



THE PYRALOID PLANET

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A Newsletter for Pyraloidea Fans

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Editorial

I continue to be impressed by the variety of topics being explored by pyraloid enthusiasts worldwide. It is wonderful to see studies about taxa in many subfamilies and from diverse areas of the world. Two students have submitted items for this newsletter, Jacob Bethin on Acentropinae, and Beatriz Seno on Musotiminae. I have worked on these taxa in the past, and, besides having beautiful adults, their immatures are exceptionally interesting in their morphologies and biological interactions, acentropines with water and musotimines with ferns. This past year, I concentrated on various collection projects, the largest involving the Crambinae and Phycitinae at the National Museum of Natural History (NMNH), Washington, D.C.

I was also involved in various collaborative projects. I planned (but was unable) to present on research about *Orphanostigma* (Spilomelinae) with Matthew Cock and others at the Entomological Society of America Meeting in Portland, Oregon, U.S. Matthew has kindly provided an overview of this research below. Also, Jadranka Rota and Niklas Wahlberg shared their work in collaboration with me, students, and others on Chrysauginae, truly one of the dark taxa left in the Pyraloidea, at the Society for European Lepidopterology (SEL) meeting in the Czech Republic this year. They share an update below, including the first chrysaugine phylogeny. The 25th SEL Congress 2027 will be held in Lund, Sweden.

Richard Mally, the major contributor to the pyraloid database, provides an in-depth update to GlobIZ. **NEW: He lists all species added to the database and asks pyraloid enthusiasts to take a look and send any taxon names that may have been missed in the database.** If you describe new pyraloid taxa or publish nomenclatural changes, or if you know about such publications in an unusual publication outlet, please send an email with the citation or the pdf so that it can be added to the database.

Finally, Richard Mally tells me I have been editor of the Pyraloid Planet for 10 years! I will be stepping down as Editor, and he has kindly offered to step forward to become the Editor in 2026. It has been a pleasure interacting with pyraloid enthusiasts worldwide through the Pyraloid Planet. I will continue to submit items and look forward to reading about others working on these beautiful moths.

I thank everyone who was able to send in items for the newsletter on our shared pyraloid passion.

M. Alma Solis



Alma Solis collecting in Texas

GlobIZ News 2025

Twenty-seven papers contained taxonomic descriptions of new Pyraloidea taxa, including four new genera in two subfamilies: Spilomelinae: *Pseudambia* D. J. L. Agassiz, 2025, *Lingulabotys* Maes, 2025a and *Micrometasia* Matsui in Matsui et al., 2025; and in Crambinae: *Coloradactria* Landry & Léger in Warren et al., 2025.

Note: Added here by Alma Solis after the first version of the newsletter: in Crambinae: *Nevadapteryx* Landry, 2025b; in Lathrotelinae: *Indoteles* Hayden, 2025.

Of the 59 newly described species, 19 were in Spilomelinae, 16 in Crambinae, 11 in Phycitinae, nine in Lathrotelinae, two in Pyraustinae, and one each in Pyralinae and

Scopariinae. Of these 59 new species, 18 were described from the Afrotropical region, followed by the Indomalayan realm (15 spp.), the West Palaearctic region (12 spp.), and the East Palaearctic region (7 spp.). Three new species each from the Nearctic and Neotropical regions and one new species from Oceania were described.

Currently, Pyralidae totals 1,093 valid genera and 6,316 species, and Crambidae 1,029 genera and 10,616 species. In the Pyraloidea this totals 2,122 genera (+ 1,472 synonyms) and 16,932 species (+ 6,653 synonyms). The table below provides an overview of the numbers per subfamily as of **November 28, 2025**.

