

# **A critical review of the booklet by PIÑAS & MANZANO (2003) on the Ecuadorian Saturniidae (Lepidoptera)**

**LUIGI RACHELI**

**Abstract:** A critical review of the booklet by PIÑAS & MANZANO (2003) on the Saturniid fauna of Ecuador is herein presented. Of 475 figures depicting Saturniid specimens in the included CD-R, there are no less than 50 misidentifications. Some Mesoamerican and southern South American species have been erroneously recorded for Ecuador. Some incorrect subsequent spellings are also present in this booklet. Few noteworthy records of Saturniids for Ecuador are also given.

**Key Words:** Lepidoptera, Saturniidae, Ecuador, PIÑAS & MANZANO, review.

## **Introduction**

It is my personal opinion that some books on Saturniidae (e.g., D'ABRERA, 1995; IZERSKY, 1999) published in recent times contain so many misidentifications, errors or doubtful records that their usefulness is more than questionable. Although these are two different examples, both books contain a long series of inaccuracies but D'ABRERA's (1995) book remains useful at least for the type specimens figured. On the contrary, IZERSKY's (1999) book is a totally unuseful and misleading book. For a very long series of reasons, I did not present at that time their reviews but I compiled only lists of inaccuracies which have been privately sent only to specialists and amateurs interested in Saturniidae. Other authors (e.g., NAUMANN, 1996; PEIGLER, 1996; PEIGLER & NAUMANN, 2003) reviewed or

commented upon these books but their comments did not often fully resolve the amount of misidentifications<sup>2</sup>

This brief premise must be viewed as a necessary clarification about the role of a contribution to the scientific knowledge. It is obvious that such kind of books which contain so many inaccuracies do not improve the scientific knowledge. For this reason, a critical review is necessary because only through it the scientific knowledge will be improved. In any case, this is not a justification about my choice to present a critical review. I view any kind of scientific contribution like a further step to improve the scientific knowledge.

Among others, the booklet by PIÑAS & MANZANO (2003) must be necessarily reviewed because the previous efforts (e.g., LEMAIRE & VENEDICTOFF, 1989) aimed at improving the knowledge on the Saturniid fauna of Ecuador cannot be obscured by such an unuseful paper. When I received the book by PIÑAS & MANZANO, my first idea was that a further synthesis after the catalogue of LEMAIRE & VENEDICTOFF (1989) should be the logic consequence of a scientific progress. But, alas, my first idea was unsound!

Although I met the senior author during one of my visits to Ecuador, he never sent me any kind of pre-publication manuscript of his book also if we published a joined paper on the same topic (i.e., PIÑAS & RACHELI, 1998). I am not the only person interested in Ecuadorian Saturniidae but my comments on the manuscript should have likely reduced the amount of errors. However, the inclusion of Claude Lemaire's name in the acknowledgements seems to be a paradox. I cannot discuss the identifications of some specimens made by Lemaire but I am sure that he never had a complete view of this work.

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<sup>2</sup> Here, I underline that both Stefan Naumann and Ric Peigler were not particularly interested in Neotropical Saturniidae, at least at that time. For this reason, some errors the source of which is D'ABRERA's (1995) book have not been evidenced in their reviews. Obviously, this is not a criticism to the reviews presented by NAUMANN (1996) and PEIGLER (1996) also because my views about these two books have been personally discussed with them during meetings in Berlin and Rome. Although D'ABRERA (1998) admitted errors and misidentifications for his volume I, his corrigenda remain still incomplete.

This booklet is part of a project divided in 25 volumes which will include all the Lepidoptera of Ecuador. The present booklet is strictly devoted to the Saturniidae of Ecuador. It is divided into five main chapters: the introduction, the systematic list of (Ecuadorian) genera, a systematic list of the species treated, a legend to the figures included in the CD-R and an index of the generic and specific names. It is unclear why the authors titled a chapter as “Systematic relationships of species” Indeed, it is only an ambiguous or erroneous definition because it is a list of the species included in the CD-R. Each species or subspecies name is followed by the referring number of the figure as reported in the CD-R. Furthermore, each subfamily, genus, species or subspecies is not listed according to the current systematic arrangement for this family.

