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*A newsletter for geometrid specialists*

# FORUM HERBULOT NEWSLETTER

## The 8<sup>th</sup> Forum Herbulot, 2014

The 8<sup>th</sup> Forum Herbulot was held from June 30 to July 4, 2014 in Naturschutzzentrum Erzgebirge in Annaberg-Buchholz, Schlettau (Germany) focusing on “*How to accelerate the inventory of Biodiversity*” and bringing together 59 geometrid specialists from 24 countries of all continents.

The congress started with an 'ice-breaking' Bavarian-Thuringian barbecue on July 30<sup>th</sup> and was followed by 32 high-quality scientific talks in eight subsequent plenary sessions from July 1 to 3: Minimum description standards, chaired by Scott Miller (Washington, USA); Rapid biodiversity assessment, chaired by Axel Hausmann (Munich, Germany); Rapid assessment tools, chaired by Jeremy deWaard (Guelph, Canada); Geometrid phylogeny and taxonomy, chaired by Pasi Sihvonen (Helsinki, Finland); Phylogeny and taxonomy of African and Asian geometrids, chaired by Catherine Byrne (Hobart, Australia); Biodiversity studies and Palaearctic geometrids, chaired by Hossein Rajaei (Stuttgart, Germany) (see program below). During these fantastic days the participants had the chance to know each other and open a lot of discussions and new cooperations. The scientific sessions were closed by a final discussion and the participants agreed on a final statement on accelerated biodiversity assessment (see below). A short visit to the Natural History Museum of Chemnitz and the congress dinner in Chemnitz concluded the congress.

The day after, most participants took part in a sightseeing of downtown Dresden with a ship tour on Elbe River. Some of them attended the Opera “II barbiere di Sevilla” at the beautiful Semperoper of Dresden.

Participants expressed their high appreciation to the sponsors and organizers of 8<sup>th</sup> FORUM HERBULOT, 2014.

For the next FORUM HERBULOT 9 in Concepción, Chile, mid-January 2017 was suggested.

Furthermore Chairman Axel Hausmann reported that future venues have been offered by the State Museum for Natural History, Stuttgart (Germany) and in South Korea.



(Some of the) Participants at the last day of Forum Herbulot 2014

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# List of participants

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The following participants took part in the 8<sup>th</sup> Forum Herbulot (in alphabetical order):

Michael Balke (Munich, Germany); Klaus-Rüdiger Beck (Demitz, Germany); Evgeny Beljaev (Vladivostok, Russia); Gunnar Brehm (Jena, Germany); Ulf Buchsbaum (Munich, Germany); Catherine Byrne (Hobart, Australia); Feza Can Cengiz (Antakya, Turkey); Mei-Yu Chen (Munich, Germany); Sei Woong Choi (South Korea); Sylvain Delabaye (Rouen, France); Jeremy deWaard (Guelph, Canada); Clarissa Dieterle (Munich, Germany); Wolfgang Dietrich (Annaberg-Buchh., Germany); Sven Erlacher (Chemnitz, Germany); Axel Hausmann (Munich, Germany); Oliver Hawlitschek (Munich, Germany); Tim Hujev (Chemnitz, Germany); Timm Karisch (Dessau, Germany); Mari Kekkonen (Helsinki, Fin-

land); Gareth King (Madrid, Spain); Gyula Laszlo (Budapest, Hungary); Hans Löbel (Sondershausen, Germany); Carlos Lopez-Vaamonde (Orléans, France); Gláucia Marconato (Sao Paulo, Brazil); Laura Marrero Palma (Chemnitz, Germany); Josepha Messenbrink (Chemnitz, Germany); Wolfram Mey (Berlin, Germany); Ellinor Michel (London, U.K.); Iva Mihoci (Zagreb, Croatia); Scott Miller (Washington, U.S.A.); Jerome Moriniere (Munich, Germany); Alfred Moser (Sao Leopoldo, Brazil); Bernd Müller (Berlin, Germany); Matthias Nuss (Dresden, Germany); Erki Õunap (Tartu, Estonia); Francesco Parisi (Campobasso, Italy); Lyubomir Penev (Sofia, Bulgaria); Gergely Petrányi (Budapest, Hungary); Hossein Rajaei Sh. (Stuttgart, Germany); Sujeevan Ratnasingham (Guelph, Canada);

László Ronkay (Budapest, Hungary); Rodolphe Rougerie (Orléans, France); Stefano Scalercio (Cosenza, Italy); Michael Schaarschmidt (Leipzig, Germany); Alexander Schintlmeister (Dresden, Germany); Marcus Schwalbe (Chemnitz, Germany); Andrea Sciarretta (Campobasso, Italy); Andreas Segerer (Munich, Germany); Pasi Sihvonen (Helsinki, Finland); Guy Sircoulomb (Paris, France); Manfred Sommerer (Munich, Germany); Hermann Staude (Magaliesburg, South Africa); Manfred Ströhle (Weiden, Germany); Dirk Stadie (Eisleben, Germany); Claude Tautel (Paris, France); Emanuel Toussaint (Paris, France); Andro Truuverk (Tartu, Estonia).

