

Editorial

Fifth International Tenebrionoidea Symposium

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Welcome to Prague

In 2002 Dr. Martin Baehr, the former curator of the Zoologisches Staatsammlung in München (Germany), organised an International Tenebrionid Symposium to honor Dr. Hans J. Bremer's work on Tenebrionidae and unknowingly laid the foundation for future, more or less, regular formal meetings to share the knowledge and enthusiasm of Tenebrionoidea workers. Subsequent meetings were then held in Lyon (France, 2005), Tempe, AZ (USA, 2013), and Mendoza (Argentina, 2015). For more information about those meetings see Smith *et al.* (2014) and Flores *et al.* (2016).

To preserve the tradition and support tenebrionid researchers from around the World, the 5th International Tenebrionoidea Symposium was organised in Prague (Czech Republic) by Luboš Purchart. The two-day meeting took place on March 5th and 6th 2018. The excellent geographic position of Prague strongly encouraged tenebrionid specialists to come (Figs 1–4). As a result, 42 participants from 16 countries attended, making it the largest and most nationality diverse meeting so far (List of attendants, p. ii).

Although the symposium formally started on Monday (March 5th), many of the participants had already gathered on the preceding Friday evening (March 2nd) for an informal meeting with the other entomologists who came to participate in some co-occurring events; as the symposium dates were selected to follow up on the International Meeting of Entomologists, which was associated with the Traditional Insect Exchange Days (March 3rd and 4th) – the largest such even in Central Europe.

At the symposium, seventeen 20-minutes talks and eighteen posters were presented (see Titles of the talks and posters, pp. ii–vi). These were grouped into three thematic sections focused on: the subfamily Pimeliinae in all aspects (1st section), biogeography, evolution and phylogeny of Tenebrionidae (2nd section), and various topics that were not included in previous two sections (3rd section).

After the symposium, on Wednesday and Thursday (March 7th and 8th), many of the participants visited the entomological collections of the Entomological department of the National Museum in Prague where they were kindly hosted by Dr. Lukáš Sekerka and Dr. Jiří Hájek (Fig. 5). The main interest was focused on the general tenebrionid collection, especially on the diverse material gathered by the late René Fouquè – a great specialist in Stenosini (Sekerka 2017).

During the symposium, Marcin Kamiński contacted Prof. Dariusz Iwan, editor-in-chief of the *Annales Zoologici*, who kindly agreed to publish an issue of the journal based on the contributions of symposium attendees – similar to the Proceedings of the Fourth Tenebrionoidea Symposium published in 2016 (see *Annales Zoologici* vol. 66 no. 4).

At the end of the meeting, participants discussed the place of the next Tenebrionoidea symposium. Aaron D. Smith suggested the Gobabeb Training and Research Centre in Namibia, while Maxwell V.L. Barclay invited the participants to London.

Acknowledgements

We would like to express our gratitude to all of the attendees. We also thank all of our colleagues who helped in reviewing papers for this issue of *Annales Zoologici*. We are grateful to Dr. Jiří Hájek and Dr. Lukáš Sekerka, who kindly hosted symposium participants in the entomological collections of the Natural History Museum in Prague. Last but not least we also thank the employees of the Department of Forest Ecology, Mendel University in Brno – Kateřina Uherková and Martin Dul'a, who helped with the organisation of the symposium.

References

- Flores, E. G., Scollo, A. N., Silnik, S. J. L., Aballay, F. H., Cheli, G. H. and R. Carrara. 2016. Fourth International Tenebrionoidea Symposium. *Annales Zoologici*, 66(4): 495–498.
- Sekerka, L. 2017. In memoriam Ing. René Fouqué. *Acta Entomologica Musei Nationalis Prague*, 57(2): 309–312.
- Smith, A. D., Aalbu, R. L. and P. Bouchard. 2014. Editorial: Third International Tenebrionoidea Symposium. *In:* Bouchard, P. and A. D. Smith (Eds). Proceedings of the Third International Tenebrionoidea Symposium, Arizona, USA, 2013. ZooKeys, 415: 1–8.