General aspects are treated in the introduction including a list of 74 species reported by LEMAIRE & VENEDICTOFF (1989) but these were not available for their booklet. Some of these species claimed to be unavailable are, however, included in the CD-R but misidentified. Some “incorrect subsequent spellings” are randomly present in this contribution. Furthermore, it must be noted that some new names have been included in the systematic list (pp. 6–13). These new names are all followed by the name of the author (i.e., PIÑAS) without the year of publication. I do not know whether and where these new names have been introduced. If these new names have been firstly introduced in this booklet, they are obviously *nomina nuda*. Indeed, no description is included to support the validity of these new names and no type material has been listed. Luckily, this is strictly a nomenclatorial problem because all these new names (i.e., *Adeloneivaia jason* occidentalis, *Dirphia avia* occidentalis, *Dirphia avia* orientalis, *Rothschildia orizaba* occidentalis) correspond to common morphs of previously described species. For this reason, they are all new synonyms if ever published.

Below, I present a list of inaccuracies regarding identifications of specimens included in the CD-R even if the identification of specimens on the basis of pictures or figures is always difficult. Sometimes, the specimens figured are also in worn conditions and for this reason their identification is almost impossible. Several species are difficult to identify (e.g., *Hylesia* and *Pseudodirphia* species) and others have never been reviewed in recent times (those included in Cercophaninae and Oxyteninae). There are so many misidentifications that possibly I failed to include all of them. However, the present review is enough to evaluate the quality of this contribution.

Concluding, some positive words can be addressed to the noteworthy records of some species such as *Caio championi* (DRUCE, 1886), *Caio harrietae* (FORBES, 1944), *Paradaemonia ruschii* MAY & OITICICA, 1943, *Paradaemonia samba* (SCHAUS, 1903), *Paradaemonia nycteris* (JORDAN, 1922), *Bathyphebia johnsoni* OITICICA & MICHENER, 1950, *Periga squamosa* (LEMAIRE, 1972), *Hypermerina kasyi* LEMAIRES, 1969, *Erythromeris flexilineata* (DOGNIN, 1911), *Erythromeris obscurior* LEMAIRES, 1975 and *Copaxa simson* MAASSEN, 1881. Furthermore, if confirmed, the records of *Schausiella toulgoeti* LEMAIRES, 1969 and *Automeris niepelti* DRAUDT, 1929 would be new records for Ecuador.

### List of misidentifications

Number of figures refers to the file name as originally reported in the CD-R or in the text.

### Subfamily Arsenurinae

Figs. 2, 3, 4. *Arsenura archianassa* DRAUDT, 1930 is not a subspecies of *A. armida* (Cramer, 1779).

Fig. 3. *Arsenura archianassa* is a mesoamerican and western Andean species and it does not occur on the eastern slope of the Andes. Probably, this specimen is a female of *Arsenura albopicta* JORDAN, 1922.

Fig. 6. The authors identified this specimen as *A. ciocolatina* DRAUDT, 1930 but it is a female of *Arsenura archianassa*.

Fig. 15. It is a male of *Arsenura (thomsoni) lemairei* RACHELI & RACHELI, 1998. It is not *Arsenura sylla sylla* (CRAMER, 1779).

### Sufamily Ceratocampinae

Fig. 66. Although this figure depicts a worn specimen, it is a male of *Eacles ormondei*. It is not a male of *Bathyphebia eminens* (DOGNIN, 1891). On the basis of the figure examined, it is very difficult to assign this specimen either to *peruviana* BOUVIER, 1927 or to *violacea* LEMAIRES, 1975. However, the collecting site of the specimen at 1000 m suggests that it is probably *Eacles ormondei peruviana*.

