

VOL. 10, Issue 2

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A newsletter for geometrid specialists

FORUM HERBULOT NEWSLETTER

Editorial

Approaching the end of the special COVID year 2020, we want to apologize that after an earlier, 'vague' announcement of a virtual, full Forum Herbulot conference this year, this has not become reality for various reasons. Nevertheless there have been some smaller-scaled meetings including important actions for the whole community, e.g. in the group of colleagues who are preparing an update of the geometrid database. In this newsletter we report and document some of these activities of the past half year. Moreover, we are happy to share the information on some new publications. As announced in our message to all FH-members on April 8, the next meeting of Forum Herbulot was postponed by two years and we are optimistic to be able to realize that event in June 2022, the exact dates still have to be fixed trying to avoid agenda conflicts, now that so many meetings are postponed to 2022.

We feel that in these turbulent times it is still more important to share any kind of information and to remain optimistic, therefore we will be happy for any contribution to our FH-Newsletter from your side, e.g. on new literature, reports on activities and projects, interesting results, calls for help, any kind of photographs (geometrids, collecting events) etc.



The Forum Herbulot Newsletter appears regularly two times per year and will be posted on the webpage of Forum Herbulot: www.herbulot.de. Old issues can be accessed there. Membership in the Forum Herbulot initiative is free.

For more information contact Axel Hausmann: hausmann.a@snsb.de or Hossein Rajaei: hossein.rajaei@smns-bw.de

The world database/knowledgebase of Geometrid moths; report on updating and call for support

One of the most essential tools for any taxonomist is an up-to-date database of the global fauna. With regard to Geometridae, the current knowledge is summarised in two Catalogues (Scoble 1999, Scoble & Hausmann 2007). Because our knowledge on systematics, species richness, DNA and distributions of geometrids are growing constantly and becoming more accurate, it is important to update the existing catalogues and make the data easily accessible.

A working group has been set up to achieve this goal (names in alphabetical order): Gunnar Brehm, Axel Hausmann, David Plotkin, Hossein Rajaei, Malcolm Scoble and Pasi Sihvonen.

We have an ambitious vision: the updated database/knowledgebase will cover the entire Geometroidea (i.e. Geometridae, Pseudobistonidae, Sematuridae, Uraniidae), of about 26 000 species. This will be open access online and semi-dynamic database, with links to specimen photographs, DNA barcodes, type specimens and original descriptions, and potentially other species-specific data. Effectively, this means we are building a Geometridae database!

Semi-dynamic means that this database is getting updated as new data become available. A new version will be released after every few years, and the released version is likely to be frozen with a unique DOI. This way it becomes clear, which version has been cited. It is also foreseen that a PDF publication of the database will be issued at some point.

The working group has been preparing the first update and we aim to have it out in 2021. The first version will cover "only" Geometridae with over 34 000 names, but the taxonomic coverage will be expanded in future updates.

You can support the work by sending any of us PDF's of your new publications on Geometroidea. These can include taxonomic changes, food-plant information, distribution information, or molecular data, among other. This ensures that the database/knowledgebase will stay up-to-date.

References

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Call for support of preparing the online performances of database and website

For hosting the database, designing the web-performance, setting the links to other databases, data transfer from xls to html, data release in an electronic journal etc, a certain external support e.g. by IT-experts is necessary. We also plan to design a new Forum Herbulot website, which should finally be kept updated regularly. These days, crowdfunding is more and more a common practice in scientific communities. Your contribution will serve for creating important tools for the study of Geometridae worldwide. We would be happy if you could help to realize this with (even small) contributions, for bank transfer details, please contact us:

Hossein Rajaei: hossein.rajaei@smns-bw.de or Axel Hausmann: hausmann.a@snsb.de

Dear Herbulotians, the next newsletter will be probably published in August 2021. Your contributions are highly welcome for publishing in the coming newsletter.

Invitation to join a Forum Herbulot community project:

GEOMETROIDEA PHYLOGENY

The project “Ecological drivers and phylogenetic components of diversification in a major insect radiation” (see [public description](#)) has secured funding from the Academy of Finland between 1.9.2020–31.8.2024. The project aims to provide a robust phylogenetic framework for Geometroidea in a global context, at genus level, forming a basis for solid classification and a platform for diversification and other analyses.

