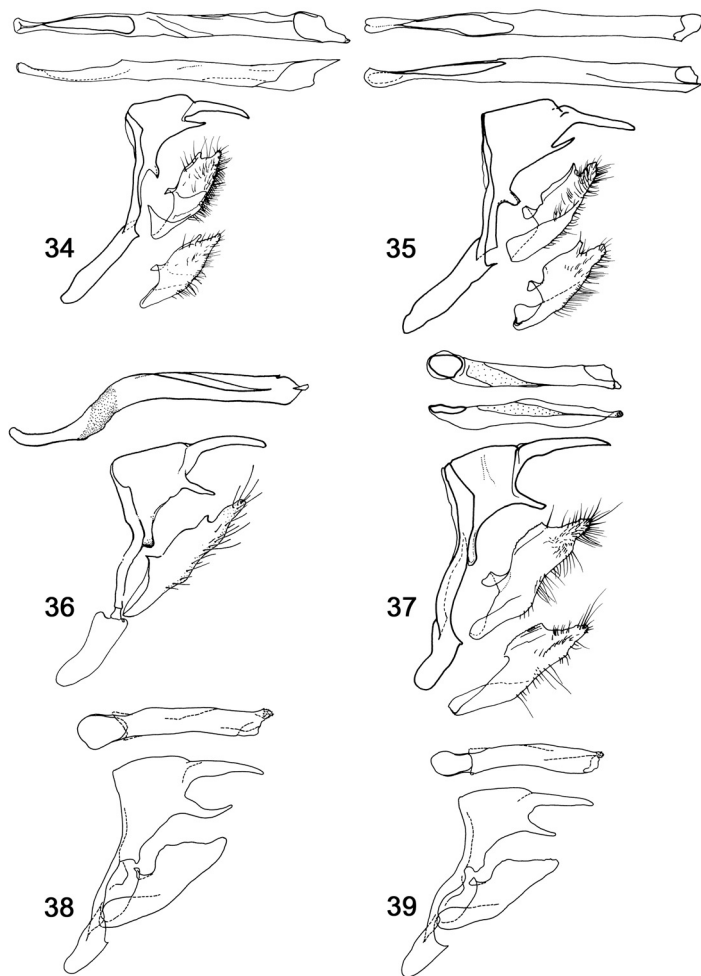
LITERATURE CITED

- Adams, M. J. 1983. Andean brown butterflies. In: Wells, S. M.; R. M. Pyle & N. M. Collins (Eds.): *The IUCN Invertebrate Red Data Book*. Gland: IUCN, pp. 473-476.
- Adams, M. J. 1985. Speciation in the pronophiline butterflies (Satyridae) of the Northern Andes. *J. Res. Lepid.* 1985 (suppl. 1): 33-49.
- Adams, M. J. 1986. Pronophiline butterflies (Satyridae) of the three Andean Cordilleras of Colombia. *Zool. J. Linn. Soc.* 87:235-320.
- Butler, A. G. 1867. Revision of the group of lepidopterous insects hitherto included in the genus *Pronophila* of Westwood. *Ann. Mag. Nat. Hist.* (3)20(118):266-268.
- Butler, A. G. 1868. *Catalogue of diurnal Lepidoptera of the family Satyridae in the collection of the British Museum*. London: Taylor and Francis, vi + 211 pp., 5 pls.
- d'Abrera, B. 1988. *Butterflies of the Neotropical Region. Part V. Nymphalidae (Concl.) & Satyridae*. Victoria, Black Rock, Hill House, [viii] + pp. 679-877.
- d'Abrera, B. 2001. *The Concise Atlas of butterflies of the world*. Melbourne / London: Hill House, 353 pp. + [i].
- Dognin, P. 1891. *Lépidoptères de Loja et environs (Équateur). Description d'espèces nouvelles*. Paris: Imprimerie F. Levé, 2:27-65, pls. 3-6.
- Fassl, A. H. 1911. Die vertikale Verbreitung der Lepidopteren in der Columbischen Central-Cordillere. *Fauna Exotica* 7:25-26.
