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Rainieria antennaepes **(Say, 1823)** foto: U. Drechsel

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The immature stages of *Leucanella aspera* (R. Felder & Rogenhofer, 1874) (Lepidoptera: Saturniidae: Hemileucinae)

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Abstract: The immature stages of *Leucanella aspera* (R. Felder & Rogenhofer, 1874) of paraguayan origin are described. In the wild a female was found in the Presidente Hayes department which laid a few ova. In the laboratory larvae were fed with leaves of *Terminalia catappa* L. (Combretaceae). Ova, seven larval instars, pupa, cocoon and adults are illustrated.

Resumen: Los estados larvales de *Leucanella aspera* (R. Felder & Rogenhofer, 1874) de origen paraguayo se describen. En la naturaleza se encontró una hembra en el departamento de Presidente Hayes la cual puso huevos. En el laboratorio se alimentaron las larvas con hojas de *Terminalia catappa* L. (Combretaceae). Huevos, siete estadios larvales, pupa, capullo e imagos se ilustran.

Zusammenfassung: Die Larventadien von *Leucanella aspera* (R. Felder & Rogenhofer, 1874) paraguayischen Ursprungs werden beschrieben. In freier Wildbahn wurde ein Weibchen im Departament von Presidente Hayes gefunden, welches einige Eier ablegte. Im Labor wurde mit Blättern von *Terminalia catappa* L. (Combretaceae) gefüttert. Fotographien von Eiern, sieben Raupenstadien, Puppe, Kokon und Imagos werden gegeben.

Key words: Paraguay, Saturniidae, Hemileucinae, *Leucanella aspera*, early stages.

Introduction

Two species of the genus *Leucanella* Lemaire, 1969 are found in Paraguay: *Leucanella memusae* (Walker, 1855), widely spread over the Oriental Region, and *L. aspera* (R. Felder & Rogenhofer, 1874), a typical element of the Chaco fauna, but can be found also in Uruguay and northern Argentina from Buenos Aires to Tucuman provinces (Lemaire, 1973) and in Bolivia (IBOL, 2009).

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Material and methods

The starting materials for the breeding were ova originated from a female which was found depositing eggs on a twig of *Prosopis nigra* Griseb. (Fabaceae) in Chaco Lodge, Laguna Salada, in the department of Presidente Hayes (Fig. 1). The ova were transported to the laboratory and repeatedly sprayed with water until the hatching of larvae. Leaves of *Terminalia catappa* L. (Combretaceae) were offered as food and adopted without delay. Classification and terminology of scoli follow Deml & Dettner (2002). Measurements of head capsules were taken with a binocular microscope with micrometric eyepiece. Voucher specimens of adult moths will be deposited in the *Museo Nacional de Historia Natural del Paraguay.*

Immature stages

Ova: The pale green eggs are laid close together in large groups (Fig. 2). They have an oval shape and are flattened laterally, measuring 1.6 x 1.1 x 0.9 mm. The micropyle at the pole of the long side is always opposite to the base of the egg mass. After six days, the color of the eggs changes to light brown and the micropyle is visible as a dark spot (Fig. 3). After another eight days one can see the black head capsules of evolving larvae behind the translucent eggshell (Fig. 4).

First instar: The first instar larvae hatched after 17 days since oviposition. During the first day larvae remained on the egg shells and devoured a large part of the shells. Head is black, body light-brown, bearing eight longitudinal rows of urticating scoli on abdominal and thoracal segments. The dorsal and subdorsal scoli are black, the lateral scoli are whitish. The thoracic scoli are bifurcated at the top, the abdominal scoli have a simple tip. Each scolus tip armed with a seta half as long as the scolus (Fig. 5). Duration of the first instar: 6 days.

Second instar: Head is black brown, legs are reddish brown, body whitish with purple-black spots. Thoracic scoli longer than abdominal scoli, top bi- or trifurcated, bearing numerous bristles (tree-shaped urticating setae). Additionally to the longer setae at the tip all scoli are bearing several shorter lateral bristles (Fig. 6). Duration of the second instar: 6 days.

Third instar: Head and legs as before, body whitish with purple and black spots. Scoli as before with a higher number of lateral bristles (Fig. 7). Duration of the third instar: 6 days.

Fourth instar: Head and legs as before, body whitish light blue, each segment apical black-purple. This coloration dissolves caudal to netlike, leaving the whitish base color appear as small spots. Scoli as before (Fig. 8). Duration of the fourth instar: 5 days.

Fifth instar: Shape and coloration as before (Fig. 9). Duration of the fifth instar: 6 - 7 days.

