

# Notes on the identity of *Phalaena Attacus cassandra* Cramer, [1779] (Lepidoptera: Saturniidae, Arsenurinae)

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## Abstract

The identity of *Phalaena Attacus cassandra* Cramer, [1779] is established, based on a female reared from a caterpillar that matched the description and illustration by STOLL (1790), raising the following questions: Are *Attacus armida* and *Attacus cassandra* really the same species, or two different species, as supposed by CRAMER (1771 [1779]), when described the adults, and Stoll, when he described the caterpillars? If they are the same, are the caterpillars polymorphic? Illustrations of the larvae and adult provide evidence that support these questions.

KEY WORDS: Lepidoptera, Saturniidae, Arsenurinae, *Arsenura*, synonymy, immatures, food plants, distribution, Neotropical.

## La identidad de *Phalaena Attacus cassandra* Cramer, [1779] (Lepidoptera: Saturniidae, Arsenurinae)

## Resumen

La identidad de *Phalaena Attacus cassandra* Cramer, [1779] se establece en base de una hembra criada de una oruga idéntica a la de la descripción e ilustraciones presentadas por STOLL (1790), levantando las siguientes cuestiones: ¿son *Attacus armida* y *Attacus cassandra* realmente la misma especie, o son dos especies distintas, como supuso CRAMER (1771 [1779]) al describir los adultos y Stoll al describir las orugas? si acaso son la misma ¿son las orugas polimórficas? Se presentan ilustraciones de las orugas y de los adultos que ofrecen las evidencias que soportan estas cuestiones.

PALABRAS CLAVE: Lepidoptera, Saturniidae, Arsenurinae, *Arsenura*, sinonimia, orugas, plantas nutricias, distribución, Neotropical.

## Introduction

CRAMER (1772 [1779]: 6-7, pl. 197, figs A, B), described two similar species of Saturniidae, from Surinam, based on specimens presumably reared from distinct caterpillars, described by STOLL (1790: 93-94, pl. 19, figs 1 A, B; 2 C, D): *Phalaena Attacus armida*, based on a male reared from a black caterpillar, and *Phalaena Attacus cassandra*, based on a female reared from a yellow caterpillar.

FABRICIUS (1781: 169), before the publication of Stoll's work, assuming that both names were junior homonyms, proposed *Bombyx erythrinae* Fabricius, 1781 as a replacement name, inspired by the illustrations and description by MERIAN (1705: pl. 11), who stated that the species was reared on *Erythrina fusca* (BECKER & STEARN, 1982:178), regarding *Phalaena Attacus cassandra* as a junior synonym of *Phalaena Attacus armida*, a synonymy accepted by all subsequent authors (BOUVIER (1931: 231), LEMAIRE (1976: 219, 1980: 26, 1996: 28), TRAVASSOS & NORONHA (1970: 107),

except for DRAUDT (1930: 792) and SCHLÜSSER (1936: 15), who regarded *Arsenura cassandra* as a good species, and *A. erythrinae* as a form of *A. armida*. A female, reared by the author, from a caterpillar that matches the description and illustration of *Phalaena Attacus cassandra*, raises doubts about this synonymy, as seen below.

## Abbreviations

CPAC Centro de Pesquisa Agropecuária dos Cerrados, Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), Planaltina, DF, Brazil

USNM National Museum of Natural History, Washington, DC

## Results

A female (CPAC 5580) (Fig. 2) reared by the author from a yellow caterpillar matching exactly the description and illustrations by STOLL (1791: 93, pl. 19, figs 2 C, 2 D), brings new evidence that *Arsenura cassandra* and *A. armida* might be distinct species.