- Fassl, A. H. 1920. Meine Bolivia-Reise. *Ent. Runds.* 37(3):10-11; (4):15-16; (5):17-18; (6):22-23; (7):25-27; (8):29-30; (9):34-35; (11):41-43; (12):45-48.
- Forster, W. 1964. Beiträge zur Kenntnis der Insektenfauna Boliviens, XIX. Lepidoptera III. Satyridae. *Veröff. Zool. Staatssamml. München* 8:51-188.
- Gabriel, A. G. 1932. *Catalogue of the type specimens of Lepidoptera Rhopalocera in the Hill Museum*. London: John Bale, Sons & Danielsson, Ltd., 40 pp.
- Gaede, M. 1931. Satyridae. II. In: Strand, E. (Ed.): *Lepidopterorum Catalogus* 29(46): 321-544.
- García-Robledo, C.; L. M. Constantino; M. D. Heredia & G. Kattan. 2002. Guía de campo. Mariposas comunes de la Cordillera Central de Colombia. Cali: Wildlife Conservation Society, Programa de Colombia, 130 pp. + [ii].
- Godman, F. D. C. & O. Salvin. 1878. Descriptions of nineteen new species of diurnal Lepidoptera from Central America. *Proc. Zool. Soc. London* 1878(1): 264-271.
- Godman, F. D. C. & O. Salvin. [1881]. *Biologia Centrali Americana. Insecta. Lepidoptera-Rhopalocera*. London: Dulau & Co., Bernard Quantch, 1, pp. 97-104, pl. 10.
- Godman, F. D. C. & O. Salvin. 1891. Appendix. Lepidoptera. In: Whymper, E.: *Supplementary appendix to Travel amongst the great Andes of the Equator*. London: John Murray, pp. 96-110.

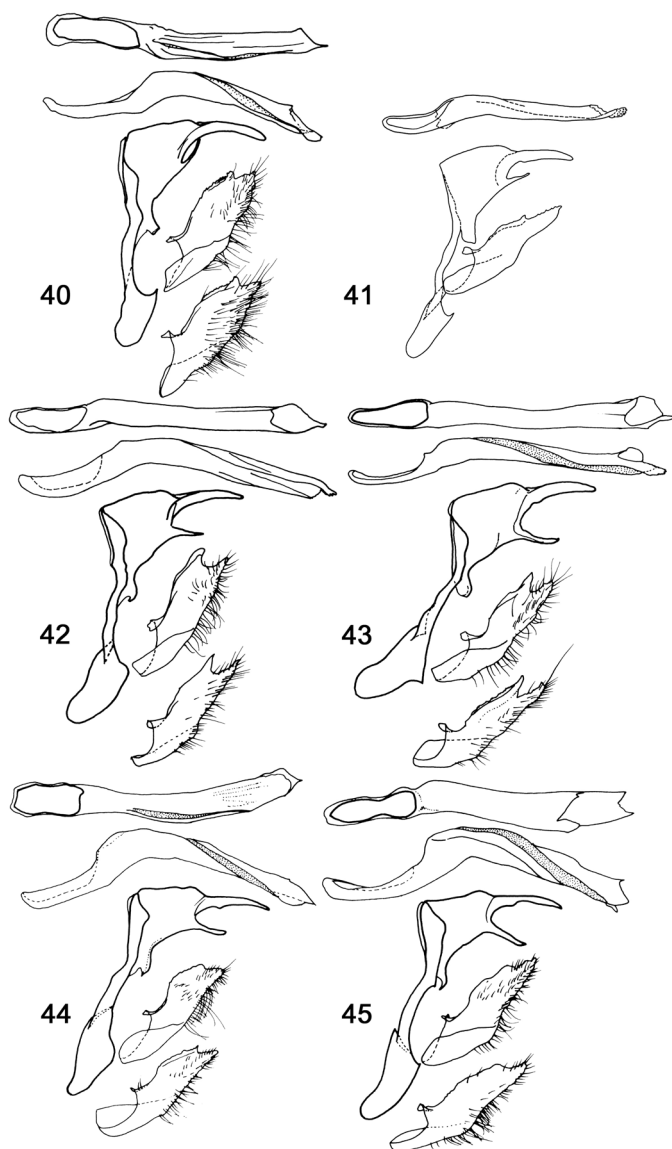
- Grose-Smith, H. & W. F. Kirby. [1895]. *Pedaliodes* III. In: *Rhopalocera Exotica, being illustrations of new, rare, and unfigured species of butterflies*. London: Gurney & Jackson, pp.10-14, 1 pl.
