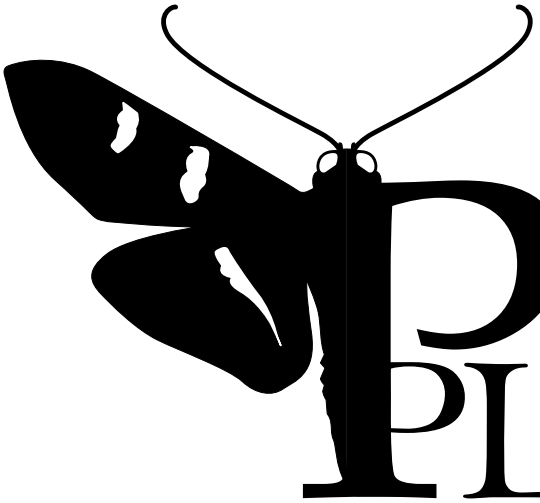

THE PYRALOID PLANET

Volume 2 – 15 June 2008
A newsletter for the Pyraloidea fans

*Welcome to the second edition of **The Pyraloid Planet (PP)**, an informal newsletter dedicated to the transfer of information among people interested in Pyraloidea taxonomy and systematics, mostly.*
*To be added to (or removed from) the "Membership" list, or for changes to your addresses, please contact me. You are welcome to forward **The Pyraloid Planet** to whoever may have an interest. Please send me the addresses and emails of anyone you might want to see added to our "Membership" list.*
*This issue of PP is marked by the recent passing of **Dr Eugene G. Munroe** and **Dr Hiroshi Inoue**, both of whom made significant contributions to Pyraloidea taxonomy. Below you will find several contributions recounting the lives and works of these prominent lepidopterists. The texts that are not signed below are my responsibility. This issue was made possible with the help of Fuqian Chen, Christian Guillermet, Louis Handfield, James Hayden, Houhun Li, Florence Marteau, Wolfram Mey, Matthias Nuss, Jay Shaffer, Michael Shaffer, Alma Solis, and Shen-Horn Yen.*
Unless a new editor would like to stand up, I plan to produce the next issue, which I hope will come out next year.
*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 Florence as well.*

The Editor
Bernard Landry

Recent publications on Pyraloidea systematics

If you are interested to learn more about recent publications on Pyraloidea systematics, please go to www.pyraloidea.org, enter the database, go to the literature report, and type the year you are interested in. If you come across a paper on the systematics of Pyraloidea that is not in GlobIZ, please advise Matthias Nuss (address below) or the Editor of The Pyraloid Planet. A list of recent references on Pyraloidea was submitted by S.-H. Yen and the information was incorporated into GlobIZ by Matthias Nuss and myself.

Congresses

The **59th Meeting of The Lepidopterists' Society** will be held June 23 through 27, 2008 at Mississippi State University, MS, U.S.A.
For more information please check http://www.lepsoc.org.

The **23rd International Congress of Entomology** will take place in Durban, Republic of South Africa, between from July 6 to 12, 2008.
Check http://www.ice2008.org.za.

The **XVIth European Congress of Lepidopterology** will be held in Cluj, Romania between 25 and 31 May, 2009.
The Congress organizer is Dr Laszlo Rákosy (laszlorakosy@hasdeu.ubbcluj.ro) and more information is available at http://www.soceurlep.org. A workshop on **Pyraloidea** is not yet planned at this point.

New material of Pyraloidea from French Guiana available for study

Between March 25 and April 16, 2008 I was able to travel to French Guiana with my technician, Corinne Reuteler, to collect moths, especially micros. My friend Daniel Néron joined us for the last 12 days of our stay. We were based at Camp **Patawa**, on km 36 of Kaw Road, in the middle of the beautiful forests of the Kaw Mountains. Owned by two French entomologists, one of whom speaks English, Camp Patawa offers food, lodging, and mercury-vapour lamp collecting facilities. Collecting went well and we came back with more than 710 specimens of Pyraloidea, mostly pinned and spread for all smaller specimens, pinned for the larger ones, and in alcohol for a few destined to be used in molecular phylogenetic studies. The dry material will all be labelled soon and subsequently available for study. Please contact me if you would like to borrow some of these specimens.

Bernard Landry

Passing of two prominent lepidopterists and pyraloid workers

Eugene G. Munroe
8.ix.1919 – 31.v.2008

Dr Eugene G. Munroe passed away in his 89th year in a hospital in Ontario, Canada. He had been in poor health for some time. His outstanding contributions to entomology have set him apart as one of the greatest, and his knowledge of Pyraloidea was unparalleled. I am proud and honoured to have had him as my mentor and MSc thesis advisor and although I hadn't been in touch with him these last few years spent away from Canada, I sent him my papers on pyraloids and the first issue of PP, which, I like to think, he was happy to see. A Festschrift in his honour, including a bibliographical sketch and list of his publications was published in *Tropical Lepidoptera* (2003, vol. 11, 1–58) on the occasion of his 80th birthday. Condolences, donations, or tributes may be made at www.tubmanfuneralhomes.com. Following are texts sent by Alma Solis, Jay Shaffer, and Michael Shaffer.