Immatures (Figs 3-6): The larvae of *A. armida* (Figs 3-4) are banded black and yellow, or entirely black as given by STOLL (1791: pl. 19, figs 1, 1 A), presumably an extremely melanic form, or a larva with the body retracted hiding, almost totally, the yellow bands, with head, abdominal legs and last abdominal segment, red, whereas that of *A. cassandra* (Figs 5-6) are bright yellow with small dots and short, thin black lines scattered along the body, and with head, abdominal legs, and last segment of abdomen red, as in the former. The illustrations and description of the larvae by MERIAN (1705: 11), reproduced here (Fig. 7): “it is yellow with black stripes...”, clearly indicates that the species belongs to *A. cassandra* (Cramer). These differences seems consistent throughout their development, as illustrated by Stoll. The proportion of black and yellow, of *A. armida* varies (as shown by the many images available on the internet), from almost totally black to nearly all yellow, banded with thin black rings.

Food plants: The caterpillars of *Arsenura* spp. are commonly found feeding on several species of Malvaceae [currently including the species formerly included in the Bombacaceae, Sterculiaceae and Tiliaceae), such as *Bombax*, *Guazuma*, *Luhea*, *Theobroma*, etc., but also on plants of other families, like Annonaceae (*Annona*, *Rollinia*, etc.) (SILVA *et al.*, 1968). No record for *A. cassandra* food plant was found in the literature. The larva studied here was found feeding of the leaves of *Guazuma ulmifolia* Lam. (Malvaceae), at Planaltina, close to Brasília, DF, Brazil. *Erithrina fusca* Lour., as the food plant, mentioned by MERIAN (1705), is probably a mistake as neither *A. cassandra*, nor *A. armida* have been reared on Fabaceae. Such confusions occur throughout Merian’s work. As Merian painted the illustrations separately, on individual pieces of paper, she either had lost her notes or had their associations wrong, mixing them up when, back in Holland, she assembled the plates. For these reason her work had been strongly criticized by early authors, as mentioned by STEARN (1982: 82): “Thus from these critical surveys of Merian’s work by Guilding and Burmeister it was evident indeed that the larvae, pupae and perfect insects she portrayed together on a single plate were not necessarily connected with one another or with the associated plant. This does not mean that her work lacks scientific value.”

Distribution: *Arsenura armida* is widely distributed throughout South America, from Colombia to Bolivia (LEMAIRE, 1980: 26, fig. 8).

Remarks: As the type material of both *Phalaena Attacus armida* and *P. A. cassandra* are lost, LEMAIER (1980: 26) designated as neotypes a couple of specimens from Surinam, the type locality of both species. The female (Fig. 2), reared from a yellow caterpillar that matched exactly the description of the female of *A. cassandra* by Cramer (Fig. 1) and of the caterpillars by Stoll (Figs 5, 6) matches the description and illustrations of the female of *A. armida*, as described and illustrated by LEMAIER (1980: pl. 1, fig. 2; pl. 2, fig. 2; pl. 4, fig. 2). This evidence: a distinct caterpillar, originally described as *P. A. cassandra*, resulting in a female that matches the females of *P. A. armida*, as

currently accepted, raises doubts about the status of the two names. Do they really represent the same species, or they are distinct species? If, distinct species, which name should be applied to what is currently considered *A. armida*? *Arsenura armida* is the most common of the species of the genus, and it's conspicuous, gregarious caterpillars are frequently found during day time on the trunk of the host plants (what is indicated by the many pictures posted in the internet). At night they move up to the canopy to feed. On the contrary, the caterpillars *A. cassandra* seems to be less common (a search in the internet and literature gave no results). It seems that some indigenous people regard the caterpillars of the former a delicacy. During a collecting trip to the Amazonian side of Ecuador, at the Misahualli lodge, it was observed a couple of native girls, very excited, shouting something like “tipuli culi, tipuli culi”, picking the caterpillar they spotted on the trunk of a tree, that they took home (“very delicious”, according to one of them). The natives of Mexico and Guatemala also regard the caterpillars, that they call “cholote”, “cuecla”, “zat”, etc., as a delicacy (LANDERO-TORRES *et al.*, 2012).

