A REVISION OF THE GENUS MEGOLERIA
(LEPIDOPTERA: NYMPHALIDAE, ITHOMIINAE)

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Abstract – The ithomiine genus Megoleria Constantino is revised. The genus contains two species, each with three subspecies, of which one, Megoleria orestilla polylla n. ssp., is described and named here. We discuss the morphological characteristics of the genus, review its systematics, designate lectotypes for four names, and summarize the biology of each of its constituent taxa. The immature stages of Megoleria orestilla (Hewitson), feeding on Drymonia urceolata Wiehler, are described for the first time.

Key words: Andes, cloud forest, Hyposcada, immature stages, Megoleria orestilla polylla n. ssp., mimicry, neotropical, Oleria.

INTRODUCTION

This paper continues a planned series of publications by the authors (Willmott & Lamas, 2006, 2007) to revise a number of problematic Ithomiinae genera, mainly in the tribes Oleriini, Dirccennini and Godyridini. These tribes are the most diverse within the subfamily and are particularly characteristic of Andean cloud forest habitats, where collections over the last few decades have brought to light numerous new taxa. The majority of these genera have not been subject to taxonomic revision since Haensch’s review a century ago (Haensch, 1909-10), and virtually all lack any modern synthesis of biological information.

In this paper we revise the systematics of the small, high Andean cloud forest genus Megoleria Constantino. Early authors typically placed Megoleria species in the related genus Oleria Hübner or its junior subjective synonym Leucothyris Boisduval (Haensch, 1909), though some authors also treated them in Hyposcada Godman & Salvin (Haensch, 1903). Mielke & Brown (1979: 132) noted that M. susiana (C. & R. Felder) had been identified by Fox (1961) as a species deserving of a new genus, but continued to treat the species in Hyposcada. However, recent phylogenetic analyses (Willmott & Freitas, 2006) place Megoleria as sister to Hyposcada, and the first goal of this paper is, therefore, to re-evaluate the characters that support separation and recognition of Megoleria as a distinct genus. We also discuss the taxonomy of both included species, name and describe one new subspecies, describe the life history of M. orestilla (Hewitson) for the first time, and summarize known information on the biology and distribution of the genus.

MATERIALS AND METHODS

Specimens were examined in major public and private collections in Europe, North and South America to record distributional data, study morphological variation, assess taxonomic diversity and locate type specimens. The following collection codens and abbreviations are used in the text:

Abbreviations:

AFEN Andrew F. E. Neild collection, London, UK
AMNH American Museum of Natural History, New York, NY, USA
BMB Booth Museum of Natural History, Brighton, UK
BMNH(S) Natural History Museum, London, UK (supplementary collection)
FLMNH McGuire Center for Lepidoptera, Florida Museum of Natural History, Gainesville, FL, USA
IAVH Instituto Alexander von Humboldt, Villa de Leyva, Colombia
JFL Jean François Le Crom collection, Bogotá, Colombia
JS Julián Salazar collection, Manizales, Colombia
KWJH Keith R. Willmott & Jason P. W. Hall collection, Gainesville, USA
LMC Luis M. Constantino collection, Cali, Colombia
MECN Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador
MEFLG Museo Entomológico Francisco Luis Gallego, Universidad Nacional de Colombia, Medellín, Colombia
MHNCA Museo de Historia Natural, Universidad de Cauca, Popayán, Colombia
MHNUC Museo de Historia Natural, Universidad de Caldas, Manizales, Colombia
MUSM Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru
OMH Olaf H. H. Mielke collection, Curitiba, Brazil
OUM Oxford University Museum, Oxford, UK
SMF Senckenberg Museum, Frankfurt-am-Main, Germany
SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany
SMTD Staatliches Museum für Tierkunde, Dresden, Germany
USNM National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
ZMHU(H) Zoologisches Museum, Humboldt Universität, Berlin, Germany (Haensch collection)
ZSBS Zoologisches Sammlung des Bayerischen Staates, Munich, Germany

(D)FW (dorsal) forewing
(V)HW (ventral) hindwing
Specimen locality data were georeferenced with the help of Brown (1979), the US National Geospatial-Intelligence Agency’s and the US Board on Geographic Names’ gazetteers available via the GEOnet Names Server (http://earth-info.nga.mil/gns/html/namefiles.htm), the global gazetteer at http://www.fallingrain.com/world/, specimen label GPS data and topographic maps. The distribution map was generated using ESRI ArcGIS 9, with elevation data provided by the Global Land One-km Base Elevation (GLOBE) Project (http://www.ngdc.noaa.gov/mgg/topo/globe.html), and administrative boundaries, coastline and river layers available from http://www.diva-gis.org/. Specimen locality data are available at www.andeanbutterflies.org/database.html.

Field observations on the natural history of Megoleria have been made by both authors in Colombia, Ecuador and Peru over the last couple of decades. Fieldwork consisted mainly of sampling ithomiine faunas in little-known regions, elevations or habitats, to provide better distributional data, as well as making observations of adult behaviour. During two ten-week studies of ithomiine immature stages in Ecuador, the immatures of M. orestilla were located and reared (see description below). Immatures were collected and reared in plastic bags, with fresh leaves of the natural hostplant provided every 2-3 days. Leaf material was removed from the bag just prior to pupation to permit the pupa to form freely. Photographs were taken of each instar and cast larval skins, head capsules and specimens of larvae and pupae were preserved, where possible, in locally available industrial alcohol (ethanol). Voucher hostplant specimens were collected and are deposited in the BMNH and MECN.

Morphology was studied using standard techniques, with adult abdomens being soaked in hot 10% KOH for 10-15 minutes, dissected and subsequently stored in glycerine. Body morphology and dissections were studied using a binocular microscope at up to 50x magnification. Wing venation was drawn from wings cleared with bleach as well as from uncleared specimens. Hindwing androconia and other wing scales of all species were examined in situ, by removal of the right forewing, using a Hitachi S2500 scanning electron microscope, at magnifications up to 5000x. Male androconial scales were further examined in M. susiana, as well as all other ithomiine genera, using a Hitachi S2500 scanning electron microscope, at magnifications of up to 5000x. Wing sections for examination were mounted on stubs with PVA glue and coated with a 20nm layer of gold/palladium (95%/5%) using a Cressington Sputter Coater.
SYSTEMATICS

Generic characteristics

Adults

Megoleria is aptly named, for these butterflies with their predominantly black wings punctuated by translucent white spots and bands (Figs. 1,2), indeed resemble certain large, Andean members of the genus Oleria. All taxa share a common set of pattern elements. The margins of both wings, a FW discal cell band and discocellular band extending down the cubital vein to the anal margin, and a FW postdiscal band, are black. The remainder of the FW discal cell, and a postdiscal and a submarginal row of spots on the FW, are transparent with translucent white shading. The hindwing bears a discal to postdiscal band of variable width, that is either translucent white/transparent, or semi-opaque pale.
yellow. In the majority of taxa these translucent spots or bands are isolated from one another by black markings, forming apparent rows of spots on both wings. A marginal row of paired white spots is present ventrally in both species and dorsally in one species. The ventral surface black markings are lined throughout with rufous scaling.

