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TORTS

Newsletter of the
Troop of Reputed Tortricid Systematists

GLOBAL INITIATIVES FOR MOLECULAR ANALYSIS OF LEPIDOPTERA

Currently there are two relatively high-profile global initiatives focused on molecular analyses of the entire order Lepidoptera: the "DNA barcode" project spear-headed by Paul Hebert (University of Guelph) and the NSF-funded "Tree of Life" project with co-P.I.s Charles Mitter (University of Maryland) and Susan Weller (University of Minnesota). Defined in a simplistic fashion (commensurate with my knowledge of molecular analyses), the former focuses on sequencing a 648-base pair segment of the mitochondrial gene cytochrome oxidase I (COI) for all species of Lepidoptera on the planet (i.e., one gene, large taxon sample). That project currently is funded to obtain sequence data for the entire North American fauna (including the Great Smoky Mountains National Park), the Australian fauna, and the fauna of Area de Conservación Guanacaste, Costa Rica. The goal is to sequence a single highly informative gene for the entire Lepidoptera fauna of the world in order to characterize every species by its unique "barcode" sequence.

In contrast, the goal of the Tree of Life project is to sequence 24 different genes (mostly nuclear) from representatives of all higher taxa of Lepidoptera (subfamilies for some families, tribes for others) in order to develop a robust and meaningful hypothesis of the phylogeny of the order. This approach uses many genes but employs a more limited taxon sample.

The potential of each of these projects to help resolve systematic problems in Tortricidae is great, and the implications of the results are far-reaching. The DNA barcode data are likely to help resolve (or at least expose) problems at the species-level, allow the association of sexes of highly dimorphic or polymorphic species, and provide "diagnostics" for the identification of pest species. Results of the Tree of Life project will help resolve relationships among tribes, confirm (or refute) the putative paraphyly of Tortricinae, assist in the assignment of "orphan" genera (e.g., *Mictopsichia*, *Arotrophora*, *Orthocomotis*) to their appropriate tribe, and provide clues to outgroups, both within and outside Tortricidae.

In addition to these global initiatives, two smaller molecular projects also are in progress. [I'm sure there are many more.] Marianne Horak (CSIRO) and Felix Sperling (University of Alberta) are working on a phylogeny of tortricid tribes based on four genes (COI, COII, EF1-∝, and 28S) and morphological data. The preliminary results of their work, presented at the International Congress of Entomology in Brisbane in 2004,

are interesting indeed, and indicate that these genes have great promise for elucidating phylogenetic relationships within the family. Also exploring the use of molecular data are Jerry Powell (University of California, Berkeley) and John Brown (USDA, Systematic Entomology Laboratory) who have teamed with Rebecca Simmons (University of North Dakota). Their work is focused on resolving relationships among the tribes of Tortricinae, with a special emphasis on the genera of Sparganothini.

The purpose of describing these project to you is two-fold. First, because the DNA barcode and Tree of Life projects are global in scope, all of us can make a contribution to them. If you live or collect in a region that harbors taxa of limited geographic distribution, we would be very pleased to hear from you. For example, samples of tribes such as Ceracini, Epitymbiini, Gatesclarkeanini, Phricanthini, and other highly restricted groups are extremely valuable to these projects, providing a more complete taxon sample for Tortricidae. If any of these taxa are available to you, please contact me for details regarding their collection, storage, and transport. In general, specimens for the DNA barcode project simply can be pinned (but not subsequently relaxed). Specimens for the Tree of Life project should be placed in 75-100% EtOH as soon as possible after the specimen has been killed.

Secondly, if you personally are involved in molecular analyses of Tortricidae, please communicate your proposed and/or in-progress studies with your fellow tortricidologists so that we can begin using the same genes and avoid sequencing the same taxa. That way our molecular work can be complimentary and additive; we will be able to share data.

Although my knowledge of gene sequencing, PCR amplification, and algorithms for producing phylogenetic hypotheses using molecular data is limited, I am pleased to function as a "clearing-house" for data and specimens. As collaborators on the Tree of Life project, Marianne Horak, Joaquin Baixeras, and John Brown are charged with trying to obtain the broadest array possible of tortricid exemplars. If you would like to contribute in any way, please feel free contact one of us.