From Alma Solis:
I was very fortunate to have spoken to Gene within a month of my becoming a graduate student at the University of Maryland. Ron Hodges arranged a meeting with Gene in October 1982 so that I could explore the idea of doing my PhD research in Pyraloidea. Gene was very kind and over a 4 hour period suggested several projects. I told him that I was having a real problem in telling genera apart in the Pyraustinae so we went into to the NMNH collection. The cabinets were very close in the old hall and there was barely enough room for him to pull out a drawer. I was genuinely astounded when he proceeded to describe the small nuances of the forewing pattern that allowed him to identify the genera. The differences were minute and very, very subtle. So we continued like this talking on the phone almost weekly and sometimes daily to solve small problems for the Neotropical Checklist. We met every October at the NMNH when he was driving south or north to Sanibel Island where he and Isobel would enjoy the sun and seashells (he was very interested in molluscans as well!). He then asked me to work with him on the chapter for the Handbook of Zoology. It was getting close to the deadline so I called Isobel Munroe and asked her if I could come up to work with Gene for a week at their

Eugene Munroe in his house in 1993.

house. She was very gracious, invited me to visit, and we worked 18 hours a day to finish the first draft. Gene's knowledge of details was astounding. He would remember obscure papers with descriptions of taxa and morphology. Then he would put on his hard hat (so that he wouldn't whack his head) and go down into his basement to fetch the paper for me. It was a privilege to work with Gene who had devoted most of his life to the Pyraloidea and I benefited greatly throughout the years from his deep knowledge of the group.

From Jay C. Shaffer:
I first met Gene, then Dr. Munroe to me, when as a graduate student my advisor Jack Franclemont took me along on a trip to Ottawa and we stayed with the Munroe family. Gene and I had little contact for some years thereafter until I sought his help with the Aldabra Crambidae project. I had not worked with Pyraustinae before and desperately needed help understanding generic relationships. I frankly admit that I was in awe of Gene and viewed our meeting with some trepidation. None of this was helped by my arriving in Pittsburgh and finding the Ottawa flight cancelled, then zigzagging my way across the Midwest and finally arriving late in Ottawa. Not to fear, Gene and Isobel met me at the airport, took me to dinner, and made me feel at home at once. I spent four productive days working with Gene at the Canadian National Collection and in his home, and over the years would make two more visits there. Gene and Isobel always made me feel at home and I could not imagine more gracious hosts.
I was amazed at the depth of Gene's knowledge of Lepidoptera, not just taxonomy, of which he had few if any equals, but of evolution and ecology as well. Gene had a propensity for "getting it right" and I quickly learned not to ask idle questions as Gene would always find the answer to any question no matter the time required! Working with Gene was both a privilege and a pleasure and I will miss him.

From Michael Shaffer: An Appreciation of Eugene G. Munroe
In happier times of 2000 the excellent well deserved 'Festschrift in honour of Eugene G. Munroe' was published in Tropical Lepidoptera and covered the many reasons why he is held in such high esteem throughout the scientific world and especially by those who were fortunate enough to know him well and work with him in one capacity or another. The Festschrift introduction written by Alma Solis covered Gene's background, distinguished academic career and the honours bestowed on him, plus the enormous influence he had in the development of our knowledge on the Pyraloidea groups.
Above all, I know you will agree, Gene is **the** acknowledged authority on the Pyraloidea through the last century and beyond and was the undoubted successor to **Sir George Hampson** in this respect. The understanding and progressive development of the Pyraloidea through Gene's publications, combined with his research work on many uncompleted manuscripts, and his impact on major collections, has greatly progressed and stabilised our knowledge of the systematic relationships of this important complex group. Those of us who had the wonderful opportunity of working closely with him and were inspired by his efforts, were also gifted by his generosity in imparting beneficial knowledge. Of major importance was the fact that Gene always recognised and stressed that a working knowledge of world fauna was paramount and taxonomists should not be forced to restrict their researches to a more limited local fauna. More than most Gene was able to acquire this necessary information through travel, to visit nearly all major museums and other institutions to study their collections in order to gain this essential knowledge, to photograph type material and closely examine major moth collections, and importantly, to have access to a wealth of entomological literature. To this end, these collections bear witness of his investigations and working involvement

and major advances were made possible in numbers of institutions from his initial sorting and preliminary identifications; this is certainly so for the pyrale accessions in London, Washington, Ottawa and elsewhere. Hundreds of drawers at the BMNH are to this day containing sorted pyrals from various subfamilies, put together either by or for Gene and concerning numbers of his unpublished manuscripts. The important initial sorting Gene carried out in the early 1950's on the pyralid collection compiled by Lord Rothschild at his Tring Museum, formed the basis for the continuous sorting and arrangement of the accessions carried on by Michael Shaffer.
Undoubtedly, his enthusiasm and willingness to help with requests for identifications and his own wish to have on loan vast amounts of material, proved too ambitious and overloaded to be adequately managed and problems ensued concerning the return of loan material after Gene retired. To some extent his work over the years was very regretfully hampered by the need for assistance in preparations of dissections for vast amounts of material, and if this aspect of work was not carried out to the high standards required, it affected his taxonomic diagnostic analysis of material being studied, an aspect not generally realised from the very high standard of scientific illustration that accompanied his papers. An unfortunate example in this respect is a paper eventually produced by his co-author after the original manuscript and plates of illustrations were refused for publication as the genitalia photographs were unusable because the original dissections were below standard. It was also a paper that was accidentally omitted from the list of publications in his Festschrift, the paper concerned was E.G. Munroe & M. Shaffer, 1980. A revision of ***Vitessidia*** Rothschild & Jordan and ***Vitessa*** Moore (Lepidoptera: Pyralidae). Bull. Br. Mus. nat. Hist. (Ent.) 39(4): 241–360. It was the first modern revisionary work dealing with the nominate subfamily Pyralinae, Pyralini and was a project initiated in earlier years by others workers.
Co-authorships with Gene did not often occur, but through the 1960's and 1970's, a very fruitful collaboration with his fellow colleague at the CNC in Ottawa, **Akira Mutuura**, saw the production of many important works on temperate East Asia and the important generic revision of ***Ostrinia***. It is therefore fitting to note that the last publication was a co-authorship with Jay C, Shaffer, 2007, Crambidae of Aldabra Atoll (Lepidoptera: Pyraloidea). Tropical Lepidoptera 14(1-2): 1–114.
The works published by Gene, either as sole author or as co-author will influence studies on the Pyraloidea for many years to come and co-workers in this field of Lepidoptera studies will continue to acknowledge with gratitude the huge input he has made.
His passing is indeed a great sadness to us all and will be keenly felt.