Fig. 72. It is not *Citheronia andina* LEMAIRES, 1971 but possibly it is *C. bellavista* DRAUDT, 1930.

Fig. 73. It is a female of *C. bellavista* although it has been listed as *C. andina* LEMAIRE, 1971.

Fig. 76. It is a male of *C. bellavista* but it has been listed as *C. aroa* SCHAUS, 1896.

Fig. 79. This specimen was unidentified. It is a male of *C. bellavista*.

Fig. 92. It is not *Schausiella carabaya* (ROTHSCHILD, 1907). It seems to be *S. toulgoeti* LEMAIRE, 1969 which, if confirmed, will be a new record for Ecuador.

Fig. 94. The authors identified this specimen as *Schausiella arpi* (SCHAUS, 1892) but it is *Schausiella polybia* (STOLL, 1781).

Figs. 103–104. Both these specimens have been listed under the name *Adeloneivaia jason occidentalis* PIÑAS. Both refer to the common *Adeloneivaia jason* (BOISDUVAL, 1872) (see comments in the introduction).

Fig. 107. This specimen has been listed as *Adeloneivaia jason* ssp. It is *Adeloneivaia jason*.

Fig. 119. Probably, it is the female of *Syssphinx quadrilineata oclusa* (DOGNIN, 1916).

Fig. 133. This specimen has been identified as *Ptiloscola bipunctata* LEMAIRE, 1972 but it is *Ptiloscola photophila* (ROTHSCHILD, 1907). Although the presence of white spots in the discal cell is not so common, it has been recorded in *Ptiloscola photophila*. By the contrast, *Ptiloscola bipunctata* is a very variable northern peruvian species which seems to be segregated to arid or semiarid areas.

### Subfamily Oxyteninae

Although species belonging to this subfamily have been collected during field expeditions to Ecuador, great part of the material obtained has never been studied and many species remain unidentified excluding those reported in a brief note (RACHELI & RACHELI, 1996). However, some identifications made by PIÑAS & MANZANO are very doubtful but I will comment upon only some of them. On the contrary, *Therinia* HÜBNER, [1823] (= *Asthenidia* WESTWOOD, 1879<sup>3</sup>) species (from fig. 160 to fig. 165) seem to be correctly identified.

Figs. 147–151. PIÑAS & MANZANO identified these five specimens as *Oxytenis bicornis* JORDAN, 1924 but differences among them are clearly evident. *Oxytenis bicornis* has been described from SE Brazil and it seems

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<sup>3</sup> In agreement with BROSCH et al. (2002), I use the generic name *Therinia* in replacement of *Asthenidia*.

unusual that this species occurs also in Ecuador. However, all these specimens are tentatively assigned to the *naemia* DRUCE, 1906 and *leda* DRUCE, 1906 species-groups.

Fig. 154. This specimen does not seem to be *O. peregrina* (STOLL, 1780).

Figs. 158–159. These two specimens have been listed as *O. zerbina* (CRAMER, 1780) but they are two different species. Specimen depicted in Fig. 159 is similar to *ferruginea* (WALKER, 1855) figured by DRAUDT (1930).

## Sufamily Hemileucinae

Fig. 176. This specimen has been identified as *Periga squamosa* (LEMAIRE, 1972) but it seems not to be related to this species. It may be *Periga extensiva* LEMAIRE, 2002.

Fig. 177. It is *Lonomia columbiana* (LEMAIRE, 1972) but it has been listed as *Periga occidentalis* (LEMAIRE, 1972).

Fig. 183. It is not a female of *Periga angulosa* (LEMAIRE, 1972) which is an amazonian species. It seems to be *Periga galbimaculata* (LEMAIRE, 1972).

Fig. 188. This specimen has been identified as *Automeris janus* (CRAMER, 1775) but it is a female of *Automeris exigua* LEMAIRE, 1977.

