

**ON SOME HITHERTO UNKNOWN FEMALES OF THE GENUS  
CATASTICTA FROM ECUADOR (SOUTH AMERICA).  
(Lepidoptera: Pieridae)**

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**Abstract:** the authors illustrate for the first time the previously unknown females of *Catastica eurigania eurigania* (Hewitson, 1870), *Catastica ctemene ctemene* (Hewitson, 1869), *Catastica scurra philotina* Röber, 1924 **comb. nov. stat. rev.**, *Catastica incerta incerta* Dognin, 1888, *Catastica seitzi blanca* Reissinger, 1972 and *Catastica philodora philodora* Brown, 1939. They hypothesize ethological and biological reasons to explain the rare observations of females of *Catastica* in the field.

**Riassunto:** gli autori illustrano per la prima volta le femmine di *Catastica eurigania eurigania* (Hewitson, 1870), *Catastica ctemene ctemene* (Hewitson, 1869), *Catastica scurra philotina* Röber, 1924 **comb. nov. stat. rev.**, di *Catastica incerta incerta* Dognin, 1888, di *Catastica seitzi blanca* Reissinger, 1972 e di *Catastica philodora philodora* Brown, 1939. Avanzano inoltre alcune ipotesi etologiche e biologiche per spiegare la relativa rarità delle femmine di *Catastica*.

Females of *Catastica* are usually very rare and poorly represented in both public and private collections. Furthermore females of many species remain undescribed. In consideration of their rarity, we give illustrations of six previously unknown females, described here for the first time.

***Catastica eurigania*** (Hewitson, 1870)

The female of this species was yet unknown. RACHELI (1996), briefly states "Females similar to males but white instead of yellowish", but he did not illustrate any specimen. We illustrate herein one of our three Ecuadorian females of *eurigania* (figs. 2-3). The specimens are practically identical to each other, but with a different extent of the black marginal chevrons on the HW recto.

***Catastica ctemene*** (Hewitson, 1869)

The nominotypical female was unknown when RACHELI (1996) stated: "Females, very rare, have red spots on the FWs and are aposematic." Females of some species (i.e. *ctemene* and *teutamis*) are in fact likely involved in mimetic rings with a variety of Nymphalidae (i.e. *Actinote*), Arctiidae, Riodinidae and other groups. It remains to be shown, however, if their wing coloration is aposematic or not. Furthermore the only Ecuadorian *ctemene* female known to us has white spots on FWs (figs. 4-5). We do not know if RACHELI (1996) examined true Ecuadorian *ctemene* females with red spots, or referred to Colombian specimens. The existence of two forms of Ecuadorian female (with either white or red spots on the FWs) can not be discarded. In fact both red and yellow spotted females of Colombian *C. ctemene rubricata* Weymer, 1907, collected nearly in the same locality, are preserved in our own collection.

***Catastica scurra philotina*** Röber, 1924 **comb. nov. stat. rev.**

*Catastica philotina* Röber, 1924 was originally described from Ecuador, [Environs de Loja]. This ecuadorian taxon was sunk into synonymy with *philais*

(C. & R. Felder, 1865) by LAMAS (1993). Subsequently LAMAS (1995) selected the lectotype of *philotina* and confirmed the synonymy. RACHELI (1996) and EITSCHBERGER & RACHELI (1998) accepted this taxonomic decision. We examined both the relevant type material and additional material from Peru, Ecuador and Colombia. Adopting criteria of classification established by EITSCHBERGER & RACHELI (1998), we concluded that *philotina* and *philais* represent separate species. Furthermore we feel that *philotina* represents an ecuadorian subspecies of *scurra* Röber, 1924. In fact, applying the above mentioned criteria, it is evident that the HW verso of *scurra philotina* Röber, 1924 **comb. nov. stat. rev.** and *philais* (C. & R. Felder, 1865) distinctly differ. The differences are especially evident in the pattern of submarginal zone of the HW verso, as summarized in fig. 1, where a scheme of HW verso of both lectotypes is represented. The interneural submarginal elements in space 3 are highly diagnostic. The junction of adjacent plumes (b) is longer, thicker and more acute in *philais*, determining a consequent shorter yellow streak (a). In *scurra philotina* the same junction is shorter and squared, so the yellow streak is much longer.