Hiroshi Inoue
8.vii.1917 – 2.vi.2008

Sadly, we have also learned that Dr Hiroshi Inoue (Iruma City, Japan) passed away on the morning of June 2 at the age of 90. Michael Shaffer sent the following about Dr Inoue.
Hiroshi Inoue was a dedicated lepidopterist and a leading authority on the Lepidoptera fauna of Japan and his considerable output of publications, either as the sole author or as co-author with many other Japanese lepidopterists, mostly covered the macro-moth families and the Pyraloidea and related groups. They concerned his own country's moth fauna and to a smaller extent, other parts of Asia as well. Apart from the inclusion of all the Microlepidoptera groups in his huge work 'Moths of Japan' published in 1982, Inoue rarely worked on the Microlepidoptera families. His publications though on the pyralid groups and related superfamilies were quite large, ranging from the 1950's up to 2006 and contained many original descriptions, new synonymies and new additions to the Japanese fauna. At the relatively late date, 1993, followed by a supplement in 2001, Inoue published on the Thyrididae in the form of an excellent and much needed revision of the genus *Herdonia* Walker. In three parts, Inoue also published a revision of the genus **Palpita** Hübner for the Palaearctic, Oriental and Australian regions which appeared in 1996, 1997 and 1999.
In recognition of his contribution to the taxonomy of Lepidoptera, contemporary taxonomists honoured Inoue by naming many new species to science after him, and amongst the Pyraloidea are the following species: *Calamotropha inouei* Bleszynski, 1959; *Microchilo inouei* Okano, 1962; *Catoptria inouella* Bleszynski, 1965; *Edulicodes inoueella* Roesler, 1972; *Eoophyla inouei* Yoshiyasu, 1979; *Nacoleia inouei* Yamanaka, 1980; *Endotricha inouei* Yoshiyasu, 1987; *Assara inouei* Yamanaka, 1994; and *Eudonia inouei* Sasaki, 1998.
Hiroshi Inoue was regarded with great fondness by all who knew him as a friend and colleague, his congeniality, friendship and generosity were much appreciated and respected. He was a visitor to the Natural History Museum in London since the early 1950's, though his visits were not very frequent, he kept up regular contact with many of the staff and held the museum in very high esteem, to the extent of honouring the museum by donating his entire Lepidoptera collection of some 160,000 specimens and genitalia slides, including his primary types. This donation ranks Inoue as one of the major benefactors to the museum. His absence from the field of Lepidoptera taxonomy will be keenly felt.

GlobIZ News

Since the Pyraloidea Workshop in Dresden in March 2006, numerous data have been added to the Global Information System on Pyraloidea (GlobIZ) and a number of programme improvements have been made.

Altogether, 2750 valid species-group names plus 1450 synonyms as well as 2200 literature records have been added to the database since May 2006, completing the world species of Gallerinae (A. Tränkner & M. Nuss), the Pyraloidea of the Galapagos Archipelago (B. Landry), the Crambinae of North America (B. Landry), and the Pyraloidea of Hawaii (M. Nuss). Much data have been edited on the Spilomelinae (F. Vegliante) and Pyraustinae (A. Tränkner).
1367 of the literature records are those published in German on Microlepidoptera including Pyraloidea, dealing with aspects of systematics, faunistics, applied entomology and others. The records have been edited by Jörg Seidel (Dresden).

Ongoing work includes data editing on Acentropinae and Schoenobiinae (Wolfgang Speidel), Musotiminae (Shen-Horn Yen), the Crambinae of the Neotropics and Africa (B. Landry) and those of the Palaearctic Region (M. Nuss, R. Schouten), as well as the Pyraloidea of Madagascar (M. Nuss).

Changes have been made to the editing forms of the database. Among others it is now possible to add images to each species-group name record and a pdf-file to each reference record. A module

to include specimen records is currently under development by Gregor Kunert.

For citation of GlobIZ, it is recommended to search for the data editor of the particular taxon on the homepage (home > partners) and to cite as follows:
Landry, B. 2007. Nearctic Crambinae. – In: M. Nuss et al., Global Information System on Pyraloidea. – www.pyraloidea.org.

