

Short report on the working progress on the systematics of the tribe Eupitheciini

Anthony C. Galsworthy & Vladimir Mironov

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Corresponding author: Sir Anthony C. Galsworthy, 11 Church Path, Merton Park, London, SW19 3HJ, U.K.; e-mail: acgalsworthy@btopenworld.com

We have been working together on Asian *Eupithecia* for five years. We have systematically collected as much as possible of the material available in Western countries, by way of loans to the Academy in St Petersburg and the Natural History Museum in London. The Zoological Institute in Beijing have also collaborated closely with us, and have made available to us material under their curation. We believe that we have now been able to examine the vast majority of material presently available in museums.

The major problem has been that for the two most prolific describers of *Eupithecia*, Dietze, at the beginning of the twentieth century, and Vojnits in the seventies and eighties, type material was not readily available, and descriptions were inadequate, and illustrations lacking or unclear. With the help of the National Museum in Hungary, we have managed to find about 95 % of Vojnits' type material. We have found a fair amount of Dietze's material, but need to do more work on this area. Most of it is probably in Berlin.

Mironov had earlier produced a book on European *Eupithecia*, and a number of papers on the Russian fauna. Our initial collaboration focussed on the Chinese fauna. We now think this comprises some 300 species, about 70 of which were undescribed. We have so far produced 5 papers describing 60 of these. There are undoubtedly many more species still to be discovered. We were able to synonymise about half of Vojnits' names.

This work led us to realise that we needed to look more widely at the Asian fauna, and Mironov spent three months in London in 2007 working with Galsworthy on the BMNH material, which enabled us to pin down most of the Butler, Warren, Walker, Swinhoe, Hampson, Leech and Prout species. Taking this together, and with the help of much material collected more recently, mainly by Hungarian and German collectors, we have produced papers on the Taiwan fauna, published in 2007 (7 new species, 3 new synonyms), and on the fauna of the Western Himalayas, with all three parts having been published this year (80 species covered, 14 new, and 30 names synonymised). Further papers are in draft on the South East Asian fauna and on that of the rest of the subcontinent. A further book-length manuscript on the Chinese fauna is in first draft, but still requires extensive work.

The major gap which this will leave is the fauna of the south west part of the continent, from Iran to the coast of the Mediterranean. If we ever finish this, the next target will probably be the African fauna.

Although we have been able to distinguish some coherent species groups within *Eupithecia* (we recognise about 45 at present), and are seeking to arrange as much as possible of the fauna within these groups, we have not thought it sensible to attempt to split up the genus, despite its large size. There are a few species still included which probably do not belong there, including the famous Hawaiian fauna, which is carnivorous in its larval stages, and we will attempt to deal with these in future work.

The geometrine moths of China

Hongxiang Han & Dayong Xue

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Corresponding author: Dr. Dayong Xue, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101 China; e-mail: xuedy@ioz.ac.cn

China bestrides both Palaearctic and Oriental regions and has a diverse fauna of Geometrid moths. The fauna of Chinese Geometridae of the subfamily Geometrinae has been systematically studied from 2001. One genus and 16 species were described as new to science, one new generic synonym, 2 new specific synonyms, and 10 new combinations were established.

In the forthcoming volume of *Fauna Sinica*, more than 360 species in 66 genera are recognized and redescribed on the basis of examining a majority of type materials, 5 new combinations, 4 new synonyms will be reported, one genus and 24 species will be recorded as new to the fauna of China. 60 genera are assigned to 9 tribes; the main morphological characters of each tribe and the diagnosis of each genus are given. Key to genera and species are provided. The citation, description, materials examined, and distribution information were provided for each species, and where known, details of habitat preference and biology. More than 900 illustrations for venation, male and female genitalia, sternite 3 and 8 are provided. Eighteen colour plates for adults are illustrated.

In the introductory section, comments on the taxonomic history of the Geometrinae are summarized. The different classifications on tribal level on the basis of different regions are introduced and compared, and the genera distributed in China are separated into different tribes. Taxonomic characters of the subfamily are listed and their taxonomic significance is discussed. Biological information, especially host-plant relationships, is listed and analysed. Zoogeographical patterns of Geometrinae are discussed and the results show that most geometrine genera are distributed in tropical areas, and African and Oriental regions are the centers of distribution and diversification. On generic level, there are mainly four distribution patterns in China, tropical and subtropical, Himalaya-Southwest mountains, northern area, and endemic genera in China. In addition, the distribution patterns of species and endemic species in China are analysed, it shows that the subfamily Geometrinae is particularly diverse in southern China.

A study on the Genus *Glaucorhoe* Herbulot, with descriptions of two new species from China (Lepidoptera: Geometridae: Larentiinae)

Chunguang Wu, Hongxiang Han & Dayong Xue

Wu, C. G., Han, H. X. & Xue, D. Y. (2009): A study on the Genus *Glaucorhoe* Herbulot, with descriptions of two new species from China (Lepidoptera: Geometridae: Larentiinae). Pp. 139 in: Hausmann, A. (ed.): Proceedings of the fifth Forum Herbulot 2008. Global strategies for plotting geometrid biodiversity in web-based databases (Munich, ZSM, 24-28 June 2008). – *Spixiana* 32/1: 139

Corresponding author: Dr. Dayong Xue, Institute of Zoology, Chinese Academy of Sciences, Beijing 100101 China; e-mail: xuedy@ioz.ac.cn

The genus *Glaucorhoe* was erected by Herbulot (1951) based on the type species *Cabera unduliferaria* Motschulsky (1860), mainly according to the characters of the male genitalia, and it belongs to the tribe Xanthorhoini defined by Pierce (1914). *Glaucorhoe* was a monotype genus when it was erected, hereafter no related study of this genus has been reported. In this contribution, two undescribed species are presented from China, with morphological differential diagnosis being provided. An additional character set in the diagnosis of the new species results from analysis of mtDNA sequences. The genus *Glaucorhoe* and another known species and its subspecies are redescribed, and the generic characters are summarized. Illustrations of moths and genitalia of all species are provided. Type specimens of the new species and further vouchers are deposited in the

Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS) Northwest Agriculture and Forestry University, Shaanxi, China (NWAUFU) and Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany (ZFMK). The discovery of these two new species is of great significance for the knowledge of the genus *Glaucorhoe* and represents an interesting case study for species identification between molecular strategy and traditional morphological methods.

- Herbulot, C. 1951. Diagnoses de nouveaux genres de Geometridae Larentiinae. *Rev. fr. Lepid.* 13: 25-26
- Pierce, F. N. 1914. The Genitalia of The Group Geometridae of the Lepidoptera of the British Islands. E. W. Classey Ltd. Faringdon, U.K. XXIX+88 pp., 48 pls.

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Autor(en)/Author(s): Han Hongxiang, Xue Dayong

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