

Description of a new species of *Lonomia* WALKER, 1855 from eastern Ecuador (Lepidoptera: Saturniidae, Hemileucinae)

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Abstract: A new species of the genus *Lonomia* WALKER, 1855 from the eastern slopes of the Andes in Ecuador, Napo province, is described and figured on the basis of a single male specimen. Given the high variability in the external pattern of several species belonging to the genus *Lonomia*, the most significant differences between the new species and its allied species, i.e. *Lonomia achelous* (CRAMER, 1777), have been recognized by comparing their male genitalia. For this reason, the differences in the external morphology between the new species and *Lonomia achelous* must be taken cautiously.

Introduction

The species belonging to the genus *Lonomia* have been recently reviewed by LEMAIRE (2002) in his monograph on the Hemileucinae. A total of 11 biological species and a single subspecies have been recognized within this genus.

Only three species of the genus *Lonomia* are known to occur in Ecuador (LEMAIRE & VENEDICTOFF, 1989; LEMAIRE, 2002). In preparing a checklist of the Hemileucinae of Ecuador (RACHELI & RACHELI, 2005), a single specimen from moderate elevation in the Napo province has been listed as a possible new species. Our statement was based on few main reasons concerning the Ecuadorian species belonging to this genus and their geographical and altitudinal ranges. This specimen shows a reddish ground colour not found in the Ecuadorian populations of *L. achelous*. Although LEMAIRE (2002) pointed out that *L. achelous* has the same number of different morphs as *L. obliqua* WALKER, 1855, we have no records of morphs characterized by this kind of reddish ground colour for both *L. achelous* and *L. obliqua*. The ground colour of this specimen is quite similar to that of *L. rufescens* LEMAIRE 1972 figured by LEMAIRE (2002: pl. 3, fig. 11) but it is not properly the same. In any case, the ground colour of this specimen did not provide the evidence to describe it as a new species. Indeed, the most interesting observation refers to the collecting site of this

specimen at 1600 meter altitude. LEMAIRE & VENEDICTOFF (1989; see also LEMAIRE 2002) did not mention records for *L. achelous* at so high altitudes in Ecuador. Also on the basis of the Ecuadorian specimens of *L. achelous* examined, we noticed that all specimens were collected below 1000 meter altitude and all of them fit with the specimen from Ecuador figured by LEMAIRE (2002: pl. 2, fig. 11). Subsequently, the dissection of this single male specimen revealed remarkable differences in its genitalia apparatus. These features have not been found in the dissected specimens of *L. achelous* from lowland sites as well as in other *Lonomia* species.

***Lonomia francescae* L. RACHELI, new species**

Holotype male (Fig. 1), Ecuador, Napo, Cocodrilo, 1600 m, 7.III.1998, O. VELASTEGUI leg., genit. prep. L. RACHELI no. LO7, L. RACHELI coll., Rome. It will be deposited in the Muséum National d'Histoire naturelle of Paris, France.

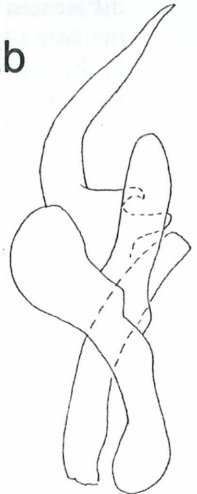
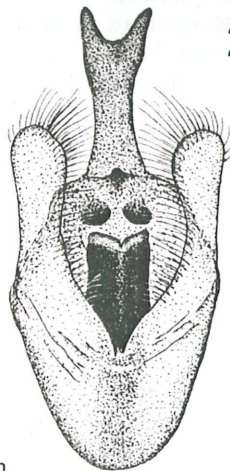
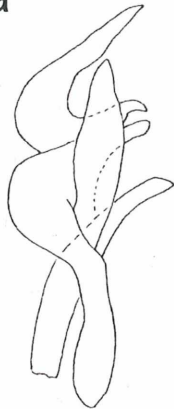
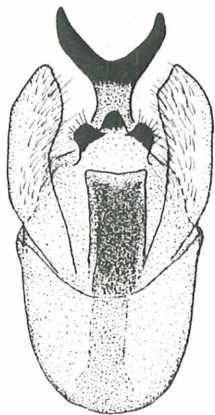
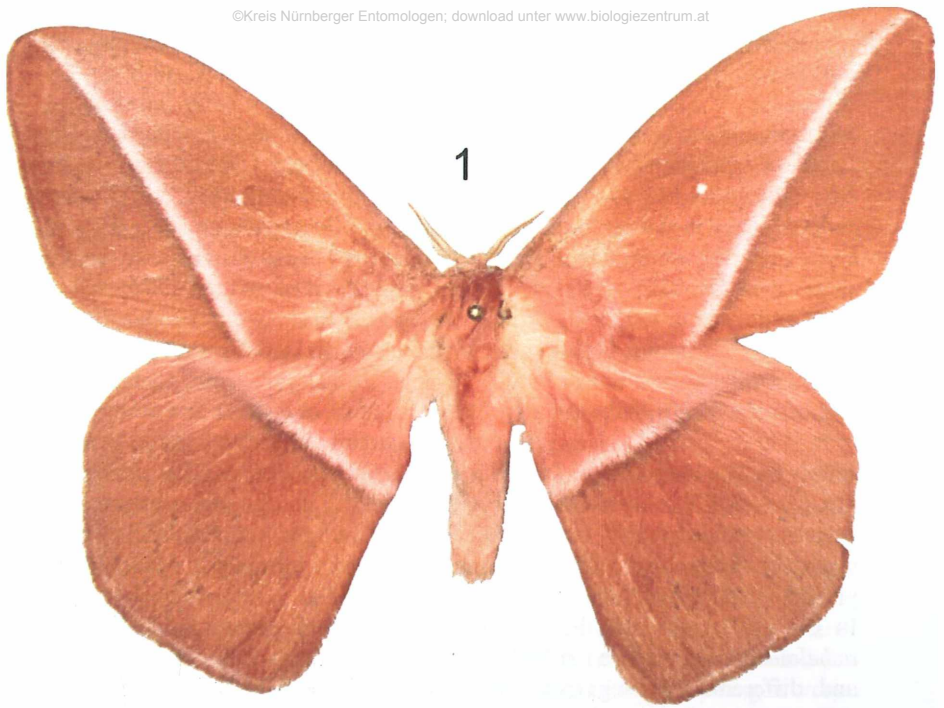
Forewing length: 41 mm. Antennae ochre-yellow. The head, thorax, abdomen, legs and the ground colour of the upperside of the wings are pinkish-red. On the forewing upperside, a double coloured oblique line from the apex to the inner margin. This line is pink coloured in the discal side and greyish-black in the external submarginal side. A white point is present in the discal cell. The shape of the apex is rounded. On the forewing underside the ground colour is similar to the upperside but with a light pinkish-white line from the costa (near the apex) to the inner margin. A double coloured point is present in the discal cell. It is greyish black rounded by white colour. A further very little greyish white point is present in the discal cell near the costa. An irregular light pinkish-white band is present in the discal-submarginal areas.