Matthias Nuss
Dresden, June 9, 2008

News from M. Alma Solis

The following projects are underway:
- Placement of all Cybalomiinae in the Western Hemisphere that are incorrectly placed in this subfamily.
- Taxonomic treatment of *Diatraea*, including the description of at least two new species, redescriptions of the known species, a key to the males and females, and a summary of the known biological information.
- Study of genitalic musculature of the Pyraloidea is on-going as additional evidence to support hypotheses of positional homologies of structures on the male tenth somite.
- A phylogenetic, worldwide revision of *Herpetogramma* with a clarification of its association with closely-allied, spilomeline genera to create a monophyletic classification within the subfamily was commenced. It has been set aside until more type specimens are acquired.
- Description of two new musotimine taxa discovered on the Old World climbing fern in Southeast Asia.
- Creation of an image database of the entire pinned Crambidae, Hyblaeidae, Pterophoridae, and Pyralidae type specimens of the USNM. Over 2200 specimens will be represented by images of the dorsal habitus, labels, slide mounted dissections, and PDF scans of the original description. A database will hold the information crucial to the specimen as well as original and current nomenclature. Approximately 80% of the project is completed. Funding for this project was received from the Smithsonian Institution Type Imaging Project.

Among many other professional activities, in 2006 I presented "Phylogenetic studies and modern classification of the Pyraloidea (Lepidoptera)" at the XXXIII Congress of the Colombian Society of Entomology, Manizales, Colombia, and "Biodiversidad de Pyraloidea Neotropical, plagas y beneficios" at CORPOICA, Palmira, Colombia. I taught a day-long workshop on the identification of Pyraloidea larvae at Palmira as well.

Request

Jean-François Landry and myself are preparing a book on the microlepidoptera of Québec and Labrador and there

is one species of Pyralidae, subfamily Galleriinae, that is known only from the type specimen, i.e. *Melissoblaptes fuscolimbella* Ragonot.
That species was described in 1887 and the type locality is «Amérique septentrionale» [North America]. Since then, no other specimen has ever been seen. We suspect that the type locality could be wrong. So we are asking you, the pyraloid specialists of the world, if you know more about it, or if you have seen more specimens. We are including a photograph of the type specimen, which is deposited in the Muséum d'histoire naturelle, Paris, France.
Thanks in advance for your consideration.
Louis Handfield, 133 Messier # 301, Mt-St-Hilaire, Québec, Canada J3H 2W8; lscal@netrover.com

The Pyraloidea of the Galapagos Archipelago: an overview

Bernard Landry, Muséum d'histoire naturelle, C.P. 6434, 1211 Genève 6, Switzerland

Among the 30 families and 326 species of Lepidoptera that have been recorded so far on the Galapagos Islands, the Pyralidae (here taken in the broad sense, i.e. inclusive of the « Crambidae ») represent the second most diverse group after the Noctuidae (sensu Lafontaine & Fibiger, 2006). So far 76 species of Pyralidae have been found on the Galapagos, while there are valid records for 92 species of Noctuidae. The next most diverse families on the Galapagos have less than 20 species.

These numbers show that the lepidopteran fauna of the Galapagos is rather depauperate when compared to that of the Neotropical region (44791 species in total and 3804 species of Pyralidae (Heppner, 1998)), which is the region of origin of the Galapagos fauna according to all available data. These numbers also show the disharmony of the fauna, with several missing Neotropical subfamilies, such as the Chrysauginae, Midilinae, Odontiinae, Schoenobiinae, Scopariinae, etc., and three subfamilies that are represented by one or two species that were almost certainly introduced by human visitors (Acentropinae, Galleriinae, and Pyralinae).

A number of phenomena have been shown to be typically important on islands in general. Here are five of them and how they affect Galapagos Pyraloidea.

The phenotypic variability is relatively important in some of the endemic species, particularly in the Crambinae and Phycitinae. It is also important in other endemic moths (there is only one endemic butterfly) and can be explained by a relaxation of the pressure of natural selection on the colour pattern as a means to avoid predation, or the small size of the populations may favour a more important expression of recessive genes.

Extreme size (gigantism or nanism), which is expressed in the large Galapagos tortoises, may be expressed in the endemic pyraustine *Beebea guglielmi* Schaus (Fig. 1), which reaches a wingspan of seven cm, although we don't know yet the phylogenetic relation-

Subfamily	Species nos.	Subfamily	Species nos.
Pyralinae	0/2	Crambinae	?7/ ?9
Galleriinae	0/1	Musotiminae	1/1
Epipaschiinae	0/1	Acentropinae	0/1
Phycitinae	7/16	Glaphyriinae	1/2
		Pyraustinae (incl. Spilomelini)	15/43
		Totals :	?31/ ?76

Table 1. The Galapagos pyraloid subfamilies and the numbers of species in each with the first number indicating the number of endemic species.

ships of this cactus-feeding behemoth, and whether or not its ancestors were also large. The other pyralids that are endemic to the Galapagos do not appear to be larger than their continental cousins. In some of the native Galapagos species of butterflies and sphingids the Galapagos populations are reduced in size in comparison to those of the continent, but the same doesn't seem to apply to pyralids.

The loss of the ability to fly is known for some bird groups and in the Galapagos the flightless cormorant is a good example. Although this phenomenon sometimes affects micromoths on islands (French & Smith, 1983), it is not known to occur among Galapagos Lepidoptera.

The tendancy to harbour drab or cryptic colours is predominant in the Galapagos moths and there doesn't seem to be any exception in the endemic Pyralidae. However, the similar colours and pattern shown by two undescribed species, one of them in genus *Agathodes* and the other in an apparently undescribed genus (Fig. 2) represent an enigma. I suppose that these moths rest on a substrate that renders them invisible to the untrained eye, but the substrate in question remains unknown.