	genera	species		
	valid	valid		
	synonyms	synonyms		
Pyralidae				
Chrysauginae	130	61	402	128
Epipaschiinae	95	69	738	174
Galleriinae	64	62	272	115
Phycitinae	668	423	3,579	1,583
Pyralinae	136	109	1,325	402
Total	1,093		6,316	
Crambidae				
Acentropinae	69	38	791	217
Crambinae	176	124	2,153	1,104
Erupinae	3	4	36	5
Glaphyriinae	75	60	538	204
Heliorthelinae	3	3	29	14
Hoploscopinae	2	4	46	2
Lathrotelinae	6	7	54	11
Linostinae	1	0	4	2
Midilinae	11	4	60	11
Musotiminae	24	8	208	26
Odontiinae	87	39	387	147
Pyraustinae	171	106	1,283	648
Schoenobiinae	29	17	239	97
Scopariinae	20	24	600	209
Spilomelinae	352	310	4,187	1,554
Total	1,029		10,616	
Pyraloidea Total	2,122	1,472	16,932	6,653

Even though I try to collect all data on new Pyraloidea taxa, it's possible that a publication might have been inadvertently overlooked. Please check the following **list of newly described species** and let me know if any names are missing (email to Richard Mally, richardmally[at]seznam.cz).

Phycitinae

Ancylodes zhengi Gulzar & Li in Liu et al., 2025

Ancylosis albaladejoi Gastón, Huemer & Vives Moreno, 2025

Ancylosis biculcita Li in Han et al., 2025

Ancylosis byuni Gulzar & Li in Gulzar et al., 2025

Ancylosis lativalvata Ren & Li in Gulzar et al., 2025

Ancylosis ningxiana Li & Ren in Gulzar et al., 2025

Bradyrrhoa andreae Govi & Fiumi, 2025

Falckia slamkaiella Alipanah, 2025

Myelopsis davidi Handfield, 2025

Nyctegretis seminigra Yang, Zhou & Ren, 2025

Tephris yildizae Akin & Orak, 2025

Pyralinae

Zitha ferrugineofasciata Irungbam & Mally, 2025

Crambinae

Catoptria korab Bassi & Huemer, 2025

Catoptria nikai Bassi & Huemer, 2025

Catoptria plat Bassi & Huemer, 2025

Catoptria plitvicensis Bassi in Bassi et al., 2025

Catoptria richteri Bassi & Huemer, 2025

Catoptria sarplanina Bassi & Huemer, 2025

Catoptria velebitica Bassi in Bassi et al., 2025

Coloradactria frigida Warren, Ferris & Landry in Warren et al., 2025

Glaucocharis bonakandaiensis Maes, 2025b

Glaucocharis faroensis Maes, 2025b

Glaucocharis oluloiensis Maes, 2025b

Prionapteryx asirensis Bassi, 2025

Prionapteryx samaru Bassi, 2025

Prionapteryx spinosa Bassi, 2025

Thaumatopsis mayelisiae Landry, 2025

Thaumatopsis powelli Landry, 2025

Lathrotelinae

Sufetula culshawi Young, Hall, Richards & Lees, 2025

Sufetula elfridea Müller, Hayden & Léger in Müller et al., 2025

Sufetula falcata Müller, Hayden & Léger in Müller et al., 2025

Sufetula fulgurata Müller, Hayden & Léger in Müller et al., 2025

Sufetula gigantea Müller, Hayden & Léger in Müller et al., 2025

Sufetula minuta Müller, Hayden & Léger in Müller et al., 2025

Sufetula monticola Müller, Hayden & Léger in Müller et al., 2025

Sufetula oculalis Müller, Hayden & Léger in Müller et al., 2025

Sufetula serrata Müller, Hayden & Léger in Müller et al., 2025

Pyraustinae

Limbobotys digitatus Ko & Bae in Ko et al., 2025

Pyrausta flavofascia Maes, 2025b

Scopariinae

Scoparia dagestanica Tsvetkov, 2025

Spilomelinae

Diaphania unipunctalis Maes, 2025c

Hemopsis abstracta Yu & Du, 2025

Hemopsis coalita Yu & Du, 2025

Hemopsis heteroidea Yu & Du, 2025

Herpetogramma digitalis Seizmair, 2025

Herpetogramma dilatalis Seizmair, 2025

Herpetogramma lunatalis Seizmair, 2025