List of attendants of the Fifth International Tenebrionoidea Symposium

Aalbu, Rolf L. (<i>USA</i>)	Liu, Changhai (<i>P. R. China</i>)
Aloquio, Sergio (<i>Brasil</i>)	Masumoto, Kimio (<i>Japan</i>)
Ando, Kiyoshi (<i>Japan</i>)	Merkl, Ottó (<i>Hungary</i>)
Barclay, Maxwell V. L. (<i>United Kingdom</i>)	Nabozhenko, Maxim (<i>Russia</i>)
Bečvář, Stanislav (<i>Czech Republic</i>)	Novák, Vladimír (<i>Czech Republic</i>)
Bouchard, Patrice (<i>Canada</i>)	Purchart, Luboš (<i>Czech Republic</i>)
Campbell, Milton (<i>Canada</i>)	Ruzzier, Enrico (<i>Italy</i>)
Chigray, Ivan (<i>Russia</i>)	Růžička, Jan (<i>Czech Republic</i>)
Chigray, Svetlana (<i>Russia</i>)	Schawaller, Wolfgang (<i>Germany</i>)
Condamine, Fabien L. (<i>France</i>)	Sekerka, Lukáš (<i>Czech Republic</i>)
Flores, Gustavo E. (<i>Argentina</i>)	Sendogan, Dirim (<i>Turkey</i>)
Geiser, Michael (<i>United Kingdom</i>)	Smith, Aaron Dennis (<i>USA</i>)
Grimm, Roland (<i>Germany</i>)	Soldati, Fabien (<i>France</i>)
Kamiński, Marcin Jan (<i>USA, Poland</i>)	Soldati, Laurent (<i>France</i>)
Kanda, Kojun (<i>USA</i>)	Steiner, Jr. Warren E. (<i>USA</i>)
Kergoat, Gael J. (<i>France</i>)	Swearingen, Jil (<i>USA</i>)
Keskin, Bekir (<i>Turkey</i>)	Tichý, Vladimír (<i>Czech Republic</i>)
Keskin, Nursen Alpagut (<i>Turkey</i>)	Wirth, Christopher C. (<i>USA</i>)
Kirdök, Melis G. (<i>Turkey</i>)	Yuan, Caixia (<i>P. R. China</i>)
Labrique, Harold (<i>France</i>)	Zhao, Guilling (<i>P. R. China</i>)
Lillig, Martin (<i>Germany</i>)	Zúñiga-Reinoso, Alvaro (<i>Germany, Chile</i>)

Titles of the talks and posters presented at the Fifth International Tenebrionoidea Symposium

Full programme with abstracts is now available at:
<https://lubospurchart.webnode.cz/a5th-international-tenebrionoidea-symposium/>

Talks

Assessing the current status of the Edrotini

Rolf L. Aalbu¹, Christopher C. Wirth²

¹Department of Entomology, California Academy of Sciences, San Francisco, USA

²Northern Arizona University, Flagstaff, USA

Brazilian Tenebrionidae: what is known and what are the future perspectives

Sergio Aloquio

*Departamento de Biologia Geral, Universidade Federal de Viçosa, Viçosa, Brasil***The Tenebrionidae Collection of the Natural History Museum**

Maxwell V. L. Barclay

*Department of Life Sciences, Natural History Museum, London, United Kingdom***Contribution to the knowledge of the darkling beetle subfamily Phrenapatinae (Coleoptera: Tenebrionidae): checklist of the world fauna and description of pupae**