A fourth phenomenon of high interest is the endemism. As shown on Table 1, the percentage of endemism is about 41% when considering the whole fauna (76 species). However, if we remove from the total number of species of pyralids the 31 that are presumed to be introduced by man as mentioned in Causton *et al.* (2006), the percentage of endemism raises to 69%. This is a high value in comparison to that of the entire fauna of the Galapagos Lepidoptera, which is estimated at 53.7% without the 56 species of lepidopterans believed to have been introduced by man. Following the advent of new beings on islands, radiations sometimes evolve, given enough time. In the Galapagos, one such famous radiation is that of Darwin's finches (Geospizinae) and there is at least one comparable radiation in the microlepidoptera: that of genus *Galagete* (Autostichidae, Landry, 2002). Apparently there hasn't been any such radiation in the Pyralidae of the Galapagos and the largest endemic species-group (three species) is probably in the crambine genus *La* Bleszynski, but I have yet to finish my study of this group.

The Galapagos pyralids are an interesting group because of the relatively high number of endemics, which include some genera (e.g. *Beebea* Schaus, *Shaffieriessa* Landry & Neunzig), but their taxonomy is incompletely known, and their natural history, even less so. Before 1989, when I started my studies on Galapagos Lepidoptera during a two-month expedition, only 17 species of Pyralidae had been recorded from the Galapagos (Linsley & Usinger, 1966; Linsley, 1977), including 6 endemics. Since 1989, the list of recorded species increased to 47 and 5 new species were described (Causton et al. 2006; Landry & Neunzig, 1998, 2006; Landry & Roque-Albelo 2006). I have specimens of 29 more Pyralidae species that remain to be recorded from the archipelago, including 23 new ones, that I am planning to describe in the next few years.

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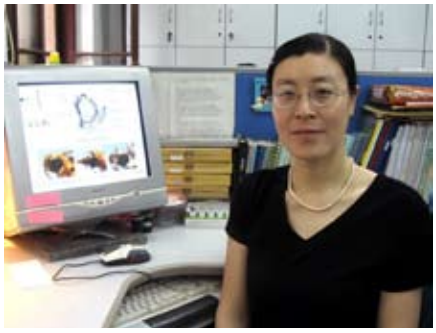
Xicui Du received her PhD Degree from Nankai University



Xicui Du, a member of the Lepidopteran Lab, College of Life Sciences, Nankai University, Tianjin, China, received her PhD degree in June 2008. She completed her research in three years under Professor H. H. Li, tutor of the PhD Program. Her doctoral dissertation focuses on a taxonomic study of 59 genera of Spilomelinae (Crambidae) from China. The dissertation comprises four parts: a general introduction, a taxonomic part, an investigation of the antennal sensilla ultrastructure by SEM, and an analysis of the biogeographical distribution.
A total of 170 species in 59 genera are fully described in the dissertation. Fourteen species are described as new, two genera and 12 species are newly recorded to China, and four new combinations are proposed. The ultrastructure of the antennal sensilla of 16 species was investigated, with seven types of sensilla identified. The distribution of the genera and species of Spilomelinae in China was analyzed and summarized by maps and tables. The results show that members from the Oriental Region constitute the majority of the Chinese Spilomelinae at both generic and species levels, 89.22% of the genera are found in more than two regions, the worldwide distributed genera account for 15.69%, and 10.78% of the recorded genera in China are endemic to the Oriental Region.
Beginning in July 2008, Xicui Du will work at the College of Plant Protection, Southwest University, Chongqing.

The Pyraloidea of Réunion Island

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Survey results

The Pyralidae and Crambidae of Réunion Island are now represented by 148 species (Guillermet, 2008), i.e. 52 more than recorded by the previous survey (Viette, 1996). In comparison, Madagascar is populated by 496 species of Pyraloidea (Viette, 1990). There is no recent list for Mauritius and Rodrigues Island, which make up the Mascarene Archipelago with Réunion Island, as the last one was published by J. Vinson in 1938. The Pyralidae family is represented by 48 species on Réunion; these belong to four subfamilies and 27 genera. The Crambidae are represented by100 species belonging to 11 subfamilies and 68 genera. Sixteen species (15 Phycitinae and 1 Spilomelinae) haven't been determined.

Geographical distribution

The Pyraloidea of Réunion Island mainly come from Madagascar, and partly from Africa and the indo-australian region. Among the 48 Pyralidae species found on Réunion, 13 are also known from Africa, 11 are also in Madagascar, and 10 in the indo-australian region. Seven species are widely distributed in many countries and six are cosmopolitan. This is the result of the international trade of live and dried plants, a real problem for Réunion. The Crambidae are more numerous, with 100 species of which 62 are also present in Madagascar, 47 in Africa, and 31 in the indo-australian region. Twenty-five species are widely distributed in many countries and three are cosmopolitan.

Altitudinal distribution and diversity

Réunion Island has an uneven, rich volcanic geography and the highest point, the "Piton des Neiges", reaches almost 3000 meters. Pyralidae are not present over 2000 m. Their species diversity is more important between 0–1250 m and reaches a peak between 0–125 m. Crambidae are also more abundant between 0–125 m and their populations are well established up to 1250 m. Over this altitude, their diversity decreases very quickly. Few species, such as *Scoparia resinodes* Joannis, are present over 2500 m in a mainly mineral world, where only *Philipia montana* plants remain. Thus, the diversity of Pyraloidea is more important at lower elevations, with 96 taxa (64.9 %).