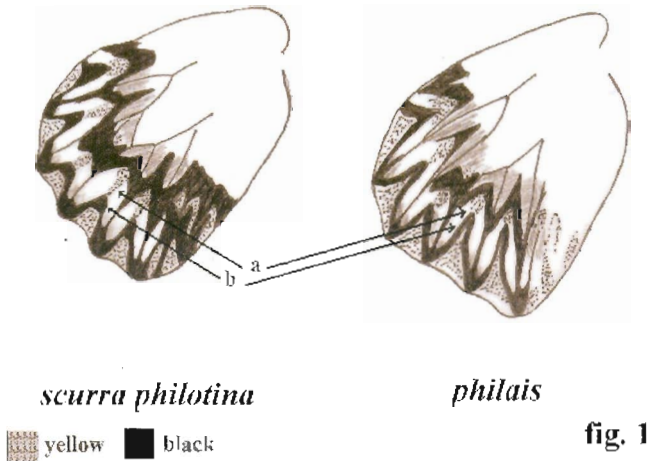


fig. 1

Furthermore these taxa are widely separated geographically (about 700 km., straight line distance, between the southernmost population of *philais* and the northernmost population of *scurra philotina*). From locality data on examined specimens, it appears that *philotina* is the northernmost subspecies of *scurra*. The main difference between *scurra scurra* and *scurra philotina* is the color of the discal band on the FW verso: it is white-yellowish in the former, yellow-brownish in the latter.

Both *philais* and *scurra*, together with *philothea* and *modesta*, belong to a complex of very similar species. *Catasticta manco* and *philoscia* are, by various authors, also considered part of this group. We feel, however, that they belong to a separate group as they exhibit a sexual dimorphism not present in other species of the *philais* group.

Distribution data of the species of the *philais* group permit us to hypothesize the existence of two vicariant subgroups: the "northern" subgroup including *philais* and *philothea* (and eventually *philoscia*) and the "southern" subgroup comprising *scurra* and *modesta* (and perhaps *manco*). Both subgroups are separated by a wide area (covering most of central and northern Ecuador), where no species of the group were ever sampled.

The female of *C. scurra philotina* Röber, 1924 **comb. nov. stat. rev.** (and generally speaking of *scurra*, too) was previously undescribed and we illustrate it here (figs. 6-7). We examined in our own collection three females from Southern Ecuador and one from Peru. In fact the same subspecies is not uncommon in northern Peru (Amazonas). Peruvian records in our own collection include: Rodriguez de Mendoza, Pedro Ruiz Gallo, Laguna de Pomacochas and the track between Molinopampa and Granada. In all localities, but Rodriguez de Mendoza, it is sympatric with *Catasticta modesta*.

#### *Catasticta incerta* Dognin, 1888

*C. incerta incerta* (Dognin, 1888) was originally described from Ecuador, Loja, Valle de Zamora. The female remained unknown. We recently received a female of this species, collected in November 2000 along the old road Loja-Zamora (Loja Prov., m. 2500) and here illustrate this interesting specimen (figs. 8-9).

#### *Catasticta seitzi* Lathy & Rosenberg, 1912

New chorological data about the Ecuadorian populations of *C. seitzi* were recently provided (BOLLINO & VITALE, 2002). During a field trip to Ecuador on January 2002, we obtained a female of the subspecies *blanca* Reissinger, 1972 collected near Guarumales (Azuay) at 2200 m. a.s.l., so we illustrate it (figs. 10-11). Furthermore we also examined a female of *C. seitzi seitzi* Lathy & Rosenberg from Colombia (Caldas). A further female of *seitzi seitzi* was recently examined in coll. Reissinger (Staatssammlungen Museum für Naturkunde, Stuttgart, Germany).