The male hindwing is slightly convex at apex, at the end of vein Sc+R1, similar to *Hyposcada* (Fig. 3). Both wings have Mr on 3d (males) or 2d (females) near the base of vein M2, or at the base of vein M2, in contrast to *Hyposcada* (in which Mr is also on 3d), where the length of Mr is usually similar to the distance between its base and the base of vein M2. Forewing Mr is notably long, similar in length to 3d. The anterior edge of the HW discal cell is notably short, so that the base of vein M1 is nearer the wing base than the base of vein M3, an apparently unique character within the Oleriini (Fig. 3). As a result of this character, 1d is longer than 2d, whereas in all *Hyposcada* 2d is longer or the veins are similar in length. In contrast to other Oleriini, there is remarkably little sexual dimorphism in wing venation, the female hindwing differing mainly in being more smoothly rounded and concave at the apex.

As in all Ithomiinae, the anterior edge of the male dorsal HW discal cell bears elongate, hair-like androconial scales, which in this genus form two distinct patches (Fig. 3). This “hair pencil” extends anteriorly to cover an area of specialized, pale, dense grayish androconial scales between veins Rs and Sc+R1, an area that extends from approximately the middle of the discal cell to a similar distance distal of the discocellular veins (Figs. 3B, E). The androconial scale patch is differentiated into two distinct scale types beneath the two hair pencils, as in *Hyposcada* and some more basal *Oleria* (Willmott & Freitas, 2006). The more basal scales (Fig. 3F) are approximately twice the length of the distal scales (Fig. 3G), broad at the base and tapering only slightly distally to end at a blunt, squared tip, the pedicel is not visible and the socket is a narrow tube. The more distal scales are proportionally narrower, ending distally in a rounded tip and tapering basally with the pedicel visible, the socket mouth is much broader, appearing like a small cup. Both scale types have distinct vanes with small, indistinct windows.

The antennae extend to just beyond the FW discocellulars and bear sulci on their ventral surface that are placed proximally within each antennomere, as in most Oleriini (Willmott & Freitas, 2006). The palpi and walking legs differ little in morphology from other Oleriini. The male genitalia are asymmetrical, with the uncus in posterior view appearing to be rotated anticlockwise (Figs. 4B, G). The right valva is distinctly longer than the left one and curved more sharply inwards at the posterior tip. The base of the uncus is broad, merging gradually with the tegumen. The appendices angularis, absent in *Hyposcada* and present in *Oleria* as sclerotized projections, are present but un sclerotized (Figs. 4A, F), a unique condition among the Ithomiinae (Willmott & Freitas, 2006). As in all Oleriini, the gnathos is distinct from the appendices angularis, attached at the base of the uncus (Fig. 4B) (Willmott & Freitas, 2006). The medioventral inner face of the valva (Figs. 4B, G) is covered with very dense, thick, short hairs, quite distinct from those over the rest of the valva, a unique character within the Ithomiinae. The aedeagus is typical in shape of most Oleriini, narrow with an elongate anterior portion such that the zone is approximately in the middle of the aedeagus (Figs. 4D, I). The vesica everts more or less vertically, and has two thin lines of cornuti on the dorsal and ventral surfaces. The cornuti are very near the base of the vesica, a character of all Oleriini that only occurs sporadically in a few other ithomiine genera (Willmott & Freitas, 2006).
The female abdomen has the eighth sternite plates (lamella postvaginalis) absent or fused with the eighth tergite (Figs. 5A, F). While it is possible to infer that these plates are fused with the eighth tergite in *Hyposcada* through the distribution of setae and pattern of sclerotization, such is not the case with *Megoleria*. The antrum is unsclerotized and slightly asymmetrical, opening to the left (Figs. 5E, J). The ductus seminalis originates near the antrum and the ductus bursae is narrow. The corpus bursae is oval, with small, evenly scattered signa over the entire inner surface, and a smaller, rounded appendix bursae near the anterior tip.

**Immature stages**

The immature life history of *Megoleria* is described here for the first time, based on observations of *M. orestilla orestilla* in the Reserva Arcoiris, Sector San Francisco, Parque Nacional Podocarpus, Zamora-Chinchipe, Ecuador (Fig. 6).

The egg, first illustrated by Brown & Freitas (1994), is typical of the Oleriini, being oval and relatively elongate, and like all Ithomiinae, the macroscopic chorionic sculpturing is limited to a series of approximately 20 vertical ribs (Figs. 6D, E). All instars have a cylindrical, smooth body, a rounded, unadorned head capsule and lack subdorsal thoracic filaments, as in all Oleriini (see Brown & Freitas, 1994). The first instar is dark green with a black head capsule, typical of the Oleriini, with black legs. Second to third instars are similar, developing a pale gray prothoracic ring and slight lateral yellow scaling on the terminal abdominal segments (Figs. 6F, J, K). In the fourth instar a prominent dirty yellow lateral line from T2 to A10 becomes visible, and the larva is dorsally grayish green (Figs. 6L, M). The fifth instar (Figs. 5N-P) resembles the fourth, except that the head capsule is brown.

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*Fig. 4. Male genitalia (stippling present only where necessary to better indicate structure, and setae on valvae partially omitted for clarity): A,F, lateral view; B,G, posterior view; C,H, dorsal view; D,I, lateral view aedeagus; E,J, dorsal view aedeagus. A-E. *M. susiana susiana*. F-J. *M. orestilla orestilla*.***
Fig. 5. Female abdomen and genitalia. A,F, lateral view abdomen terminal sclerites; B,G, dorsal view eighth tergite; C,H, ventral view seventh sternite; D,I, posterior view tip abdomen; E,J, dorsal view genitalia. A-E, *M. susiana susiana*. F-J, *M. orestilla polymacula*.
Fig. 6. Immature stages of *M. orestilla orestilla*, Reserva Arcoiris, 2000m, Zamora-Chinchipe, Ecuador. A-C. Larval foodplant *Drymonia urceolata*. D,E. Egg, lateral view, early (D) and on point of ecdlosion (E). F. 2nd instar larva, dorsolateral view. G-I. Foodplant leaf showing characteristic feeding damage – ventral surface canal isolating leaf tip. J,K. 3rd instar larva, dorsolateral (J) and dorsal (K) views. L,M. 4th instar larva, lateral (L) and dorsal (M) views. N-P. 5th instar larva, lateral (N) and dorsal (O) views, and dorsolateral view (P) just prior to pupation. Q-T. Pupa, lateral (Q), dorsal (R), ventral (S) and posterior (T) views. U. Adult female *M. orestilla orestilla*. Rearing codes for each image given in Appendix 2.
among the Oleriini only in the basal _Oleria_ species _O. aegineta_ (Hewitson, 1869) (Willmott, pers. obs.). The late fifth instar shows an indistinct pale mid-dorsal gray line.

