



THE PYRALOID PLANET

Volume 4 – 1 July 2010
A newsletter for the Pyraloidea fans

Dear Pyraloidea fans,

Welcome to this fourth edition of our newsletter. As you will see below, we have lost another great pyraloid fan in Dale Habeck, who passed away in May. Alma Solis kindly provided some notes on her knowledge of him. I have met him only once or twice and I remember a very gentle man.

Few people have sent me information to publish in PP this time. Hopefully there will be more next year. But perhaps this is due to my poor success in advertising for contributions. So if someone else wants to edit the next issue, please let me know!

I was fortunate last year in July to spend time in **Venezuela** to collect and visit **Pepe Clavijo**, who did his Ph.D. at McGill University, where we met, under the guidance of Eugene Munroe. Pepe went on to work at the *Universidad Central de Venezuela* at the Maracay Campus where he teaches and is Director of the *Museo del Instituto de Zoología Agrícola «Francisco Fernandez Yopez»* (MIZA). Last Summer Pepe was busy preparing the move of the collections of MIZA into a brand new building (Fig. 4). I was able to collect in *Parque Nacional Henri-Pittier*, including at the Portachuelo Pass (see Figs 1–3), famous for its migrations of birds and leps. Several hundred specimens of Pyraloidea are thus newly available for study in Geneva. I was also able to sort a few draw-



Fig. 1. Paso Portachuelo, Henri-Pittier National Park, Venezuela.

ers of Crambinae of MIZA and photograph their collection of already identified pyraloids, which helped to identify my material.

When I think about the pyraloid world globally, the thing that strikes me this Spring is the **introductions** of two Asian species in foreign lands, one in North America and the other in Europe. *Ecpyrrorrhoe* puralis* (South), a pyraustine, was introduced in the USA somewhere in the 1990s and is now

found in several Eastern states of the USA, from Pennsylvania to Mississippi. Since the caterpillar feeds on *Paulownia tomentosa* (Thunb.) Steud. (Scrophulariaceae), which is also introduced and invasive, this new introduction sounds more like a successful story in biological control, instead of a catas-

* You want to know the etymology of this name? Me too! Please send any information you may find.

trophe, unless the caterpillar starts munching on other native Scrophulariaceae... More information can be found on the first report of *E. puralis* in North America by Alma Solis and colleagues, documented in GlobIZ. The second species, '*Neoglyphodes' perspectalis* (Walker), also a pyraustine, was first reported from Germany in 2007. It has since been found in France and Switzerland, and one unpublished country record is known to me. Last year in June moths were collected near Geneva, in adjacent Vaud Canton, and just a few weeks ago (on May 23) I found caterpillars among leaves of a box tree (*Buxus* sp.) in Canton Geneva (see Figs 5–7), which means that moths were present in the canton at least since last year. This introduction promises to have devastating consequences on the various *Buxus* species found in Europe as shown by images seen on http://sites.estvideo.net/sae/pyrale_du_buis.html. Another sad effect of globalization, undoubtedly... The generic assignation of this species has changed several times in the past, and Richard Mally & Matthias Nuss have a paper accepted in the *European Journal of Entomology* on this problem. The pdf file will be freely available soon via the journal homepage and GlobIZ.

As usual please send any changes of address to me and you may suggest additions to the 'Membership List' as well as send PP to whoever you like.

Bernard Landry



Fig. 2. Tower set up by B. Landry at Paso Portachuelo in July 2009.



Fig. 3. Six pyrales on tower at Paso Portachuelo on 15 July 2009.



Fig. 4. New building of Museo del Instituto de Zoología Agrícola «Francisco Fernández Yépez», Maracay, Venezuela, in July 2009 (almost ready to accept staff and collections).



Fig. 5. '*Neoglyphodes' perspectalis* caterpillar found in Geneva.

This issue was made possible with the help of David Agassiz, James Hayden, Houhun Li, Richard Mally, Debbie Matthews Lott, Matthias Nuss, and Alma Solis.

The logo of **The Pyraloid Planet** was created by **Florence Marteau** of the Muséum d'histoire naturelle, Geneva, Switzerland, and the layout of this issue was made by **Corinne Charvet** of the same institution.



Figs 6, 7. Pupae of '*Neoglyphodes' perspectalis* found in Geneva. On left, pupa recently metamorphosed; on right, pupa the day before the emergence of the imago.