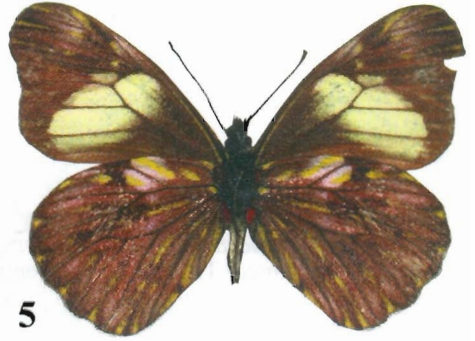
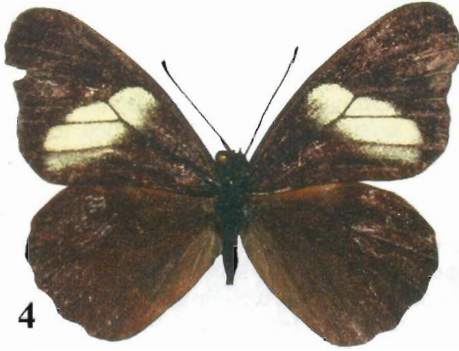
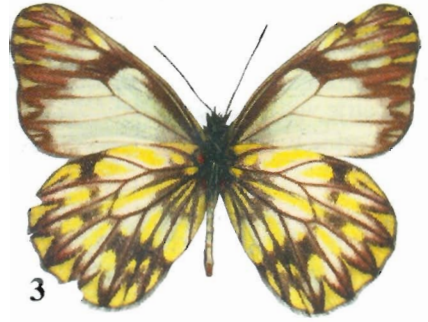
#### *Catasticta philodora* Brown, 1939

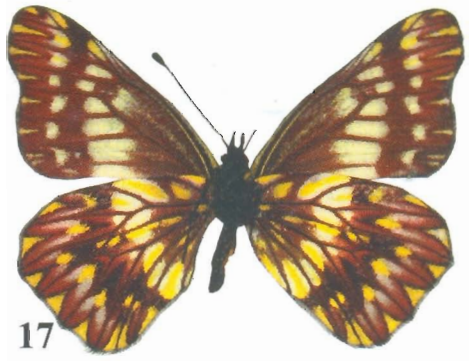
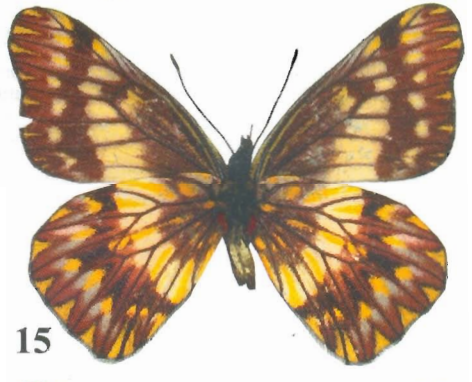
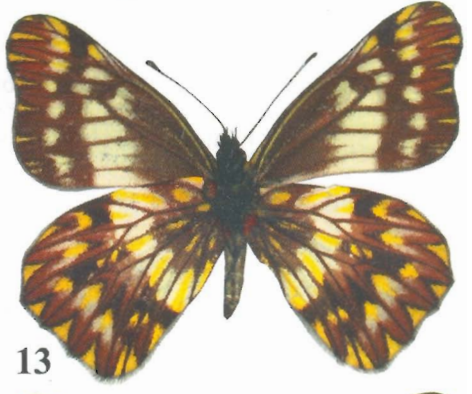
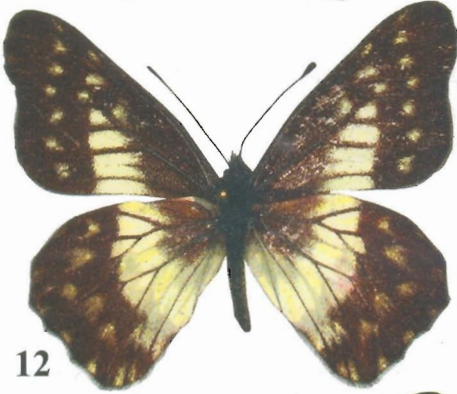
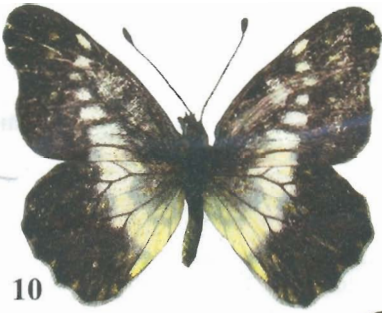
*C. philodora philodora* Brown, 1939 was described from E-Ecuador, Rio Pastaza, Rio Blanco. The female has remained unknown. The second author collected an extensive series of females of this species at the Yanayacu Biological Station. This series shows that females in the area are polymorphic. In fact, we observed white, yellow and intermediate patterns (figs. 12-17). The presence of bimodal (sensu VANÉ-WRIGHT, 1975) *Catasticta* populations with polymorphic females has never reported before. If the existence of bimodal populations can be confirmed in other species, it would be of great help in understanding systematic relationships within and between many critical taxa.