The pupa (Figs. 6Q-T) is a mottled pale olive green and very pale green, the latter color present laterally on the third thoracic and first three abdominal segments, on the wing cases, and ventrally. Unusually, there appear to be no reflective areas (based on photographs examined, taken by Marianne Elias). There is a prominent black lateral spot on abdominal segment 1 (A1), and a less distinct dark brown spot laterally on A2. A brown spot marks the FW discocellulars on the wing case. Like all Oleriini the pupa is sharply bent in lateral view (Fig. 6Q); at approximately 90 degrees the angle is most similar to that of _Hyposcada_ pupae. The pupa is largely smooth except for a series of rounded “bumps” scattered around abdominal segments posterior of A3 (Fig. 6R), as in some _Hyposcada_. Head horns are absent, the anterior tip of the pupa being completely rounded (Fig. 6R).

**Generic relationships and diagnosis**

_Megoleria_ species possess the following unambiguous synapomorphies of the tribe Oleriini (Willmott & Freitas, 2006): 1. Egg with ratio between vertical and horizontal axes between 1.5 and 1.7; 2. Pupa ground color pale green (this is a unique synapomorphy within Ithomiinae, though not all Oleriini species have been examined, and some olerine species have further derived character states); 3. Sulci on fourth from terminal antennomere of female antenna nearer proximal edge of antennomere; 4. Pale continuous central band on tegula present; 5. Cornuti placed at continuous central band on tegula present; 5. Cornuti placed at 

Cladistic analyses based on adult characters, immature stage characters (Willmott & Freitas, 2006) and molecular sequence data (Brower et al., 2006) all provide support for the monophyly of the tribe, but the relationships of _Megoleria_ to remaining genera are less clearly resolved. Brower et al. (2006) found _Megoleria_ to be basal to remaining Oleriini, but Willmott & Freitas (2006) found it to be sister to _Hyposcada_, albeit with weak and conflicting support from adult and immature stage data partitions. The shared larval hostplant family Gesneriaceae provides the most convincing support for the monophyly of _Megoleria-Hyposcada_, since this plant family is otherwise unknown as a host among the rest of the Ithomiinae, which feed almost exclusively on Solanaceae (Willmott & Freitas, 2006). Some characters of the immature stages, such as the shape of the pupa and presence of abdominal “bumps”, may provide additional synapomorphies when sufficient life histories are known.

Constantino (1999) listed the following characters as distinguishing _Megoleria_ from _Oleria_: 1. Antenna extending distally beyond FW discocellulars; 2. Large size (FW length 40-42mm vs 20-25mm); 3. FW vein Cu2 curved rather than straight; 4. FW vein M1 straight (not curved); 5. Hindwing distal margin rounded; 6. HW veins M1 and Rs separate at base; and 7. A pair of male DHW androconial hair pencils (rather than a single patch, presumably, though this was not stated). Character 1 also occurs in some _Oleria_ (e.g. _O. santinenez_ (Haensch)), as well as all _Hyposcada_. Character 2 is not nearly as marked as suggested, with some specimens of larger _Oleria_ (e.g. _O. cyrene_ (Latreille) and an undescribed species from Peru) being of similar size to _Megoleria_, while characters 3-6 all occur in both _Hyposcada_ and _Oleria_. While character 7 is rare in other oleriines it is not unknown; for example, _Oleria aegineta_ (Hewitson, 1869) and _Hyposcada zarepha_ (Hewitson, 1869) have the DHW male androconial hair pencil divided into two patches. Synapomorphies for _Megoleria_ identified by Willmott & Freitas (2006) and this study include: 1. The anterior edge of the HW discal cell is notably short, so that the base of vein M1 is nearer the wing base than the base of vein M3; 2. The medio-ventral inner face of the valva is covered with very dense, thick, short hairs, quite distinct from those over the rest of the valva; and 3. The appendices angulares present but unscerotized. The first synapomorphy is unique within the Oleriini, the last two are unique within the Ithomiinae. Given that both _Hyposcada_ and _Megoleria_ as currently conceived are monophyletic, that both are easily identified, and that there is some doubt over the sister relationship between the two genera, there is no compelling reason not to maintain the existing generic classification.

**Taxonomy**

Two species are recognized, with a total of six subspecies, of which one subspecies is described and named here.

_Megoleria_ Constantino, 1999: 60. Type-species, _Ithomia susiana_ C. Felder & R. Felder, 1862, by original designation. (“-” denotes a subspecies, “--” denotes a synonym)

- _susiana_ (C. Felder & R. Felder, 1862) 
  - _sandra_ Constantino, 1999
  - _susanna_ (Staudinger, [1884])
- _orestilla_ (Hewitson, 1867)
  - _polylla_ Lamas & Willmott, **n. ssp.**
  - _polymacula_ (Rosenberg & Talbot, 1914)
  - _magnifica_ (Tessmann, 1928)
  - _speciosa_ (Tessmann, 1928)

**Key to _Megoleria_ taxa:**

1. White spots present and distinct on DHW margin; base of FW cell Cu1-M3 black (susiana)..........................2
   White spots absent or only a trace on DHW margin; base of FW cell Cu1-M3 transparent or with transparent spot (orestilla) 4
2. HW discal band tapering from anal margin towards apex....3
   HW discal band approximately even in width............
   ..................................................susiana susiana
3. HW discal band translucent white.......................sandra susanna
   HW discal band opaque to semi-opaque pale yellow........
   ..................................................susiana susanna
4. FW cells Cu2-Cu1 and Cu1-M3 each with two transparent spots; HW discal cell entirely or almost entirely black.......5
   FW cells Cu2-Cu1 and Cu1-M3 each with single, broad transparent area; HW discal cell posterior half transparent....
   ..................................................orestilla orestilla
5. HW transparent spots of discal band in cells M3-M2 and M2-M1 of similar width to spot in cell Cu1-M3................
   ....................orestilla polymacula
   HW transparent spots of discal band in cells M3-M2 and M2-M1 1.5-2x wider than that in cell Cu1-M3............
DISTRIBUTION AND NATURAL HISTORY

Megoleria are confined to the Andes, ranging from western Venezuela to western Colombia and along the eastern Andes to Bolivia, but the two species are sympatric only from southern Colombia to central eastern Ecuador (Fig. 7). Both species occur in undisturbed cloud forest habitats from approximately 1200-2700m, but are most commonly encountered from 1600-2400m.

