

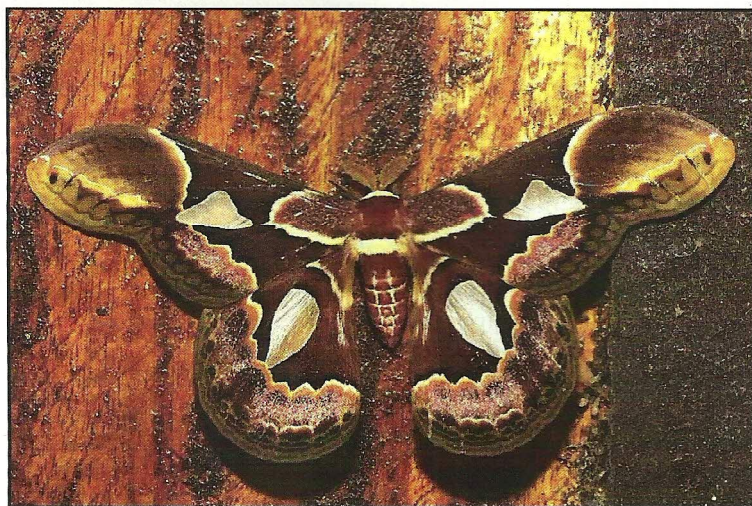
## DOING SOMETHING PARA LA TIERRA

BY

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There is no doubting the importance of the Reserva Natural Laguna Blanca in Paraguay. Smack in the middle of the cerrado belt, one of the most threatened habitats in South America, the reserve is small but in just under 9 months of field work has demonstrated its big importance. In the field of herpetology alone, the scientific staff at Para La Tierra (PLT, [www.paralatierra.org](http://www.paralatierra.org)) and the volunteers that help them can already count amongst their achievements one new snake for Paraguay, another new snake not recorded in the country for over 50 years, a new frog for science and, just for good measure, what may well prove to be a new toad for science. But we are here to talk about Leps, so let me take the opportunity to fill you in on some of the more interesting recent discoveries in Lepidopterology from the reserve, the ongoing inventory work and how you can help out, if you want! First though, lets set the scene with a bit more about the Reserva Natural Laguna Blanca.

Situated in Departamento San Pedro, north-eastern Paraguay, Reserva Laguna Blanca is somewhere near the centre of South America. Its fascinating mix of Atlantic Forest, transitional dry forest and cerrado (South American grassland) contribute towards a unique faunal diversity that have led to it being declared an Important Bird Area by Birdlife International (on account of 12 globally threatened species calling it home) and just last year made a "Reserva Natural" by the Paraguayan government. With a crystal clear lake and white sand beach (it's called Laguna Blanca because you can see the white sandy lake bed from the air) it is a natural paradise, and despite its small size (somewhere in the region of 800ha) it is clearly of great importance for conservation.



*Rothschildia* (photograph by John T. Smit)<sup>(1)</sup>

As part of the declaration as a reserve, the non-profit, non-governmental research organisation Para La Tierra was established. With a permanent staff of professional scientists and a constant stream of volunteers and academic interns to help them out, their remit is to study the flora and fauna of the reserve year round and to establish links with communities to generate local understanding and instill pride in this natural gem. In addition to behavioural studies on specific species, the early work of PLT is to thoroughly inventory all the major animal groups, establishing species lists and a small educational museum. Hardly any previous studies have been carried out at Laguna Blanca, and with its location at the intersection of some of the most biodiverse habitats on the continent, it should

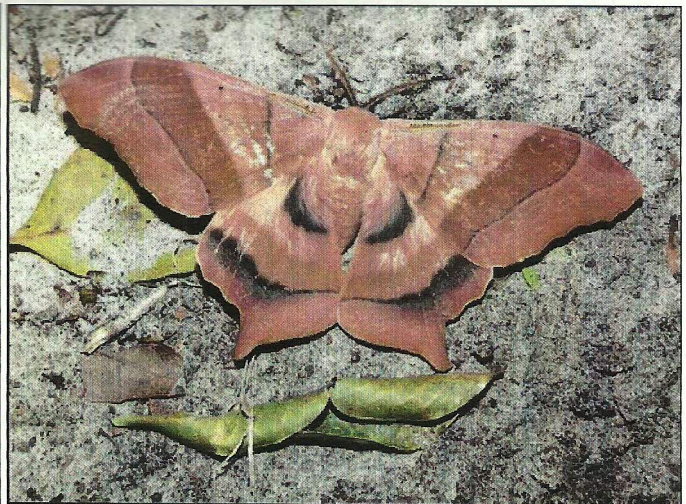
come as no surprise that their early findings have been of such considerable importance.

Still in its early stages the Lepidoptera inventory is focusing initially on two groups of moths, the hawkmoths (Sphingidae) and the emperor moths (Saturniidae). These two groups have been chosen because they are "sexy" (in moth terms anyway) and their large size and eye-catching appearance makes them good candidates for educational and promotional work. In our experience showing somebody a *Rothschildia* is likely to get a "wow, thats cool! What is it?" type of response. Showing somebody a Pyralid is likely to get a "eugh! is that some kind of mosquito?; Pass me my fly swatter!" type of response. It also helps that these two families are amongst the more "well-known" of the South American moths, meaning that we have a decent shot at identifying them without the need for specialist assistance, dissected genitals and a massive comparative collection.

