

# PARAGUAY BIODIVERSIDAD

PARAGUAY BIODIVERSITY

PARAGUAY BIODIVERSITÄT



*Naupactus rivulosus* (Olivier, 1790)

foto: U. Drechsel

# Biodiversity Research in “Reserva Natural Dimas”

Ulf Drechsel\*

**Abstract:** In the study area 42 species of Saturniidae and 51 species of Sphingidae were found. Nine species are specially treated and presented in photographs.

**Resumen:** En el área de estudio se encontraron 42 especies de Saturniidae y 51 especies de Sphingidae. Nueve especies son especialmente tratados y presentados con fotografías.

**Zusammenfassung:** Im Untersuchungsgebiet wurden 42 Arten Saturniidae und 51 Arten Sphingidae festgestellt. Neun Arten werden besonders behandelt und in Photographien vorgestellt.

**Key words:** Paraguay, Alto Parana, Dimas, Saturniidae, Sphingidae, biodiversity

## Introduction

The “Reserva Natural Dimas”, a nature reserve under private management, is located in eastern Paraguay in the department of Alto Paraná south of the river Monday. Along the river extends a flat strip of land, about 2 km wide, exposed to periodic flooding and covered with native grasses and herbs. Surrounded by this grassland lies a flat hill of about 30 hectares, covered with Atlantic Forest, one of the few remaining forests that are not subject to constant plundering. The former cover with Atlantic forest is destroyed over a wide area in the neighborhood of the reserve. With the disappearance of the forests was accompanied the disappearing of the large animal fauna and a drastic change in the microclimate. Therefore, the studies focused largely on the invertebrate fauna, especially the insects. Here two moths-families shall be presented, the hawkmoths or Sphingidae and the silkmths or Saturniidae.

\*Gral. Aquino 694, Asunción, Paraguay ([ulfdrechsel@hotmail.com](mailto:ulfdrechsel@hotmail.com))

### Material and methods

The reserve was visited a total of 39 times in all months of the year from November 2004 to July 2014. Used were 250-watt mercury vapor lamps in front of a white cloth for direct observation of the approaching insects. Flowers which only give off scent at night when they are open were controlled for nectar feeding hawkmoths. Found caterpillars have been collected for rearing and hostplant identification.

### Results

A total of 42 species of Saturniidae (table 1) were observed in the study area, of which turned out four species as new for science: *Lonomia parobliqua* Brechlin, Meister & Mielke, 2011 (figs.1-2); *Ptiloscota paraguayensis* Brechlin, Meister & Drechsel, 2008 (fig.3), *Eubergia altoparanensis* Brechlin & Meister, 2011 (fig. 4) and *Dirphia avialtoparanensis* Brechlin & Meister, 2011 (fig. 5). Further remarkable species were *Automeris submacula* (Walker, 1855) (fig. 6) and *Automeris beckeri* (Herrich-Schäffer, [1856]) (fig. 7), considered in their entire distribution area as extremely rare, and *Eudyaria venata* (Butler, 1871), with the far northernmost locality of this species. An aberrantly colored specimen of *E. venata* with red instead of the normal black spots on the hind wings could be observed (fig. 8).



Figs. 1-4: 1) *Lonomia parobliqua* male; 2) *L. parobliqua* female; 3) *Ptiloscota paraguayensis*; 4) *Eubergia altoparanensis*



Figs. 5-8: 5) *Dirphia avialtoparanensis*; 6) *Automeris submacula*; 7) *Automeris beckeri*; 8) *Eudyarida venata*

From the family Sphingidae 51 species were detected (table 1). One species, *Xylophanes crenulata* Vaglia & Haxaire, 2009, (fig. 9) which was previously determined as *X. ceratomioides* (Grote & Robinson, 1867), turned out to be new for science. A rarely collected species, *Aleuron iphis* (Walker, 1856) (fig. 10), which never was observed to be attracted by light sources could be regularly seen visiting nocturnal flowers along with other nectar-sucking species as *Aleuron chloropterus* (Perty, 1833) and *Callionima* and *Xylophanes* species.