Patrice Bouchard

*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada***Evolution of endemism and drivers of island diversification for multiple colonizations and replicated radiations of beetles on an ancient oceanic island**Fabien L. Condamine^{1,2}, Laurent Soldati¹, Anne-Laure Clamens¹, Roula Jabbour-Zahab^{1,3}, Hervé Jourdan⁴, Gael J. Kergoat¹¹ CNRS, Institut des Sciences de l'Evolution (Université de Montpellier), Montpellier, France² INRA, Centre de Biologie pour la Gestion des Populations (INRA / IRD / CIRAD / Montpellier SupAgro), Montferrier-sur-Lez, France³ CNRS, CEFE (CNRS, Université de Montpellier), Montpellier, France⁴ IRD, IMBE (INEE, Centre IRD de Nouméa), Nouméa, Nouvelle-Calédonie**Revision of the Neotropical subgenus *Mesopraocis* Flores & Pizarro-Araya of the genus *Praocis* Eschscholtz (Pimeliinae: Praociini)**Gustavo E. Flores¹, Jaime Pizarro-Araya^{2,3}¹ Laboratorio de Entomología, Instituto Argentino de Investigaciones de las Zonas Áridas (CCT CONICET Mendoza) Mendoza, Argentina² Laboratorio de Entomología Ecológica, Departamento de Biología, Facultad de Ciencias, Universidad de La Serena, La Serena, Chile³ Instituto de Investigación Multidisciplinaria en Ciencia y Tecnología, Universidad de La Serena, La Serena, Chile***Ex Africa semper aliquid novi: biogeography of the tribe Dendarini (Tenebrionidae)***Marcin J. Kamiński¹, Dariusz Iwan¹, Kojun Kanda², Aaron D. Smith²¹ Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw, Poland² Northern Arizona University, Department of Biological Sciences, Flagstaff, USA**Taxonomic studies of New World Laenini (Tenebrionidae: Lagriinae)**Kojun Kanda¹, M. Andrew Johnston²¹ Northern Arizona University, Department of Biological Sciences, Flagstaff, USA² Biodiversity Knowledge Integration Center Arizona State University**Is *Turkonalassus* Keskin, Nabozhenko et Keskin, 2017 (Tenebrionidae, Helopini) a new genus? A molecular insight!**Bekir Keskin¹, Dirim Sendoğan¹, Maxim Nabozhenko^{2,3}, Nursen Alpagut Keskin¹¹ Ege University, Faculty of Science, Biology Department, Izmir, Turkey² Caspian Institute of Biological Resources of Dagestan Scientific Centre of Russian Academy of Sciences, Makhachkala, Russia³ Dagestan State University, Makhachkala, Russia**Karyological variations in Tenebrionidae**Nursen Alpagut Keskin¹, Dirim Sendoğan¹, Utku Cal san¹, Cosku Ögren¹, Bekir¹ Keskin, Maxim V. Nabozhenko^{2,3}¹ Ege University, Faculty of Science, Biology Department, Izmir, Turkey² Caspian Institute of Biological Resources of Dagestan Scientific Centre of Russian Academy of Sciences, Makhachkala, Russia³ Dagestan State University, Makhachkala, Russia**The tenebrionid beetles in the Musée des confluences collections**

Harold Labrique

Musée des Confluences, Lyon, France

Revision of the Edrotini (Tenebrionidae: Pimeliinae) of Peru

Alfredo E. Giraldo Mendoza¹, Gustavo E. Flores²

¹Universidad Nacional Agraria La Molina, Museo de Entomología Klaus Raven Büller, Lima, Perú

²CONICET, Laboratorio de Entomología, Instituto Argentino de Investigaciones de las Zonas Áridas (IADIZA, CCT CONICET Mendoza), Mendoza, Argentina

„Ultra”-psammophilous Tenebrionidae in the deserts of the Old World

Wolfgang Schawaller

Natural History Museum, Stuttgart, Germany

Biodiversity and phylogeny of Pimeliinae: preliminary findings and next steps

Aaron D. Smith¹, Kojun Kanda¹, Marcin J. Kamiński², Patrice Bouchard³, Gustavo E. Flores⁴, Gael J. Kerfoot⁵,

Fabien L. Condamine^{6,7}, Rolf L. Aalbu⁸, A. Lamb¹, Luboš Purchart⁹

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⁸Department of Entomology, California Academy of Sciences, San Francisco, USA

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Descriptions of the larva, pupa, habitats and life history of the North American darkling beetle *Idiobates castaneus* (Knoch) (Coleoptera: Tenebrionidae; Tenebrionini)

Warren E. Steiner, Jr.