Herpetogramma nigripalpalis Seizmair, 2025

Herpetogramma undularis Seizmair, 2025

Herpetogramma viraktamathi Shankara Murthy & Nagaraj in Murthy et al., 2025

Micrometasia melanatella Matsui, 2025

Micrometasia ryukyuensis Matsui, 2025
Palpita hispaniolaensis Landry & Solis, 2025
Palpita maribelae Landry & Solis, 2025
Parathrausta contrastalis Maes, 2025b
Parathrausta nigerstimalis Maes, 2025b
Pseudambia kingstoni Agassiz, 2025
Pseudambia manicensis Agassiz, 2025
Pseudambia stellata Agassiz, 2025

Richard Mally, December 2025

NEWS FROM.....

Vernon Brou, Jr. & Monica S. Boutte

We reported a new U.S. state record of *Eurrhyarodes splendens* Druce for Louisiana. It was photographed on November 7, 2024, by M.S. Boutte (see below). This beautiful Spilomelinae (tribe Herpetogrammatini) species has been previously reported in the United States from Texas and Arizona and south to South America.

Reference

Brou Jr., V.A. and M.S. Boutte. 2025. *Eurrhyarodes splendens* Druce, 1895 (Lepidoptera: Crambidae) in Louisiana. Southern Lepidoptera News. 47:10-11. https://www.academia.edu/145377945/Eurrhyarodes_splendens_Druce_1895_Lepidoptera_Pyraliidae_in_Louisiana



Matthew Cock

Publicly shared citizen science images and DNA barcodes to assess the establishment and spread of a crambid weed biological control agent

A neotropical Arctiinae moth *Pa-reuchaetes pseudoinsulata* Rego Barros has been deliberately released in six countries in South and South-East Asia as a biological control agent for an invasive weed *Chromolaena odorata* (Asteraceae). Matthew Cock (CABI Emeritus Fellow) collaborated with Michael Day (Department of Agriculture and Fisheries, Queensland) and Rachel Winston (MIA Consulting, Utah) to see whether georeferenced and dated images shared by citizen scientists on the iNaturalist.org platform could be used to assess the establishment and spread of this weed biological control agent (Cock et al. 2023). Adding to our existing knowledge, it was found that *P. pseudoinsulata* is established in Thailand and Vietnam and has spread to China (Yunnan and Hainan provinces), Cambodia and West Malaysia (Penang). This was one of the first examples of the establishment of a biological control agent being documented from citizen science images.

Following this research, we considered the case of *Orphanostigma haemorrhoidalis* (Guenée) (Crambidae, Spilomelinae), which is indigenous to the Americas and has been widely released in the Old World tropics for the biological control of *Lantana camara* (Verbenaceae) from the 1950s to the 1980s. We added images shared on the Afromoths website and DNA barcodes from the Barcode of Life Data System (BOLD) to our potential information sources. We immediately encountered taxonomic issues, and expanded the collaboration to include Alma Solis (Systematic Entomology Laboratory, USDA), who led on a first paper to clarify these. *Orphanostigma*

futilalis (Barnes & McDunnough), described from south Texas, United States, was removed from synonymy with *O. haemorrhoidalis*. Lectotypes for *O. futilalis*, and *O. haemorrhoidalis* were designated to stabilize the names of these species, and *O. eugeniephillipsia* Solis was described from Costa Rica (Solis et al. 2024).