Dale H. Habeck

Dale H. Habeck passed away on May 19, 2010. He was an Emeritus Professor at the University of Florida at Gainesville. Although Dale's work was primarily on biological control agents his true love was rearing insects, and he was especially intrigued by aquatic pyraloids. He used to say that the biological control work paid for his rearing activities. Soon after I was hired by USDA, I called him in 1991 and asked him if I could come to visit him, follow him around, and learn as much I could about the larvae of aquatic pyraloids. He was amazingly generous. I was able to study the caterpillars in his collection and he knew exactly where to take me to collect, ie. to develop a search image for, immatures of every genus occurring in Florida. The experience was amazing, one minute he would stop and ask: "do you see that cistern over there. Do you see the bumps on top of the water? Most of those will be *Synclita obliteralis*." We put on waders to get into ponds, or we just walked into the water if it was low and clear, and/or we went on an airboat to a local reservoir. This leads to a story that resulted in a publication. He arranged for us to go out on an airboat to look for aquatic larvae in a local reservoir. On the airboat we would pull up vegetation and look for larvae. He mentioned to me that he had been looking for the immatures of *Petrophila drumalis* and had never found them. I picked up some *Pistia stratiotes* or water lettuce and found a larva that looked different from everything else I had seen. I showed it to him and all of sudden he said, "Everyone get a plastic bag and start collecting water lettuce." We took it to the lab where he had many aquatic tanks. We went through the water lettuce looking for immatures. It turned out to be immatures of *Petrophila drumalis* (see Habeck & Solis, 1994). This was my first foray into adult morphology of Acentropinae. Later he agreed to work with me on the larvae of the Epipaschiinae for the MONA fascicle. Last year I received a phone call and he told me that due to health reasons he would not be finishing this project and that the collection of immatures would be taken from his house by Debbie Matthews and held for me. I was able to go through this extensive collection early this spring after it arrived at my office in D.C. Needless to say, he will be missed and his knowledge about larvae will be evident in his collection.

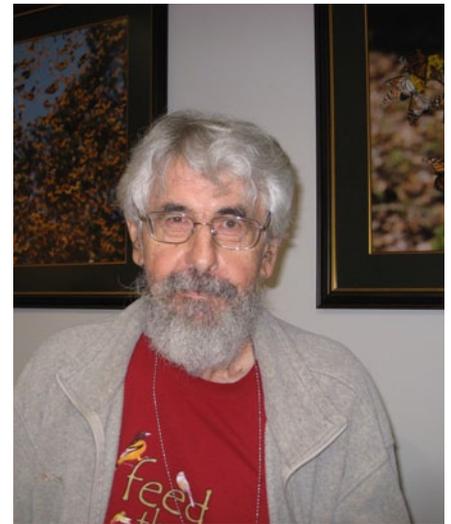


Fig. 8. Dale Habeck in the Conference Room of McGuire Centre, Gainesville, Florida, January 2009. Photo by Jackie Miller.

Publications on pyraloids by D. Habeck:

- Habeck, D. H. 1974. Caterpillars of *Parapoynx* in relation to aquatic plants in Florida. Hyacinth Control J. 12:15-18.
- Habeck, D. H. & G. E. Allen. 1974. Lepidopterous insects as biological control agents for aquatic weeds. Proc. 4th Int. Symp. Aquatic Weeds, Vienna: 107-113.
- Knopf, K. W. and D. H. Habeck. 1976. Life history and biology of *Samea multiplicalis* (Guenée) (Lepidoptera: Pyralidae). Envir. Entomol. 5(3): 539-542.
- Center, T.D., J.K. Balciunas, and D. H. Habeck. 1982. Descriptions of *Sameodes albigitallis* (Lepidoptera: Pyralidae) life stages with key to Lepidoptera larvae on waterhyacinth. Ann. Entomol. Soc. Amer. 75(4): 471-479.
- Habeck, D. H. and J.C. Nickerson: 1982. *Atheloca subrufella* (Hulst) (Lepidoptera: Pyralidae: Phycitinae), a pest of coconuts. Fla. Dept. Agric. Cons. Serv. Entomol. Circ. 241. 2 p.
- Habeck, Dale H. 1982. The potential of *Parapoynx stratiotata* L. as a biological control agent for Eurasian watermilfoil. J. Aquatic Plant Management 21: 26-29.
- Habeck, D. H. K. Haag and G. B. Buckingham. 1986. Native insect enemies of aquatic macrophytes-moths. Aquatics 8(1): 17-19, 22.
- Passoa, S. and D. H. Habeck. 1987. A description of the larva and pupa of *Rupela albinella* (Cramer), a pest of rice in Latin America (Lepidoptera: Pyralidae: Schoenobiinae). Fla. Entomol. 70(3): 368-378.
- Habeck, D. H., C. R. Thompson, F. A. Dray, T. D. Center and J.K. Balciunas. 1987. Biological Control of Waterlettuce. Pp. 108-114. Proc. 21st Am. Mtg. Aquatic Plant Control Research Program. 17-21 Nov. 1986, Mobile Alabama. Misc. Paper A-87-2. Environ. Lab. U.S. Army Engineer Waterways Expt. Sta., Vicksburg, Mississippi.
- Habeck, D. H. 1988. *Neargyractis slossonalis* (Lepidoptera: Pyralidae, Nymphulinae): larval description and biological notes. Fla. Entomol. 71(4): 582-592.
- Dray, F. A., Jr., T. D. Center and D. H. Habeck. 1989. Immature stages of the aquatic moth *Petrophila drumalis* (Lepidoptera: Pyralidae: Nymphulinae) from *Pistia stratiotes* L. (waterlettuce). Fla. Entomol. 72(4): 711-714.
- Habeck, D.H. and F. D. Bennett. 1990. *Cactoblastis cactorum* Berg (Lepidoptera: Pyralidae), a phycitine new to Florida. FL Dept. Agric. & Consumer Serv. Entomology Circ. 33. 4 pp.
- Habeck, Dale H. 1994. Lepidoptera, p. 320-329 in Aquatic Insects of China Useful for Monitoring Water Quality, eds. Morse, J. C., L. Yang, L. Tian. Hohai University Press, Nanjing, China. 574 pp.
- Habeck, D. and M. A. Solis. 1994. Transfer of *Petrophila drumalis* (Dyar) to *Argyrectis* based on immature and adult characters with a larval description of *Argyrectis subornata* (Hampson) (Lepidoptera: Crambidae: Nymphulinae). Proceedings of the Entomological Society of Washington 96 (4): 726-734.
- Habeck, Dale H. 1996. Australian moths for hydrilla control. U.S. Army Corps of Engineers Waterways Experiment Station, Technical report A-96-10. Vicksburg, Miss. 19 pp + illustrations.
- Habeck, Dale H. and J. K. Balciunas. 2005. Larvae of Nymphulinae (Lepidoptera: Pyralidae) associated with *Hydrilla verticillata* (Hydrocharitaceae) in North Queensland. Australian Journal of Entomology. 44: 354-363.