Department of Entomology, Smithsonian Institution, Washington, USA

Towards a revision of the genus *Edrotes*

Christopher C. Wirth

Northern Arizona University, Flagstaff, USA

Preliminary studies about the genetics and phylogenetics patterns of the darkling beetles (Coleoptera, Tenebrionidae) from Atacama Desert

Alvaro Zúñiga-Reinoso¹, Lapo Regioneri¹, Marcel Bläser¹, Julia Oly¹, Gustavo Flores², Reinhard Predel¹

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Posters

Tenebrionidae (Coleoptera) of forensic importance in Mendoza and Catamarca, Argentina: Their relationship to decomposition stages as complementary PMI indicators

Fernando H. Aballay^{1,3}, Fernando N. Jofré¹, Gustavo E. Flores¹, Néstor D. Centeno²

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³Departamento de Biología, Facultad de Ciencias Exactas Físicas y Naturales, Universidad Nacional de San Juan, San Juan, Argentina

A new species of *Discopleurus* (Coleoptera: Tenebrionidae: Pimeliinae), the first Stenosini from Brazil

Sergio Aloquio¹, Gustavo E. Flores², Cristiano Lopes-Andrade³

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³Laboratório de Sistemática e Biologia de Coleópteros, Departamento de Biologia Animal, Universidade Federal de Viçosa, Viçosa, Brasil

New data on the behavior and morphology of species of the Neotropical genus *Nilio* (Coleoptera: Tenebrionidae: Nillioninae)

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Synopsis of the American Neomida (Coleoptera: Tenebrionidae: Diaperini)

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²Laboratório de Sistemática e Biologia de Coleópteros, Departamento de Biologia Animal, Universidade Federal de Viçosa, Viçosa, Brasil

Cytogenetics of *Turkonalassus quercanus* (Tenebrionidae, Helopini)

Utku Çalişan, Nurşen Alpagut Keskin

Ege University, Faculty of Science, Biology Department, Izmir, Turkey

Species diversity of Tenebrionidae in mountaintops of extraandean volcanoes of Payunia (Argentina), with descriptions of two new species

Rodolfo Carrara¹, Violeta A. Silvestro², Germán H. Cheli³, Sergio Roig-Juñent¹, Gustavo E. Flores¹

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The role of tenebrionid beetles on litter fragmentation processes and soil biogeochemical cycles in arid Patagonia

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Spatial distribution of tenebrionid beetles in relation to environmental variability in Península Valdés, Patagonia

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Taxonomic significance of the ovipositor and female genital tubes in the genus *Blaps* Fabricius, 1775 (Coleoptera: Tenebrionidae) from the Caucasus

Ivan Chigray¹, Maxim Nabozhenko^{2,3}, Gayirbeg Abdurakhmanov³

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Revision of the genus *Calyptopsis* Solier, 1835 (Coleoptera: Tenebrionidae: Tentyriini): problems and progress in the taxonomy

Svetlana Chigray

Southern Federal University, Rostov-on-Don, Russia

A molecular phylogeny of Pedinini (Coleoptera: Tenebrionidae) and its implications for higher-level classification

Marcin Jan Kamiński¹, Kojun Kanda², Ryan Lumen², Aaron D. Smith², Dariusz Iwan¹

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² *Northern Arizona University, Department of Biological Sciences, Flagstaff, USA*

Phylogeography of *Odocnemis aegaeica* Nabozhenko et Keskin, 2016 species group

Bekir Keskin¹, Maxim Nabozhenko^{2,3}, Nursen Alpagut Keskin¹, Anna Papadopoulou⁴