Analysis of DNA barcodes showed that there are two genetically distinguishable populations of *O. haemorrhoidalis* in the Americas 1.53% bp different, one in the south-eastern USA and the other widespread in the rest of the Neotropics. As the genitalia and biology of the two populations could not be distinguished we considered them as one species. The two populations were introduced into different parts of the World and subsequently spread. We used DNA barcodes from BOLD to clarify that a population from Florida is established in Hawai'i, Australia and Fiji, while a population from Trinidad is established in parts of mainland Africa (including new records for Cameroon, Nigeria and Ghana), Madagascar, Mauritius and La Réunion. New country records for *O. haemorrhoidalis* were established from iNaturalist images from Eswatini, Kenya and Mozambique, and from Afromoths for Tanzania (Cock et al. 2025). Publicly-shared DNA barcodes and citizen science images have proved a valuable, perhaps unanticipated, resource to monitor the establish and spread of biological control agents.

References

Cock, M.J.W., M.D. Day, & R.L. Winston. 2023. Citizen science to monitor the establishment and spread of a biological control agent: the case of *Pareuchaetes pseudinsulata* (Lepidoptera, Erebidae) for the control of *Chromolaena odorata* (Asteraceae) in South and South-East Asia. CABI Agriculture and Biosci-

ence. 4(25): 6 pp. <https://doi.org/10.1186/s43170-023-00171-5>

Cock, M.J.W., M.D. Day, M.A. Solis, & R.L. Winston. 2025. Publicly-shared DNA barcodes and citizen science images provide new evidence on the establishment and spread of a lantana biological control agent, *Orphanostigma haemorrhoidalis* (Lepidoptera, Crambidae). CABI Agriculture and Bioscience. 6(1): 0010, 11 pp. <https://doi.org/10.1079/ab.2025.0010>

Solis, M.A., M.J.W. Cock, D.H. Janzen, & W. Hallwachs. 2024. New World *Orphanostigma* Guenée, 1854, including a new species from Costa Rica (Lepidoptera: Crambidae: Spilomelinae). Zootaxa. 5471(3): 383–390. <https://doi.org/10.11646/zootaxa.5471.3.8>



O. haemorrhoidalis from Fiji (NMNH)

Bernard Landry

I published four papers on pyraloids during this more prolific year than usual. In the Spilomelinae Landry & Solis (2025) describe two striking new species of *Palpita* Hübner from the Dominican Republic. The *Palpita* fauna of the Dominican Republic includes five additional described species and three more that remain undescribed for lack of material.

Landry (2025) is a revision of the *bolt-rellus* species group of *Thaumatopsis* Morrison (Crambinae), which is found in the USA and northern Mexico. Six species are treated, including two new ones, i.e., one from Texas very similar to *T. repandus* (Grote) (long recognized as a new species by A.B. Klots), and another from Mexico that is externally more similar to *Neodactria* Landry species.

Warren et al. (2025) will probably generate the most ‘hype’ among these four papers because the new taxa are described for a crambine with a female that is brachypterous and flightless (see figure right). My thanks to Clifford Ferris who contacted me about this taxon. I obtained legs of a specimen for sequencing here at the Muséum d’histoire naturelle, Geneva (MHNG) by our chief of molecular labs Julia Bilat. The sequences obtained were retrieved by bioinformatician Jeremy Gauthier and transmitted to Théo Léger for inclusion into his Ph.D. dataset to show that the new genus *Coloradactria* B. Landry & T. Léger is closely related to *Neodactria* (Crambini). In terms of flightlessness in Pyraloidea, the new taxon is only the 6th known with brachypterous females. There is one in Pyralinae, one in Acentropinae, one for which the subfamily is unknown, and three in Crambinae. Finally, also in the Crambinae one species from southwestern USA has been misidentified in the literature and I describe it in another new genus, *Nevadapteryx* Landry, with two new species from southern California and Nevada (Landry et al. 2025). Its placement in the Ancyloleptini was determined using molecular data.

Regarding the MHNG collections, my wife and I drove to Italy in May to retrieve the Pyraloidea collection of Giorgio Baldizzone, donated to the MHNG and consisting of more



Coloradactria B. Landry & T. Léger live female (original image courtesy of Christian A. Nunes)

than 6000 specimens, including 57 new species for our collection. The mostly south-European specimens were sorted to species, transferred to MHNG drawers, and labelled to reflect the donation. This material will be incorporated as soon as possible into the main collection, i.e., late next year or later, after the move of our entire pinned insect collections into the new state-of-the-art building presently in the final stages of construction. Based on a table I have been updating these last 25 years, the MHNG now includes close to 32,000 specimens of Pyraloidea and 2,465 taxa identified to genus or species.