Figs.: 9-10: 9) *Xylophanes crenulata*; 10) *Aleuron iphis*

**Table 1: Checklist of the Saturniidae recorded from Reserva Natural Dimas**

<b>ARSEURINAE</b>	<i>Automeris beckeri</i> (Herrich-Schäffer, [1856])
<i>Arsenura armida</i> (Cramer, 1779)	<i>Automeris submacula</i> (Walker, 1855)
<i>Arsenura xanthopus</i> (Walker, 1855)	<i>Leucanella memusae</i> (Walker, 1855)
<i>Dysdaemonia fosteri</i> W. Rothschild, 1906	<i>Pseudautomeris luteata</i> (Walker, 1865)
<i>Paradaemonia thelia</i> (Jordan, 1922)	<i>Gamelia catharina</i> (Draudt, 1929)
<b>CERATOCAMPINAE</b>	<i>Hyperchiria incisa</i> Walker, 1855
<i>Citheronia laocoon</i> (Cramer, 1777)	<i>Eubergia alto paranensis</i> Brechlin & Meister, 2011
<i>Schausiella arpi</i> (Schaus, 1892)	<i>Hylesia scortina</i> Draudt, 1929
<i>Psilopygida walkeri</i> (Grote, 1867)	<i>Hylesia falcifera</i> (Hübner, [1825])
<i>Syssphinx molina</i> (Cramer, 1780)	<i>Hylesia ebalus</i> (Cramer, 1775)
<i>Adeloneivaia subangulata</i> (Herrich-Schäffer, [1855])	<i>Molippa simillima</i> Jones, 1907
<i>Adelowalkeria flavosignata</i> (Walker, 1865)	<i>Dirphia avialto paranensis</i> Brechlin & Meister, 2011
<i>Adelowalkeria tristygma</i> (Boisduval, 1872)	<i>Dirphia moderata</i> Bouvier, 1929
<i>Oiticella luteciae</i> (Bouvier, 1924)	<i>Eudyaria venata</i> (Butler, 1871)
<i>Oiticella convergens</i> (Herrich-Schäffer, [1855])	<b>SATURNIINAE</b>
<i>Ptiloscola paraguayensis</i> Brechlin, Meister & Drechsel, 2008	<i>Copaxa decrescens</i> Walker, 1855
<i>Neorcarnegia basirei</i> (Schaus, 1892)	<i>Copaxa canella</i> Walker, 1855
<b>HEMILEUCINAE</b>	<i>Copaxa flavina</i> Draudt, 1929
<i>Lonomia parobliqua</i> Brechlin, Meister & Mielke, 2011	<i>Rothschildia jacobaeae</i> (Walker, 1855)
<i>Periga circumstans</i> Walker, 1855	<i>Rothschildia erycina</i> (Shaw, [1796])
<i>Automeris amoena</i> (Boisduval, 1875)	<i>Rothschildia hopfferi</i> (C.Felder & R.Felder, 1859)
<i>Automeris bilinea</i> (Walker, 1855)	<i>Rothschildia arethusa</i> (Walker, 1855)
<i>Automeris naranja</i> Schaus, 1898	<i>Rothschildia aurota</i> (Cramer, 1775)