Known hostplants are in the family Gesneriaceae (e.g., Fig. 6A), a family otherwise used among the Ithomiinae only by the sister genus Hyposcada. The immature stages are known only for M. orestilla (Fig. 6), and their natural history is described in the account for that species.

Adults are usually uncommon, encountered as solitary individuals flying relatively high, typically from 2-5m above the ground, in shady understorey and midstorey of tall forest. We have never encountered either species feeding on Asteraceae flowers, though we have never encountered either species feeding on Asteraceae flowers, though.

Identification, taxonomy and variation: Megoleria susiana (Fig. 1) is easily distinguished from M. orestilla (Fig. 2) by the conspicuous row of marginal white spots on the DHW from cell Cuz2-Cu1 to the apex, and by the absence of a transparent spot or area at the base of FW cell M3 and HW cell M1-Rs. The VHW marginal white spots are slightly smaller than in M. orestilla and more concentrated towards the center of each cell. Notwithstanding these more obvious differences, Mielke & Brown (1979) and D’Abrera (1984) considered M. orestilla to be a subspecies of M. susiana, presumably based on apparent allopary of the various taxa known at that time. Since then, however, additional distribution data demonstrate the two species to be widely sympatric from southern Colombia to central eastern Ecuador. Moreover, on closer inspection there are a number of clear and consistent morphological differences between the two species in wing pattern (as mentioned above), venation and genitalia. The male hindwing cell in M. orestilla is proportionally smaller than in M. susiana and vein 3d meets M at the base of vein M2, rather than more basally (Fig. 3). In M. susiana the “footprint” of the basal hair pencil is similar in size to that of the distal hair pencil, whereas in M. orestilla the former is approximately twice the width of the latter. In comparison with M. susiana, the male genitalia of M. orestilla (Fig. 4) is more elongate with a distinct attenuated posterior point. The tegumen is more produced anteriorly in M. susiana, and in dorsal aspect the uncus and tegumen are more asymmetric. In the female (Fig. 5), the seventh tergite of M. susiana extends further ventrally at its posterior corner, and the ostium bursae is indistinct, only weakly indented into the posterior edge of the seventh sternite.

Megoleria susiana shows geographic variation in the extent of black markings on both wings, but especially the hindwing discal band, the extent of reddish brown markings on the ventral markings on both wings, but especially the hindwing, in the color of the hindwing cell in M. susiana is proportionally smaller than in M. orestilla and venation and genitalia.

Range and status: Venezuela (Mérida) to eastern Ecuador along the east Andean slopes, and throughout western and central Colombia (Fig. 7). Although currently unknown from northwestern Ecuador, its presence there is not unlikely. Rare, in cloud forest from 1200-2400m.

Identification, taxonomy and variation: The nominate subspecies differs from both other subspecies in having the hindwing transparent band of even width, rather than it being broader at the anal margin. The paired white HW marginal spots are elongate parallel with the veins, rather than being circular. Other differences are discussed under the other subspecies. Felder & Felder (1862) described this species based on an unstated number of male and female specimens originating from Pandi, a locality situated southwest of Bogotá, on the western slopes of the Cordillera Oriental.

Range: Venezuela (southern Cordillera de Mérida) to central eastern Ecuador (Tungurahua), apparently occurring in Colombia on both slopes of the Cordillera Oriental. Habitat and adult ecology: This subspecies occurs from 1400-2000m in cloud forest habitats and appears to be very rare outside of Colombia, the center of its range. In Ecuador, Haensch (1903) collected a single male between Baeza and (Puerto) Napo, on January 16th, most likely in the Cosanga region, while Jason Hall (pers. comm.) collected a single female in secondary forest at Rio Machay in July. Despite considerable collecting effort in northern Ecuador we have observed no other specimens in the field, and it is evidently much rarer than its congener. Megoleria s. susiana is presumably involved in mimicry with M. orestilla pollyana n. sp. and several other species of Oleria. Interestingly, with the exception of O. cyrene, the other species of Oleria that mimic M. susiana are sexually dimorphic, with only the female mimicking M. susiana. Such species include O. athalina (Staudinger, [1884]), O. radina (Haensch, 1909), O. baizana (Haensch, 1903) and O. tremona (Haensch, 1909).

Specimens examined (36♂, 35♀): COLOMBIA - Boyacá: “Minas de Muzo” - (error), 1884-1885, 1♂, (BMNH); Caquetá: no specific locality, [specimens not recorded] (JFL); Cundinamarca: “Bogotá” - (error), 1♂, 1♀, (BMNH(S)), 1♀ [mislabelled as a “type”], 2♀ [Photographed by D’Abrera], 1♀, (BMNH(S)), (Lindig), 1♂ [=Pandi; LT Plataforma; B.M. Type No. Rh. 18155], 1♀ [PLT susiana; B.M. Type No. Rh. 18156], 1♀ [PLT susiana; B.M. Type No. Rh. 18158], (BMNH); “environs de Bogotá” - (error), 1♀, (BMNH), (Apollinaire-Marie), 1918, 1♀, (BMNH(S)), “Region de Bogotá” - (error), (Apollinaire-Marie), 1917, 1♀, (BMNH), “Santa-Fé de Bogotá” - (error), 1♀, (BMNH); Monte Redondo, [4°20'N, 73°52'W], [specimens not recorded] (IAYV); Monte Redondo, [4°20'N, 73°52'W], 1♀, Jan Mar Sep Oct, 1♀, 3♀, (ZSBS); Huida: Parque Nacional Las Cuevas (=Parque Nacional Natural Cueva de los Guácharos), [c. 1°37'N, 75°55'W], 1800m, (M. Cooper), 15-21 May 1976, 3♂, 3♀, (FLMNH); Meta: “Rio Meta” - (error), 1♀, (BMNH); Santander: Pico de Armas, [6°21'N, 73°30'W], Jan, 2♀, (AMNH); Tolima: Aguadita, [5°09'N, 75°07'W], Jun 1914, 1♂, (BMNH); La Mariana area, Rio Ambeima, [3°43'N, 75°42'W], 1600-1700m, Jun, 1♀, (FLMNH); Rio Chiri, [4°07.19'N, 75°15.57'W], Apr-Jun 1921, 1♀, (BMNH); No specific locality: “Colombia”, 1♀, (AMNH), 2♂, 3♀, (BMNH(S)), 1♀, (BMNH), 1♀, (MUSM), 1♀, 2♀, (SMTD), 1♀, (ZMHU(H)), 1♀, 1♀, (ZSBS); “New Granada”, 3♀, (BMNH(S)), 1♀, (BMNH), (Watson), 1871, 1♀, (OUM); Not located: “Interior of Colombia”, (J. Carder), 1♀, (BMNH), (Wheeler), 1♀, (BMNH); Rio Magdalena, 1♀, (SMTD); ECUADOR - Napo: Baeza, [0°28'S, 77°53'W], 2000m, (Haensch), 1♂, (ZMHU(H)); Guacamayos, [0°37'S, 77°49'W], (I. Aldis), Jul, 1♀, (KWHJ); Tungurahua: Rio Machay, [1°23'55'S, 78°16.3'W], 1600m, (J.W.P. Hall), Jul 1993, 1♀, (KWHJ). VENEZUELA - Táchira: Mata Mula, Via Bravón - Delicias, P.N. El Tamá, [7°37.93'N, 72°26.1'W], 1850m, (A. Neld). NO LOCALITY DATA - no data, 1♀, (AMNH), 1♂, 2♀ [SPT susiana; B.M. Types No. Rh. 18145, 18157], (BMNH), 1♀, (SMF), (E.W. Mark), 1848-1857, 1♀ [“Probably near Bogota”], (OUM).
**Megoleria susiana susanna** Constantino, 1999  
**Figs.** 1A,B, 7

