

# Ghost moths of the world website

## <http://www.johngrehan.net/index.php/hepialidae/>

John Grehan

Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213

[Calabar.John@gmail.com](mailto:Calabar.John@gmail.com)

The 'Hepialidae (ghost moths) of the World' website reflects a lifelong interest of mine and represents an effort to make this relatively obscure group of moths more accessible to a wide audience. Ghost moth larvae are secluded feeders living in tunnels made from host tissues, other substrates, or silk webbing, and they have host plant associations that often involve a developmental transition from mycophagy/detrithophagy to phytophagy. Adults are short lived due to their lack of functional mouthparts. In regions such as Australasia and South America the family is represented by many genera and species and includes some species that are sufficiently numerous to be regarded as major agricultural pests. In many other regions the family attracts much less notice, particularly where the moths are infrequently attracted to light.

The website provides a global list of currently recognized ghost moth genera and each is linked to an individual page where all species are listed, and each is illustrated by a photograph of a mounted specimen wherever possible. A general summary for each genus includes notes on distribution, systematics, habitat, and biology. Where sufficient information and illustration is available, individual species are also given separate pages. The main page also includes links to former and current hepialid research, hepialid biology, and hepialid systematics. Although the principal focus is on the family Hepialidae, links are also provided for other exoporian families. A taxonomy page lists taxonomic works over the last decade or so including studies by Carlos Mielke, Mirna Casagrande (Latin America), Svyatoslev Knyazev & Victor Dubalotov (central Asia), Ted Edwards, Ken Green, Mike Moore, Thomas Simonsen (Australasia), Weichun Li & Hongyi Wei, and Zhi-Wen Zou et al. (China).

The ghost moth site was initially developed through institutional web resources, and is now a standalone site thanks to the kind guidance of Malte Ebach. Further development of the site was made possible through collaborations with a range of enthusiasts including Victor Gashtarov, Carlos Mielke, John Nielsen, John Rawlins, Thierry Salesne, Nick Temby, and the kindness and generosity of many other researchers and amateurs throughout the world, particularly for providing images of adults and larvae (including the recent contribution to the Newsletter by David Fischer). The web project has helped me keep in touch with new developments in hepialid research, including, in Australia, the entomological equivalent of the storm chasers who endure the hazards of ticks, mozzies, and roos and other dangers to chase down

weather correlated ghost moth emergence (see John Nielsen's blog at <https://australianhepialidae.wordpress.com/>). Also there are technological applications such as time-lapse photography of emergence (Peter McKenzie), and video records of courtship behavior (John Turner).

To further expand the content of this site I am always interested in additional images, particularly habitat and habitus illustrations, as well as new information. I also encourage further collecting and photography of ghost moths in various parts of the world, particularly where there is currently relatively little information, if any, in places such as the Celebes and the Lesser Sunda, the central Andes of northern Peru, and northern East Africa such as Kenya and Ethiopia (no records yet from the latter). Much of East Asia is poorly sampled, with many records being limited to a few scattered specimens. In such regions photographs are always welcome, but identification usually requires a specimen. Even in places such as Costa Rica that have been extensively surveyed for their high biodiversity, the ghost moth fauna is poorly known.

Lastly, I should mention that while species illustration is very extensive on the website, some groups have major gaps, particularly for South African and Asian species. I would be pleased to provide information to any readers who have the opportunity and inclination, the location of type specimens or other material that could be photographed at institutions such as the Natural History Museum (London), the Senckenberg Research Institute and Natural History Museum (Frankfurt) and the Ditsong National Museum of Natural History (Pretoria) to name a few.

My thanks to James Adams for encouraging this article.



*Zelotypia stacyi* (Australia). Photo by John Nielsen

Image and derivatives Copyright (C) John Nielsen.  
Use authorized by John Grehan.  
<http://www.johngrehan.net/index.php/hepialidae>



Left to right: *Endoclita signifer* (India), photo by Vijay Ismaival; *Aepytus guarani* (Brazil), photo by Elyana Joerke; *Aenetus virescens* 'albo extremus' morph (New Zealand), photo by John Grehan; Carlos Mielke with collection of *Rosela tesselatus* (Brazil), photo by Elyana Joerke.



*Aenetus cohici* (New Caledonia), photos by Thierry Salesne. Clockwise from upper left: female green form; male green form; male blue-gray form; emerging adult; mature larva.



Left: Nick Temby with *Trictena* sp., photo by Nick Temby; Right, below: John Nielsen with some Australian hepialids and poster of micros, photo by John Nielsen.