M. Alma Solis

News from Alma Solis

My administrative duties as Research Leader of the Systematic Entomology Laboratory take time, but I still manage to get lots done. I have been involved in the following Pyraloidea projects since the last PP:

Research:

Herpetogramma: I conducted research on the placement of *Herpetogramma* species that are not Spilomelinae. I will be going to the BM in late June, early July this year to continue this work. I've also been working in the following subfamilies: **Acentropinae**: *Usingeriessa* & *Oxyelophila* (with a student in Texas who has reared the larvae); *Aulacodes* (with Kenji Nishida who has reared a species of this genus for the first time on a terrestrial hostplant); **Spilomelinae**: *Hyalorista*; **Chrysauginae** (as a result of curating): *Heliades*, *Chenovadia*, and *Craftsia*, and a new genus for *Lepidomys proclea* (larvae were reared by a student in Mexico), **Glaphyriinae**: *Schacontia* of Costa Rica. **Valles Caldera National Preserve**: I conducted fieldwork at Valles Caldera National Preserve in New Mexico in the summer of 2009. I hope to be going out there again this summer. I have organized a symposium on Arthropods of VCNP for the National Entomological Society of America meeting in San Diego, 2010. I will be presenting on the lone acenropine species *Petrophila avernalis*, including a discussion of acenropine species in Northwestern Mexico that I did with Manuel Balcazar. **Other**: I continue to proof the USNM type database with almost 3000 type photos. I continue to collaborate with D. Janzen identifying material for his CR barcoding project. I have started retaining material coming in from U.S. ports for identification for COI analysis. The *Epipaschiinae* MONA fascicle will be started.

Collections:

The effort to finish curating the entire collection before I retire continues: **Chrysauginae**: Incorporated 2-3 cabinets (about 75 drawers for about the 3rd time in my lifetime here) of protem and recurated the collection. This provided material for species previously not represented in the collection. **Epipaschiinae**: Protem (about 45 drawers) sorted to genus. (next step: incorporation). **Phycitinae**: Recurated the cactus moth

phycitines. All protem was moved to after the curated portions of the collection. If anybody would like to help with sorting the Neotropical protem of this subfamily let me know. It is huge! It is currently sorted by country so that I can find relevant material for U.S. quarantine purposes. **Pyralinae**: Nearctic and Neotropical collections recurated. **Spilomelinae**: Moved the Spilomelinae protem from another location to after the curated collection so that the entire Pyraloidea collection is together.

NOTE: **Pterophoridae**: As curator of the Pterophoridae I have been very fortunate to have Reed Watkins working on this collection. In 2010 I wrote an introduction and was able to put a list of the USNM Pterophoridae holdings created by Reed up on the web (http://entomology.si.edu/Collections_Leps_Pterophoridae.htm.)

Identifications: I continue to do identifications coming in from the ports and other places. The Department of Homeland Security (DHS) at U.S. ports insists on collecting adults flying in the holds of ships so I get lots of different adult pyraloids from all over the world, as well as local species. Prior to DHS most of the material from the Animal, Plant, Health Inspection Service (APHIS) was larvae with validated hosts, which of course provides more valuable information. The pyraloid larval key to frequently intercepted species on the web now features some photographs, instead of line drawings, for characters and will soon be up on the SEL website. This paper gets many hits on the web. In 2009 I participated in two one-week workshops (in at the University of Maryland and the other at the University of California at Davis) to teach identification of Pyraloidea (adults and larvae) via the National Plant Diagnostic Network.

M. Alma Solis

GlobIZ News

During the last 12 months, the data edited in the Global Information System on Pyraloidea (GlobIZ) increased to 11'662 species

group names (+ 4'474 synonyms) and 6'228 literature references. In Crambinae, the number of valid species is now 1'958 and thus already exceeds the number of species formerly given for the group, though Bernard Landry is still adding data. This time, the largest proportion of data has been added in Spilomelinae by Richard Mally, who entered our team in 2009. There are now 2'879 valid species names of Spilomelinae in GlobIZ and approximately 1'000 species names are missing. In 2010, Thomas Simonsen entered our team. He focuses on Phycitinae and morphology of Pyraloidea. Welcome Thomas!