Finally, I also reviewed the taxonomic assignments of the Crambinae in *BOLD: The Barcode of Life Data System* (www.barcodinglife.org), i.e., mostly the placement of genera into tribes, when known. I looked at each entry to confirm if the specimens photographed really belonged to the species or genus where they were placed.

References

Landry, B. 2025. A review of the *Thaumatopsis* species of the *bolterellus* group with descriptions of two new species (Crambidae, Crambinae). *Journal of the Lepidopterists' Society*. 79(2): 85-98.

Landry, B. & M.A. Solis. 2025. Two new species of *Palpita* Hübner from the Dominican Republic (Lepidoptera: Pyraloidea, Spilomeliinae). *Tropical Lepidoptera Research*. 35(1): 58-63. DOI: 10.5281/zenodo.15360135

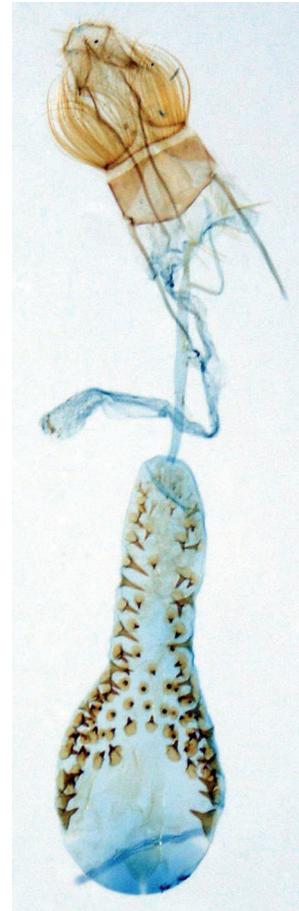
Landry, B., T. Léger, J. Bilat, & J. Gauthier. 2025. A new genus and species of Crambinae (Lepidoptera Crambidae) from south-western U.S.A., with new insights into the phylogeny of the subfamily. *Proceedings of the Entomological Society of Washington*. 127(4): 719-732.

Warren, A.D., C.D. Ferris, B. Landry, J. Gauthier, T. Léger, J. Bilat, & C.A. Nunes. 2025. A new genus and species of Crambinae (Pyraloidea: Crambidae) with brachypterous females from Colorado, U.S.A. *Journal of the Lepidopterists' Society*. 79(2): 73-84.

Guillaume Leraut

I am currently working on the Phycitinae of Southern Africa and have published a few papers in the last months. Leraut, G. (2025a) is cited below and a second one is forthcoming. I also report an article with Patrice Leraut on Phycitinae (Leraut, P. & G. Leraut, 2024). Also, a more general paper (in French) about high altitude insects, that includes some Pyralidae (Phycitinae) and Crambidae (Scopariinae, Cathariinae) (Leraut, G. 2025b). My work on the *Spatulipalpia* complex is delayed in a French review and hope it will be issued soon.

I also report an article by Patrice Leraut on the Pyralinae of Madagascar (Leraut, P. 2025).



Ancylosis germanosingidae G. Leraut, 2025
holotype

References

Leraut, G.H.C. 2025a. A new genus, a new species and two taxonomic treatments in the *Ancylosis* group from South-Eastern Africa (Lep.: Pyralidae). *Rev. Fr. Entomol. Gén.* 7(4): 119-129.

Leraut, G.H.C. 2025b. Appréhender la faune entomologique des plus hautes alti-

tudes dans les Alpes occidentales: bilan des connaissances et revue de littérature. Rev. Fr. Entomol. Gén. 7(3): 66-89.