You are welcome to join, so we can make this a Forum Herbulot community project on Geometroidea! Joining is easy: contact Pasi for a missing taxon list and details, submit < 10 years old samples, which will be included in the molecular phylogenetic analyses. We plan to sequence up to 11 molecular markers for each sample, including DNA barcode. A subset of samples will go through whole genome sequencing protocol. Full specimens are preferred because we will examine the morphology of the specimens as well. In exchange to your efforts, I propose a co-authorship in the resulting phylogeny paper and access to your sample data. To become an author, the samples must be new to the project, and you must approve the manuscript before it is submitted. The molecular work is done as material becomes available and data analyses will be done towards the end of the project. We aim to publish the phylogeny paper in 2025.

Since the project focuses on genus level systematics, I am looking for material of genera not included in previous molecular analyses; also additional species from genera that are species rich, particularly with distinct species groups, and/or are geographically widespread; or other relevant material are welcome. If you have a personal interest in using molecular data to study a more specific question, contact Pasi to discuss if it could be supported.



Material needed, possibility for coauthorship

Target taxon
Geometroidea (Geometridae, Uraniidae, Sematuridae, Epicopeiidae, Pseudobistonidae)

Research questions

Phylogeny and classification

- Do current classifications form monophyletic groups?
- Do we need to reclassify taxa?

Macroevolutionary approach

- Why some lineages are more species-rich than others?
- Why diversity is unevenly distributed?
- What are the drivers of diversification?

Methodological work

- How combination of WGS, Sanger and barcode methods (grafting) suits to study these questions?

Urania leilus (photo: Didier Descouens)

UNIVERSITY OF HELSINKI

Project will have two experienced molecular systematists, starting in January 2021: Leidys Murillo Ramos (Colombia) and Kyung Min Lee (South Korea).

Other collaborators and material providers already involved are (sorry if I forgot somebody!): Hermann Staude (RSA), Hossein Rajaei (GER), Axel Hausmann (GER), Gunnar Brehm (GER), Niklas Wahlberg (SWE), Maria Heikkilä (FIN), Cathy Byrne (AUS), Sei-Woong Choi (KOR), Pritha Dey (IND), Silke Holm (EST), Luis Parra (CHI), Peder Skou (DEN), Dirk Stadie (GER), Steve Williams (AUS) and Tanner Matson (USA). Your contribution is now more important than ever because COVID regulations do not allow international field work or museum visits. We still miss many common genera, even in Europe! We can get better sampling and results together ☺

Pasi Sihvonen, University of Helsinki, pasi.sihvonen@helsinki.fi

Where is the XII Forum Herbulot (2024)?

The Scientific Board of Forum Herbulot is still looking for the venue of Forum Herbulot 2024. If you are interested to host the 12th Forum Herbulot in your country, please write an e-mail to Axel Hausmann (hausmann.a@snsb.de) and Hossein Rajaei (hossein.rajaei@smns-bw.de).

Venues which offer good possibilities for interesting collecting would be highly appreciated.

Studying the early stages and host-associations of African Geometridae

by the Caterpillar Rearing Group (CRG).

Hermann Staude

The third illustrated instalment of African Lepidoptera early stages and their host associations by the CRG of LepSoc-Africa was recently published, thereby effectively doubling, in seven years, the amount of Lepidoptera-host associations that had been accumulated in more than a century before the inception of the CRG in 2012.

The whole document can be downloaded from ResearchGate (Staude *et al.* 2020. Lepidoptera hosts and parasitoids for southern Africa, illustrated report, *Metamorphosis* **31** (3), 380pp. 152mb) or, if higher resolution is required, individual sections can be downloaded free of charge from the *Metamorphosis* website (<https://www.metamorphosis.org.za/>). Printed books will be available on request from the Editor.