*Megoleria susiana susanna* Constantino, 1999: 62, figs. 3-4, 17.  
TL: Colombia, Valle del Cauca, San Antonio, km 14 via al mar, 2000m. **Holotype♂**, BMNH [examined].

**Identification, taxonomy and variation:** This recently described subspecies is distinguished by its translucent white hindwing discal band that is broad along the anal margin and tapers towards the apex. Constantino (1999) described this taxon from a series of three males and one female collected in the departments of Valle del Cauca, Cauca, and Risaralda, in southwestern Colombia.  

**Range:** Western slope of the central and southern Cordillera Occidental in Colombia (Valle del Cauca, Cauca), possibly extending into extreme northwestern Ecuador.  

**Habitat and adult ecology:** This subspecies has been recorded from 1200-2500m in cloud forest habitats, where it appears to be uncommon. The apparently broad elevational range may reflect erroneous label elevation data, with most specimens having been collected from 2000-2500m. *Megoleria susiana sandra* is mimicked by the female of an undescribed subspecies of *Oleria radina* (Willmott & Lamas, unpub.).  

**Specimens examined (15♂, 6♀): COLOMBIA - Cauca: Pela Huevo, Tambito, [c. 2°30'N, 76°59'W], 2000m, 11 Feb 1997, 1♂, (MUSM); Tambito, [2°30'N, 76°59'W], 2000m, (W. Chilito), 24 Jul 1997, 1♀, (MHNCA); **Valle del Cauca:** “Vitacoberge” [= Cerro Bitaco?], [3°46'N, 76°38'W], 2300m, (A.H. Fassl), Aug 1909, 1♂ [BMNH(E) # 805942], (BMNH), Jul 1909, 1♂, (BMNH); Alto Calima, [3°53'N, 76°36'W], 1200m, (L. Denhez), 25 Jun 1974, 1♂, (MUSM); Bitaco, [3°46'N, 76°38'W], 2500m, 1♂, (SMF); Cerro San Antonio, [3°29'N, 76°38'W], 2200m, ([A.H. Fassl]), Aug 1908, 1♂, (BMNH); Lago Calima, [3°53'N, 76°36'W], (IADVH); Rio Aguacatal, [3°28'N, 76°32'W], 2000m, 1♂, (SMF), 1♀, (SMTD), ([A.H. Fassl]), Nov 1908, 1♂, (SMF); Rio Bitaco, [3°46'N, 76°38'W], 2500m, (A.H. Fassl), Dec 1908, 1♂, (SMF), 2300-2400m, ([A.H. Fassl]), Dec 1908, 1♂, (BMNH), 2400m, ([A.H. Fassl]), Dec 1908, 1♀ [BMNH # 805943], (BMNH); San Antonio, above Cali, km 14, [3°29'N, 76°38'W], 2000m, (J. Bechara), 10 Aug 1979, 1♂ [HT Sandra], (LMC); NO specific locality: “Colombia”, 1♂, (SMTD); Not located: “W Colombia”, 500m, 1♂, ([ZSBS]); NO LOCALITY DATA - no data, 1♂, (BMNH).

**Other records - COLOMBIA - Risaralda: Cerro Tatamá, [c. 5°04'N, 76°08'W], 1800m, (J. Salazar), 19 Jul 1984, 2♂, (JSL) (Constantino, 1999); **Valle del Cauca:** Quebrada El Pital, Lago Calima, [c. 3°53'N, 76°36'W], 1200m, (D. Torres), 23 Sep 1984, 1♀, (MHNUC) (Constantino, 1999).

*Megoleria orestilla* (Hewitson, 1867)  
**Figs.** 2, 3D,E, 4F-J, 5F-J, 6, 7

**Identification, taxonomy and variation:** *Megoleria orestilla* is distinguished from *M. susiana* under that species. Recently regarded as conspecific with *M. susiana* (Mielke & Brown, 1979; D’Abrera, 1984; Constantino, 1999), the two species are sympatric and clearly distinct (Lamas, 2004), as discussed under *M. susiana*. Although Piñas (2004) treated *M. orestilla* as a subspecies of *Oleria radina*, in his checklist of Ecuadorian Ithominae, we presume that this was due to lack of knowledge of Constantino’s (1999) description, rather than intended to be a genuine taxonomic change. There is geographic variation in the extent of black markings on both wings, and three subspecies are recognized.  

**Range and status:** Colombia (Cordilleras Central and Oriental) to Bolivia (Cochabamba), along the east Andean slopes. Uncommon to rare, in cloud forest from 1300-2700m.

**Specimens examined: 111♂, 73♀**

*Megoleria orestilla orestilla* (Hewitson, 1867)  
**Figs.** 2, 3D-F, 4F-J, 6, 7

*Ithomia orestilla* Hewitson, 1867: [20], pl. [11], fig. 160. **TL:** “New Granada” (error) [= Ecuador]. **Lectotype♂**, BMNH (here designated) [examined].  

*Hyposcada orestilla*: Haensch, 1903: 188.  
*Leucothrys orestilla*: Haensch, 1909: 148, pl. 38g, fig. [4].  


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**Identification, taxonomy and variation:** This subspecies is distinguished from both other subspecies by the hindwing discal band being tinged pale yellow, and often being opaque, rather than translucent white. This band is also narrower than in *M. susiana sandra*. The black scaling on the forewing is more extensive than in other subspecies, especially in the discal cell. The ventral fuscous markings form a more even submarginal band on the HW and are reduced in the basal half of the VFW. This taxon was described by Staudinger ([1884]) based on a unique male illustrated on his plate 30, collected by E. Kalbreyer, “probably in the valley of the Rio Atatro”. This rather vague locality possibly refers to a place on the western slopes of the Cordillera Occidental, along the road from Medellín to Quibdó, on the upper reaches of the Rio Atatro.  