- Hayward, K. J. 1958. Dibujos de los genitales masculinos de algunos satíridos Neotropicales (Lep. Rhop. Satyridae). *Acta Zool. Lilloana* 16:61-81.
- Hayward, K. J. 1964. Dibujos de los genitales masculinos de algunos satíridos neotropicales IV (Lep. Rhop. Satyridae). *Acta Zool. Lilloana* 20:187-191.
- Herrich-Schäffer, G. A. W. 1865. Prodrömus systematis lepidopterorum. Versuch einer systematischen anordnung der schmetterlinge. Korresp.-Bl. zool.-min.Ver. Regensburg 19(5):63-76.
- Hewitson, W. C. 1862. On *Pronophila*, a genus of diurnal Lepidoptera; with figures on the new species, and reference to all those which have been previously figured or described. *Trans. Ent. Soc. London* 1(3):1-17, pls. 1-6.
- Hewitson, W. C. 1868. Satyridae. *Pronophila* III and IV. Illustrations of new species of exotic butterflies, 4. London: John van Voorst, pp. [65-68], pls. [36-37].
- Hewitson, W. C. 1869. Descriptions of new species of Lepidoptera Rhopalocera, from Old Calabar and Ecuador. *Ent. Mont. Mag.* 6:97-99.
- Hewitson, W. C. 1869a. Satyridae. *Equatorial Lepidoptera collected by Mr. Buckley, part III*. London: John van Voorst, pp. 33-48.
- Hewitson, W. C. 1870. Description of twenty-two new species of Equatorial Lepidoptera. *Trans. Ent. Soc. London* 1870:153-163.
- Hewitson, W. C. 1871. Satyridae. *Pronophila* V. Illustrations of new species of exotic butterflies, 4. London: John van Voorst, pp. [69-70], pl. [38].
- Hewitson, W. C. 1872. Satyridae. *Pronophila* VII. Illustrations of new species of exotic butterflies, 5. London: John van Voorst, pp. [51-52], pl. [28].
- Hewitson, W. C. 1877. Satyridae. *Equatorial Lepidoptera collected by Mr. Buckley, V*. London: John Van Voorst, pp. 81-96.
- Kirby, W. F. 1871. *A synonymic catalogue of diurnal Lepidoptera*. London: John van Voorst, vii + 690 pp.
- Kirby, W. F. 1877. *A synonymic catalogue of diurnal Lepidoptera. Supplement*. London: John van Voorst, pp. i-viii + 691-883.
- Kirby, W. F. 1879. *Catalogue of the collection of diurnal Lepidoptera formed by the late William Chapman Hewitson, of Oatlands, Walton-on-Thames; and bequeathed by him to the British Museum*. London: John van Voorst, iv + 246 pp.
- Krüger, E. 1924. Beiträge zur Kenntnis der columbischen Satyriden. *Ent. Rund.* 41:23-24, 27-28, 31-32, 35.
- Lamas, G. 1979. Additions and corrections to the check-list of western Peru butterflies (Lepidoptera). *Rev. Cienc. Univ. Nac. Mayor San Marcos* 71(1):54-61.
- Lamas, G.; Á. L. Vilorio & T. W. Pyrcz. 2004. Tribe Satyrini, Subtribe Pronophilina. In: Lamas, G. (ed.): Checklist. Part 4A. Hesperioidea - Papilionoidea. In: Heppner, J. B. (ed.): *Atlas of Neotropical Lepidoptera*. Vol. 4. Gainesville, FL: Association for Tropical Lepidoptera / Scientific Publishers, pp. 206-215.