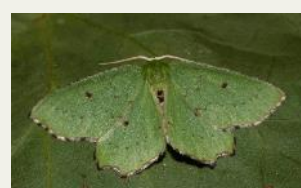
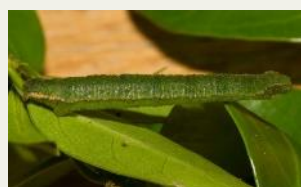
Geometridae, being the largest Lepidoptera family in southern Africa with 1565 known taxa (second largest Erebidae with 1511 taxa), feature prominently in the study. The geometrid part of the database on host associations is growing with 1718 larval geometrid-host associations now recorded for southern Africa, comprising 456 species representing 29% of the subregions' fauna.



Panagropsis muricolor,
Desmobathrinae on
Mimosa zeyheri,
Sapotaceae



Eupithecia infectaria,
Larentiinae on
Buddleja salviifolia &
Scrophulariaceae



Dolosis illacerata,
Geometrinae on
Canthium inerme,
Rubiaceae



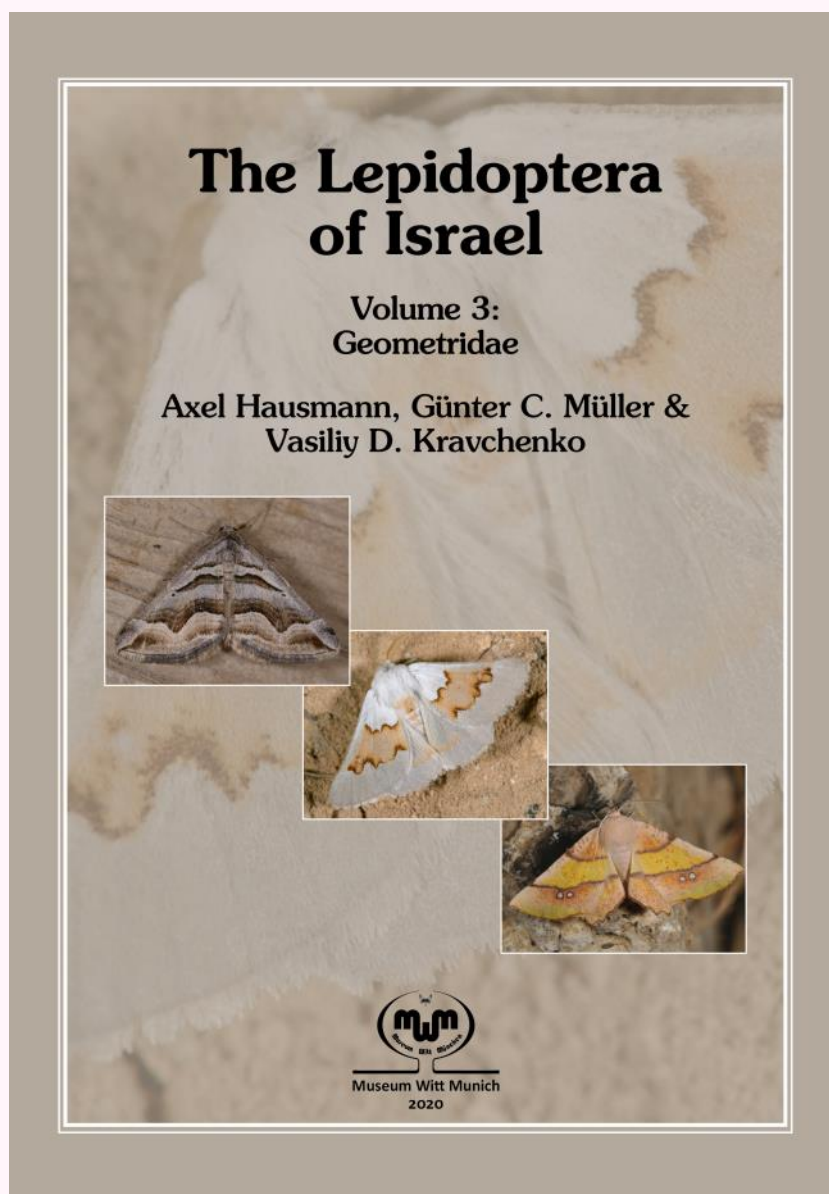
Traminda neptunaria,
Sterrhinae on
Vachellia gerrardii
Fabaceae