Cilaus longinasus Joannis, 1932 (Musotiminae) a genus and species endemic to La Réunion. This is a female specimen from the MNHN collections, Paris.

Endemism

Of the 148 species of Pyralidae and Crambidae found on Réunion, 40 are endemic (27 %) to the island. Only three endemic genera (in Phycitinae and Musotiminae) have been documented. Four endemic species are restricted to the three islands of the Mascarene Archipelago (4 %). The total percentage of Pyraloidea endemism of the three islands of the Mascarenes is 29.7 %. There are ten endemic species

Pyralidae	Species Réunion	Endemics Réunion	Endemics Mascarene	% Endemic Réunion	% Endemics Mascarene
Galleriinae	4	0	0	0	0
Epipaschiinae	1	0	0	0	0
Pyralinae	4	1	0	25	0
Phycitinae	39	9	2	23,1	5,1
Total Pyralidae	48	10	2	20,8	4,2
Crambidae					
Crambinae	5	0	1	0	20
Acentropinae	5	3	0	60	0
Cybalomiinae	1	1	0	100	0
Musotiminae	3	3	0	100	0
Scopariinae	2	1	0	50	0
Evergestinae	1	0	0	0	0
Odontiinae	1	1	0	100	0
Noordinae	1	0	0	0	0
Glaphyriinae	2	0	0	0	0
Spilomelinae	70	20	0	28,6	0
Pyraustinae	9	1	1	11,1	11,1
Total Crambidae	100	30	2	30	2
Total général	148	40	4	27	2,7

of Pyralidae on Réunion Island (20.8 %). This figure will have to be corrected following further studies on the 15 undetermined species of Phycitinae. The number of endemic species of Crambidae was found to be 30 (30 %). The following subfamilies have no endemic species: Galleriinae, Epipaschiinae, Evergestinae, Noordinae, and Glaphyriinae.
The subfamilies with a very high number of endemic species, between 60–100 %, are Acentropinae, Cybalomiinae, Musotiminae, and Odontiinae, but these subfamilies are represented by a small number of species each. With 70 species, 20 of which are endemic (28.6 %), the Spilomelinae represent the most diverse subfamily of Pyraloidea on Réunion.
The altitudinal distribution of endemic Pyralidae and Crambidae differs depending on families. The endemic Pyralidae are more numerous between 500–1200 m while the endemic Crambidae are more numerous between 0–1250 m. The percentage of endemism increases with the elevation, until 1250 m for the Pyralidae and until 2500 m for the Crambidae, while their total diversity decreases.

Conclusion
Even though the endemism of Pyraloidea remains important on Réunion because primitive forests are well protected by official institutions, my studies show that an important increase in the introduction of new exotic species occurred since 1996 due to the internationalization of the trade of plants and dried food products.

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"Pyrales" from southern Africa

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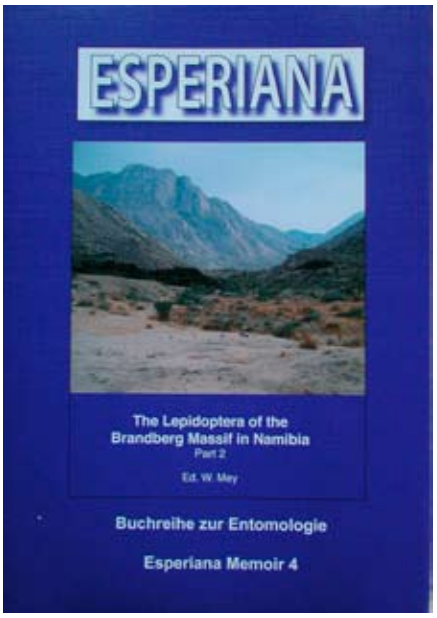

The investigation of the Lepidoptera material of the Brandberg Massif in Namibia, which was collected during 3 expeditions from 2000 to 2002 has been accomplished last year. The results were published in a two volumes monograph "The Lepidoptera of the Brandberg Massif in Namibia". The books appeared in the series Esperiana Memoir as vol. 1 and vol. 4. The books can be ordered by the series editor H. Hacker, Bad Staffelstein, Germany (www.esperiana.net)

All occurring pyraloid groups were examined by group specialists:

Vol. 1
Crambidae: Crambinae, Cybalomiinae (G. Bassi)
Crambidae: Noordiinae, Odontiinae, Spilomelinae, Pyraustinae (K. Maes)

Vol. 2
Pyralidae: Pyralinae (P. Leraut)
Pyralidae: Epipaschiinae (W. Speidel)
Pyralidae: Phycitinae (W. Mey)

A total of 17 species were described and 5 new genera established in Crambidae and Pyralinae.
The most diverse and species-rich group within Pyraloidea on the Brandberg are the Phycitinae. Since I was unable to recruit a phycitine specialist I had to study the group by myself. The low resolution at the species level in the phycitine chapter is a reflection of my "beginner" level, but I hope to continue with the group in order to achieve the advanced level of my esteemed colleagues someday.