- Lewis, H. L. 1973. *Butterflies of the World*. London: Follet, xvi + 312 pp. [208 pls.].
- Miller, L. D. 1968. The higher classification, phylogeny and zoogeography of the Satyridae (Lepidoptera). *Mem. Am. Ent. Soc.* 24:1-174.
- Moreno Espinosa, M.; X. Silva del Pozo; G. Estévez Jácome; Inés Marggraff & Paul Marggraff. 2000. *Mariposas del Ecuador. [2nd. ed.]*. Quito: OXY Occidental Exploration and Production Company, 165 pp. + [iii].

- Pelz, V. 1997. Life history of *Pedaliodes parepa* from Ecuador (Lepidoptera: Nymphalidae: Satyrinae). *Trop. Lepid.* 8(1):41-45.
- Piñas Rubio, F., S. J. 2004. *Mariposas del Ecuador. Vol. 11b2. Familia: Nymphalidae, Subfamilia: Satyrinae*. Quito: Compañía de Jesús, vi + 90 pp., 1 CD [with 692 images].
- Piñas Rubio, F., S. J. & I. Manzano Pesántez. 1997. *Mariposas del Ecuador. Vol. 1. Géneros*. Quito: Pontificia Universidad Católica del Ecuador, 115 pp. + [v].
- Pyrz, T. W. 1999a. The E. Krüger collection of pronophiline butterflies. Part I: Introduction, genera *Altopedaliodes* to *Lymanopoda* (Lepidoptera: Nymphalidae: Satyrinae). *Lambillionea* 99:221-240.
- Pyrz, T. W. 1999b. The E. Krüger collection of pronophiline butterflies. Part II: Genera *Manerebia* to *Thiemeia* (Lepidoptera: Nymphalidae: Satyrinae). *Lambillionea* 99:351-376.
- Pyrz, T. W., 2004a. New oreal pedalioidine butterflies from Ecuador and Colombia (Nymphalidae: Satyrinae: Pronophilini). *Bol. Cient. Centro de Museos (Manizales)* 8: 287-301.
- Pyrz, T. W., 2004b. Pronophiline butterflies of the highlands of Chachapoyas in northern Peru: faunal survey, diversity and distribution patterns (Lepidoptera, Nymphalidae, Satyrinae). *Genus, Int. J. Invert. Taxon. (Wroclaw)* 15(4): 455-622.
- Pyrz, T. W. & G. Rodríguez. 2007. Mariposas de la tribu Pronophilini en la Cordillera Occidental de los Andes de Colombia (Lepidoptera: Nymphalidae, Satyrinae). *SHILAP, Revta. lepid.* 35(140): 455-489.
- Pyrz, T. W. & Á. L. Viloría. 1999. Contribution to the knowledge of Ecuadorian Pronophilini, Part 1; new pedalioidines (Lepidoptera: Nymphalidae: Satyrinae). *Genus, Int. J. Invert. Taxon. (Wroclaw)* 10(1):117-150.
- Pyrz, T. W. & Á. L. Viloría. 2005. Adiciones a la fauna de mariposas de la Reserva Forestal de Tambito (Colombia): descripción de cuatro subespecies nuevas de la subtribu Pronophilina (Nymphalidae, Satyrinae). *Bol. Cient. Centro de Museos (Manizales)* 9: 258-277.
- Pyrz, T. W. & Á. L. Viloría. 2006. Systematics, zoogeography and bionomics of high Andean pedalioidines. Part 2: *Pedaliodes praxia* (Hewitson) and related species (Lepidoptera, Nymphalidae, Satyrinae). *Genus, Int. J. Invert. Taxon. (Wroclaw)* 17(3): 427-436.
- Pyrz, T. W. & Á. L. Viloría. 2007. Erebiine and pronophiline butterflies of the Serranía del Tamá, Venezuela-Colombia border (Lepidoptera: Nymphalidae: Satyrinae). *Trop. Lepid.* 15(1-2): 18-52.
