

FINDING CATH

BY
PAUL SMITH

For most people interested in zoology the finding of a new and unknown species must rank among the most exciting of discoveries that they can hope to make. Rediscovering a long lost species must be a close second. Think for a moment about the excitement that would be caused by capturing a living, breathing Tasmanian Wolf, the thrill of observing an elusive male Pink-headed Duck making his way through a dense Burmese swamp or the headlines that you would generate by being the first person to clap eyes on a Steller's Sea Cow in more than two hundred and fifty years. Well, here in Paraguay something similar happened to me and my companions, it just so happens that I am interested in butterflies!



Catharisa cerina (Rancho Laguna Blanca, Departamento San Pedro, Paraguay)



Catharisa cerina (Rancho Laguna Blanca, Departamento San Pedro, Paraguay)

Catharisa cerina Jordan 1911..... No? Not ringing any bells? Well I admit it's not exactly the Coelacanth is it, but in terms of known specimens and available biological data it far outstrips the pug-faced prehistoric fish in its "rareness". So what is it? How did you find it? I hear (or imagine!) you asking as you sit on the edge of your seat. Well here it is, the story of the rediscovery of *Catharisa cerina*, an attractive Emperor Moth (Saturniidae) that hardly anybody has ever even heard of!

Date 12 October 2006. Location Rancho Laguna Blanca, Departamento San Pedro, in the cerrado belt of northeastern Paraguay. I am leading a birding tour that is chugging along nicely. Flushed with the success of adding a new species to the Paraguay bird list the previous day (it was a Common Tern, hardly earth-shattering but never recorded before in Paraguay!), and I am up early with a spring in my step and ready for the day's observations. Making my way across to the vehicle there is a bright yellow Saturniid that I have never seen before which sat quietly on the windscreen. I remove it gently to some vegetation, take a few snaps and vow to find out what it is as soon as the tour is over. Yep, that's it! The long and short of it - my tale of rediscovery didn't involve long expeditions into uncharted territory, battles with hostile natives or remarkable diligence and patience in tracking down my target. It was pure luck!!

So in an attempt to pad this article out a bit let me give you a bit of background on this beautiful moth and try to make you understand just why this is a significant discovery regardless of the fortuitous nature in which it was made. *Catharisa cerina* might not trip off your tongue in the same way that the Moa,

the Dodo or the Quagga does, but at least by the end of this article you'll know as much about this species as anybody else in the world does!

All known specimens of *Catharisa cerina* are female – let's call her *Cath* for short to avoid using up my word allocation with unnecessary repetition! Nobody knows what a male looks like, except for *Cath* herself of course and at this stage our entire knowledge of the species comes from 5 museum specimens collected a long time ago

plus the individual that chose my windscreen as its resting place. In fact, until very recently only three specimens, all lacking any collection data were known, all labelled “*Paraguay*” and leading to the conclusion that the species was endemic to the country. Then a recent paper by Racheli (2005) brought to the world’s attention two further specimens in the Staatliches Museum für Naturkunde, Stuttgart, Germany, which, despite barely legible handwritten specimen labels, were apparently collected in Misiones, Argentina, in June 1930. Again the provenance of these specimens is confused, not only by the dodgy penmanship on the specimen labels, but also by the fact that they are labeled Provincia Corrientes, but the localities mentioned are apparently in Provincia Misiones. Mmmmm!

In summary we know next to nothing about *Cath*’s range. Laguna Blanca is the first confirmed location for the species in Paraguay, other sites in the country are currently unknown. It also apparently occurs in northern Argentina, maybe in Corrientes, maybe in Misiones, maybe in both, and then there are about 400km of grey area between San Pedro and northern Argentina where the species may or may not occur. The Argentinean specimens were collected in mid-June, whilst the only phenological data available for Paraguay is from Laguna Blanca in mid-October at the opposite end of the year. Might it be pushing it a little given the limited data to estimate at least two flight times during the year?

As you can see distribution and date wise things are still far from being resolved. Let’s try something that is a little bit easier to draw conclusions from. What colour is *Cath*? According to Jordan who described the species the ground colour is “*uniformly greenish chrome yellow*”. I guess I’m not alone in being a little bit confused by what colour that is supposed to be, in fact it sounds distinctly like three different colours to me! Lemaire (2002 pl.114) included an illustration of the paratype of *Cath* that had a yellow ground colour, and pinned down the tone of the species by omitting the “*greenish*” and the “*chrome*” in his written description. Racheli (2005), however, noted that the Stuttgart specimens both featured a “*light green ground colour which is different to the paratype*”. For what it’s worth the Laguna Blanca *Cath*, as you can see from the accompanying photographs, shows not a hint of green or chrome and sits firmly in the Lemaire yellow camp. It is possibly important to note that the Laguna Blanca individual is the only actual record of a living individual. So where does that leave us? Are we dealing with a species that shows individual variation with some individuals being yellowish and some tending towards greenish? Or is the greenish hue possibly an artifact of specimen preservation? I don’t know, but somebody should find out!