We live in exciting times. Collaboration within the Forum Herbulot community has been beneficial to this study with various disciplines contributing in different ways. A good example is the geometrids of Africa barcoding project, spearheaded by Axel Hausmann, that now enables us to positively identify reared species, which failed to become an adult due to parasitism or other reason, by barcoding. The taxonomic effort, mainly by the late Martin Krüger, which has accelerated in recent years with hundreds of new species described from the region, has provided a more stable platform for the recording of these ecological associations. The many recent projects, by the FH community, elucidating geometrid phylogeny has already greatly enhanced our understanding of their relationships. It is hoped that the exciting new project 'Geometroidea phylogeny and diversification', spearheaded by Pasi Sihvonen, which aims to study geometrid phylogeny to genus level globally, will take our understanding of geometrid relationships to a new level. Perhaps our growing data on geometrid-host-parasitoid associations together with a greater understanding of geometrid phylogeny, species boundaries and speciation will enable us to better understand how this incredible diversity of Geometridae has come to be. We live in exciting times.

The work is continuing with new submissions being received at the rate of 2.4 per day. You are invited to submit any rearing data you may have on African Lepidoptera and become part of the CRG.

A new book on the Geometridae of Israel and adjacent countries

Axel Hausmann, Günter C. Müller & Vasiliy D. Kravchenko (2020): The Lepidoptera of Israel, Volume 3, Geometridae. Proceedings of the Museum Witt Munich (9), ISBN 978-3-940732-46-0, price 89,00 €, hardcover, 256 pages, 29 colour plates.



This new publication deals with the 216 geometrid species that occur in Israel, presenting distributional data (with maps), habitat, phenology, host-plants and genetic data. A complete checklist is presented including the geometrid fauna of the adjacent countries of the Levant. 50 species are deleted from the national species list of Israel (earlier misidentifications), 63 species with records from closely adjacent areas are mentioned as potentially also present in Israel. 47 species are new for Israel, 22 for Jordan, six for Lebanon, two for Syria, one for Iraq, and 19 are new for Egypt / Sinai Peninsula. 13 species and one subspecies are described as new for science. Another eleven taxonomic changes are formally proposed. All Israeli species and most species of the adjacent countries are shown on colour plates.

The book can be ordered from:

AVM Akademischer Verlag München

Lindberghstr. 15, 80939 München, Tel: +49(0)89-51616151

avm@druckmedien.de



New book!

2020

Fazekas Imre The Eupitheciini of Hungary

(Lepidoptera: Geometridae)

205 pages, 168x243 mm (B/5)

ISBN 978-615-00-9795-4

Publisher: Pannon Institute, H-Pécs

A könyv ára: 49 € (+ post)

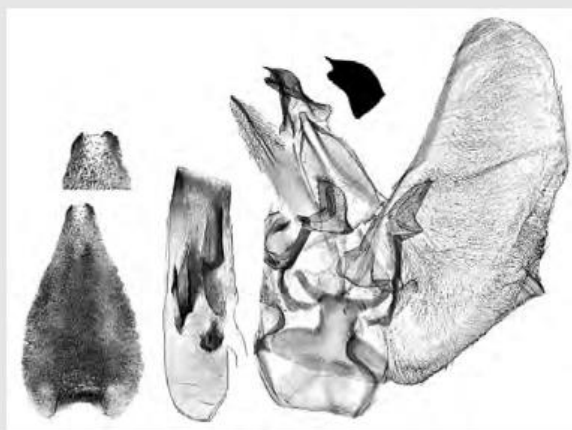
The title of the order:

E-mail: fazekas@outlook.com

An exhaustive review of pug moths of Hungary. The Hungarian Eupitheciini are revised on the basis of the study of 12500 specimens. These species represent 4 genera.

A comprehensive synthesis of information on 80 known Hungarian species of Eupitheciini, including a short historical outline, plentiful information on the morphology, biology and distribution, list of Hungarian taxa and their host plants, is presented.

Keys to Hungarian genera and some species are provided. Adult moths in colour, male and female genitalia, other diagnostic characters, and Hungarian distribution maps are provided. The book will be an important source of information for further studies on this tribe Eupitheciini in Hungary and elsewhere in Europe.



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