Leraut, P.J.A. & G.H.C. Leraut. 2024. Résultat d'élevages de Phycites réalisés par M. Bruno Le Rü, avec description d'un genre et dix espèces nouvelles d'Afrique tropicale et mention des plantes-hôtes associées (Lepidoptera : Phycitinae). Rev. Fr. Ent. Gén. 6(4): 56-79.

Leraut, P.J.A. 2025. Supplement to the Faune de Madagascar series. An illustrated catalogue of the Pyralinae of Madagascar (Lepidoptera, Pyralidae). Rev. Fr. Entomol. Gén. 6(7) Suppl.: 176-228.

Koen Maes

This past year I collected in very different localities, in Colombia in South America and the rainforests of Cameroon in Africa. A few thousand specimens have been added to the ABSRC collection. Meanwhile the verification through the study of type material and numerous dissections of the accessions of Crambidae from the African region goes on. It is a complex picture riddled with misidentifications, misplacements, and new species and genera. This year I published three papers (see references right) and more are in preparation. At the moment, David Agassiz and I are finishing a revision of the genus *Panotima* (see right) with fern feeding Musotiminae species. It seems to occur all over Africa.

Furthermore, I commenced a detailed study on the genus *Autocharis* (Odontiinae) (see right) with numerous new taxa in Africa but also in the Oriental region. I am also trying to determine the identity of *Herpetogramma* species in Africa, a genus that is also more complex than previously known. The identity of the known species has been tackled, but a

lot of new species have been discovered. Two publications about this genus are being prepared.



Panotima (above), *Autocharis* (below)

References

Maes K.V.N. 2025a. Studies on Crambidae VII: *Lingulobotys* gen. nov from Africa. (Pyraloidea, Crambidae, Spilomelinae). Metamorphosis. 36: 4-10.

Maes K.V.N. 2025b. Studies on Crambidae VIII: New species from the Afrotropical region. (Lepidoptera: Pyraloidea: Crambidae). Metamorphosis. 36:33-46.

Maes K.V.N. 2025c. Studies on Crambidae IX-On the identity of *Botis bicolor* Swainson,[1821], its generic placement, some related species, and a new species from South Africa (Pyraloidea, Crambidae, Spilomelinae). Metamorphosis. 36: 82-91.

Scott Miller

I bring to your attention four very interesting papers from previous years:

Tripathy, A. & A. P. Singh. 2024. Defensive behaviour of a moth (Crambidae: *Eoophyla* sp.) that mimics jumping spiders (Araneae: Salticidae) in tropical India. PECKHAMIA. 313.1: 1-5.

Kunluang, S., T. Yasanga, & M. Manaboon. 2025. Wing abnormalities and morphological differences in the edible moth *Omphisa fuscidentalis* (Lepidoptera: Crambidae) from northern Thailand. International Journal of Tropical Insect Science. <https://doi.org/10.1007/s42690-025-01680-8>

CABI/EPPO (2022) *Duponchelia fovealis*. Distribution Maps of Plant Pests No. 704. CABI Head Office, Wallingford, U.K.

CABI/EPPO (2024) *Cydalima perspectalis*. Distribution Maps of Plant Pests No. 764. CABI Head Office, Wallingford, U.K.

Note & update by Alma Solis: In the June 2024 distribution map of *C. perspectalis* in the article above, they cite four states in northeastern United States where it has been documented to occur. Because I identify and/or confirm all new states (& counties) for the entire United States, this deleterious moth quickly spread further west and south since June 2024. For example, just a month later after this publication was published in July 2024, the Department of Agriculture of Pennsylvania (U.S. state just south of New York) issued an order of quarantine for *C. perspectalis*.



Cydalima perspectalis larva

Jadranka Rota & Niklas Wahlberg

Sloth moths and relatives: working on the first molecular phylogeny of Chrysauginae (Pyralidae)

As many of you probably know, sloth moths are unusual pyralids living in very close association with sloths. We already know a lot about their habits, the fact that the adults live in sloth fur, while the coprophagous larvae develop in sloth faeces (Pauli et al., 2014), but very little is known about their evolutionary history.