## Program of Forum Herbulot 2014

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### Monday, June 30, 2014

Arrivals, Transfers, Registration

Icebreaker (Bavarian/Thuringian barbecue)

Evening: collecting

### Tuesday, July 1, 2014

09:00-12:30: Keynote-lectures on minimum description standards – taxonomical and nomenclatorial implications (chair: S. Miller)

09:00 *Short Opening Address* Axel Hausmann: Claude Herbulot – his way of accelerating biodiversity assessment

09:15 Michael Balke: Taxonomy - faster. Better

09:50 Ellinor Michel et al.: Global Digital Infrastructure for Biological Nomenclature and Taxonomy

10:30 Plenary discussions (focus: minimum description standards)

10:50-11:15 *Coffee break*

11:15 Lyubomir Penev & Pavel Stoev: Streamlining descriptions of new species identified with barcode data

11:45 Sujeevan Ratnasingham: The BIN system: Standardizing molecular operational taxonomy in animals

12:15 Plenary discussions (focus: technical work flows)

12:30-14:30 *Lunch break*

14:30-19:00: Keynote-lectures on rapid biodiversity assessment – examples from various aspects of lepidopteran research (chair: A. Hausmann)

14:30 Jeremy deWaard et al.: From BINs to Biodiversity: Rapid Arthropod Assessments using DNA Barcodes

14:55 Scott Miller: DNA barcode enabled ecological research on Geometridae in Papua New Guinea

15:20 Hermann S. Staude: Accelerating the inventory of Lepidoptera early-stages and host-plant & other associations, by citizen-science projects

15:45 Plenary discussions

16:00-16:20 *Coffee break*

16:30 Breakout in 4 topical sub-groups with discussions

18:00 Plenary group-presentations with discussions, if possible preparing or fixing a consensus declaration

19:00 *Dinner*

20:00 Meeting of group secretaries/representants for preparing and fixing a "Forum Herbulot declaration on the acceleration of biodiversity assessment"



Evening: field studies and collecting

### Wednesday, July 2, 2014

09:00-10:45: Rapid assessment tools (12' talk, 3' discussion) (chair: J. deWaard)

09:00 Rodolphe Rougerie et al.: DNA barcoding and DNA metabarcoding as tools for rapid inventory and high-throughput identification of Lepidoptera species in Amazonia.

09:15 Mari Kekkonen: The flowchart of taxonomy – right pieces in the right order

09:30 Axel Hausmann et al.: With or without speed-limit? How to assess 3000 species of Emeralds.

09:45 Carlos Lopez-Vaamonde et al.: DNA barcoding reveals that the reverse latitudinal gradient of Gracillariidae leaf-miners is an artifact of tropical under-sampling

10:00 Sylvain Delabyeet et al.: Using DNA barcoding as a tool to describe moth community patterns in Lopé and Ivindo National Parks, Gabon

10:15 Discussions

10:30-11:00 *Coffee break*

11:00-12:30: Rapid assessment tools, geometrid phylogeny/taxonomy (12' talk, 3' discussion) (chair: P. Sihvonen)

11:00 Gyula M. László et al.: The importance of the morphotaxonomy in the exploration of the real biodiversity of Lepidoptera.

11:15 Gunnar Brehm: Land in sight? – exploring the global geometrid diversity hotspot

11:30 Sei-Woong Choi: Spatial and temporal pattern of species richness and abundance of macromoths including Geometridae in Mt. Jirisan National Park

11:45 Catherine Byrne: Current Research on Australian Geometridae

12:00 Andro Truuverk and Erki Õunap: On the Phylogeny and Systematics of the tribe Larentiini (Lepidoptera: Geometridae)

12:15 Discussions

12:30-14:30 *Lunch break*

14:30-15:45: Phylogeny/taxonomy of African and Asian geometrids (12' talk, 3' discussion) (chair: C. Byrne)

14:30 Evgeny A. Beljaev: Molecular and morphological phylogenies in geometroid lepidopterans (Geometriiformes) – discordant or concordant