TORTS NEWSLETTER DISTRIBUTED AS PDF

Since last year the newsletter has been distributed primarily via e-mail as a PDF. Several members still receive a hard-copy via regular mail owing to problems receiving attachments. If you have been receiving a hard copy and prefer to receive a PDF, please let me know. Likewise, if you have been receiving a PDF and would prefer a hard copy, let me know. Please check your e-mail address in this issue for accuracy. If you have corrections, please provide them to me at jbrown@sel. barc.usda. gov.

NEW WEBSITE TO PERUSE

Dr. B.-K. Byun has developed a new website to host information associated with TORTS (http://tortrshome.org/). Posted on the site are the TORTS "membership" list, PDFs of recent Newsletters, a list of entomological journals, and many other interesting features and links. Although the site is still under construction, Dr. Byun hopes that it eventually will become a place for the exchange of ideas among tortricid workers worldwide.

IMAGES OF NORTH AMERICAN TORTRICIDAE AVAILABLE ON WEB

The website for the North American Moth Photographers Group at the Mississippi Entomological Museum at Mississippi State University (http://mothphotographersgroup.msstate.edu/TG/Plate17a.shtml) includes a "digital guide to moth identification." The guide has outstanding images of North American Tortricidae organized according the Check List of the Lepidoptera of America north of Mexico (Hodges et al. 1983). The "plates," which are nearly complete for North America, are arranged as large groups of congeners and/or related taxa, so multiple images are displayed simultaneously. Many of the photos of Tortricidae were provided by Todd Gilligan, who currently is a graduate student at Ohio State University. Todd's website (tortricid.net) includes images of most of the type specimens of Tortricidae at ANSP, USNM, and CSIRO along with hundreds of other specimens.

According to the Mississippi State site, their images of tortricids have been enhanced by Nolie Schneider who used a photo editor to remove specimen labels from the backgrounds of all photos. Blank spaces and/or photos of unspread specimens have been inserted as "place-keepers" for missing species. These are intended to be replaced at the first opportunity by photos of spread specimens. If you have photos of North American species not included in the guide, the images would be much appreciated. If you know of additional species that are attributable to the eastern North American fauna, please send the information, along with photos (if available), to the web-master of the site (BPatter789@aol.com).

UPDATES TO WORLD CATALOGUE OF INSECTS, VOLUME 5, TORTRICIDAE (LEPIDOPTERA)

Because one of the goals of the tortricid catalog was to identify gaps in our knowledge and areas where our taxonomy is in need of revision, I have tried to encourage colleagues to provide corrections, additions, and recommendations that may improve the value and correctness of the catalog as it is being converted into electronic format. Several workers have been extremely generous with their comments, in particular Utsugi Jinbo, who discovered many overlooked taxa in the Oriental fauna.

This article is comprised of two lists and a bibliography. The first list includes species and genera described prior to 2005 not included in the catalog. About 50% of the species described in 2004 were included, but those published late on the year were not discovered until after publication of the catalog. The second list provides new combinations and new synonymies proposed prior to 2005. Finally, a bibliography is provided in support of all the additions and changes. [Changes and additions proposed in 2005 will be provided next year.]

SPECIES AND GENERA OF TORTRICIDAE DESCRIBED PRIOR TO 2005 NOT INCLUDED IN TORTRICIDAE CATALOGUE

Aethes

eberti Sutter & Karisch, 2004 (*Aethes*), *Entomol. Nachr. Berich*. 48: 213. TL: Iran (Elburs Mountains, 12 km v. Keredj) Holotype (♂): LNK

shakibai Huemer & Wieser, 2004 (*Aethes*), *Carinthia* II 114(2): 390. TL: Iran (Mazandaran, Miankaleh, Miangaleh). Holotype (♀): TLMF.

Anacrusis

russomitrana Razowski & Becker, 2004 (*Anacrusis*), in Razowski, *SHILAP Revta. Lepid*. 32: 348. TL: Brazil (Rio de Janeiro, Nova Friburgo). Holotype (♂): VBC.