Mr Chen Fuqian PhD candidate

Mr Chen Fuqian is a PhD candidate of the Chinese Academy of Science, Beijing, China. He is one of the most active young pyraloidea workers and has recently published many papers on taxonomic reassessment of various genera of the Chinese Acentropinae. In this March, he visited Dr. Yen Shen-Horn (National Sun Yat-Sen University, Kaohsiung, Taiwan), under a Taiwan-China bilateral visit scheme supported by the Taiwan government from March to April, to work on taxonomic revision of several difficult Oriental musotimine genera with Yen. Dr Du Xicuei and Prof. Li Houhun, both active microlepidopterists in China, also visited Taiwan for similar purposes under the same support scheme in 2006. (Photo by Mr. Shih Li-Chen, 2008)

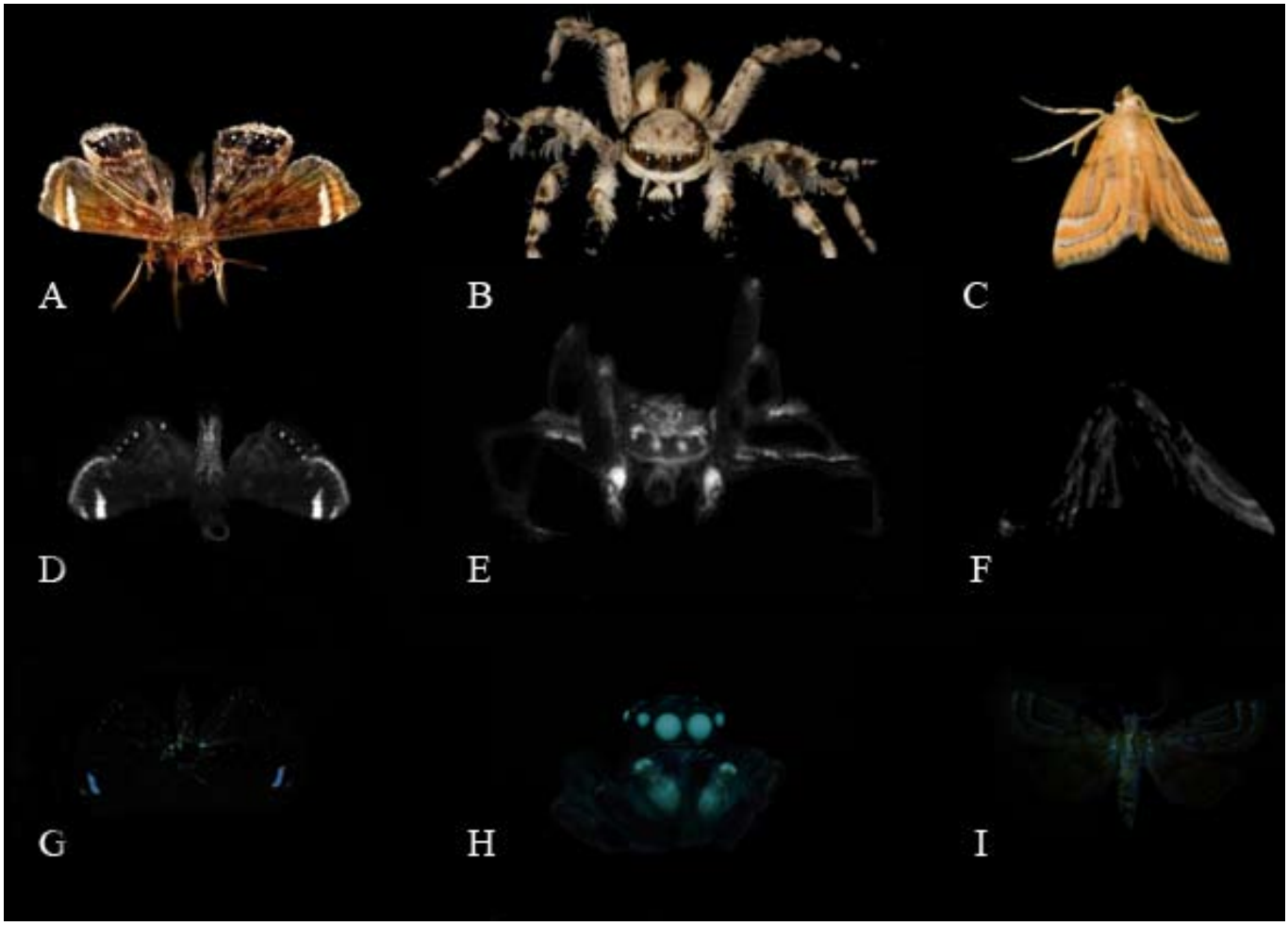

Photo: *Eugauria albidentata* (Hampson) (left) and *"Cataclysta" angulata* Moore are always sympatric and their larvae utilize the same host plant in Taiwan. The adults share similar arrangement of wing maculation, but with different background colouration. *Eugauria* avoids spider attacks by exhibiting its UV reflectance similar to that of the spiders, but *"Cataclysta" angulata* lacks UV reflectance and always gets attacked by the spiders.

Cataclystiform mimicry

Miss Wang Muyun, a 1st year master student of Dr Yen Shen-Horn, has been studying the putative mimicry between various microlepidopteran moth groups and jumping spiders (Salticidae) since late 2006. This kind of mimicry is completely different from those based on the classical Batesian and Müllerian mimicry scenarios based on studies on butterflies. The predator represents the model itself and the prey gains advantage by resembling the model. This mimicry type has been anticipated since the 1980s based on observations of the wing pattern of some micromoths characterized by white stripes and series of «eye spots» on either fore- or hindwing accompanied with various kinds of display behaviour. Eugene Munroe termed this wing pattern type as «cataclystiform». Recently Rota & Wagner (2006; PLoS One 1(1): e45) proved existence of the jumping spider mimicry of *Brenthia* (Choreutidae) from Costa Rica. Wang's study focuses on the visual interactions between the moths and spiders, spider's cognition and the parallel evolution in wing pattern between unrelated moth groups.