#### Brief considerations on the rarity of *Catasticta* females.

As previously mentioned, females of *Catasticta* are rarely collected and poorly represented in reference collections. It's our opinion that this is a results of the behaviour and natural history of the group. **Males** tend to be more visible, and thus more frequently collected, due to their propensity to gather in large numbers at seeps and streams. (DE VRIES, 1987 and pers. obs.). **Females**, however, rarely exhibit this "puddling" behaviour and are most frequently encountered visiting flowers. In the area of Yanayacu Biological Station (Cosanga, Ecuador) females are most frequently found feeding on flowers of three Asteraceae (*Vernonia*, *Erato* and *Munnozia*) (H. Greeney, pers. obs. (ms.)). The opportunity to find flowers in the neotropics is, in any case, quite rare, and this would explain one of the reasons of rare opportunities to observe the females of *Catasticta*, even if locally (especially in disturbed areas or in cloud forest) it is not necessarily true.

Known host plant relationships are all within the Loranthaceae (DE VRIES, 1987; EITSCHBERGER & RACHELI, 1998). This family of plants contains mostly shrubs living as partial parasites on aerial parts of the host. The location of host plants and observations from the field suggest that *Catasticta* female are canopy dwellers, thus affording only rare opportunities to observe and capture them. Female rarity is higher for the common species encountered at middle altitude, while females of much scarcer high elevation species belonging to the (sub)genus *Leodontoia* are, in proportion, more frequently collected.





If we consider, for example, the case of *Catasticta anaitis* (Hewitson, 1869), in spite of hundreds of males observed both in the field and in our own collections, we obtained only two females. In contrast, RACHELI (1996) reports 6 males and 2 females of *Catasticta (Leodontoia) cinerea* Butler, 1897 and 10 males and 4 females of *Catasticta (Leodontoia) albofasciata* Lathy & Rosenberg, 1912 as known from Ecuador. This evidence induced us to investigate the altitudinal distribution and growth habits of ecuadorian Lorantheaceae. We examined a list of Lorantheaceae reported from Ecuador (WATSON, L. & DALLWITZ, M.J., 1992 onwards) which indicates altitudinal variation in relevant Lorantheaceae genera. Most high altitude Lorantheaceae (f.e. *Aetanthus*, *Cladocolea*, *Tristerix*, *Struthantus*) are shrubs living as parasites on roots of the host. If these are in fact host plants for high elevation *Leodontoia*, females of these species would be expected to be encountered closer to the ground while searching for suitable oviposition sites. Females of lower elevation *Catasticta* s.s. would, in contrast, be more likely to spend time in canopy searching for suitable host plants.

### Acknowledgements

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- Fig. 2 – 3. *Catasticta eurigania eurigania* ♀ - Ecuador – Morona Santiago, km. 17 road Gualaquiza-Macas, m. 1600, 25<sup>th</sup> april 1998, Lg. & coll. Bollino
- Fig. 4 – 5. *Catasticta ctemene ctemene* ♀ - Ecuador – Morona Santiago, above Macas, Volcan Sangay, m. 1700, IX-X.2001, coll. Bollino
- Fig. 6 – 7. *Catasticta scurra philotina* ♀ - Ecuador, Loja, old road Loja-Zamora, m. 2500, XI.2000, coll. Bollino
- Fig. 8 – 9. *Catasticta incerta incerta* ♀ - Ecuador, Loja, old road Loja-Zamora, m. 2500, XI.2000, coll. Bollino
- Fig. 10 – 11. *Catasticta seitzii blanca* ♀ - Ecuador, Azuay, road Mendez-Guarumales, 2° 37' S 78° 32' W, m. 2200, X.2001, coll. Bollino
- Fig. 12 – 17. *Catasticta philodora philodora* ♀♀ - Ecuador, Napo, Yanayacu Biological Station, 0°36' S 77°52' W, m. 2100-2500, Lg. Harold Greeney, coll. Bollino