14:45 Hossein Rajaei et al.: Molecular and morphological investigations suggest family level for the little known *Pseudobiston pinratana* Inoue, 1994

15:00 Pasi Sihvonen et al.: Enigmatic cycad moths of Africa: a holistic approach to examine their systematic position (Lepidoptera: Geometridae)

15:15 Andrea Sciarretta et al.: Recent advances on the knowledge of Geometrid moths of Ethiopia

15:30 Claude Tautel: a complex diversity of taxa behind one species: *Lophophelma luteipes* Felder, 1875

15:45 Discussions

16:00-16:30 *Coffee break*

16:30-17:15: Afternoon poster session: various biodiversity studies (chair: A. Hausmann)

Stefano Scalercio et al.: Improvements in the knowledge of the Larentiinae fauna of southern Italy by DNA barcoding analysis (Lepidoptera, Geometridae)

Glaucia Marconato: Palyadini Systematics, state-of-the-art

Wolfram Mey: Family ranking in Lepidoptera communities in southwestern Africa: are Geometridae statistically important?

19:00 *Dinner*

Evening: field studies and collecting

### Thursday, July 3, 2014

09:00-10:45: Morning plenary sessions: Palaearctic geometrids (12' talk, 3' discussion) (chair: H. Rajaei)

9:00 Feza Can Cengiz & Axel Hausmann: The Geometridae of the Amanos Mountains in Southern Turkey - with a review of the historical exploration

9:15 Gareth E. King: Contribution to an understanding of the early stages (egg, larva) of *Lythria sanguinaria* (Duponchel, 1842) with reference to two species in the Rhodometrini Agenjo, 1952 (Geometridae: Sterrhinae) (data from central Spain)

9:30 Evgeny Beljaev: Unexpected feature of the geometrid moths assemblages on the small islands in the Peter the Great Gulf

9:45 Laura Marrero Palma & Sven Erlacher: *Charissa (Pterygnophos)* from Central Asia

10:00 Closing presentation:

Erki Õunap: Phylogeny and classification of Timandrini and related groups - preliminary results

10:15 Discussions

10:30-11:00 *Coffee break*

11-12:00 Final discussions, FH Declaration on the Acceleration of Biodiversity Assessment, Date and venue of FH 2016/2017: Concepción, Chile

12:30-14:30 *Lunch break*

14:30 Transfer to Chemnitz

15:30-17:30 Visit to the museum in Chemnitz

18:00-21:00 Congress dinner in Chemnitz, Closure of Forum Herbulot 2014

Transfer to Annaberg-Buchholz

### Friday, July 4, 2014

Transfer to Dresden, Visit to the museum, sightseeing Dresden centre, Ship tour on Elbe river, and Opera (Il barbiere di Sevilla)

# Forum Herbulot 2014 statement on accelerated biodiversity assessment (Community Consensus Position)

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Forum Herbulot is a research initiative, founded in the year of 2000, with approx. 150 members from 42 countries. Most are renowned experts in Lepidopterology (with a main focus on the largest family, Geometridae). During the 8th congress of the Forum Herbulot, held between June 30th and July 5th at the Nature Conservation Centre of the Ore Mountains in Schlettau, Germany, attendants joined a general discussion of the topic "How to accelerate the inventory of biodiversity" and decided to publish the following declaration:

(1) Forum Herbulot (FH) highlights that global biodiversity assessment needs to be accelerated, through

- extensive sampling projects, especially in tropical and subtropical regions where a large part of Lepidopteran diversity remains undescribed,
- species descriptions and
- interim-assessments and characterization of diversity (e.g. DNA Barcoding; collection management; databasing)

To achieve this goal we urge national and international funding agencies, as well as decision-makers to provide substantial support and financial resources to projects involving sampling, DNA barcoding, and taxonomic research. WE NEED TO consider that mankind is facing, within the next few years, its biggest environmental crisis ever, i.e. the definitive and irreversible loss of a considerable part of biodiversity on earth. Species on Earth are disappearing at an alarming rate and it will soon be too late to perform research on (and subsequent conservation of) Life's most precious heritage: biodiversity. FH urgently asks national and international authorities to endorse and support biodiversity research by adopting collecting/exportation regulations in fact facilitating, rather than obstructing, research on biodiversity, along the lines of Article 8a of the Nagoya Protocol on Access and Benefit Sharing.

(2) FH highlights the need of formally described species within the universally adopted Linnean system, but also recognizes the urgent need to develop and integrate the use of interim DNA-based systems to characterize species.