Most of you may have recognised already that the public website www.pyraloidea.org appears in a new design. It was developed by Gregor Kunert and his team.

A Content Management System is incorporated which allows quick additions and corrections to the website. Anybody is welcome to make suggestions and contributions.

A main innovation has been made to the taxon report on the public site. In front of every name you will find a color symbol:

-  indicates that the record is completed and data are verified using the original description;
-  indicates that the data have been taken from secondary sources but should be fairly complete;
-  indicates that checklist data are available, of which the nomenclatural record is not yet linked to bibliographic information.

Thus, these symbols indicate the quality level of information given. Nevertheless, errors may happen or questions appear. For that reason, name(-s) of editor(-s) of nomenclatural data are given below every record to stimulate correspondence among team members in order to improve the quality of data. Feedback can be also submitted via the e-mail address provided in that menu.

A help section has been added to the public site, explaining how to search the database and how to read the taxon report.

Currently, the data must be uploaded from time to time to the public site, as the public site is under additional development.

In contrast, the most updated data set is always available for all GlobIZ team members when using the old fashioned taxon report via their login.

Thanks to all who contributed improving GlobIZ!

Matthias Nuss
Dresden, May 12, 2010

News from Richard Mally

A few months ago, I started working on my Ph.D. at the Senckenberg Museum of Zoology in Dresden under the supervision of Matthias Nuss. After completing my diploma thesis on the phylogeny of European species of *Udea* Gn. (manuscript in prep.) based on morphological and molecular data, my interest moved to Spilomelinae in general.

Very little is known about the phylogenetic relationships in Spilomelinae, and even the monophyly of this group is doubtful. To test the hypothesis of its monophyly, I recently started working on a molecular phylogeny, restricting the taxon sampling mainly to representatives of the spilomeline genus groups proposed by Munroe (1995) in his Neotropical Checklist. Apart from spilomeline taxa, I am going to include several species of Pyraustinae s. str. as well as taxa from Evergestinae and Midilinae in the analysis. For the molecular phylogeny my plan is to sequence at least three nuclear and one mitochondrial genes. Since especially the single copy nuclear genes are prone to DNA degradation, I am in need of fresh, i.e. recently collected material. Although I got access to fresh material from Europe, the Neotropics (thanks to Bernard Landry), and from the Philippines, I am still interested in recently collected, quickly dried specimens of species of the abovementioned subfamilies.

For Spilomelinae, there are no unambiguous morphological synapomorphies known so far. Therefore, in addition to molecular data, I am going to investigate morphologi-

cal characters of the sampled taxa. In this respect, the method described by Knölke et al. (2005) of DNA extraction from the specimen's abdomen, followed by dissection of the genitalia has proven quite efficient. By comparing the morphology and molecular based phylogenies, I hope to discover patterns of morphological evolution in this large group, which will help to establish a stable taxonomic system for Spilomelinae.

Since I have already worked on *Udea* (see Fig. 9), I am going to study its phylogenetic relationships by investigating genera like *Lamprosema*, *Atomopteryx*, *Rhectosemia* and *Leucinodes*, classified by Munroe (1995) as the *Udea* genus group.

Another project that I am (co-)working on is the 2nd Pyraloidea volume of "Microlepidoptera of Europe", for which I am largely responsible for the Spilomelinae.

References

- Knölke, S., S. Erlacher, A. Hausmann, M. A. Miller & A. H. Segerer** 2005: A procedure for combined genitalia dissection and DNA extraction in Lepidoptera. – *Insect Systematics & Evolution*, Copenhagen 35: 401–409.
- Munroe, E. G.** 1995 a: Crambidae (Crambinae, Schoenobiinae, Cybalomiinae, Linostinae, Glyphyriinae, Dichogaminae, Scopariinae, Musotiminae, Midilinae, Nymphulinae,

Odontiinae, Evergestinae, Pyraustinae). Pp. 34–79. – *In*: Heppner, J. B., Atlas of Neotropical Lepidoptera. Checklist: Part 2. Hyblaeoidea - Pyraloidea - Tortricoidea 3. – Association for Tropical Lepidoptera & Scientific Publishers, Gainesville.

Richard Mally
richard.mally@senckenberg.de

News from James Hayden

Jim Hayden finished his Ph.D. from Cornell University in December 2009 with a dissertation entitled "Phylogenetic classification of the eurrhynchine Odontiinae and revision of the major Neotropical genera.". He has submitted his revision of *Cliniodes* Guenée for publication, comprising 28 New World species. If you want to sort and identify eurrhynchines in your collection, please contact him for a preliminary key and illustrated characters. In large part, the goal of the analysis is to provide diagnoses for taxa and to synonymize many of the numerous genera of tropical Odontiinae. However, completion of the higher-level analysis will take some time to improve the sampling of species and outgroups for the subfamily.