- Salazar Escobar, J. A. 1996. Sobre la concentración de lepidópteros ropalóceros en las cumbres de un cerro del noroccidente de CALDÁS, Colombia (Insecta: Lepidoptera). *SHILAP, Revta. lepid.* 24(94): 183-194.
- Salazar Escobar, J. A. 1996. Noticias sobre algunos Satyrinae poco conocidos para Colombia (Lepidoptera: Nymphalidae). *Bol. Cient. Centro de Museos (Manizales)* 1(1):17-21.
- Scudder, S. H. 1875. Historical sketch of the generic names proposed for butterflies. A contribution to systematic nomenclature. *Proc. Am. Acad. Arts Sc.* 10:91-293.
- Staudinger, O. 1887. I. Theil. Exotische Tagfalter in systematischer Reihenfolge mit Berücksichtigung neuer Arte. In: Staudinger O. & E. Schatz. 1884-1892. *Exotische Schmetterlinge*. Fürth: G. Löwensohn, IX Satyriden. Exotische Tagfalter, 1:219-237.

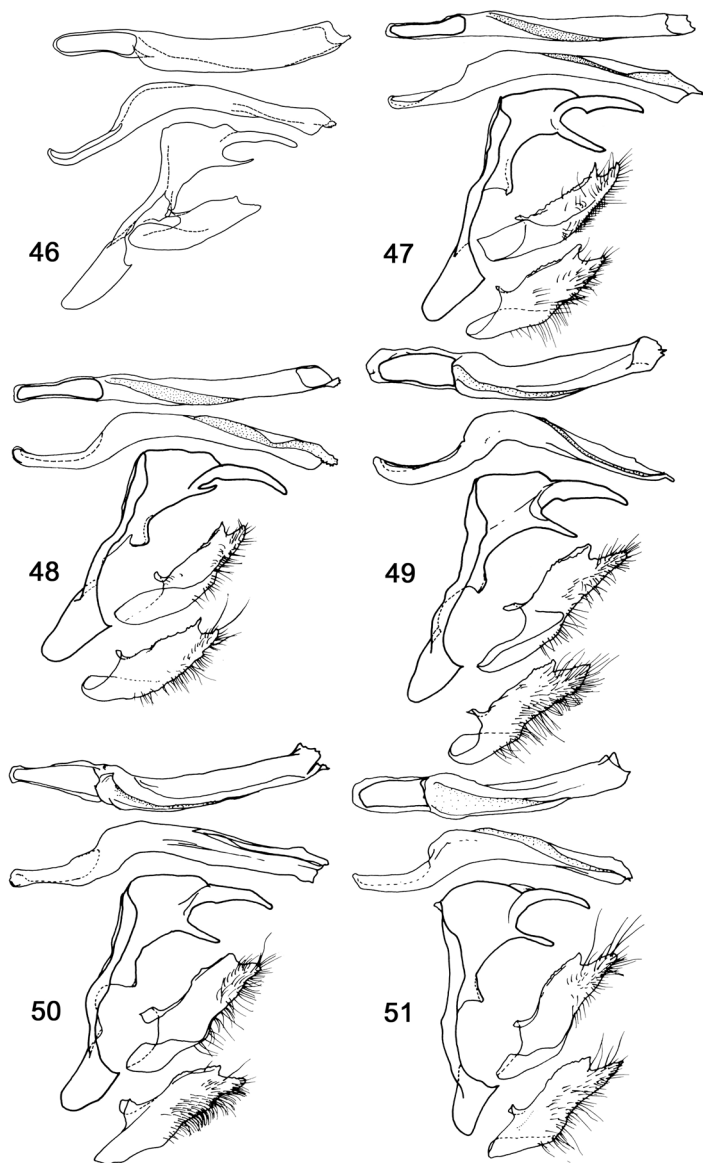
- Thieme, O. 1905. Monographie der gattung *Pedaliodes* Butl. (Lepidoptera. Rhopalocera. Satyridae). *Berl. Ent. Z.* 50(1/2):43-141, pls. 1-3.