Fig. 190. It has been listed as *A. exigua* but it is a female of *Automeris metzli* (SALLÉ, 1853).

Fig. 192. Although it has been listed as *Automeris metzli*, it seems to match more the female of *Automeris exigua*.

Fig. 194. This specimen has been identified as *Automeris boops* (FELDER & ROGENHOFER, 1874) but it is *Automeris larra* (WALKER, 1855).

Fig. 195. I am not able to confirm the identification of this specimen as *Automeris niepelti* DRAUDT, 1929 on the basis of this figure.

Fig. 204. It is *Automeris duchartrei* BOUVIER, 1936 and not *Automeris bilinea* (WALKER, 1855).

Fig. 207. The authors have been not able to identify this specimen. It is a female of *Automeris jucunda* (CRAMER, 1779).

Fig. 210. It is very difficult to identify this specimen on the basis of this picture. Perhaps it may be *Automeris gabriellae* LEMAIRE, 1966 but it seems to be more similar to the black morph of the common *Automeris midea* (MAASSEN, 1885). The underside is more useful for the identification.

Fig. 211. It is a male of *A. midea* and it is not *A. gabriellae*.

Fig. 212. According to the authors, it is *Automeris bilinea tamphilus* (which is known to occur only in SE Brazil) while it is one of the several morphs of *A. duchartrei*.

Fig. 214. The authors have been not able to identify this specimen. It is *A. midea*.

Fig. 215. The authors have not been able to identify this specimen. It may be one of the several morphs of *A. duchartrei*. However, I have examined a further male from Brazil, Para, Obidos which shows the same shared features (i.e., ground colour of both wings similar to that of *A. duchartrei* and *A. cinctistriga* (FELDER & ROGENHOFER, 1874); the presence of a yellow line around the ocellus which is connected with the yellow line of the submarginal line).

Fig. 219. It is the female of *Automeris amanda subobscura* WEYMER, 1909. It is not the female of *Automeris banus argentifera* LEMAIRE, 1966.

Figs. 236–237. The authors listed *Automeris belti equatorialis* BOUVIER, 1936 which is a synonym of *Automeris belti zaruma* SCHAUS, 1921.

Fig. 245. This specimen has been identified as *Automeris pomifera* SCHAUS, 1906. As reported elsewhere (RACHELI, 1995), *Automeris innoxia* (SCHAUS, 1906) has been recorded also as a western amazonian species. Subsequently, this species has been confirmed for further lowlands localities in Peru (see RACHELI & CALLEGARI, 1996). Although LEMAIRE (2002) did not consider my records of *A. innoxia*, I underline that all the lowland records assigned to *A. pomifera* must be reviewed. This latter species is distributed only in the altitudinal belt from 1,200 to 1,600 ca. Furthermore, I am not here discussing if lowland specimens must be assigned to *A. innoxia* or to a possibly undescribed species but all these lowland specimens are very different from the typical *A. pomifera*.

Fig. 246. The authors have not been able to identify this specimen. It is *Automeris pomifera* SCHAUS, 1906.

Fig. 247. It is *Automeris jivaros* DOGNIN, 1890 but it has been listed as *Automeris annulata atrolimbata*.

Fig. 248. It seems *Automeris zugana* DRUCE, 1886. However, it is not *Automeris annulata atrolimbata*.

Fig. 249. It is the female of *Automeris harrisorum* LEMAIRE, 1967. It is not the female of *Automeris v. vomona* SCHAUS, 1906.

Fig. 250. This specimen has been listed as *Automeris* sp. 5. I tentatively assign this specimen to *Automeris napoensis* LEMAIRE, 2002. PIÑAS & RACHELI (1998: 160) have previously listed the same specimen as *Automeris caucensis* LEMAIRE, 1976. Obviously, this specimen refers to this species-group. LEMAIRE himself (2002) has doubts about the placement of some of the few known specimens of this species group (see LEMAIRE, 2002 for further details on this new taxonomic arrangement of this species-group).