Sixth instar: Shape and coloration as before (Fig. 10). Duration of the fifth instar: 7 - 9 days.

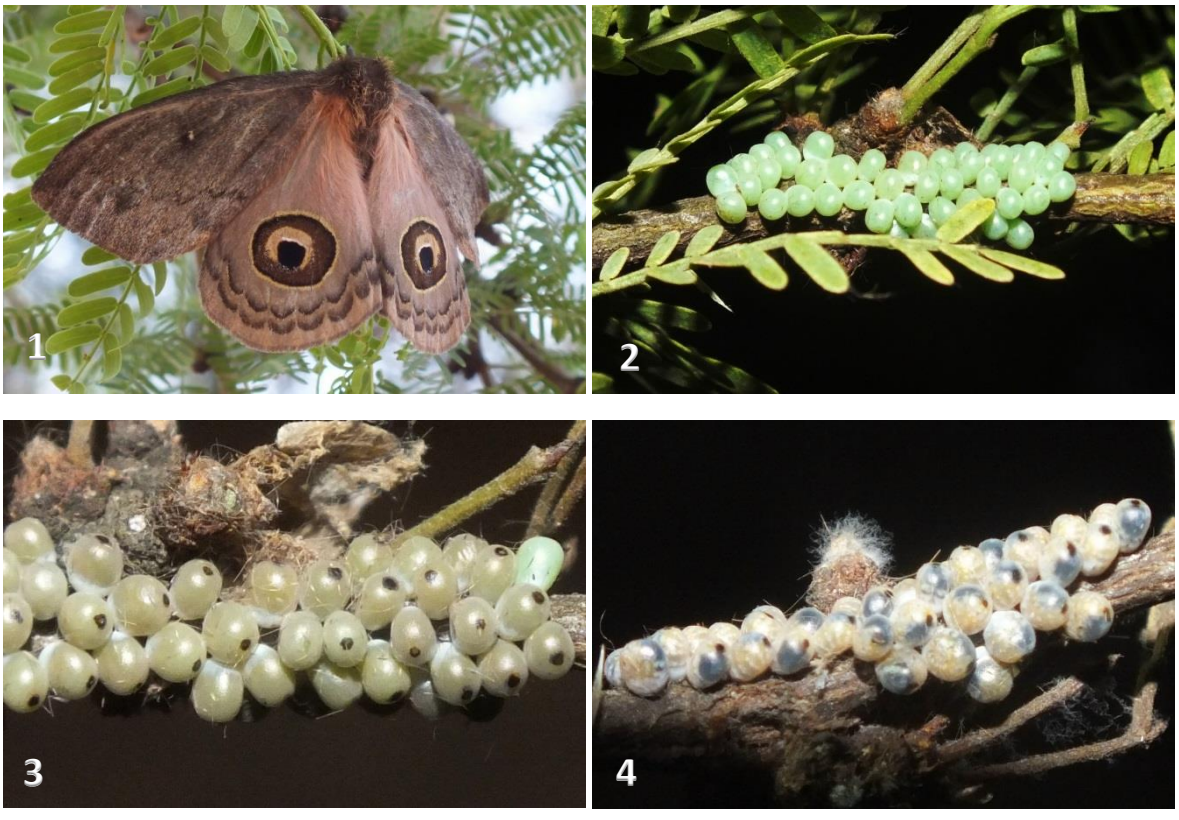
Seventh instar: Shape and coloration as before (Fig. 11). Duration of the fifth instar until the beginning of weaving of the cocoon: 7 - 11 days.

Prepupa: Time interval between the beginning of cocoon spinning and pupation: 4 days.

