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Trigonectes balzani **(Perugia, 1891)** foto: U. Drechsel

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Notes on the biology and distribution of *Rothschildia schreiteriana* Breyer & Orfila, 1945 in Paraguay (Lepidoptera: Saturniidae)

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Abstract: Twice overwintering of cocoons of *Rothschildia schreiteriana* Breyer & Orfila, 1945 of Paraguayan origin is reported. In the wild, cocoons were found in the department of Boquerón in southwestern Chaco. Hostplant is *Vallesia glabra* (Cav.) Link (Apocynaceae). Hostplant, cocoon and adults are illustrated.

Resumen: Se informa de doble hibernación de capullos de *Rothschildia schreiteriana* Breyer y Orfila, 1945 de origen paraguayo. Los capullos se encontraron en el departamento de Boquerón, en el suroeste del Chaco. Planta hospedera es *Vallesia glabra* (Cav.) Link (Apocynaceae). Planta hospedera, capullo y adultos se ilustran.

Zusammenfassung: Zweimaliges Überwintern von Kokons von *Rothschildia schreiteriana* Breyer y Orfila, 1945 paraguayischen Ursprungs wird gemeldet. Die Kokons wurden im Departament von Boquerón im südwestlichen Chaco gefunden. Die Wirtspflanze ist *Vallesia glabra* (Cav.) Link (Apocynaceae). Fotographien von Wirtspflanze, Kokon, und Imagos werden gegeben.

Key words: Paraguay, Saturniidae, *Rothschildia schreiteriana*, prolonged diapause, foodplant

The genus *Rothschildia* Grote, 1896 is distributed from southern USA to northern Argentina with over 45 described species. Eight species of the genus were also found in Paraguay: *Rothschildia jacobaeae* (Walker, 1855), *R. erycina* (Shaw, 1796), *R. hopfferi* (C. & R. Felder, 1859), *R. hesperus* (Linnaeus, 1758), *R. maurus* (Burmeister, 1879), *R. schreiteriana* Breyer & Orfila, 1945, *R. arethusa* (Walker, 1855) and *R. aurota* (Cramer, 1775). *R. schreiteriana* has been collected at low elevations in the Argentine provinces of Salta, Tucuman and La Rioja (Lemaire, 1978; Zapata & Ludueña-Almeida, 2005). Recently it has been reported from Santa Cruz province in Bolivia (BOLD Systems, 2014). In the Paraguayan Chaco its occurrence was observed for the first time in 1985 (Drechsel,

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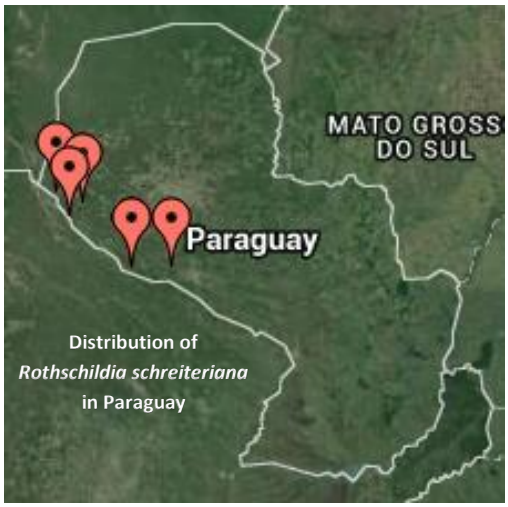

unpubl.). The distribution appears to be restricted to the southwestern part of the Chaco in the departments of Boquerón and Presidente Hayes (see map) which approximately coincides with the distribution of the host plant.

Six times cocoons of *R. schreiteriana* were found in the Paraguayan Chaco from 1985 to 2014 and always at or near bushes of *Vallesia glabra* (Cav.) Link (Apocynaceae) (Figs. 1-3). Once cocoons were found at a small bush of this plant, which was the only one within a cleared area planted with grass. Although so far no caterpillars have been found but can be deduced that this is the forage plant.

Xifreda et al. (2007) provide occurrence data of *V. glabra*: "*A species of broad geographical distribution in the Americas, Peru, Bolivia, Paraguay, northern and central Argentina; in our country it grows from Formosa, Jujuy and Salta to Cordoba and San Juan.*" On the distribution in Paraguay reported Endress (1992): "*in forests along the rivers*" and "*in Paraguay in the Rio Pilcomayo basin*".

Interesting is the observation of Xifreda et al. (2007): "*It is never seen attacked by diseases and parasites; the animals do not eat it*". Marzocca (1952:37) notes the existence of an alkaloid, the Vallesina, blocking the nerve centers of locomotion, which can cause death by respiratory paralysis and asphyxiation.

A total of 23 overwintering cocoons were found in August 2014 in Estancia Toro Mocho in the department of Boquerón most of all hanging in a bush of *V. glabra* and a few in the surrounding vegetation. Most likely these were the descendants of a single female, therefore a certain genetic homogeneity can be assumed. The first moth, a male (Fig. 5), appeared on November 22 the same year. A total of 11 specimens hatched during the summer season between November 2014 and March 14, 2015. Six cocoons were parasitized by Tachinidae flies and one by a huge Ichneumonidae wasp. Five more cocoons were apparently still alive and showed no weight loss. On November 29, 2015 after a second overwintering, hatched a female (Fig. 6). The remaining four pupae proved dead.

This phenomenon of prolonged diapause, a kind of dormancy that extends over more than one year, is known of many insect species from temperate climates (Waldbauer, 1978). Prolonged diapause is interpreted among other as an adaptation to possible adverse environmental conditions acting as demographic refuges for insect populations. The wide scattering of nearly four months of emerging times during the first summer and after prolonged diapause of almost one year is unusual for tropical and subtropical silkmoths. *R. schreiteriana* inhabits in Paraguay exclusi-

vely the Chaco, which is characterized by unpredictable and catastrophic environment conditions like droughts or floods which could wipe out all progeny if all emerge together. Long term hatching and prolonged diapause strategy are likely to act as adaptation to environmental risks.

Figs. 1-3: *Vallesia glabra*; 1) small specimen in the Paraguayan Chaco; 2) flower; 3) fruits
Fig. 4-6: *Rothschildia schreiteriana;* 4) cocoon; 5) male 22.xi.2014; 6) female 29.xi.2015

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FRONT COVER PHOTO: *Trigonectes balzani* (Perugia, 1891) (Rivulidae), Paraguay, Dep. Presidente Hayes, Costa Esmeralda, 5. I. 2011