- Torres Núñez, R. & J. F. Le Crom. 1997. Una nueva especie de *Pedaliodes* Butler, 1867 de la Cordillera Oriental de Colombia (Lepidoptera: Nymphalidae, Satyrinae, Pronophilini). *SHILAP, Revta. lepid.* 25(100):213-218.
- Vélez, J. & J. Salazar. 1991. Mariposas de Colombia. Bogotá: Villegas Editores, 168 pp.
- Viloria, Á. L. 1990. *Taxonomía y distribución de los Satyridae (Lepidoptera: Rhopalocera) en la Sierra de Perijá, frontera colombo-venezolana*. Maracaibo: La Universidad del Zulia, xxxviii + 296 pp. (Thesis).
- Viloria, Á. L. 1998. *Studies on the systematics and biogeography of some montane satyrid butterflies (Lepidoptera)*. London: King's College London / The Natural History Museum, 493 pp. (PhD Thesis).
- Viloria, Á. L. 2002. Limitaciones que ofrecen distintas interpretaciones taxonómicas y biogeográficas al inventario de lepidópteros hiperdiversos de las montañas neotropicales y a sus posibles aplicaciones. In: Costa, C.; S. A. Vanin; J. M. Lobo & A. Melic (eds.): *Proyecto de Red Iberoamericana de Biogeografía y Entomología Sistemática PRIBES 2002*. m3m-Monografías Tercer Milenio, vol. 2. Zaragoza: Sociedad Entomológica Aragonesa, CYTED, pp. 173-190.
- Viloria, Á. L. 2007. The Pronophilina: synopsis of their biology and systematics (Lepidoptera: Nymphalidae: Satyrinae). *Trop. Lepid.* 15(1-2): 1-17.
- Viloria, Á. L.; L. D. Miller & J. Y. Miller. 2004. Nymphalidae: Satyrinae. *Neopedaliodes* Viloria, L. D. Miller & J. Y. Miller, new genus. In: Appendix. Descriptions of new butterfly genera (Lepidoptera: Nymphalidae, Lycaenidae). In: Lamas, G. (ed.): Checklist. Part 4A. Hesperioidea - Papilionoidea. In: Heppner, J. B. (ed.): *Atlas of Neotropical Lepidoptera. Vol. 4*. Gainesville, FL: Association for Tropical Lepidoptera / Scientific Publishers, pp. 284.
- Viloria, Á. L. & T. W. Pyrcz. 1994. A new genus, *Protopedaliodes* and a new species *Protopedaliodes kukenani* from the Pantepui, Venezuela (Lepidoptera, Nymphalidae, Satyrinae). *Lambillionea* 94(3):345-352.
- Weeks, A. G. 1905. Illustrations of diurnal Lepidoptera with descriptions. Boston: The University Press, 1: [1] + xii + 117 pp., 45 pls.
- Weymer, G. 1912. 4 Familie: Satyridae. In: Seitz, Adalbert (Ed.): *Die Gross-Schmetterlinge der Erde, 2; Exotische Fauna, 5*. Stuttgart: A. Kernen, pp. 173-283.
- Weymer, G. & J. P. Maassen. 1890. *Lepidopteren gesammelt auf einer Reise durch Colombia, Ecuador, Perú, Brasilien, Argentinien und Bolivien in den Jahren 1868-1877 von Alphons Stübels*. Berlin: A. Asher & Co., [1] + xi + 182 pp., 9 pls.
- Whymper, E. 1892. *Travels amongst the great Andes of the Equator*. London: John Murray, xxvi + 456 p., 19 pls., 2 folded maps.