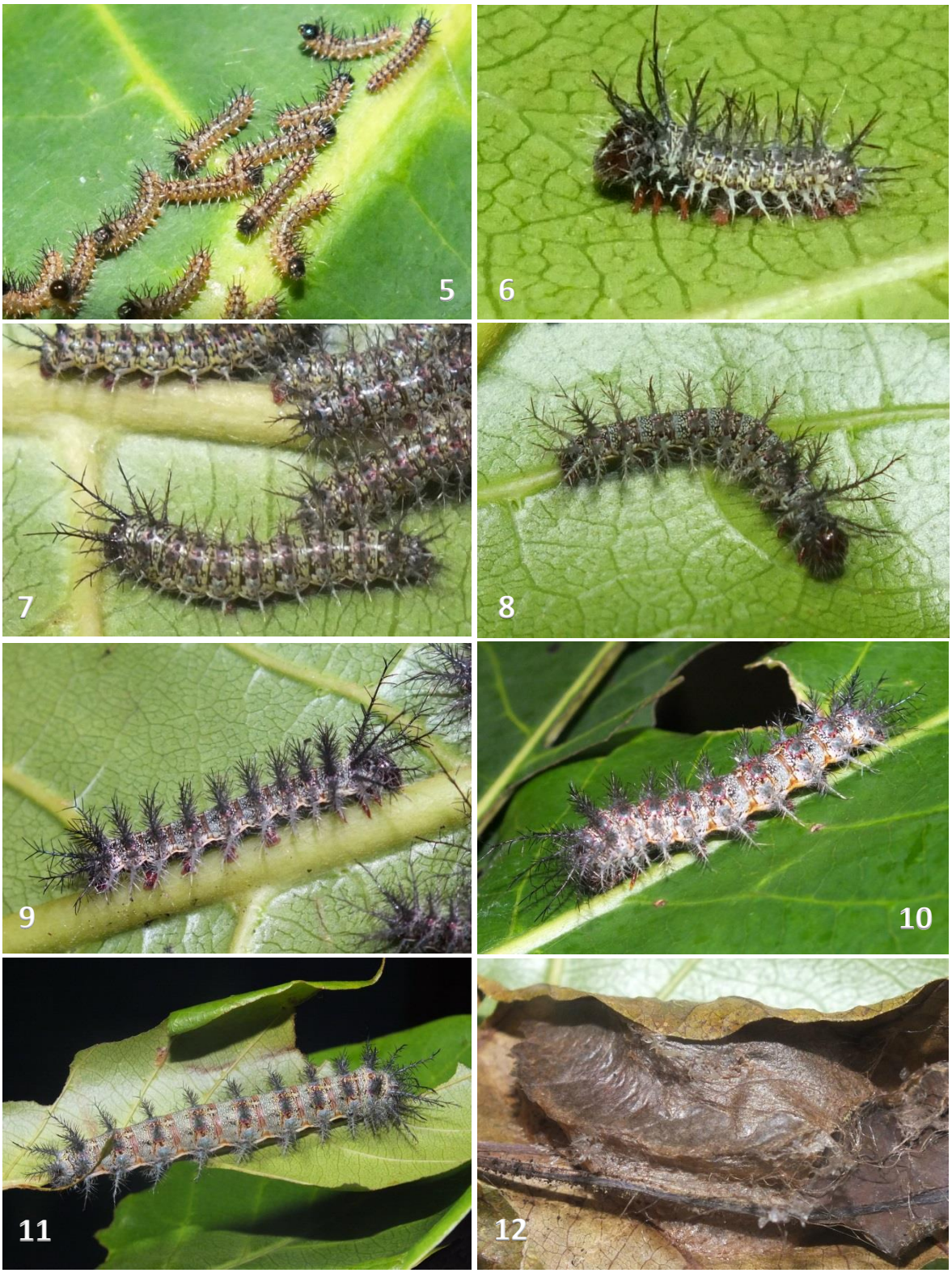
Cocoon: The cocoon is made of brown silk, individually between leaves or other objects. The exterior has a shriveled aspect at the sites where it is not attached to an object. The inner side is smooth, apical the cocoon is blocked with a hole-like openwork silk layer (Figs. 12, 13, 15).

Pupa: The basic color of the pupa is maroon, mouthparts, abdominal spiracles and the dividing lines between the abdominal segments are dark brown (Fig. 14).