Fig. 9. *Udea costalis* (Eversmann). Photographed by R. Mally.

Jim is now a postdoctoral researcher at the Carnegie Museum of Natural History (Pittsburgh, Pennsylvania). As he is finishing the odontiine work, he is looking into new projects in other subfamilies, in part to find outgroups of the Odontiinae. The CMNH has exceptional pyraloid holdings, including possibly the best Afrotropical coverage of any North American collection and many new species from a recently concluded Caribbean survey. The collection is historically significant because Gene Munroe borrowed most of these holdings as one of his first career moves, which many of his early papers reflect. Nevertheless, there is much that he did not get around to treating, and the collection continues to grow by the hour. Please contact Jim, John Rawlins, or Bob Davidson (Collection Manager) with inquiries.

New address: See 'Membership List'.

<http://iz.carnegiemnh.org/inverts/izhome.html>
<http://sites.google.com/site/jehayden63/Home>

James Hayden

Early stages of East African Lepidoptera by D. G. Sevastopulo

Manuscript document held in the Entomology library of the Natural History Museum, London (S.58)

Each species has black & white photographs and a typescript description of the larva, foodplant and life history.

The volume on Pyralidae includes the following species (listed as in the volume):

Sceliodes laisalis Wlk.
Zebronia pheenice Cr.
Zincknia fascialis C.
Pagyda traducalis Zell.
Pagyda salvalis Wlk.
Lamprosema indicate F.
Botyodes asialis Guen.
Sylepta derogata F.
Filodes costivitalis Guen.
Agathodes musivalis Guen.
Glyphodes prasinalis Sals.

Glyphodes unionalis Hbn.
Glyphodes angustimargo Warr.
Glyphodes bonjongalis Plotz.
Glyphodes sericea Drury
Glyphodes stolalis Guen.
Glyphodes bicolor Swains.
Margaronia argyraspides Tams
Terastia meticulosalis Guen.
Neostege holoxutha Hamps.
Noorda margartactalis Hamps.
Crocidolomia binotalis Zell.
Pachyzancla aegrotalis Zell.
Udea ablactalis Wlk.
Pyrausta incoloralis Guen.
Macalla sp.n.
Phycitinae sp.
Phycitinae sp.
Pyralid sp.
Sylepta sp.
Glyphodes sp.

D.G. Sevastopulo lived in East Africa in the mid 20th Century, and most of the localities are Kampala, Nyali, Kwale, and Mombasa.

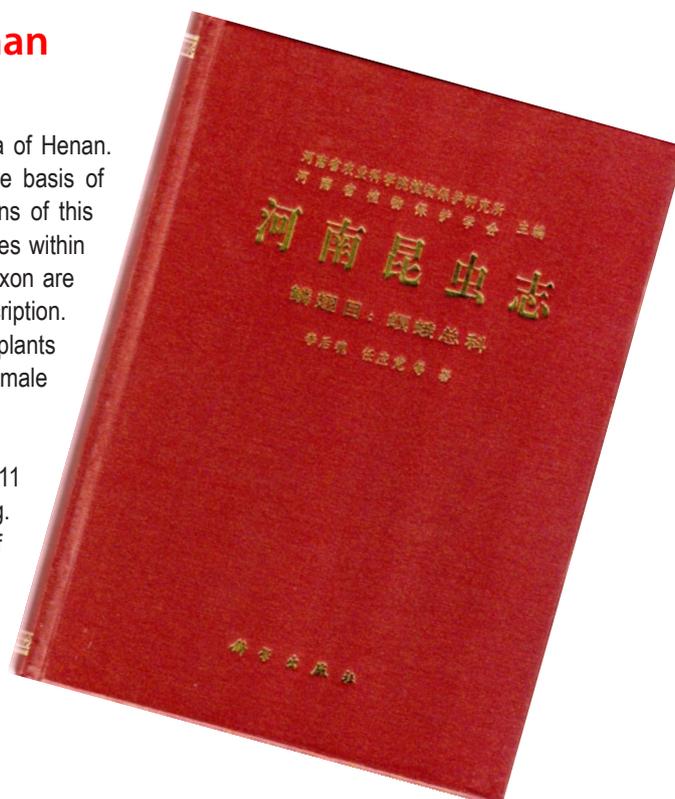
David Agassiz
3 March 2010

Introduction to Pyraloidea of Henan

This work on Pyraloidea is part of the series Insect Fauna of Henan. It deals with the Pyraloidea fauna of Henan Province on the basis of ten years of successive collecting throughout the main regions of this province. A total of 277 species in 146 genera of 12 subfamilies within two families are described in detail. The synonyms of each taxon are listed in chronological order, with reference to the original description. The available data on the geographical distribution and host-plants are also given. 96 plates of adults (19 in colour) as well as both male and female genitalia are included.

The series Insect Fauna of Henan treats 8700 species in 11 books, published or to be published by Science Press, Beijing. Other than Pyraloidea, two other books treat other families of Lepidoptera while the others are focused on Hemiptera, Diptera, Hymenoptera, Arachnida, and Acarina.

