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Phobetron hipparchia (Cramer, 1777)

foto: U. Drechsel

The immature stages of *Lepidokirbya vittipes* (Walker, 1855) (Lepidoptera: Erebidae: Arctiinae)

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Abstract: The immature stages of *Lepidokirbya vittipes* (Walker, 1855) of paraguayan origin are described. In the laboratory the larvae were fed with leaves of *Psidium guajava* L. and *Plinia trunciflora* (O. Berg) Kausel (both Myrtaceae). Generation (oviposition to imago) lasted 50-55 days. Eggs, larval instars, cocoon, pupa and adults are illustrated.

Resumen: Los estados inmaduros de *Lepidokirbya vittipes* (Walker, 1855) de origen paraguayo se describen. En el laboratorio se alimentaron con hojas de *Psidium guajava* L. y *Plinia trunciflora* (O. Berg) Kausel (ambas Myrtaceae). Una generación (oviposición a imago) duró 50-55 días. Huevos, estadios larvales, capullo, pupa y adultos se ilustran.

Zusammenfassung: Die praeimaginalen Stadien von *Lepidokirbya vittipes* (Walker, 1855) paraguayischen Ursprungs werden beschrieben. Im Labor wurde mit Blättern von *Psidium guajava* L. und *Plinia trunciflora* (O. Berg) Kausel (beide Myrtaceae) gefüttert. Dauer von Eiablage zu Imago 50-55 Tage. Photographien von Ei, Larvenstadien, Kokon, Puppe und Imagos werden gegeben.

Key words: Paraguay, Erebidae, Arctiinae, *Lepidokirbya vittipes*, early stages.

Introduction

The genus *Lepidokirbya* Travassos, 1943 consists of two described species: *Lepidokirbya vittipes* (Walker, 1855), widespread in the neotropical region from Mexico to Argentina and *L. venigera* Toulgoët, [1983] from French Guyana, Brazil and Peru (Vincent & Laguerre, 2014). Although *L. vittipes* is widespread throughout the eastern part of Paraguay it is nowhere frequently encoun-

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tered. With the exception of the departments of Misiones, Central and Kanindeyú the species was detected in the entire eastern region (fig.17). Rothschild (1910) mentioned a male specimen from Paraguay (Sapucay), in the collection of the Natural History Museum, probably collected by Foster.

Material and methods

The starting material for the breeding were ova originated from a female (fig. 1) which was found in the Estancia "Laguna Ciervo" in the department of Amambay. The ova were transported to the laboratory and repeatedly sprayed with water until the hatching of larvae. Leaves of *Psidium guajava* and *Plinia trunciflora* (both Myrtaceae) were offered as food and adopted without delay. Larvae developed under ambient conditions and were housed in ventilated plastic containers. Frass of the first five instars was collected daily from the bottom of the rearing container to sort out the head capsules. 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

Egg: The singly laid eggs are hemispherical in shape 0.9 mm in diameter and 0.7 mm high. The white translucent surface is granular like a golf ball and spotted with small yellow dots (fig. 2).

First instar: First instar larvae hatched after seven days since oviposition. Shortly after hatching the pattern of the caterpillar's coloration can already be seen (fig. 3.), which is clearly and fully seen on day three (fig. 4). Basic color of body and legs pale yellowish brown, head darker brown. The first, second and front part of the third thoracic segment and the penultimate abdominal segment chestnut red, the posterior half of the third thoracic segment, the anterior edge of the first, as well as the facing halves of the seventh and eighth abdominal segments chalky white. The second and seventh abdominal segment dorsally with a dark brown transverse band, third to sixth segment white dorsal, dorsolateral dark brown. The dark brown color forms a longitudinal rectangle, which is white in the center. The warts carry two, at most three black bristles (fig. 4). Average width of head capsule 0.47 mm (n=4). Duration of the first instar six days.

Second instar: Similar to first instar except that the white "saddle" of the third to sixth segment is now dissolved in white spots, the anal plate is white and the warts wear now five to seven bristles each (fig. 5). Average width of head capsule 0.77 mm (n=4). Duration of the second instar four days.

Third instar: Head, legs, underside of the body, the first two thoracic segments and the penultimate abdominal segment red. Front half of the third thoracic segments red, rear half and anal plate white. The color of the upper side of the remaining abdominal segments similar to the second instar. The black bristles on the thorax segments are twice as long as the other, are directed forward, have white points and are inserted on black warts (fig. 6). Average width of head capsule 1.17 mm (n=4). Duration of the third instar four days.

Fourth instar: Similar to third instar (fig. 7). Average width of head capsule 1.62 mm (n=4). Duration of the fourth instar five days.

Fifth instar: Similar to the previous instar, the formerly white areas are now yellow and the black center section carries only two small yellow dots on each segment. The bristles of the subdorsal warts of the first two thoracic segments and the two dorsal warts of the penultimate abdominal segment are longer than the other. They lie close together in parallel tufts and look like protruding spikes (fig. 8). Average width of head capsule 2.05 mm (n=4). Duration of the fifth instar four days.

Sixth instar: Similar to the previous instar, the center section is now entirely black (figs. 9,10). Average width of head capsule 3.15 mm (n=4). Duration of the sixth instar five days.

Cocoon: The cocoon is made of black silk with interwoven black hair (fig. 11).

Prepupa: The caterpillar weaves its hair in the exterior layer of the cocoon and only a few stubbles remain on the warts (fig. 12). Prepupal stage lasts two days.

Pupa: The pupa is shiny dark brown and has a significant constriction between thorax and abdomen (fig. 13).