Anopina

xicotepeca Razowski & Brown, 2004 (*Anopina*), *SHILAP Revta. Lepid.* 32: 325. TL: Mexico (Puebla, Xicotepec de Juarez, Altura de Catalina). Holotype (♂): MRSN.

Antichlidas

trigonia Zhang & Li, 2004 (*Antichlidas*), *Entomotaxonomia* 26: 194. TL: China (Henan Province, Xiaguan, Neixiang County). Holotype (♂): NUTC.

Archipimima

consentanea Razowski, 2004 (*Archipimima*), *SHILAP Revta. Lepid.* 32: 349. TL: Brazil (Santa Catarina, Rio Vermelho). Holotype (♂): VBC.

vermelhana Razowski, 2004 (*Archipimima*), *SHILAP Revta. Lepid.* 32: 350. TL: Brazil (Santa Catarina, Rio Vermelho). Holotype (♂): VBC.

Archips

carteri Rose & Pooni, 2004 (*Archips*), *Entomon* 29: 152. TL: India (Dist. Kangra, Palampur). Holotype (♂): Himachal Pradesh (?).

kangraensis Rose & Pooni, 2004 (*Archips*), *Entomon* 29: 150. TL: India (Dist. Kangra, Dharmshala). Holotype (♂): Himachal Pradesh (?).

mertias Rose & Pooni, 2004 (*Archips*), *Entomon* 29: 145. TL: India (Dist. Kangra, Dharmshala). Holotype (♂): Himachal Pradesh (?).

pseudotermias Rose & Pooni, 2004 (*Archips*), *Entomon* 29: 146. TL: India (Punjab, Dist. Patiala). Holotype (♂): PUP.

crassifolianus Liu, 1990 (*Archips*), *Forest Research* 3(2): 137. TL: China. Holotype: Unknown. [paper not seen]

Clepsis

neomelissa Rose & Pooni, 2004 (*Archips*), *Entomon* 29: 157. TL: India (Dist. Sirmour, Reunka Lake). Holotype (♂): Himachal Pradesh (?).

Eugnosta

cataracta Aarvik 2004 (*Eugnosta*), *Esperiana Memoir* 1: 190. TL: Namibia (Brandberg, Am Köngstein). Holotype (♂): NMNW.

meyi Aarvik 2004 (*Eugnosta*), *Esperiana Memoir* 1: 190. TL: Namibia (Brandberg, Am Köngstein). Holotype (♂): NMNW.

namibiana Aarvik 2004 (*Eugnosta*), *Esperiana Memoir* 1: 191. TL: Namibia (Brandberg, Am Köngstein). Holotype (♂): NMNW.

Galomecalpa

meridana Razowski & Brown, 2004 (*Galomecalpa*), *SHILAP Revta. Lepid.* 32: 322. TL: Venezuela (Merida, Murcuy Fish

Hatchery, 7 km E Tabay). Holotype (♂): USNM.

Gauruncus

venezolanus Razowski & Brown, 2004 (*Gauruncus*), *SHILAP Revta. Lepid.* 32: 328. TL: Venezuela (Aragua, Rancho Grande). Holotype (♂): USNM.

Geogepa

monticola Jinbo, 2004 (*Geogepa*) *Trans. Lepid. Soc. Japan* 55: 252. TL: Japan (Odarumi-toge, Yamanashi). Holotype (♂): NSMT.

Gibberifera

clavata Zhang & Li, 2004 (*Gibberifera*), *SHILAP Revta. Lepid.* 32: 291. TL: China (Medog, Motuo County, Xizang Autonomous Region). Holotype (♂): NUTC.

Hynhamia

ochroleuca Razowski & Brown, 2004 (*Hynhamia*), *SHILAP Revta. Lepid.* 32: 327. TL: Costa Rica (Cartago Province, Parque Nacional Tapanti-Maziso de la Muerte, Estacion de la Esperanza). Holotype (♂): INBio.