Lepidoptera: Pyraloidea. by Li, H. H., Ren, Y. D., Zhang, D. D., Du, X. C., Li, W. C. and Ping Y. 2009: ix, 440 pp.



"Membership" list

David Agassiz
The Garden House, Stafford Place
Weston-super-Mare BS23 2QZ
UNITED KINGDOM
e-mail : agassiz@btinternet.com ;
D.Agassiz@nhm.ac.uk

Stacey Anderson
Entomology Technician
NAQS - AQIS Darwin
PO Box 37846, Winnellie, NT 0821
AUSTRALIA
e-mail : Stacey.Anderson@aqis.gov.au

J. E. F. Asselbergs
Neerland 20 NL-4614
GD Bergen-op-Zoom
NETHERLANDS
e-mail : JEF.Asselbergs@hetnet.nl

Yang Seup Bae
Incheon University
Incheon, KOREA
e-mail : baes@incheon.ac.kr

George J. Balogh
6275 Liteolier Street
Portage, Michigan 49024-2394
U.S.A.
e-mail : bugdr@att.net

Hans Bänziger
Department of Entomology
Faculty of Agriculture
Chiang Mai University
Chiang Mai 50200
THAILAND
e-mail : sangda.h@chiangmai.ac.th

Alejandro Barro
Dpto Biología Animal y Humana
Facultad de Biología
Universidad de La Habana
Calle 25 # 455 entre J e I
Vedado CP 10400
La Habana, CUBA
e-mail : abarro@fbio.uh.cu

Graziano Bassi
Via San Martino 25
I-10051 Avigliana (TO), Italy
e-mail : graziano.bassi@alice.it

Vitor O. Becker
Reserva Serra Bonita
P.O. Box 001
45880-970 Camacan
BRAZIL
e-mail : becker.vitor@gmail.com

Richard L. Brown
Mississippi Entomological Museum
Mississippi State, MS 39762
U.S.A.
Email : moth@ra.msstate.edu

José Clavijo
Museo del Instituto de Zoología Agrícola
Facultad de Agronomía
Universidad Central de Venezuela
Apartado 4579, C.P. 2101-A
Maracay (Aragua)
VENEZUELA
e-mail : clamiche@telcel.net.ve

Willy De Prins
Dorpstraat 401B
B-3061 Leefdaal
BELGIUM
e-mail : Willy.deprins@gmail.com

Julian P. Donahue
Natural History Museum of
Los Angeles County
900 Exposition Boulevard
Los Angeles
California 90007-4057
U.S.A.
e-mail : Bugbooks@aol.com

Yanli Du
Department of Entomology
China Agricultural University
Haidian, Beijing, 100094
CHINA
e-mail :

Xicui Du
College of Plant Protection
Southwest University
Beibei District, Chongqing 400716
CHINA
e-mail : lucy2073@sina.com

Marc Epstein
Senior Insect Biosystematist, Lepidoptera
Plant Pest Diagnostic Branch
California Dept. of Food & Agriculture
3294 Meadowview Rd
Sacramento, CA 95832-1448
U.S.A.
e-mail : mepstein@cdfa.ca.gov

Clifford D. Ferris
5405 Bill Nye Avenue, R.R. #3
Laramie, WY 82070
U.S.A.
e-mail : cdferris@uwyo.edu

Reinhard Gaedike
Florusstraße 5
53225 Bonn
GERMANY
e-mail : tinagma@msn.com

Barry Goater
27 Hiltigbury Road "The Ridge"
GB-SO53 5SR Chandlers Ford (Hampshire)
UNITED KINGDOM
e-mail : barrygoater@tiscali.co.uk

Kurt Grimm
Fruthwilerstrasse 65d
CH-8272 Ermatingen
SWITZERLAND
e-mail : kurtgrimm@bluewin.ch

Christian Guillermet
11 Ruelle des Amandiers
Garbejaire 108
06560 Valbonne Sophia Antipolis
FRANCE
e-mail : chring@club-internet.fr

James Hayden
Rea Postdoctoral Fellow
Section of Invertebrate Zoology
Carnegie Museum of Natural History
4400 Forbes Avenue
Pittsburgh, PA 15213
U.S.A.
e-mail : haydenj@carnegiemnh.org ;
jehayden63@gmail.com

Bob Heckford
67 Newnham Road
GB-PL7 4AW Plympton (Plymouth), S. Devon
UNITED KINGDOM
e-mail : bheckford@bondpearce.com

John B. Heppner
Florida State Collection of Arthropods
Division of Plant Industry
Florida Department of Agriculture
P.O. Box 147100
Gainesville, Florida 32614-7100
U.S.A.
e-mail : JBHATL@aol.com

Alvaro Herrera Villalobos
Enlace con Investigadores
UEA de Vertebrados, INBio
Apdo Postal 22-3100
Santo Domingo, Heredia
COSTA RICA
e-mail : alherrer@inbio.ac.cr

Ronald W. Hodges
85253Ridgetop Drive
Eugene, Oregon 97405-9535
U.S.A.
e-mail : rwhodges@rhodges.net