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Biotic and abiotic factors that influence the biodiversity patterns of Tenebrionidae in the Puna and High Andes of the province of Salta, Argentina

Hilda B. Macagno¹, Ivanna G. Cruz¹, Sandra M. Rodríguez-Artigas³, Jose A. Corronca¹, Gustavo E. Flores²

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New species of *Schizaraeus* Kulzer from Peru (Pimeliinae: Stenosini)

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Female genital tubes in the tribe Helopini: structure and taxonomic significance

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Cytogenetics of *Helops glabriventris* (Tenebrionidae: Helopini)

Cosku Öğren, Nurşen Alpagut Keskin

Ege University, Faculty of Science, Biology Department, Izmir, Turkey

Revision of the genus *Diastoleus* Solier, 1838 (Tenebrioninae: Scotobiini)

Violeta A. Silvestro

Laboratorio de Entomología, Instituto de Biodiversidad y Biología Experimental y Aplicada (IBBEA), CONICET-UBA. Ciudad Autónoma de Buenos Aires, Argentina

Taxonomy of the genus *Strongylium* from Tibet, with the description of two new species (Coleoptera: Tenebrionidae)

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² *Hebei University, College of Life Sciences, Baoding, China*



Figure 1. Group photo. Sitting, from the left to right: Luboš Purchart, Kojun Kanda, Sergio Aloquio, Gustavo E. Flores, Marcin J. Kamiński, Kimio Masumoto, Jil Swearingen, Warren Steiner, Shanghai Liu, Cheng-Bin Wang, Lukáš Sekerka, Michael Geiser, Jan Růžička; standing, from left to right: Christopher Wirth, Gael J. Kergoat, Aaron D. Smith, Fabien Condamine, Jordan Rainey, Roland Grimm, Svetlana Chigray, Martin Lillig, Kiyoshi Ando, Alvaro Zúñiga-Reinoso, Milton Campbell, Rolf Aalbu, Ivan Chigray, Enrico Ruzzier, Wolfgang Schawaller, Harold Labrique, Fabien Soldati, Vladimír Tichý, Bekir Keskin, Maxim Nabozhenko, Nursen A. Keskin, Stanislav Bečvář, Ottó Merkl, Melis G. Kirdök, Dirim Sendogan, Caixia Yuan, Maxwell V.L. Barclay, Guilling Zhao, Vladimír Novák, Laurent Soldati, Patrice Bouchard.



Figure 2. The first talk. First row, from the wall: Marcin J. Kamiński, Roland Grimm, Vladimír Tichý, Harold Labrique, Milton Campbell, Rolf Aalbu, Chris C. Volansky-Wirth; second row, from the wall: Alvaro Zúñiga-Reinoso, Gustavo E. Flores, Enrico Ruzzier, Bekir Keskin, Nursen A. Keskin, Dirim Sendogan, Melis G. Kirdök; third row, from the wall: Aaron D. Smith, Patrice Bouchard, Kiyoshi Ando, Wolfgang Schawaller, Ottó Merkl, Kimio Masumoto, Jil Swearingen, Warren Steiner; fourth row, from the wall: Martin Lillig, Stanislav Bečvář, Jan Růžička, Cheng-Bin Wang, Caixia Yuan, Michael Geiser, Jordan Rainey; fifth row, from the wall: Fabien Soldati, Laurent Soldati, Fabien Condamine, Gael J. Kergoat, Vladimír Novák, Shanghai Liu (photo by Luboš Purchart).



Figure 3. Sergio Aloquio and Wolfgang Schawaller during a poster session (photo by Christopher Wirth).



Figure 4. Enrico Ruzzier and Kojun Kanda exchanging specimens (photo by Christopher Wirth).

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Figure 5. Ottó Merkl at the entomological collection of the Natural History Museum in Prague (photo by Christopher Wirth).