Such an interim system can be generated, for instance, by the use of DNA barcoding, and of automatically assigned Barcode Index Numbers (BIN), in the Barcode of Life Datasystems (BOLD). Therefore we welcome

- (a) the forthcoming online documentation of BIN history in BOLD
- (b) DNA barcoding programs focusing on unnamed species (suspected to be new) in collections

(c) projects of DNA barcoding of type specimens. National funding agencies and decision-makers should commit themselves quickly to provide substantial support and financial resources to generate DNA-barcodes for all type specimens deposited in their national collections.

(3) FH acknowledges the advantages of modern tools for species descriptions, and supports/encourages:

- electronic publication of species descriptions linked to online databases
- development of interfaces linking DNA barcode data (e.g. BOLD), online publishing tools and other online databases (e.g. GenBank, GBIF, EOL, etc.)
- registration in Zoobank as a standard for all new nomenclatural acts
- DNA barcoding of holotypes as best practice for all newly described species.

(4) FH recommends, for species descriptions, the following minimum quality standards (in addition to the minimum requirements of the Code):

- information on wing pattern
  - internal morphological features (usually genitalia)
  - genetics (preferably the standard DNA barcode, i.e. the 5' 658bp of the COI gene) when available
  - differential diagnosis from the closest related species
- FH encourages careful and thorough differential diagnoses, as well as full bibliographic references to the original descriptions of all mentioned species names in taxonomic publications whenever possible.

(5) Common resource data: FH supports the Bouchout Declaration (<http://bouchoutdeclaration.org/>) for open access to biodiversity data and thus strongly encourages opening for free use the online access to key biodiversity data including sequences (along with access numbers on BOLD and GenBank / EMBL / DDBJ published in the original descriptions), taxonomic names, descriptions, occurrence data, images, ecological dates, habitats, biological traits and data.

The Forum Herbulot.

3 July 2014, Schlettau (Germany)

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## Monday: Icebreaker: Bavarian / Thuringian Barbecue



## Tuesday: Plenary Sessions



**(for the following photos only the presenter is mentioned even when the talk had co-authors)**



Axel Hausmann: Claude Herbulot – his way of accelerating biodiversity assessment



Michael Balke: Taxonomy - faster. Better



Ellinor Michel: Global Digital Infrastructure for Biological Nomenclature and Taxonomy



Lyubomir Penev: Streamlining descriptions of new species identified with barcode data



Sujeevan Ratnasingham: The BIN system: Standardizing molecular operational taxonomy in animals



Jeremy deWaard: From BINs to Biodiversity: Rapid Arthropod Assessments using DNA Barcodes



Scott E. Miller: DNA barcode enabled ecological research on Geometridae in Papua New Guinea

## Tuesday: Plenary Sessions



Hermann S. Staude: Accelerating the inventory of Lepidoptera early-stages and host-plant & other associations, by using citizen-science projects

## Tuesday: Discussion groups



# Wednesday: Plenary Sessions



Rodolphe Rougerie: DNA barcoding and DNA metabarcoding as tools for rapid inventory and high-throughput identification of Lepidoptera



Mari Kekkonen: The flowchart of taxonomy-right pieces in the right order



Axel Hausmann: With or without speed-limit? How to assess 3000 Emerald species .



Carlos Lopez-Vaamonde: DNA barcoding reveals that the reverse latitudinal gradient of Gracillariidae leaf-miners is an artifact of tropical under-sampling



Sylvain Delabye: Using DNA barcoding as a tool to describe moth community patterns in Lopé and Ivindo National Parks, Gabon



Gyula M. László: The importance of the traditional taxonomy in the exploration of the real biodiversity of Lepidoptera. A study case: the Nolini (Lepidoptera, Nolinae, Noctuoidea) fauna of Eurasia



Gunnar Brehm: Land in sight? – exploring the global geometrid diversity hotspot



Sei-Woong Choi: Spatial and temporal pattern of species richness and abundance of macromoths including Geometridae in Mt. Jirisan National Park, South Korea





Catherine Byrne: Current Research on Australian Geometridae – redefining the Tasmanian ‘Archiearinae’ and the blitzing of Australia’s remote fauna



Andro Truuverk: On the Phylogeny and Systematics of the tribe Larentiini (Lepidoptera: Geometridae)



Evgeny A. Beljaev: Molecular and morphological phylogenies in geometroid lepidopterans (Insecta: Lepidoptera: Geometriformes) – discordant or concordant



Hossein Rajaei: Molecular and morphological investigations suggest family level for the little known *Pseudobiston pinratanai* Inoue, 1994



Pasi Sihvonen, Hermann S. Staude: Enigmatic cycad moths of Africa: a holistic approach to examine their systematic position (Lepidoptera: Geometridae)



Andrea Sciarretta: Recent advances in the knowledge of Geometrid moths of Ethiopia



Claude Tautel: A complex diversity of taxa behind one species: *Lophophelma luteipes* Felder, 1875



Wolfram Mey: Family ranking in Lepidoptera communities in southwestern Africa: are Geometridae statistically important?