On the hindwing upperside, the ground colour is the same as on the forewing with a line from the costa to the inner margin showing the same features as those of the forewing. This line separates the postdiscal from the basal areas. On the underside, the basal area, part of the discal area and the inner margin are light pinkish-white. An irregular light pinkish-white band

Colour figures:

Fig. 1: *Lonomia francescae* n. sp., holotype male.

Fig. 2 a: *Lonomia francescae* n. sp., holotype male, genitalia, ventral and lateral views. Fig. 2 b: *Lonomia achelous* (Ecuador, Napo prov., Misahualli), male genitalia, ventral and lateral views.



2 mm

is present in the discal-submarginal areas. The remaining areas are pinkish-red. Two very little blackish brown points are present in the discal cell.

Male genitalia (Fig. 2 a): the structure of the male genitalia is typical for the *Lonomia* species (see for comparisons LEMAIRE, 2002: figs. 1–2). Generally, it shows analogies with those of *L. achelous* (Fig. 2 b) and *L. rufescens* but in particular with the former. In detail, the uncus is bilobed and completely sclerotized. The two projections form a semicircle with a shape similar to that of *L. rufescens* as figured by LEMAIRE (2002: fig. 2). The shape of the gnathos is similar to that of *L. achelous* but larger and completely sclerotized. The gnathos is characterized by three similarly shaped projections whereas in *L. achelous* the central projection is much reduced. In the frontal view, the harpe is more elongated and it shows a triangular shape and an irregular margin apically. It is not squared as in *L. achelous*. The shape of the saccus is rounded similar to that of *L. descimoni* LEMAIRE, 1972. The most important features of the genitalia of the new species are the shape of the sclerotized uncus and gnathos. Furthermore, the shape of the uncus with their long projections forming a semicircle is present in this new species only.

In the posterior view, the differences between the new species and *L. achelous* are even more marked. The shape of the uncus is clearly outlined and different. The tegumen shows a basal irregular margin which is different from the semicircular shape of *L. achelous*.

Comparing the genitalia of the new species with that of *L. achelous*, some differences have been noticed also in the aedeagus. In detail, the shape of the apex of the aedeagus of the new species is regular, and it is less convex in the central part. In contrast, the same part is bilobed in *L. achelous* and the central part shows a marked triangular shape.

Although the eighth sternite is usually quite variable within populations of the same species, we briefly describe that of the new species comparing it with that of *L. achelous*. The eighth sternite of the new species is characterized by two pairs of spines which are sclerotized apically. The space between these two pairs of spines is shaped as an enlarged “U” The shape of the eighth sternite of *L. achelous* is characterized by the same pairs of spines which are more sclerotized and with the medial spines of the two pairs turned inwards. The position of these spines reduces the space between the two pairs of spines to an area which is almost an open circle.

Female unknown.

Etymology: This new species is dedicated to Francesca Tonini.

The description of the male genitalia of *L. francescae* n. sp. is based on comparisons with the male genitalia of *L. achelous* from some pre-Andean and lowland sites in Ecuador and Peru. Further comparisons have also been made on the genitalia figures given by LEMAIRE (2002). Analyzing and comparing the male genitalia of the above mentioned specimens, some differences were evidenced between the new species and *L. achelous*.

Furthermore, some inconsistencies in LEMAIRE's (2002) figure of the male genitalia of *L. achelous* have been noticed. In detail, all the male genitalia of *L. achelous* we examined do not show the shape of the uncus as depicted in LEMAIRE's figure 2. Although we are not informed about the collecting site of the specimen of *L. achelous* dissected by LEMAIRE, the uncus in all the specimens examined by ourselves shows a different shape mainly due to the projections of the uncus forming a semicircle. On the other hand, it is confirmed that the uncus of *L. achelous* is not sclerotized as shown in LEMAIRE's figure.

The external morphology of the holotype shows some features shared with the male specimen of *L. achelous* from Bolivia figured by LEMAIRE (2002: pl. 2, fig. 9). Excluding the differences in their ground colours, they share the same shape of the forewing with a round apex usually not found in lowland specimens of *L. achelous*. Also the shape of the hindwing is very similar to both the holotype and the specimen from Bolivia. It seems possible that Bolivian specimens reported by LEMAIRE (2002) from medium elevations (1600–1900 m) may refer to this new species. However, only through the genitalia examination it will be possible to confirm their identification.

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