**Range:** Western and northern Cordillera Central, and northern Cordillera Occidental in Colombia (Antioquia, Caldas, Risaralda, Valle del Cauca).  

**Habitat and adult ecology:** Nothing has been published on the natural history of this taxon, which is rare in collections. Ithomine co-mimics include *Oleria cyrene cyrene*, the female of an undescribed subspecies of *Oleria radina*, and possibly *Elzunia humboldt* (Latreille, [1809]).

**Specimens examined (5♂, 9♀): COLOMBIA - Antioquia: Mesopotamia, [5°51'N, 75°16'W], 2♂, (AMNH); Valdivia, [7°09'N, 75°27'W], (Pratt), 1897, 3♀, 1♂, (BMNH); Caldas: Manizales, [5°05'N, 75°32'W], ([A.M. Patiño], 4♂, (BMNH); Risaralda: Distrito de Pereira, [4°49'N, 75°43'W], (R. M. Valencia), 1885, 1♂, (BMNH); San Antonio de Chami, [5°20.6'N, 76°00'W], 1650m, (JLF); no specific locality, (JLF); **Valle del Cauca:** Rio Cañas Gordas, [3°21'N, 76°31'W], May, 1♀, (FLMNH); Not located: “Cauca” (G. Kalbreyer), 1♂ [= Rio Atatro; HT susanna], (ZMUH); Rio Aguada [possibly = Rio Aguacatal], Jul, 1♂, (FLMNH).
Identification, taxonomy and variation: The nominate subspecies differs from other subspecies in having the transparent area in FW cells Cu2-M3 undivided, and the posterior half of the HW discal cell and base of cells 2A-Cul transparent, rather than black. The black marginal borders tend to become narrower from north to south within the range of the subspecies. Specimens from far northern Ecuador (Sucumbíos) suggest intergradation with *M. o. polylla*, having the hindwing discal cell almost completely black (Fig. 2D), and analogous variation is also present in the same area in presumed mimics such as *Oleria cyrene*. Hewitson (1867) described this taxon from an unspecified number of male specimens in his collection, from “New Granada.” The illustration and syntype are, however, typical of central and southern South American specimens, and given the occurrence in extreme northern Ecuador of specimens apparently intergrading to the Colombian *M. o. polylla*, it seems highly unlikely that *M. o. orestilla* occurs in Colombia, and the type specimen(s) thus appear to have been mislabelled. In order to fix the identity of the name, we designate herein as lectotype the male syntype in BMNH bearing the number “B.M. Type No. Rh. 7457”.

Range: Ecuador (Napo) to northern Peru (San Martin), along the east slope of the Andes, with intergrades to *M. o. polylla* in far northern Ecuador (Sucumbíos) (Fig. 2B). Constantino (1999) reports the range to extend into southern Colombia, but we have seen no bona fide Colombian specimens, and this report may perhaps have been based on the erroneously locality data of the lectotype.

Immature stages: An intensive survey of ithomiine immature stages was conducted at Reserva Arcoiris, Sector San Francisco, Parque Nacional Podocarpus, Zamora-Chinchipe, Ecuador by KRW and Raúl Aldaz in January-February 2002 and, with the further assistance of Marianne Elias, again from September - December 2006. The morphology of the immature stages is described in the generic account. In 2002 a female of *M. orestilla* was observed ovipositing on *Drymonia urceolata* Wiehler (Figs. 6A-C), a common plant within the reserve, leading to intensive searches of this plant for additional immature stage individuals.

Despite searching a very large number of plants, a total of only 13 immature stage individuals were collected, comprising eggs (8), 2nd instar (2), 3rd instar (1), 3rd-4th instar (1), and 4th-5th instar (1). Of the 8 eggs found, 4 hatched, of which 3 survived to 1st instar and 1 to 2nd instar. One larva collected as a second instar was parasitized by an unidentified Diptera. The three larvae that died as 1st instars all failed to eat the hostplant, and our general lack of success in rearing the species, with all four larvae found as 2nd-4th instars dying without advancing past the 4th instar, strongly suggests that our rearing conditions were unsuitable. The avoidance of the leaves by first instars, and distinctive feeding behaviour of later instars (described below) suggest that leaf damage initiates some form of chemical defence that renders the leaves toxic to larvae. We therefore advise others attempting to rear this species on *Drymonia urceolata* to use whole potted plants or plants in situ, rather than feed larvae with leaves collected from plants.

All four larvae collected in 2006 were found on leaves exhibiting a distinctive pattern of feeding damage: 2nd-3rd instar larvae cut a trench through the underside of the leaf from one side to the other, leaving semi-isolated an equal triangular section at the tip of the leaf (Figs. 6G, H). Feeding in the underside of the leaf from one side to the other, leaving semi-isolated areas of veins or areas of leaf damage (as in some ithomine). We have observed males feeding on flowers of a small, non-Asteraceae understory tree, but have never observed the species feeding on the weedy Asteraceae that are otherwise highly attractive to most montane ithomine species, including *Oleria*. We have also observed males occasionally feeding on bird excrement. This subspecies flies with and is an accurate mimic of numerous ithomiines. These include not only a number of *Oleria* species, such as *O. athalina, O. tremona, O. makrena* (Hewitson, 1854), *O. fasciata* (Haensch, 1903), *O. cyrene, O. derodina* (Haensch, 1909), *O. santinez* and *O. oleriodes* (D’Almeida, 1952), but also isolated members of *Godyris* Boisdouval, *Hyposcada, Hypsocadia*, Ithomia Hübner, Napeogenes Bates, Patricia Fox, Greta Fox and Petronymia Butler & Druce.

*Specimens examined (95♂, 52♀♀): “COLOMBIA” - No specific locality: “New Granada” - (error), 1♂ [LT orestilla; B.M. Type No. Rh. 7457] (BMNH).