Stefano Scalercio: Advances in the knowledge of the larentiine fauna of southern Italy by DNA barcoding



Glauca Marconato: Palyadini Systematics, state-of-the-art



Feza Can Cengiz, Axel Hausmann: The Geometridae of the Amanos mountains in southern Turkey - with a review of the historical exploration



Gareth E. King: Contribution to an understanding of the early stages (egg, larva) of *Lythria sanguinaria* (Duponchel, 1842) with reference to two species in the Rhodometrini Agenjo, 1952 (Geometridae: Sterrhinae)



Evgeny A. Beljaev: Unexpected feature of geometrid species composition (Lepidoptera: Geometridae) on the small islands in the Peter the Great Gulf (Sea of Japan, south of Russian Far East)



Laura Marrero Palma: *Charissa*, subgenus *Pterygnophos*: little-known geometrid moths from Central Asia

Erki Öunap: Phylogeny and classification of Timandriini and related groups - preliminary results



# Coffee and Lunch Breaks



# Evenings



## The organizers: Sven Erlacher and Axel Hausmann



# Thursday: Visit to Chemnitz Natural History Museum



## Thursday: Conference Dinner (Chemnitz)



## Friday: Visit to Dresden Natural History Museum, Dresden City, Boat Tour and Opera



### The 9<sup>th</sup> Forum Herbulot, 2017

The Departamento de Zoología, Facultad de Ciencias Naturales y Oceanográficas, Universidad de Concepción, is pleased to invite researchers to participate in Herbulot Forum 2017 which will take place in January 2017 in Concepción, Chile [http://www.udec.cl/tv\\_manoman/coo.html](http://www.udec.cl/tv_manoman/coo.html). This will again be an opportunity to discuss all issues related to advances in research in the Geometridae family. Joined to incomparable setting that offers the city of Concepción, in January (summer in the southern hemisphere) we will have some days where we can enjoy, in addition to the scientific content of the Forum Herbulot, each and every one of the possibilities that the city offers, art, culture, gastronomy and, of course, friendliness and affable nature its people. The organizing committee has also contemplated the realization of excursions for the collection of entomological material into temperate forests of southern Chile.

Soon be announcing the definitive dates of the Forum more the places to be visited in this country long. Here I leave a link for more information on the city of Concepción: <http://chile.travel/en/where-to-go/lakes-and-volcanoes/concepcion-and-chillan/concepcion-2/>

Luis Parra

### New Literature

- Krüger, M. (2014) A revision of the *Mauna* Walker, 1865 and *Illa* Warren, 1914 group of genera (Lepidoptera: Geometridae: Nacophorini). *Annals of the Ditsong Nat. Mus. Nat. History* 4: 77-173.
- Mironov, V. (2014) Geometrid Moths of the Genus *Eupithecia* Curtis, 1825 (Lepidoptera, Geometridae): Prerequisites and Characteristic Features of High Species Diversity. *Entomological Review* 94 (1): 105-127.
- Mironov, V. & A. Galsworthy (2014) A survey of *Eupithecia* Curtis, 1825 (Lepidoptera, Geometridae, Larentiinae) in Mongolia with descriptions of two new species. *Zootaxa* 3774 (2): 101-130.
- Sihvonen P, Skou P, Flamigni C, Fiumi G, Hausmann A. (2014) Revision of the *Hylaea fasciaria* (Linnaeus, 1758) species group in the western Palaearctic (Lepidoptera: Geometridae, Ennominae). *Zootaxa*, 3768(4):469-486.
- Rajaei Sh. H, László GM. (2014) *Scotopteryx kurmanjiana*, a new species from the Kopet-Dagh Mountains (Lepidoptera, Geometridae, Larentiinae). *Nota Lepidopterologica* 37 (1): 37-42.
- Stadie D, Hausmann A, Rajaei Sh. H. (2014) *Cataclysmes subtilisparsata* Wehrli, 1932 (Geometridae, Larentiinae) recognized as bona species – an integrative approach. *Nota Lepidopterologica*, 37 (2): 141-150.
- Staude, H.S. & P. Sihvonen (2014) Revision of the African geometrid genus *Zerenopsis* C. & R. Felder - moths with peculiar life histories and mating behaviours (Geometridae: Ennominae: Diptychini). *Metamorphosis* 25: 11-55.