What about habitat preference then? You won’t be surprised to learn that things are no clearer there either. The lack of specimen data and precise localities throws a bit of a spanner in the works when trying to draw conclusions from the existing specimens. Besides Paraguay and northern Argentina are both very different places habitat wise to what they were in the early 20th Century. Based only on the Laguna Blanca specimen it would be tempting to write “*Habitat: Car windscreens*” – but what conclusions can we begin to draw from this single individual?

The habitat at Laguna Blanca is essentially a mosaic of cerrado with areas of heavily degraded Atlantic Forest patches. Cerrado itself, is difficult to define to the uninitiated. In layman’s terms it is the South American savanna, but that would do the complexity of the vegetational communities of the cerrado a great disservice. In fact cerrado itself can be split into several “*sub-habitats*”: *Campo limpio cerrado* (clean field) being open grassy fields without bushes, *Sensu strictu cerrado* being low bushy fields without grass, *Cerradón* being dry cerrado forest and *Campo sucio cerrado* (dirty field) being a mixture of grass, bushes and trees. Confused? Well suffice to say that cerrado is an extremely important and threatened habitat whatever form it takes and that any given area of cerrado usually consists of a patchwork of all four “*sub-habitats*” resulting in localized animal and plant populations within the biome. Cerrado grows on loose sandy soils which drain quickly and despite looking brown and miserable for much of the year it blooms suddenly following periods of heavy rain, converting it into one of the most beautiful spectacles of colour in the Neotropics. Now the crucial information – over 65% of the plant species found in the cerrado are endemic to it (*i.e.*, they occur nowhere else) and the habitat is currently the fastest disappearing in the Neotropics. The other major habitat at Laguna Blanca is the humid subtropical Atlantic Forest, officially one of the five most threatened habitats on earth. Now *Cath*’s decision to sit on my windscreen and the fact that the car was parked essentially equidistant between cerrado and a patch of Atlantic Forest means that we can’t really be sure where she came from! We can, however, be sure that whichever habitat she has chosen it is under imminent conservation threat, and given the rarity of specimens we might therefore conclude that *Cath* herself is worthy of conservation concern. There is no cerrado in northern Argentina but there is (or



Campo sucio cerrado (Laguna Blanca)



Campo limpio cerrado (foreground),
cerradón (background)



Campo sucio cerrado (Laguna Blanca)



Sensu strictu cerrado (2008)

was!) Atlantic Forest. We need to be careful, however, as in parts of Provincia Corrientes and Misiones the Atlantic Forest forms a natural mosaic with a type of grassland not too far removed from cerradón – the Mesopotamian Grasslands. Maybe then we are taking a risk on trying to pin the habitat preference of the species down to one or other habitat type – after all there is (or was!) lots of Atlantic Forest in Paraguay and northern Argentina and there aren't lots of *Caths*! Maybe the species has a far more specialized habitat preference which confines it to the interface of humid

forest and natural grassland rather than specifically to either one or the other? This might help explain its rarity and its apparently localised distribution, and would make it even more threatened by habitat destruction. Again, we can't be sure!

Needless to say if we can't make precise conclusions about the habitat, distribution or even the colour of the thing, then we are some way short of being able to effectively conserve it. We know nothing of its reproduction or host plants, or even what a male looks like! Captive breeding is hampered by the fact that we will struggle to make educated guesses as to how best to do so given that the species is currently classified in a monotypic genus with no apparent close relatives. Additionally, specimens are so rare and valuable that few entomologists would be prepared to risk damaging them by attempting to breed them.

For now *Cath*'s future is up in the air. It could be another 80 years before another one shows up and we are no closer to understanding her now than we were when Jordan first described her in 1911. Meanwhile the habitat in which she makes her home is coming under increasing pressure as habitat destruction continues unchecked. What a shame it would be if this beautiful moth followed the Dodo, Moa, Quagga and the rest into oblivion and nobody even noticed!

REFERENCES

- Jordan, K.** 1911. Descriptions of New Saturniidae, *Novitates Zoologica* 18: p.129 - 134. Available online at < <http://www.archive.org/details/novitateszoologi18lond> >
- Lemaire, C.** 2002. *The Saturniidae of America: Les Saturniidae Americains (=Attacidae). Hemileucinae* – Goecke & Evers, Keltern.
- Racheli, L.** 2005. Notes on Further Female Specimens of *Catharis cerina* Jordan 1911 (Lepidoptera: Saturniidae: Hemileucinae), *Entomologische Zeitschrift* 115: p.209.

ACKNOWLEDGEMENTS

Thanks to Hugo del Castillo, Kirti Chaudhurri and Richard Smith who accompanied me in the field during this trip. Special thanks to Ulf Drechsel who put the name to *Cath*'s face! Thanks also to Barry Lombardini for making me actually sit down and write this!