Meridemis

obraztsovi Rose & Pooni, 2004 (*Meridemis*), *Entomon* 29: 171. TL: India (Dist. Sirmour, Renuka Lake). Holotype (♂): Himachal Pradesh (?).

punjabensis Rose & Pooni, 2004 (*Meridemis*), *Entomon* 29: 169. TL: India (Dist. Roopnagar, Roopnagar, Youth Hostel). Holotype (♂): PUP.

Mexiculia

Mexiculia Razowski & Brown, 2004, *SHILAP Revta. Lepid.* 32: 322. Type species: *Mexiculia chorisma* Razowski & Brown, 2004. [Tortricinae: Euliini]

chorisma Razowski & Brown, 2004 (*Mexiculia*), *SHILAP Revta. Lepid.* 32: 323. TL: Mexico (Puebla, Xicotepec de Juarez, Altura de Catalina). Holotype (♂): MRSN.

Monortha

procera Razowski, 2004 (*Clepsis*), *Acta zool. cracov*. 47: 255. TL: Ecuador (Pichincha-Septimo Paraiso Reserve). Holotype (♂): MHNG.

Neocalyptis

conicus Rose & Pooni, 2004 (*Neocalyptis*), *Entomon* 29: 164. TL: India (Uttaranchal, Dist. Dehradun). Holotype (♂): Forest Research Institute (India).

Netechmodes

landryi Razowski, 2004 (*Netechmodes*), *Acta zool. cracov*. 147: 251: TL: Ecuador (Pichincha-Septimo Paraiso Reserve). Holotype (♂): MHNG

Nuntiella

angustiptera Zhang & Li, 2004 (*Nuntiella*), *Acta Entomol. Sinica* 47: 486. TL: China (Guangxi Province, Mt. Mao'er). Holotype (♂): NUTC.

lacticulla Zhang & Li, 2004 (*Nuntiella*), *Acta Entomol. Sinica* 47: 485. TL: China (Guizhou Province, Mt. Fanjing). Holotype (♂): NUTC.

Odonthalitus

mexicanus Razowski & Brown, 2004 (*Odonthalitus*), *SHILAP Revta. Lepid.* 32: 326. TL: Mexico (Puebla, Xicotepec de Juarez, Altura de Catalina). Holotype (♀): MRSN.

Phiaris

acropryerana Bae, 2000 (*Phiaris*), *Trans. Lepid. Soc. Japan* 51: 135. TL: Japan (Honshu, Aichi Prefecture, Koutagi, Kitashitara). Holotype (♀): OPU.

hokkaidana Bae, 2000 (*Phiaris*), *Trans. Lepid. Soc. Japan* 51: 196. TL: Japan (Hokkaido, Kushiro, Kawayu). Holotype (♂): OPU.

opacalis Bae, 2000 (*Phiaris*), *Trans. Lepid. Soc. Japan* 51: 139. TL: Japan (Hokkaido, Bibai, Koshunai). Holotype (♂): OPU

toshiookui Bae, 2000 (*Phiaris*), *Trans. Lepid. Soc. Japan* 51: 188. TL: Japan (Honshu, Iwate Prefecture, Mt. Hayachine). Holotype (♂): OPU.

Psuedomeritastis

emphanes Razowski, 2004 (*Pseudo-meritastis*), *Acta zool. cracov*. 47: 250. TL: Ecuador (Pichincha-Septimo Paraiso Reserve). Holotype (♂): MHNG.

Ptycholoma

circumclusna; Choi et al. 2004 (*Ptycholoma lecheana*), *Korean J. Appl. Ent.* 43: 189. [misspelling of *circumclusana*]

Quasieulia

jaliscana Razowski & Brown, 2004 (*Quasieulia*), *SHILAP Revta. Lepid.* 32: 324. TL: Mexico (Jalisco, Parque Nacional Nevado de Colima). Holotype (♂): USNM.

Rhopalovalva

orbiculata Zhang & Li, 2004 (*Rhopalovalva*), *Nota Lepid*. 27: 241. TL: China (Guangxi Province, Mt. Mao'er). Holotype (♂): NUTC.

ovata Zhang & Li, 2004 (*Rhopalovalva*), *Nota Lepid*. 27: 240. TL: China (Hunan Province, Sangzhi County). Holotype (♂): NUTC.