**ECUADOR - Loja**: enervons de Loja, [4°37.4’S, 79°22.3’W], 1600m, (K.R. Willmott, Nov, 1♂, (BMNH, (K. R. Willmott), Oct, 1♂, (KWJH); *Pasta 2*; “Rio Pastaza” - (error), 1♂, (SMTD); “Sarayacu, Rio Bobonaza” - (error), (C. Buckley), 1879, 1♂, (BMNH); “Upper Rio Pastaza” - (error), 1♂, 1♀, (SMTD); Abitagua, Rio Pastaza, [1°27’S, 78°09’W], 1200m, Apr, 2♂, (USNM); Sucumbíos: El Higuero, [0°30.9’N, 77°32.2’W], 2400m, (K. R. Willmott, Nov, 1♂, (KWJH); Quebrada El Garrapal, [0°29.3’N, 77°32.2’W], 2100-2200m, (K. R. Willmott), 31 Dec 2001, 1♂, 1♀, (BMNH); “Rio Sucio, nr. La Bonita, [0°28.5’N, 77°33.3’W], 1800-2000m, (K. R. Willmott, 15 Dec 2001, 1♂, (KWJH); Tungurahua: “Ambato” = upper Rio Pastaza, [1°24’S, 78°25’W], (A. Vásquez), 6♂, 3♀, (BMNS(S), 1♂, 1♀, (BMNH); “en[v]rons’ d’Ambato” = upper Rio Pastaza, [1°24’S, 78°25’W], (I. Blanc), 1♂, 1♀, (BMNS(S)), (I. Blanc), 3♂, 2♀, (BMNH); Bahos a Canelos, (M. de Mathan), Sep-Oct 1994, 1♂, (BMNH(S)), 1♀, (BMNH); “Puyo Pastaza”, [1°24’S, 78°25’W], 1500-2000m, (M.G. Palmer), 1♂, (BMNH(S)); Bahos, [1°24’S, 78°25’W], 1800m, 1♂, 1♀, (SMF), 1♂, (ZSBS); Jun, 1♀, (AMNH), (M.G. Palmer), 1♀, (SMF), 1♀, (BMNH), Apr 1992, 1♂, 3♀, (BMNH); Las Minas de Ulba, 2300m, Dec, 1♂, 1♀, (AMNH); Rio Blanco, [1°23’S, 78°20’W], 1650-2000m, 1♂, (FLMNH); Rio Machay, [1°23.75’S, 78°16.3’W], 1700m, (K. R. Willmott & J.P.W. Hall), Aug, 1♀, (KWJH); Rio Topo, [1°25’S, 78°10’W], 1300m, Jul, 1♂, (USNM); Volcán Tungurahua, [1°24’S, 78°25’W], 1♂, 1♀, (ZMHH(U)); Zamora-Chinchipe: “Zamora” - (error), (O.T. Baron), 2♂, (BMNH); Casa Simpson, Reserve Tapichalaca, above Valladolid, [4°29.4’S, 79°07.5’W], 2420m, (K. Willmott), 30 November 2005, 1♀, (FLMNH); Quebrada Honda trail, Reserve Tapichalaca, [4°28.35’S, 79°07.3’W], 1900-2000m, (K. Willmott), 30 November 2005, 1♂, 1♀, (FLMNH); San Francisco, casa de Arcoiris, km 23 Loja-Zamora rd., [3°59.4’S, 79°50.7’W], 2000-2150m, (K. Willmott), 28 November 2003, 1♂, 1♀, (KWJH); San Francisco, casa de Arcoiris, km 23 Loja-Zamora rd., [3°59.4’S, 79°50.7’W], 2000-2150m, (K. Willmott), 04 Feb 2002, 1♂, (BMNH), 1♂, (KWJH); (R. Aldaz), 07 Feb 2002, 1♂, (KWJH), 13 Jan 2002, 1♂, (KWJH); San Francisco, casa de Arcoiris, km 23 Loja-Zamora rd., [3°59.4’S, 79°50.7’W], 2000-2150m, (K. Willmott), 10 October 2006, 1♂, (FLMNH), 15 October 2006, 1♀, (FLMNH), 26 October 2006, 1♂, (FLMNH), 4 Dec 2006, 1♀, (KWJH), 4 Nov 2006, 1♂, (FLMNH), Zamora, [4°04’S, 78°58’W], (O.T. Baron), 1♂, (BMNH(S)); No
Description and diagnosis: This subspecies is distinguished from its closest neighbour, *M. orestilla orestilla*, by having more extensive black on both wings, resulting in the HW translucent discal band narrowing (instead of broadening) from apex to anal margin, the transparent areas in FW cells Cu2-M3 divided in two by a vertical black line, and the FW black discal band being broader. The FW pattern is similar to *M. o. polymacula*, but the hindwing translucent discal band in that subspecies is approximately even throughout the wing, whereas in *M. o. polymulla* it is broadest in cells M3-M1.

Type material: *Holotype♂: Parque Nacional Las Cuevas (=Parque Nacional Natural Cueva de los Guácharos), [c. 1°37'N, 75°55'W], 1800m, (A. & E. Pratt), 1912, 1♂, (BMNH); Leucothyris polymacula (Rosenberg & Talbot, 1914): Figs. 2G,H, 5F-J, 7

Identification, taxonomy and variation: This taxon shares all of the diagnostic characters from the same locality. It cannot be distinguished from the holotype (Fig. 2A) in having the translucent hindwing discal band broader at the anal margin, and both have a transparent spot at the posterior edge of the hindwing discal cell. Given the isolation between the Colombian cordilleras Central and Oriental, and the presence of different groups of potential co-mimics in each of these areas, it is perhaps likely that the Antioquia specimen represents a distinct taxon. However, given the lack of material we do not describe it here.

Range: Southeastern Colombia, from Huila to, presumably, near the border with Ecuador.

Habitat and adult ecology: Little is known of the natural history of this rare taxon. The holotype was collected at 1800m along with a small series of *M. susiana susiana*, suggesting these taxa may fly together and be involved in mimicry.

Specimens examined (2♂, 1♀): COLOMBIA - Antioquia: Municipio de Andes, [5°39.08'N, 75°52.24'W], 1357m, (J. Urbina), 12 Apr 1978, 1♀ [no. 8437], (MEFLG); *Huila*: Parque Nacional Las Cuevas (=Parque Nacional Natural Cueva de los Guácharos), [c. 1°37'N, 75°55'W], 1800m, (M. Cooper), 15 May 1976, 1♀ [HT polymalla], (FLMNH); No specific locality: "Colombia", 1♀, (MUSM).

*Megoleria orestilla polymalla* (Rosenberg & Talbot, 1914)

Figs. 2G,H, 5F-I, 7

Leucothyris polymalla Rosenberg & Talbot, 1914: 673. TL: Peru, (Pasco), Huancabamba. Holotype♂, BMNH [examined].

Leucothyris magnifica magnifica Tessmann, 1928: 121, pl. 5, fig. 2. TL: Peru, (Pasco), Pichis road, between Enefas and Dos de Mayo, 1500 m. Lectotype♂, ZMHU (here designated) [examined].

Leucothyris magnifica speciosa Tessmann, 1928: 121. TL: Bolivia, [La Paz], San Antonio [de Chicalulu], 1800m. Lectotype♂, ZMHU (here designated) [examined].


Megoleria susiana polymalla: Constantino, 1999: 62.