Fig. 257. It is not *Automeris moloneyi* but it seems to be *Automeris andicola* BOUVIER, 1930. See arguments below for fig. 258.

Fig. 258. It is not *Automeris moloneyi* DRUCE, 1897 but it is *Automeris andicola* BOUVIER, 1930. This specimen has been collected in Manabi province. It is remarkable that this record confirms the presence of this species northernmost of Loja province. It is not only a range extension for this species but also it may indirectly confirm the record of CAMPOS (1931)<sup>4</sup> for Guayas province.

Fig. 259. It is not *Automeris a. amoena* (BOISDUVAL, 1875) but it is *Automeris jucunda* (CRAMER, 1779).

Fig. 260. This specimen has been listed as *Pseudautomeris antioquia* (SCHAUS, 1921). I am not able to confirm this identification on the basis of this figure.

Fig. 261. It is not *Pseudautomeris salmonea* (CRAMER, 1777). It seems to be *Pseudautomeris irene arminirene* (STRAND, 1920).

Fig. 264. It is not *Pseudautomeris pohli* LEMAIRE, 1967. Probably, it is *Pseudautomeris irene arminirene* (STRAND, 1920).

Fig. 267. It seems to be obvious that it is not *Pseudautomeris coronis* (SCHAUS, 1913) which is a SE brazilian species. It seems to be a female of *Pseudautomeris irene arminirene* (STRAND, 1920).

Fig. 269. This specimen has been unidentified. This figure depicts an aberration of *Leucanella* sp.

Figs. 273–274. These two specimens (a male and a female) from Carchi and Sucumbios provinces have been identified as *Leucanella nyctimene* (LATREILLE, 1832). Both specimens have been collected at high elevations (2,800 and 3,000 meters). *Leucanella nyctimene* is known only from Colombia (see LEMAIRE, 2002). Both specimens show also some shared characters with specimens of *Leucanella c. contempta* (LEMAIRE, 1967) from Colombia figured by LEMAIRE (2002: pl. 64, 7 and 8). Although I am not able to confirm the identification of these specimens, they seem to be *Leucanella c. contempta*.

Fig. 282. Obviously, it is not *Gamelia musta* SCHAUS, 1912 but probably it is *G. pyrrhomelas* (WALKER, 1865).

Fig. 286. It seems to be a female of *Gamelia abasia* (STOLL, 1781). However, it is not a female of *Gamelia abas* (CRAMER, 1775).

Fig. 291. It is *Molippa tusina* (SCHAUS, 1921) although it has been listed as *Erythromeris* sp.

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<sup>4</sup> It is well known that the majority of CAMPOS' (1931) records are erroneous.

Figs. 292, 293, 294. The authors identified these three specimens as *Molippa n. nibasa*. According to LEMAIRE (2002), the western ecuadorian population is tentatively assigned to *Molippa nibasa* MAASSEN & WEYDING, 1885 while that from eastern Ecuador is tentatively assigned to *Molippa simillima* JONES, 1907. LEMAIRE (2002) pointed out that these arrangements need confirmation. However, the examination of western and eastern ecuadorian specimens reveal minor differences in the external patterns.

Fig. 296. It is *Molippa latemedia* (DRUCE, 1890). It is not *Molippa tusina* (SCHAUS, 1921).

Fig. 298. It is *Hyperchiria nausica* (CRAMER, 1779). It is not *Hyperchiria acuta* (CONTE, 1906).

Figs. 316–357. All these figures depict *Hylesia* specimens. Objectively, there are several problems for the identification of *Hylesia* species. As LEMAIRE (2002) argued, various species can be identified only upon genitalia examination. However, some species are misidentified and there is possibly at least one new species among those figured by PIÑAS & MANZANO.

Figs. 359–360. It is *Paradirphia andicola* recently described by LEMAIRE (2002). It is not *Paradirphia geneforti* (BOUVIER, 1923).