Terence Hollingworth
6, impasse Chopin
31700 Blagnac
FRANCE
e-mail : Terence.Hollingworth@airbus.com

Marianne Horak
Australian National Insect Collection
GPO Box 1700, Canberra, ACT, 2601
AUSTRALIA
e-mail : marianne.horak@csiro.au

Robin Howard
Las Descargues
46210 Gorses
FRANCE
email : robin.lasdescargues@gmail.com

Peter Huemer
Tiroler Landesmuseum Naturwissenschaften
Feldstrasse 11a
A-6020 Innsbruck
AUSTRIA
e-mail : p.huemer@natur-tnmf.at

Ole Karsholt
Zoologisk Museum
Universitetsparken 15
DK-2100 København Ø
DENMARK
e-mail : okarsholt@snm.ku.dk

Gareth Edward King
Departamento de Biología (Zoología)
Universidad Autónoma de Madrid
C/. Darwin, 2, 28049 Cantoblanco (Madrid)
SPAIN
e-mail : sterrhinae@gmail.com

Valentina Kirpichnikova
Mountain-Taiga Station
Far Eastern Branch of Russian Academy of
Sciences
RU-692533 Gornotajozhnoe,
Ussuri region
RUSSIA
e-mail : omelko@ott.ru

Gregor Kunert
Kunert Business Software
Deutscher Platz 5c, D-04103 Leipzig, Germany
e-mail : Gregor.Kunert@kbs-leipzig.de

Bernard Landry
Muséum d'histoire naturelle
Route de Malagnou 1, CH-1208 Genève
SWITZERLAND
e-mail : bernard.landry@ville-ge.ch

Jean-François Landry
Agriculture and Agri-Food Canada
Central Experimental Farm, Neatby Bldg.
960 Carling Avenue
Ottawa (Ontario)
K1A 0C6, CANADA
e-mail : landryjf@agr.gc.ca

Patrice Leraut
Muséum national d'histoire naturelle
45, rue de Buffon
F-75005 Paris
FRANCE
e-mail : pleraut@mnhn.fr

Houhun Li
College of Life Sciences, Nankai University
Tianjin 300071
CHINA
e-mail : lihouhun@nankai.edu.cn

Weichun Li
College of Life Sciences, Nankai University
Tianjin 300071
CHINA
e-mail : weichunlee@126.com

Jiayu Liu
College of Life Sciences, Nankai University
Tianjin 300071
CHINA
e-mail : fsluijiayu@163.com

Jean-Michel Maes
Museo Entomologica
AP 527, Leon
NICARAGUA
e-mail : jmmaes@ibw.com.ni

Koen Maes
AgroBioSys Intl.
Kleine Smetledestraat 192
B-9230 Wetteren
BELGIUM
e-mail : kvmaes@belgacom.net, kvmaes@
telenet.be

Richard Mally
Sektion Lepidoptera - Museum für Tierkunde
Senckenberg Naturhistorische Sammlungen
Dresden
Königsbrücker Landstraße 159
D-01109 Dresden
GERMANY
e-mail : Richard.mally@senckenberg.de

Edda Martinez
Mississippi Entomological Museum
Box 9775
Mississippi State, MS 39762
U.S.A.
e-mail : elm110@msstate.edu

Eric Metzler
P.O. Box 45
Alamogordo, New Mexico 88311-0045
U.S.A.
e-mail : spruance@beyondbb.com

Wolfram Mey
Museum für Naturkunde
Humboldt-Universität
Invalidenstr. 43
D-10115 Berlin
GERMANY
e-mail : wolfram.mey@museum.hu-berlin.de

Joël Minet
Muséum national d'histoire naturelle
45, rue de Buffon
F-75005 Paris
FRANCE
e-mail : minet@mnhn.fr

Andrew Mitchell
Agricultural Scientific Collections Unit, OAI
NSW Department of Primary Industries
Forest Rd
Orange NSW 2800
AUSTRALIA
e-mail : andrew.mitchell@dpi.nsw.gov.au

Charlie Mitter
Department of Entomology
4112 Plant Sciences Building
University of Maryland
College Park, Maryland 20742
U.S.A.
e-mail : cmitter@umd.edu

Herb H. Neunzig
Department of Entomology
North Carolina State University
Raleigh, North Carolina, 27695-7613
U.S.A.
e-mail : h.neunzig@gte.net

Matthias Nuss
Staatliche Naturhistorische Sammlungen
Museum für Tierkunde
Königsbrücker Landstr. 159
D-01109 Dresden
GERMANY
e-mail : matthias.nuss@senckenberg.de

Eugenie Phillips
COSTA RICA
e-mail : eugeniephillips@hotmail.com

Jerry A. Powell
Essig Museum of Entomology
201 Wellman Hall
University of California
Berkeley, CA 94720
U.S.A.
e-mail : powellj@nature.berkeley.edu

Yingdang Ren
Institute of Plant Protection
Henan Academy of Agricultural Science
Zhengzhou 450002
CHINA
e-mail : renyd@126.com