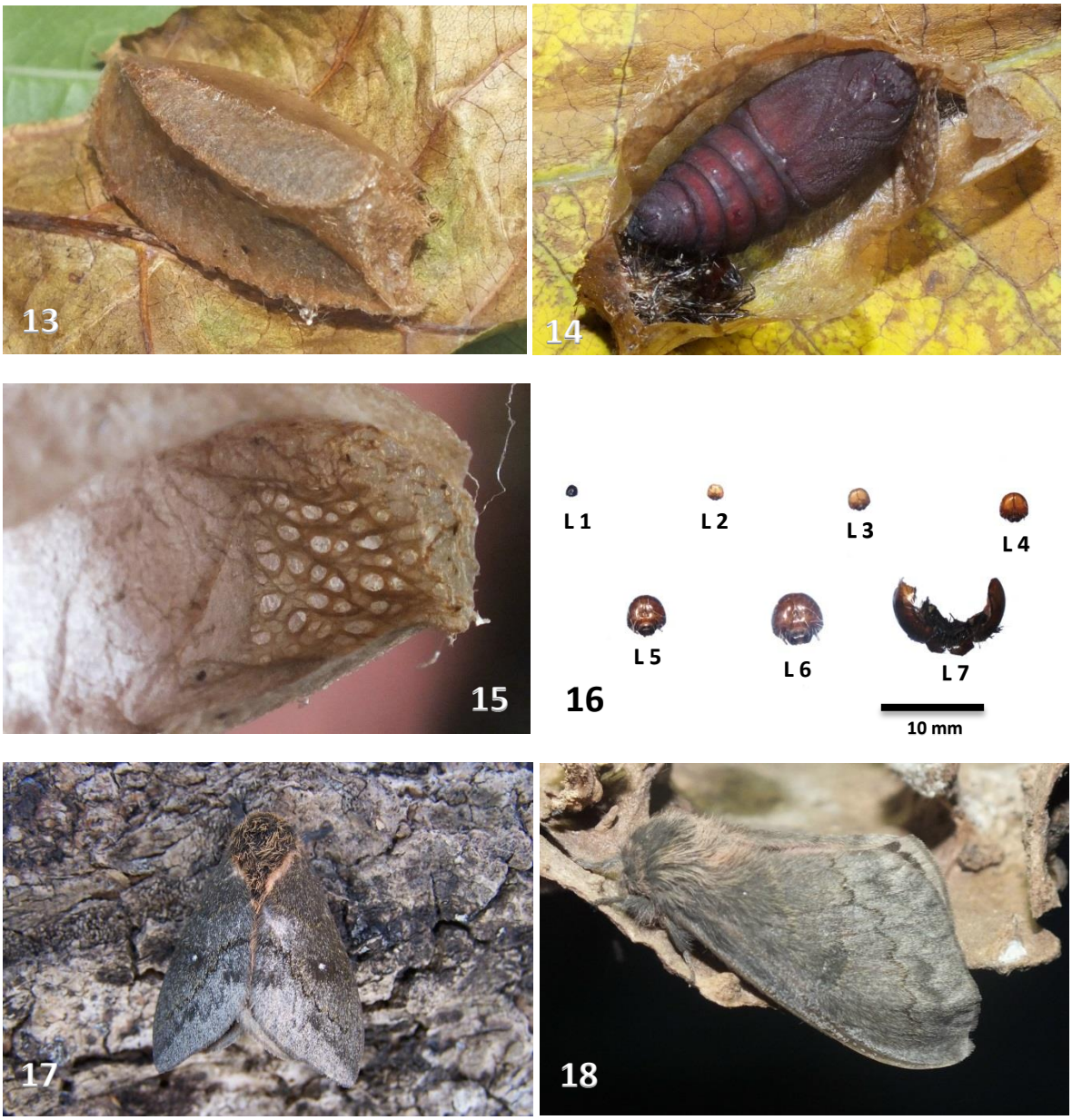
Imago: The first moth, a male, emerged 26 days after pupation, the first female 29 days after pupation.



Figs. 1-2: *L. aspera*; 1) female laying eggs; 2) egg group on a twig of *Prosopis nigra*; 3) ova, six days old; 4) ova, fourteen days old, the black head capsules of the larvae can be seen through the egg membrane



Figs. 5-12: *L. aspera*; 5) first instar; 6) second instar; 7) third instar; 8) fourth instar; 9) fifth instar; 10) sixth instar; 11) seventh instar; 12) cocoon



Figs. 13-18: *L. aspera*; 13) cocoon; 14) cocoon opened with female pupa; 15) the inner face of the apical end; 16) head capsules of seven larval instars; 17) male; 18) female

Discussion

The entire cycle from egg laying to appearance of the first moth lasted 85 days. Larvae live extremely gregarious during the first four instars, feed, rest and molt at the same time. During the first three instars the larvae stay close together and do not leave their places not even at distur-

bance. From the fourth instar they change their behavior and drop to the ground when disturbed and fast running in all directions try to hide under a cover. From the fifth instar, the community dissolves into smaller groups. Members of each group feed, rest and molt together, the beginning of the molting of each group extends over several days. From the seventh instar the groups too are dissolved and the larvae dispersed around. The difference in size between the first and last molted larvae is now strikingly. Pupation takes place individually in a cocoon of brown silk. Handling the larvae and even the cocoons can cause painful stinging. The fine setae of the scoli break off very easily and float in the air, when hitting the human skin they generate a painful burning sensation.

Map: The map shows the approximate distribution in Paraguay based on the points where the species could be observed by the author. All sites are located in the Chaco with the exception of three observations, which, however, were done directly on the left bank of the Rio Paraguay with predominantly Chaco vegetation.

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FRONT COVER PHOTO: *Rainieria antennaepes* (Say, 1823) (Micropezidae) Paraguay, Dep. Paraguarí, Chircal, 2. VI. 2005