Identification, taxonomy and variation: This subspecies is distinguished by the relatively narrow but even translucent HW discal band, in addition to characters discussed under the other subspecies. Tessmann (1928) described *Leucothyris magnifica* from Pasco, Peru, apparently unaware of Rosenberg & Talbot’s (1914) description of *Leucothyris polymalla* from the same area, and we regard the two names as synonyms. We can also see no significant differences between Peruvian and Bolivian specimens, and so follow Lamas (2004) in regarding *Leucothyris magnifica speciosa* as a further synonym of *polymalla*. The main characters used by Tessmann to justify recognition of two subspecies were the width of the hyaline discal band on the HW (wider in *magnifica*, narrower in *speciosa*), and the thicker black line along HW vein M3 in *speciosa*. However, both traits vary slightly in series we have examined, apparently without geographic correlation.

Range: Peru (Pasco) to Bolivia (Cochabamba), along the eastern slope of the Andes.

Habitat and adult ecology: This subspecies is known from 1400-2700m in cloud forest, where it is apparently uncommon (Peru) to rare (Bolivia). It is similar in behaviour to the closest neighbour, *M. orestilla orestilla*, apparently unaware of Rosenberg & Talbot’s (1914) description of *Leucothyris polymalla* from the same area, and we regard the two names as synonyms. We can also see no significant differences between Peruvian and Bolivian specimens, and so follow Lamas (2004) in regarding *Leucothyris magnifica speciosa* as a further synonym of *polymalla*. The main characters used by Tessmann to justify recognition of two subspecies were the width of the hyaline discal band on the HW (wider in *magnifica*, narrower in *speciosa*), and the thicker black line along HW vein M3 in *speciosa*. However, both traits vary slightly in series we have examined, apparently without geographic correlation.

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75°25′W), 2100m, (G. Lamas), 21 Aug 2003, 1♂, (ZMHU), 28 Jun 2004, 1♀, (ZMHU), 1♂-3 km S Mina Pichita, [11°05′S, 75°25′W], 2100m, (G. Lamas), 16-17 Oct 1989, 3♂, (MUSM); 1♂-3 km SW Mina Pichita, [11°05′S, 75°25′W], 2100m, (G. Lamas), 24, 26 Aug 1988, 2♂, 2♀, (ZMHU); Chanchamayo, [11°04′S, 75°19′W], 1♀, (BMNH); Mina Pichita, [11°05′S, 75°25′W], 2000m, (O. Mielke & M. Casagrande), 16, 17 Oct 1989, 1♀, (OHM); Quebrada Siete Jeringas, [11°12′S, 75°24′W], 1700m, (G. Lamas, J.J. Ramirez), 15 Nov 2003, 1♀, (MUSM), 28 Jun 2004, 1♂, (MUSM), 8 Nov 2003, 1♀, (MUSM); Pasco: Cushi, [9°58′S, 75°42′W], 1900m, (W. Hoffmanns), 1♀, (BMNH); Eneas-Dos de Mayo, [c. 10°20′S, 75°13′W], (G. Tessmann), 1♂, [LT Rh. 7458], 1♀, (BMNH); Huancabamba, [10°23′S, 75°33′W], 1900m, 1♂ [PT polymacula; B.M. Type No. Rh. 7458], 1♀ [HT polymacula; B.M. Type No. Rh. 18159], 1♂ [PT polymacula; B.M. Type No. Rh. 7459], (BMNH); Pozuzo, [10°07′S, 75°32′W], 1520-1820m, (native collector), 1♂, (BMNH); Puno: Uruhuasi, [13°42′S, 70°26′W], (H. & C. Watkins), Apr May 1910, 1♂ [PT polymacula; B.M. Type No. Rh. 7532], 1♀ [PT polymacula; B.M. Type No. Rh. 7533], (BMNH), Mar Apr 1910, 1♂ [PT polymacula; B.M. Type No. Rh. 7534], (BMNH).

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REFERENCES CITED


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Appendix 1. Genitalia dissections examined of *Megoleria*. * indicates a figured specimen.

<table>
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<td>M. orestilla polymacula</td>
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<td>Peru: Junín, Chanchamayo</td>
<td>*BMNH</td>
<td>7226</td>
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<td>M. susiana susanna</td>
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<td>♀</td>
<td>Colombia: “Bogotá”</td>
<td>*BMNH</td>
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Appendix 2. Rearing records for *Megoleria orestilla orestilla* at Reserva Arcoiris, 2000m, Zamora-Chinchipe, Ecuador. Image numbers (Fig. 6) are listed under Rearing Code. Collectors are: KW: Keith Willmott; RA: Raúl Aldaz; ME: Marianne Elias. Dates of developmental stages are the last dates on which that stage was recorded.

<table>
<thead>
<tr>
<th>Taxon ID status</th>
<th>Rearing code (Fig.)</th>
<th>Collector</th>
<th>Stage found</th>
<th>N</th>
<th>Date found</th>
<th>Plant location</th>
<th>Height on plant</th>
<th>Location on plant</th>
<th>Date egg</th>
<th>Date 1st instar</th>
<th>Date 2nd instar</th>
<th>Date 3rd instar</th>
<th>Date 4th instar</th>
<th>Date 5th instar</th>
<th>End date pupa</th>
<th>Last stage</th>
<th>Sex</th>
<th>Fate</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Likely</td>
<td>KRW-284 (6k)</td>
<td>KW</td>
<td>3/4</td>
<td>1</td>
<td>03/02/2002</td>
<td>damp, shady primary forest understorey near stream</td>
<td>0.5</td>
<td>under leaf</td>
<td>07/02 2002</td>
<td>4</td>
<td>died</td>
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<td>KW</td>
<td>egg 1</td>
<td>03/02/2002</td>
<td>damp, shady primary forest understorey on steep slope beside trail</td>
<td>5</td>
<td>under leaf 2-3cm from leaf edge, not near vein or damaged portion</td>
<td>13/02 2002</td>
<td>18/02 2002</td>
<td>2</td>
<td>died</td>
<td>oviposition at 1430hrs</td>
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<td>KW</td>
<td>egg 1</td>
<td>03/02/2002</td>
<td>damp, shady primary forest understorey on steep slope beside trail</td>
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<td>under leaf 2-3cm from leaf edge, not near vein or damaged portion</td>
<td>egg</td>
<td>failed to hatch</td>
<td>oviposition at 1430hrs</td>
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<td>under leaf 2-3cm from leaf edge, not near vein or damaged portion</td>
<td>14/02 2002</td>
<td>18/02 2002</td>
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<td>died</td>
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<td>Likely</td>
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<td>damp, shady primary forest understorey on steep slope beside trail</td>
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<td>under leaf</td>
<td>16/02 2002</td>
<td>18/02 2002</td>
<td>1</td>
<td>died</td>
<td>ovip. at 1430hrs; larva didn't eat</td>
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<td>kept by RA</td>
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<td>17/12 2006</td>
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<td>female</td>
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<td>06/12 2006</td>
<td>08/12 2006</td>
<td>3</td>
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