**Table 2: Checklist of the Sphingidae recorded from Reserva Natural Dimas**

<b>SPHINGINAE</b>	<i>Madoryx bubastus</i> (Cramer, 1777)
<i>Agrius cingulatus</i> (Fabricius, 1775)	<i>Callionima parce</i> (Fabricius, 1775)
<i>Cocytius duponchel</i> (Poey, 1832)	<i>Callionima inuus</i> (Rothschild & Jordan, 1903)
<i>Neococytius cluentius</i> (Cramer, 1775)	<i>Callionima falcifera</i> (Gehlen, 1943)
<i>Manduca sexta</i> (Linnaeus, 1764)	<i>Aleuron chloropterum</i> (Perty, 1833)
<i>Manduca lucetius</i> (Cramer, 1780)	<i>Aleuron iphis</i> (Walker, 1856)
<i>Manduca diffissa</i> (Butler, 1871)	<i>Enyo lugubris</i> (Linnaeus, 1771)
<i>Manduca hannibal</i> (Cramer, 1779)	<i>Enyo ocypete</i> (Linnaeus, 1758)
<i>Manduca lefeburei</i> (Guérin-Ménéville, 1844)	<i>Enyo gorgon</i> (Cramer, 1777)
<i>Manduca rustica</i> (Fabricius, 1775)	<i>Nyceryx nictitans</i> (Boisduval, [1875])
<i>Manduca florestan</i> (Cramer, 1782)	<i>Nyceryx alophus</i> (Boisduval, [1875])
<i>Neogene dynaeus</i> (Hübner, [1825])	<i>Nyceryx riscus</i> (Schaus, 1890)
<b>SMERINTHINAE</b>	<i>Perigonia pallida</i> Rothschild & Jordan, 1903
<i>Protambulyx strigilis</i> (Linnaeus, 1771)	<i>Perigonia lusca</i> (Fabricius, 1777)
<i>Adhemarius gannascus</i> (Stoll, 1790)	<i>Eupyrrhoglossum sagra</i> (Poey, 1832)
<i>Adhemarius daphne</i> (Boisduval, [1875])	<i>Aellopos titan</i> (Cramer, 1777)
<b>MACROGLOSSINAE</b>	<i>Eumorpha analis</i> (Rothschild & Jordan, 1903)
<i>Erinnyis alope</i> (Drury, 1770)	<i>Eumorpha fasciata</i> (Linnaeus, 1771)
<i>Erinnyis lassauxi</i> (Boisduval, 1859)	<i>Eumorpha labruscae</i> (Linnaeus, 1758)
<i>Erinnyis ello</i> (Linnaeus, 1758)	<i>Xylophanes pluto</i> (Fabricius, 1777)
<i>Erinnyis oenotrus</i> (Cramer, 1782)	<i>Xylophanes porcus</i> (Hübner, [1823])
<i>Erinnyis crameri</i> (Schaus, 1898)	<i>Xylophanes crenulata</i> Vaglia & Haxaire, 2009
<i>Erinnyis obscura</i> (Fabricius, 1775)	<i>Xylophanes chiron</i> (Drury, 1771)
<i>Phryxus caicus</i> (Cramer, 1777)	<i>Xylophanes tersa</i> (Linnaeus, 1771)
<i>Pachylia ficus</i> (Linnaeus, 1758)	<i>Xylophanes fosteri</i> Rothschild & Jordan, 1906
<i>Pachylioides resumens</i> (Walker, 1856)	<i>Xylophanes elara</i> (Druce, 1878)
<i>Madoryx oiclus</i> (Cramer, 1780)	<i>Xylophanes loelia</i> (Druce, 1878)

### Acknowledgements

The author express his most sincere gratitude to Guillermo Knapps, Hugo Bogado Barrios and Rogelio Ocampos for logistic support. Special thanks to the owner of Estancia Dimas, Hugo Bogado Barrios for the permission to realize the studies.

### References

BRECHLIN, R. & F. MEISTER, 2008. Neue Arten der Gattung *Ptiloscola* Michener, 1949 (Lepidoptera: Saturniidae). *Entomo-Satsphingia, Entomologische Beitrage* 1: 21-26.

BRECHLIN, R., F. MEISTER, C. G. C. MIELKE & E. VAN SCHAYK, 2011. Fünfzehn neue Arten der Gattung *Lonomia* Walker, 1855 (Lepidoptera: Saturniidae). *Entomo-Satsphingia* 4 (2): 61 – 77.

BRECHLIN, R. & F. MEISTER, 2011a. Four new taxa of *Eubergia* Bouvier, 1929 (Lepidoptera: Saturniidae). *Entomo-Satsphingia* 4(1): 90-91.

BRECHLIN, R. & F. MEISTER, 2011b. New species of the genus *Dirphia* Hübner, 1819 (Lepidoptera: Saturniidae). *Entomo-Satsphingia* 4(5): 5-29.

DRECHSEL, U., 1994. Beitrag zur Kenntnis der Sphingidenfauna von Paraguay (Lepidoptera: Sphingidae). *Entomologische Zeitschrift* 104(14): 265-276.

VAGLIA, T. & J. HAXAIRE, 2009. Description d'un nouveau Sphingidae néotropical *Xylophanes crenulata* (Lepidoptera, Sphingidae). *The European Entomologist* 1(3-4): 95-102.