Rhopobota

okui Nasu, 2000 (*Rhopobota*), *Trans. lepid. Soc. Japan* 51: 21. TL: Japan (Honshu, Nara Prefecture, Mt. Takatori-yama). Holotype (♂): OPU.

Selania

costifuscana Aarvik, 2004 (*Selania*), *Esperiana Memoir* 1: 193. TL: Namibia (10 km W Brandberg). Holotype (♀): NMNW.

Sisurcana

brasiliana Razowski, 2004 (*Sisurcana*), *SHILAP Revta. Lepid.* 32: 348. TL: Brazil (Santa Catarina, Rio Vermelho). Holotype (♂): VBC.

leptina Razowski, 2004 (*Sisurcana*), *Acta zool. cracov*. 47: 254. TL: Ecuador (Pichincha-Septimo Paraiso Reserve). Holotype (♂): MHNG.

Soloropha

micheliacola Liu, 2001 (*Sorolopha*), *Fauna of Insects in Fujian Province of China* 5: 45. TL: China. Holotype: Unknown. [paper not seen]

Thalleulia

Thalleulia Razowski, 2004, *Acta zool. cracov.* 147: 251. Type species: *Thalleulia gracilescens* Razowski, 2004. [Tortricinae: Euliini]

gracilescens Razowski, 2004 (*Thalleulia*), *Acta zool. cracov*. 147: 251. TL: Ecuador (Pichincha-Septimo Paraiso Reserve). Holotype (♂): MHNG

Thiodia

excavana Aarvik 2004 (*Thiodia*), *Esperiana Memoir* 1: 192. TL: Namibia (Brandberg, Mason Shelter). Holotype (♂): NMNW.

Transtillaspis

anxia Razowski & Brown, 2004 (*Transtillaspis*), *SHILAP Revta. Lepid.* 32: 330. TL: Colombia (Bogota, Chico). Holotype (♀): USNM.

cinifera Razowski & Brown, 2004 (*Transtillaspis*), *SHILAP Revta. Lepid.* 32: 329. TL: Venezuela (Merida, 4 km S Santo Domingo). Holotype (♀): USNM.

tucumana Razowski & Brown, 2004 (*Transtillaspis*), *SHILAP Revta. Lepid.* 32: 329. TL: Argentina (Tucuman, Ciudad Universitaria). Holotype (♂): USNM.

Unplaced

dryonephela Meyrick, 1932 (*Eulia*), *Exotic Microlepid*. 4: 256. TL: Japan (Hokkaido, Zyohzankei; Hakodate). Syntypes (3): Unknown.

haemostacta Meyrick, 1931 (*Argyroploce*), *Exotic Microlepid.* 4: 132. TL: Formosa [Taiwan]. Holotype (♂): Unknown.

NEW COMBINATIONS AND NEW SYNONYMS PROPOSED PRIOR 2005 NOT INCLUDED IN TORTRICIDAE CATALOGUE

bipunctana Fabricius to *Phiaris* (Bae 2000)
bipunctana yama Kawabe to *Phiaris* (Bae 2000)
castaneanum Walsingham to *Phiaris* (Bae 2000)
defricata Meyrick to *Galomecalpa* (Razowski & Brown 2004)
dolosana Kennel to *Phiaris* (Bae 2000)
examinata Falkovitsh to *Phiaris* (Bae 2000)
lucina Liu & Bai as valid species (Liu & Bae 1982)
malesana Meyrick to *Cydia* (Aarvik 2004)
mori Matsumura to *Phiaris* (Bae 2000)
morivora Matsumura to *Phiaris* (Bae 2000)
platydayas synonymized with *malesana* (Arvik 2004)
pryerana Walsingham to *Phiaris* (Bae 2000)
siderana Treitschke to *Phiaris* (Bae 2000)
transversa Christoph to *Phiaris* (Bae 2000)

LITERATURE IN SUPPORT OF CHANGES IN CATALOGUE

Aarvik, L. 2004. Tortricidae (Lepidoptera, Tortricoidea). Esperiana Memoir 1 2004: 189-198.