Amanda Roe
Systematics and Evolution
CW315 Biological Sciences Bldg
University of Alberta
Edmonton, Alberta T6G 2E9
CANADA
e-mail : amandaroe5@gmail.com

Daniel Rubinoff
310 Gilmore Hall
Dept. of Entomology
University of Hawaii
3050 Maile Way, Honolulu
Hawaii 96822-2231
U.S.A.
e-mail : rubinoff@hawaii.edu

Michael Sabourin
630 Beaver Meadow Rd.
Marshfield, VT 05658
USA
e-mail : mothvet@yahoo.com

Akio Sasaki
11-5, Onoba 5
Akita City
Akita Pref., 010-1424
JAPAN
e-mail : scopar089@ybb.ne.jp

Brian Scholtens
Biology Department
College of Charleston
66 College Street
Charleston, South Carolina 29424-0011
U.S.A.
e-mail : scholtensb@cofc.edu

Rob Schouten
Museon, Dept. of Natural History
Stadhouderslaan 41
NL-2517 HV Den Haag
NETHERLANDS
e-mail : rschouten@museon.nl

Christian H. Schulze
Department für Populationsökologie, IECB /
Universität Wien
Althanstr. 14, A-1090 Wien
AUSTRIA
e-mail : christian.schulze@univie.ac.at

Andreas Segerer
Zoologische Staatssammlung München
Münchhausenstr. 21
D-81247 München
GERMANY
phone : +49-89-8107-151 ; FAX :
+49-89-8107-300
e-mail : Andreas.Segerer@zsm.mwn.de

Jay Shaffer
Department of Biology-3E1
George Mason University
4400 University Drive
Fairfax, Virginia 22030-4444
U.S.A.
e-mail : jshaffe1@gmu.edu

Ayuna A. Shodotova
Institute of General and Experimental Biology
Siberian Branch of the Russian Academy of
Sciences
Sakhyanovoi Street 6, Ulan-Ude, 670047
RUSSIA
e-mail : shodotova@mail.ru

Thomas J. Simonsen
Department of Entomology
The Natural History Museum
Cromwell Road, London
SW7 5BD, United Kingdom
e-mail : t.simonsen@nhm.ac.uk

Frantisek Slamka
Racianska 61
SK-83102 Bratislava
SLOVAQUIA
e-mail : f.slamka@nextra.sk

M. Alma Solis
SEL, USDA, Smithsonian Institution
P.O. Box 37012
National Museum Natural History
E-517, MRC 168, Washington
DC 20013-7012
U.S.A.
e-mail : alma.solis@ars.usda.gov

Wolfgang Speidel
Museum Witt
Tengstr. 33
80796 München
GERMANY
e-mail : speidel-wolfgang@web.de

Felix Sperling
Department of Biological Sciences
University of Alberta
Edmonton, Alberta T6G 2E9
CANADA
e-mail : Felix.Sperling@ualberta.ca

Hari Sutrisno
LIPI - The Indonesian Institute of Sciences
Zoological Division
Research Center for Biology
PO Box 25, Cibinong 16911, Bogor
INDONESIA
e-mail : sutrisnohari@yahoo.com

Stephen Sutton
Kota Kinabalu, Sabah
MALAYSIA
e-mail : sutton@pc.jaring.my

Kevin Tuck
Department of Entomology
Natural History Museum
Cromwell Road
London SW7 5BD
UNITED KINGDOM
e-mail : K.Tuck@nhm.ac.uk

Héctor Vargas
Facultad de Agronomía
Universidad de Tarapacá
CASILLA 6D
Arica, CHILE
e-mail : havargas@uta.cl

Francesca Vegliante
Staatliche Naturhistorische Sammlungen,
Museum für Tierkunde
Königsbrücker Landstr. 159,
D-01109 Dresden
GERMANY
e-mail : francesca.vegliante@snsd.smwk.
sachsen.de

Pierre Viette
F-10200 Montier-en-L'Isle
FRANCE

David L. Wagner
Department of Ecology and Evolutionary Biology
University of Connecticut
Storrs, CT 06269
U.S.A.
e-mail : david.wagner@uconn.edu

Terry Whitaker
4 Crowtrees, Low Bentham
Lancaster LA2 7EE
UNITED KINGDOM
e-mail : tmw1@globalnet.co.uk

Chunsheng Wu
Institute of Zoology
Chinese Academy of Sciences
Beichen West Road, Chaoyang District
Beijing 100101
P. R. CHINA
e-mail : wucs@ioz.ac.cn
Hiroshi Yamanaka
4-18, Eiraku-cho
Toyama City
Toyama Pref.
930-0853 JAPAN
e-mail : hycopm@po1.ctt.ne.jp

Shen-Horn Yen
Department of Biological Sciences
National Sun Yat-Sen University
Kaohsiung 804
TAIWAN
e-mail : shenhornyen@gmail.com

Ping You
Institute of Zoology, Shaanxi Normal University
Xi'an 710062
CHINA
e-mail : youping@snnu.edu.cn

Dandan Zhang
Institute of Entomology, Sun Yat-sen University
Guangzhou, Guangdong 510275
CHINA
e-mail : zhdd61@163.com