She recently found that *Eugauria*, a diurnal Musotiminae genus widely distributed from China to Papua New Guinea, can successfully avoid attack of many different jumping spider species by displaying their forewing UV reflectance, which is visually similar with the UV reflectance on spider's legs. She is going to present a poster about putative evolutionary correlation between spider's behavioural and photonic characteristics and the diversity and convergence of moth wing pattern during the forthcoming International Congress of Entomology in South Africa.

News from James Hayden

James Hayden is nearing the completion of his PhD work at Cornell University in Ithaca, NY. In addition to his dissertation revising *Cliniodes* Gn. and related Neotropical Eurrhypini (Odontiinae), he is reviewing *Dicepolia* Sn. (little brown relatives of *Autocharis* Swin.) and a new genus related to *Pseudonoorda* Mun. from the Bahama Is. He presented a preliminary morphology-based phylogeny of the tribe at the Ent. Soc. America 2007 meeting in San Diego, CA. He will be illustrating and publishing many of those new characters as a thesis chapter.

The Eurrhypini is defined by a remarkable stridulatory apparatus that is part of the male genitalia. To date, the connection between the apparatus's function (Gwynne & Edwards, 1986) and its general systematic significance (Leraut & Luquet, 1982 (1983)) has not been tested on more species. Jim strongly urges that somebody get these things into the lab to record courtship signalling. *Mimoschinia* and *Eurrhypis* should be readily available to many North American and European workers, and diversity sharply increases in the subtropics and tropics. *Deanolis sublimbalis* Sn., the red-banded mango borer, is another common species that is sorely needed in collections; despite its pest status, it is seldom reared out (M. Horak, pers. comm.)

Unfortunately, except for the early-diverging aridlands species (such as the two genera above), eurrhypines are not strongly phototropic. Jim spent much of summer 2007 fruitlessly hunting *Metrea ostreonalis* Grt. in eastern North America and *Cliniodes* in Puerto Rico. However, thanks to collections-based research, he will shortly publish a range expansion of *Metrea* in the Lep. Soc. News. He would consequently like to borrow or trade *Cliniodes, Dicepolia*, and any tropical eurrhypines.

This summer, Jim was graciously received by Thomas Simonsen at U. Alberta to train in histological techniques. Jim is interested in the stridulatory apparatus's origin: the *pars stridens* seems to consist of a pair of hypertrophic scales, but sectioning and internal reconstruction should provide a better answer. However, he does not have expendible specimens in 70% ethanol, so any workers who would like to trade material, please let him know. Instead, Thomas and Jim's interest turned to the Organ of vom Rath in the tip of the labial palpi, which senses CO2 and is sexually dimorphic at least in some cactus phycitines and *Neoleucinodes* (Diaz & Solis, 2007). Of course, "snout moths" display great variation in palpal structure, and his phylogenetic results demonstrate its reliability, given proper coding. General inquiry into palpal functional morphology would be very interesting, and the Pyraloidea would be a model group for the Lepidoptera.

Jim is about to embark on an NSF-funded tour of several European institutions in June and July. He looks forward to searching the holdings for types and outgroups and to meeting several members of the PP community. He is also starting to search for post-doctoral positions, with an interest in anything related to pyraloid systematics and functional morphology (or that of Lepidoptera in general).

Finally, Jim spends a fair amount of time photocopying and scanning taxonomic literature from Cornell's large library system. To expedite things, he would like to know of anyone interested in trading digital copies. It should be an easy choice between a pocket hard drive and a duffle bag full of reprints (recalling Michael Shaffer's amusing description of Gene Munroe's visits to the BM).

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Pyralid moths in the Vitor O. Becker Collection, Brazil

After almost five years dedicated to establish a biological reserve and supervising the construction of a research center and a lodge to accommodate visitors, here at Serra Bonita, Camacan, Bahia, I am slowly returning to my moths. During this time I did very little entomology, either with publications or curation, except for some collecting.

The main task I am starting just now is to incorporate into the collection the specimens I took to the Smithsonian Institution in 1999 for identification. At that time over 4,000 pyralid specimens (one of each unidentified species of my collection), were taken to be compared with their collection. As I had no time to work them all in one trip, the material was left there to be worked out in the following years, every time I had an opportunity to return to do some contract work. Over 50% of the material was identified to species level. For some groups, such as Pyraustinae, Spilomelinae, and Epipaschiinae, over 70% of my material was represented in their collection. For others, such as Nymphulinae, Scopariinae, Musotiminae, etc., I managed to identify no more than 20% of the species.

All my material is now spread (I do that in the field), labeled, sorted to morphospecies and curated (in unit trays). Over 6,000 species of pyralids are represented (for over 30,000 specimens). Considering that there are about 4,500 species described for the neotropical fauna, according to Munroe et al.'s 1995 checklist, and that, obviously, my collection does not include all described species, one can estimate the number of undescribed species. As the pyralids is one of the groups I do not have much interest in (neither time left!) to work on myself, I welcome anyone interested to study them.

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