Bae, Y.-S. 2000. Systematic study of the genus *Phiaris* Hübner (Lepidoptera: Tortricidae) from Korea and Japan, part I. Transactions of the Lepidopterological Society of Japan 51: 131-153.

Bae, Y.-S. 2000. Systematic study of the genus *Phiaris* Hübner (Lepidoptera: Tortricidae) from Korea and Japan, part II. Transactions of the Lepidopterological Society of Japan 51: 185-201.

Choi, K.-H., S.-W. Lee, D.-H. Lee, D.-A. Kim, S.-J. Suh & Y.-J. Kwon. 2004. Recent occurrence status of Tortricidae pests in apple orchards in Geoungbuk Province. Korean Journal of Applied Entomology 43: 189-194.

Huemer, P. & Wieser, C. 2004. *Aethes shakibai* sp. n., eine neue Wickler art aus dem Nordiran (Lepidoptera: Tortricidae). Carinthia II 114(2): 389-394.

Jinbo, U., 2004. Notes on the genus *Geogepa* (Lepidoptera, Tortricidae) from Japan, with description of a new species. Transactions of the Lepidopterological Society of Japan 55: 251-255.

Liu, Y.-Q. 1990. Three new species of tortricids on *Picea*. Forest Research 3: 137-140.

Nasu, Y. 2000. One new and three newly recorded olethreutine moths (Lepidoptera, Tortricidae) from Japan. Transactions of the Lepidopterological Society of Japan 51: 19-28.

Razowski J. 2004. Tortricinae and Chlidanotinae (Lepidoptera: Tortricidae) collected by B. Landry in Ecuador. Acta Zoologica Cracoviensia 47 (3-4): 249-261.

Razowski, J. 2004. Atteriini collected in Brazil, with descriptions of four new species (Lepidoptera: Tortricidae). SHILAP Revista de Lepidopterologia 32: 347-353.

Razowski J. & J. W. Brown. 2004. New species and new combinations in Neotropical Euliini (Lepidoptera: Tortricidae). SHILAP Revista de lepidopterologia 32: 321-337.

Rose, H. S. & H. S. Pooni. 2004. Taxonomic studies on the family Tortricidae (Tortricoidea: Lepidoptera) from North-West India: I. Tribe Archipini. Entomon 29: 137-181.

Sutter, R. & T. Karisch. 2004. *Aethes eberti* n. sp. aus dem Iran (Lep., Tortricidae). Entomologische Nachrichten und Berichte 48: 213-214.

Zhang, A. & Li H. 2004. A taxonomic study on the genus *Rhopalovalva* Kuznetsov, 1964 (Tortricidae: Olethreutinae). Nota Lepidopterologia 27: 239-243.

Zhang A.-H. & Li H.-H. 2004. A systematic study on the genus *Nuntiella* Kuznetsov (Lepidoptera: Tortricidae: Olethreutinae). Acta Entomologica Sinica 47: 485-489.

Zhang, A, H & H. H. Li. 2004. A systematic study on *Gibberifera* Obraztsov, 1946 from China (Lepidoptera: Tortricidae, Olethreutinae). SHILAP Revista de Lepidopterologia 32: 289-295.

Zhang, A, H & H. H. Li. 2004. Taxonomic study on the genus *Antichlidas* (Lepidoptera: Tortricidae: Olethreutinae), with description of a new species. Entomotaxonomia 26: 193-196.

If you find errors, know of species not included, or recognize other shortcomings in the catalogue, please contact me with these corrections. Also, please continue to send me reprints of your recent articles on Tortricidae, (or microlepidpotera in general). I thank Lief Aarvik, Timm Karisch, and Joaquin Baixeras for recent reprints. It is my intention to provide an annual list of changes, additions, and corrections in the first issue of the Newsletter (2005 corrections will appear in 8(1)).

Maybe we can convince one of our web-savvy colleagues to post PDFs of recent papers on his/her website for all of us to download and print! If you would be willing to be involved in such a project, please contact me at jbrown@sel.barc.usda.gov.

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