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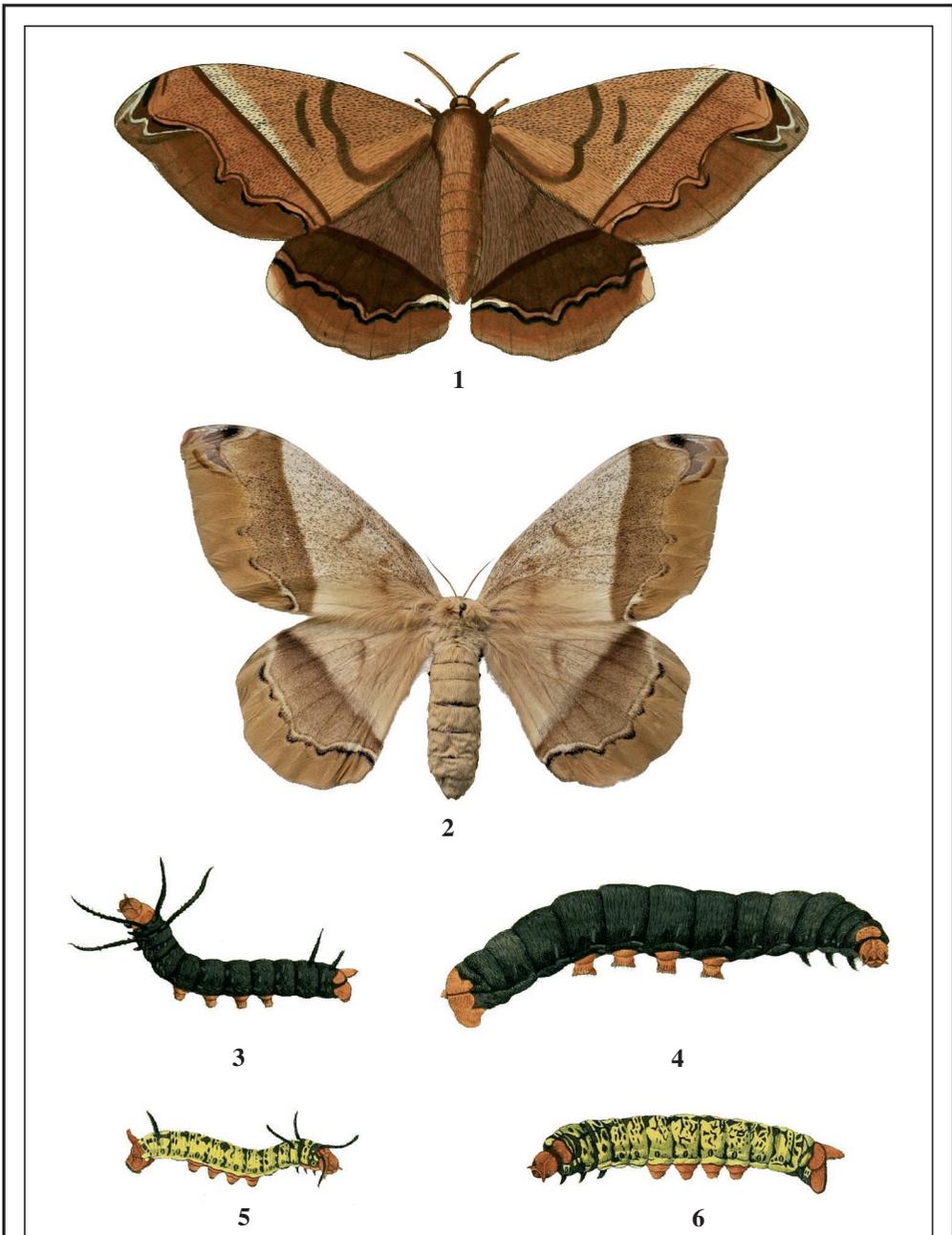
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**Figs 1-6.**— *Arsenura cassandra* and *A. armida*. **1.** *A. cassandra*, female, Surinam (from Cramer, 1779, pl. 197 B). **2.** *A. cassandra*, female, reared from a larva collected in the DF, Brazil. **3-4.** *A. armida*, caterpillars (from Stoll, [1790], pl. 19 1A, B). **5-6.** *A. cassandra*, caterpillars (from Stoll, [1790], pl. 19 2 C, 2 D).



Fig. 7.— Merian's 1705: pl.11.