The beauty of being located permanently at the reserve is that PLT has a unique opportunity to perform long-term studies on the wildlife. For a variety of reasons (most related to money!) such studies are rare in South America, and in Paraguay no such long-term studies have ever been performed. Couple that with the fact that South American Lepidopterans are in general understudied, and there is a huge opportunity to contribute something worthwhile to the scientific databank of our fluttery friends. Note that in the previous paragraph I described Sphingids and Saturniids



*Catharisa cerina* (photograph by Paul Smith)



*Titaea orsinome* (photograph by Karina Atkinson)<sup>(2)</sup>

as "well-known" when compared to other South American moths. The speech marks were no accident, for much of what we know about many species is based only on short collecting trips, and consists of little more than a name, a place and a date. When it comes to proposing effective conservation measures for these handsome beasts, clearly we are well short of what we need to know!

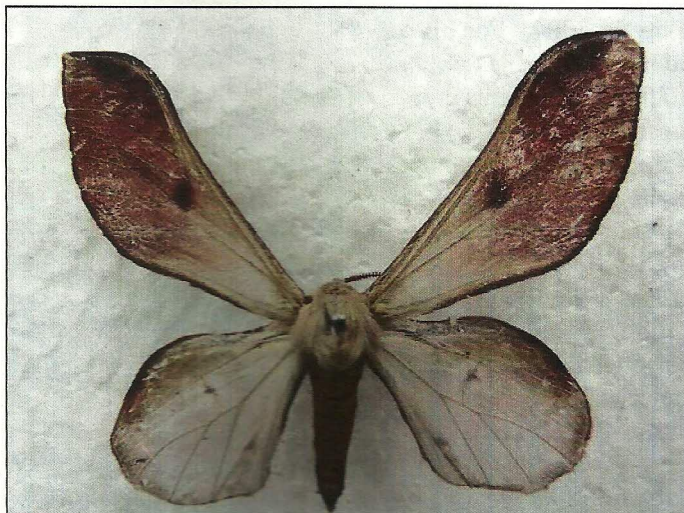
So let's give an example of why long term studies are much more important than short collecting trips for these moth

groups. In an earlier article for SLN (Finding Cath, SLN Volume 31 NO. 1 pp. 23-25, 2009) I talked about the rediscovery of the gorgeously yellow Saturniid moth *Catharisa cerina* at Laguna Blanca, a species that had been lost in the scientific wilderness for some 70 or more years. Since that article was published PLT workers have found it again, in the same place on almost exactly the same date. This time they have collected specimens and managed to get gravid females to lay eggs, though they were unsuccessful in finding the correct food plant on which to rear the larvae.



*Megaceresa pulchra* (photograph by Paul Smith)

The preliminary conclusion therefore is that Cath has a single flight per year, but that it is not as uncommon as records suggest. Like many other Saturniids it exhibits an explosive breeding system in which adults appear for a short time in order to reproduce. If it is a localised species with a short flight time, it is hardly surprising that so few specimens exist using the "short collecting trip" method. Finding it would be like finding a needle in a haystack - as my luck at stumbling across it essentially was. Now for the first time there exists the opportunity to study and document the life cycle of this species in full, and begin to understand a little more about its ecological requirements. In the not so distant future Cath's habits may no longer be such a mystery.



*Almeidaia aidaie* (photograph by Karina Atkinson)<sup>(2)</sup>

Nor is Cath an isolated case. The same is true for a number of other rare Saturniid moths that have appeared at Laguna Blanca. Take for example the handsome *Titaea orsinome*, known from just 2 previous records in Paraguay but found to be common at Laguna Blanca, the frankly breathtaking *Megaceresa pulchra* only the second

record for Paraguay and the remarkable appearance of *Almeidaia aidaea*, a species previously known from just 2 locations in Mato Grosso, Brazil, but now confirmed as present in Paraguay as well. All of these species have limited periods of activity and distributions tied to the rarely explored cerrado region that have contributed to a perhaps (or perhaps not!) undeserved reputation for rareness. How many other species are we just missing by not being in the right place at the right time? And how many other species are we failing to conserve effectively by just not knowing enough about them? It's shocking how little we know about even these large moths. Oh yes, and this is the point where I ask you to remember that we are talking about the "well-known" Saturniidae here.

Clearly there is a hell of a lot to be done just with moths and, with a whole more on their plate, PLT relies on volunteers both to help with the fieldwork and to keep financially viable. If you have an interest in butterflies and moths and are looking to contribute to something worthwhile in a country that few people even dream of visiting, then check the PLT website out for opportunities ([www.paralatierra.org](http://www.paralatierra.org)). You don't need to be a specialist to be useful, though of course if you are a specialist you can be useful too! And if you have an interest in other Lepidopteran groups and are willing to get inventories off the ground for them, then our door is always open. So why not take the opportunity to be the first person to raise Cath to maturity? Be the lucky netter who finds the next new species for Paraguay? Or simply marvel at the deafening sounds of a thousand beating Sphingid wings that fill the air on a humid summer evening? Our record is 21 different hawkmoth species at the moth light on a single night! Beat that!

Note: All the photographs were taken at Laguna Blanca.

**Sources**

- 1) John T. Smit, <http://science.naturalis.nl/smitj>
- 2) Karina Atkinson, [www.paralatierra.org](http://www.paralatierra.org)

(Paul Smith, FAUNA Paraguay [www.faanaparaguay.com](http://www.faanaparaguay.com), [faanaparaguay@yahoo.com.ar](mailto:faanaparaguay@yahoo.com.ar),  
Para La Tierra [www.paralatierra.org](http://www.paralatierra.org), [paralatierra@ymail.com](mailto:paralatierra@ymail.com))

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