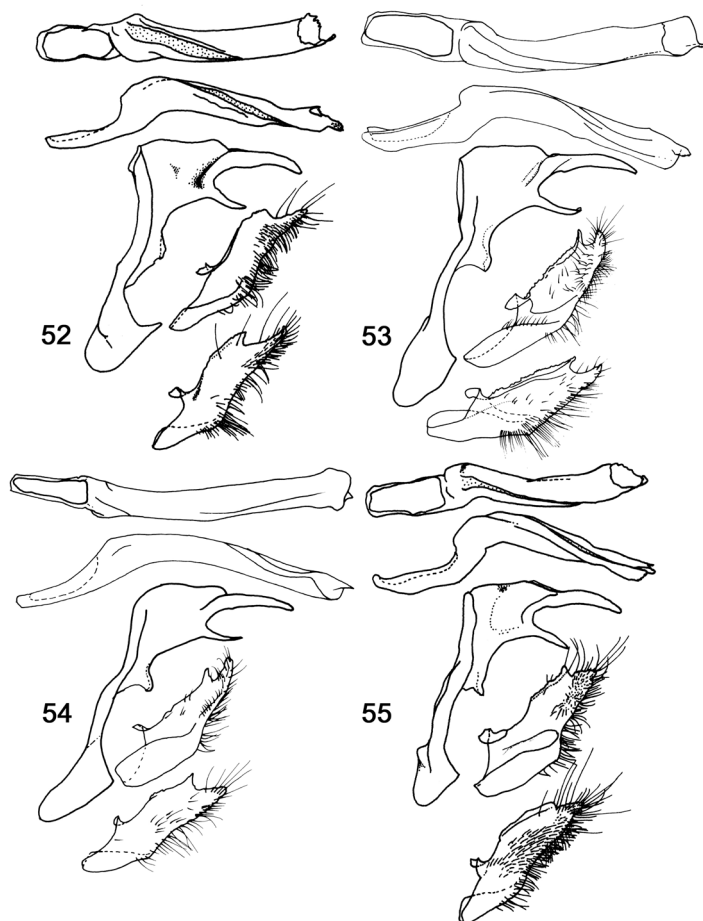
Figures 34-39. Male genitalia of the taxa studied; above dorsal and lateral view of aedeagus (removed from original position); valvae detached from main structure (except 38 and 39); **34)** *Parapedaliodes parepa parepa* (Hewitson); **35)** *P. parepa milvia* (Thieme); **36)** *Neopedaliodes chingazaensis* (Torres & Le Crom) [re-drawn and modified from Torres & Le Crom, 1997]; **37)** *N. entella* (Thieme); **38)** *N. proculeja proculeja* (Thieme); **39)** *N. proculeja malaga* Pyrcz **new subspecies**.



Figures 40-45. Male genitalia of the taxa studied; above dorsal and lateral view of aedeagus (removed from original position); valvae detached from main structure (except 41); **40)** *N. zipa* (Adams); **41)** *N. yeyo* Pyrcz & Rodríguez; **42)** *N. juba juba* (Staudinger); **43)** *N. juba jubilosa* Viloría, L. D. Miller & J. Y. Miller, **new subspecies**; **44)** *N. michaeli michaeli* Viloría, L. D. Miller & J. Y. Miller, **new subspecies**; **45)** *N. michaeli citrica* Viloría, L. D. Miller & J. Y. Miller, **new subspecies**.



Figures 46-51. Male genitalia of the taxa studied; above dorsal and lateral view of aedeagus (removed from original position); valvae detached from main structure (except 46); **46)** *N. michaeli innupta* Pyrcz, **new subspecies**; **47)** *N. parrhoebia parrhoebia* (Hewitson); **48)** *N. parrhoebia phintia* (Hewitson); **49)** *N. lafebreae* Viloria, L. D. Miller & J. Y. Miller, **new species**; **50)** *N. philotera* (Hewitson); **51)** *N. margaretha margaretha* (Adams).



Figures 52-55. Male genitalia of the taxa studied; above dorsal and lateral view of aedeagus (removed from original position); valvae detached from main structure; **52)** *N. margaretha allyni* Viloría, L. D. Miller & J. Y. Miller, **new subspecies**; **53)** *N. phoenicusa* (Hewitson); **54)** *N. nora nora* (Adams); **55)** *N. nora stepheni* Viloría, L. D. Miller & J. Y. Miller, **new subspecies**.

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