Fig. 361. According to the new taxonomic arrangement proposed by LEMAIRE (2002), it is *Paradirphia geneforti* (BOUVIER, 1923). It is not *Paradirphia oblita* as claimed by PIÑAS & MANZANO.

Fig. 362. I am not able to identify this specimen but it is not *Paradirphia o. oblita* (LEMAIRE, 1976).

Fig. 363. It seems to be a female of *Paradirphia geneforti*. However, it is not *Paradirphia o. oblita*.

Fig. 366. Although it is very difficult to identify *Meroleuca* PACKARD, 1904 or *Meroleucoides* MICHENER, 1949 species, it is not *Meroleucoides famula* (MAASSEN, 1890). It could be *Meroleucoides nata* (MAASSEN, 1890). However, some differences in the upperside of both wings as well as the locality (in Azuay province) where the specimen has been collected suggest that the identification needs confirmation.

Fig. 369. This specimen has been identified as *Cerodirphia lojensis* LEMAIRE, 1988 but it shows few shared characters with the holotype figured by LEMAIRE (2002: pl. 88, fig. 5).

Figs. 371–372. Although they have been reported as *Cerodirphia b. brunnea* (DRAUDT, 1930), both specimens are *Cerodirphia speciosa* (CRAMER, 1777).

- Fig. 376. It is a female of *Cerodirphia wellingi roseissima* LEMAIRE, 2002. It is not *Cerodirphia candida* LEMAIRE, 1969 which is a western Andean species.
- Fig. 382. This specimen has been listed as *Dirphia* sp. Probably, it is a dark form of *Dirphia brevifurca* STRAND, 1911 or possibly an undescribed species. Although it is very different from the specimen figured by LEMAIRE (2002), I have examined specimens of *D. brevifurca* from SE Peru which show an intermediate pattern between that figured by Lemaire and that by PIÑAS & MANZANO.
- Fig. 383. It is *Dirphia aculea* VUILLOT, 1892. It is not *Dirphia acidalia* HÜBNER, [1819] as erroneously reported by PIÑAS & MANZANO.
- Fig. 384. The authors identified this specimen as *Dirphia tarquinia* (CRAMER, 1775) but it is another specimen of *Dirphia aculea*.
- Fig. 389. This specimen has been listed as *Dirphia avia orientalis* PIÑAS. It is *Dirphia avia* (STOLL, 1780). For further details on this new name see the introduction.
- Fig. 390. This specimen has been listed as *Dirphia avia orientalis* PIÑAS. It is a female of *Dirphia fraterna fraterna* (FELDER & ROGENHOFER, 1874).
- Figs. 391-392. These specimens have been listed as *Dirphia avia occidentalis* PIÑAS. They are *Dirphia avia* (STOLL, 1780). For further details on this new name see the introduction.
- Figs. 401-402-403. These specimens have been unidentified. They are *Periphoba hircia* (CRAMER, 1775).
- Figs. 404-422. All these figures depict *Pseudodirphia* specimens. The identification of *Pseudodirphia* species is always very difficult. LEMAIRE (2002) himself did not resolved problems concerning the identification of specimens included in the *agis* and *eumedidoides* species-groups. However, some comments about species belonging to this genus are given.
- Fig. 411. I am not sure about the identification of this specimen as *P. oblicua* [*sic*] [recte *P. obliqua* (BOUVIER, 1924)]. It seems to be more similar to *P. eumedidoides* (VUILLOT, 1892).
- Fig. 412. This specimen has been listed as *Pseudodirphia* sp. 1. It may be an aberration of an undetermined species or an undescribed species.
- Figs. 414-415. Both specimens have been listed as *Pseudodirphia* sp. 2. I tentatively identify both specimens as *Pseudodirphia thiaucourti* LEMAIRE, 1982.
- Fig. 416. This specimen has been listed as *Pseudodirphia* sp. 3. It is *Pseudodirphia biremis* (DRAUDT, 1930). It must be noticed that the same specimen has been correctly identified by PIÑAS & RACHELI (1998: 160).