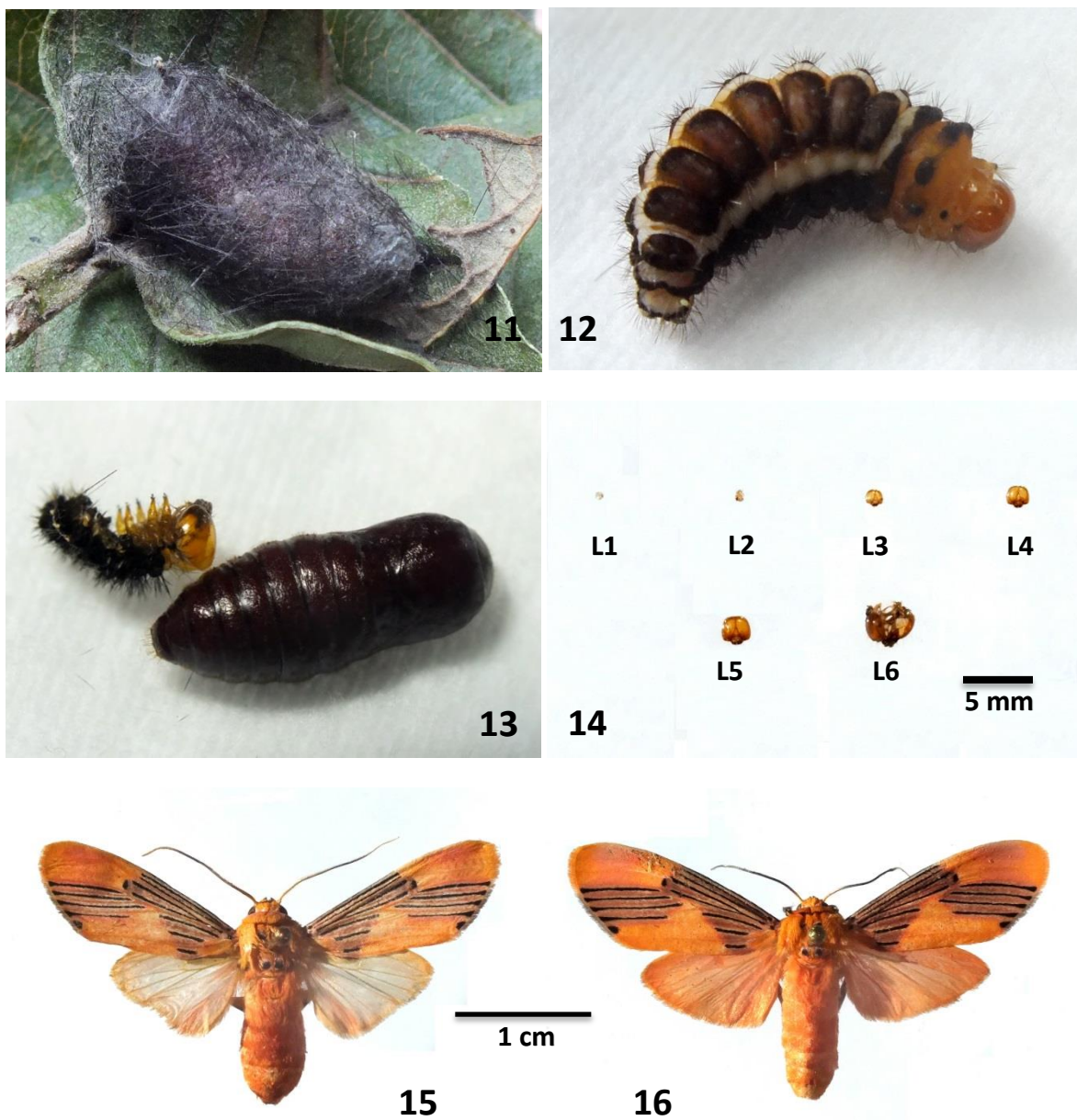
Imago: The first moth, a female, emerged 15 days after the start of weaving the cocoon, the remaining appeared within the following five days. Average wingspan of males 31 mm (n=5), of females 36 mm (n=3).



Figs. 1-2: *Lepidokirbya vittipes*; 1) female P; 2) ova



Figs. 3-10): *L. vittipes*; 3,4) first instar; 5) second instar; 6) third instar; 7) fourth instar; 8) fifth instar; 9,10) sixth instar



Figs. 11-16): *L. vittipes*; 11) cocoon; 12) prepupa; 13) pupa; 14) head capsules of all six instars; 15) male F1; 16) female F1



Fig. 17 *L. vittipes* distribution map

Discussion

Larvae of *L. vittipes* has been repeatedly found by the author on *Psidium guajava* and once on *Plinia trunciflora*. It seems that *P. guajava* is the preferred food plant, but other species of the Myrtaceae family are accepted too. So the species is considered to be a potential pest to *Eucalyptus urophylla*, because a few caterpillars had been found on this plant (Pereira et al. 2001). First instar larvae feed only on the lower epidermis of the leaf (fig. 3), second instar larvae feed on upper and lower epidermis and third instar larvae were chewing holes in the leaf. Larvae of the first instar show a “bungee jumping” behavior (Silva et al. 2014). A larva feeling threatened jumps off its leaf where it has left attached a thread of silk and is suspended in the air from where it hauls itself back again. Placed on the ground, it repeats in rapid succession several sideways directed jumps, wriggles violently leaping a distance away. From the fifth stage the caterpillar lift the front half of the body (fig.7) and make sideways beating movements, what looks threatening because of the hair tufts which look like protruding spikes.

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FRONT COVER PHOTO: *Phobetron hipparchia* (Cramer, 1777) (Limacodidae), penultimate instar larva, Paraguay, Dep. Caazapa, Tapyta, 10. IIII. 2016