Although I collected and obtained specimens of Cercophaninae during my travels to South America, I never spent enough time to study them. However, I comment upon only some doubtful choices made by PIÑAS & MANZANO. Some specimens listed as *Janiodes ecuadorensis* (DOGNIN, 1890) are possibly misidentifications of *Janiodes bethulia* (DRUCE, 1904).

Fig. 427–428. The authors figured and identified this specimen from western Ecuador (Pichincha province) as *Janiodes nigropuncta* (DRUCE, 1906). The same specimen has been previously figured by PIÑAS (2000). JORDAN (1924) has considered *nigropuncta* as a valid subspecies of *laverna* (DRUCE, 1890) from Peru and Bolivia. PIÑAS (2000) has elevated *nigropuncta* to the specific status after comparisons of the male genitalia and other morphological external characters with *laverna*. However, the identification of this specimen as *nigropuncta* shows some incongruences. Comparisons of both JORDAN's (1924) and PIÑAS' (2000) male genitalia show differences among them. Although the specimen figured by PIÑAS (2000) is similar to *nigropuncta* figured by JORDAN (1924) and DRAUDT (1930: pl. 122e), some differences are also evident in the external pattern. Further material is needed to confirm the identification of this specimen.

Figs. 429–430. This specimen refers to a new species, *Janiodes manzanoi*, recently described by PIÑAS (2000) on two specimens from Napo and Tungurahua provinces.

### Sufamily Saturniinae

Fig. 443. This specimen has been listed as *Copaxa* sp. It is *Copaxa multifenestrata* (HERRICH-SCHÄFFER, [1858]).

Fig. 447. This specimen has been listed as *Copaxa multifenestrata* but the eastern andean population refers to *Copaxa satellita* WALKER, 1856.

Fig. 450. The authors listed this specimen as *Copaxa expandens brunnaeocaeca* [sic] (recte *brunneocaeca*<sup>5</sup> LEMAIRE, 1982). However, it refers to *Copaxa expandens* WALKER, 1855.

Fig. 451. This specimen has been identified as *Copaxa expandens brunnaeocaeca* [sic] but it is a female of *Copaxa andensis* LEMAIRE, 1971.

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<sup>5</sup> Although LEMAIRE (1996) listed this species with the name *brunnaeocaeca* [sic], the original spelling is *brunneocaeca* (see LEMAIRE, 1982: 58).

Fig. 453. I tentatively identify this specimen as *Copaxa multifenestrata* although it has been considered as *Copaxa expandens brunnaeocaeca* [sic].  
 Fig. 454–455. Both these specimens have been listed as *Copaxa semioculata orientalis*. According to the recent revisional paper by WOLFE et al. (2003), the specimen depicted in Fig. 454 refers to *Copaxa orientalis* LEMAIRE, 1975 while that depicted in Fig. 455 refers to *C. semioculata* (FELDER & ROGENHOFER, 1874).  
 Fig. 457. This specimen has been listed as *Rothschildia poruloides* [sic]. The correct name is *zorulloides* (DOGNIN, 1895).  
 Fig. 470–471. These specimens from Pichincha province have been identified as *Rothschildia h. hesperus* (LINNÉ, 1758) but this latter species has never been recorded for the western slope of the Andes. In fact, these specimens are *Rothschildia orizaba equatorialis* ROTHSCCHILD, 1907.  
 Fig. 473. This specimen has been listed as *Rothschildia aurota occidentalis* PIÑAS. It is *Rothschildia orizaba equatorialis* ROTHSCCHILD, 1907. For further details on this new name see the introduction.

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**Author:** Luigi Racheli  
Via G. Valmarana 66  
I-00139 Rome, Italy.  
E-mail: racheli@tiscalinet.it

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