There are three genera of sloth moths: *Bradypodicola* Spuler, 1906 and *Bradypophila* Ihering, 1914 are monotypic, and *Cryptoses* Dyar, 1908 has three species (Savela, 2025). Together with about 130 other genera, they belong to the pyralid subfamily Chrysauginae, having about 400 species in total (Solis and Mitter, 1992). Chrysauginae are mainly distributed in the Neotropics, with several lineages in the Nearctic, and possibly also a separate lineage in Australia (Regier et al., 2012).

The group is in dire need of study – more than half of the genera are monotypic (Savela, 2025). With the help of Alma Solis, we designed a Master's thesis project for Mahika Mukherjee at Lund University. We involved a number of other people in the process, including Flávia Miranda (Universidade Estadual de Santa Cruz-UESC, Brazil), who is a sloth taxonomist and has been interested in the arthropods associated with sloths, and Etká Yapar (PhD student, Lund University). Using museomics methods (Twort et al., 2021) on samples that Alma and Flávia sent us, we inferred a first molecular phylogeny of Chrysauginae. We sampled approximately 60 genera, sequencing whole genomes. We also included several members of the hypothesized sister group to Chrysauginae, Galleriinae, as well as the other pyralids and crambids as outgroups.

From ca. 1000 BUSCO genes, we inferred a well-resolved phylogeny with excellent support for the sister group relationship between Chrysauginae and Galleriinae (Fig 1). As we sampled all three sloth moth genera, we can see that, perhaps unsurprisingly, the sloth moth lifestyle evolved only once. A taxonomic clean-up is needed to make some of the chrysaugine genera monophyletic.

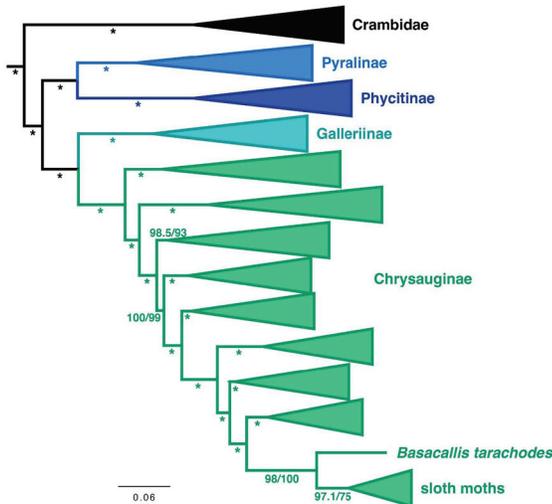


Fig. 1

A noteworthy finding is that *Basacallis tarachodes* Dyar, 1914 is resolved as the closest sister group to the sloth moth clade. Our taxon sampling is limited and it is possible that another chrysaugine taxon is more closely related to the sloth moths, but for now we would love to learn more about the biology of this poorly known species. In his description of the monotypic genus *Basacallis* Cashatt, 1984, the author stated that the life history of this species is unknown (Cashatt, 1984). **It would be great to hear from anyone who has any knowledge of this species' biology.**

At the moment, we are carrying out further lab work to include the Australian Chrysauginae genera (Fig. 2) into the dataset to try to resolve their position. The library prepara-

tion for these samples looks promising and we hope for a fully resolved phylogeny some time in 2026.



Fig. 2

References

Cashatt, E. 1984. Revision of the genus *Parachma* Walker (Pyralidae: Chrysauginae) of North America north of Mexico with description of a new genus. *Journal of the Lepidopterists' Society*. 38: 268-280.

Pauli, J.N., J.E. Mendoza, S.A. Steffan, C.C. Carey, P.J. Weimer, & M.Z. Peery. 2014. A syndrome of mutualism reinforces the lifestyle of a sloth. *Proceedings of the Royal Society B: Biological Sciences*. 281: 20133006. doi: 10.1098/rspb.2013.3006.

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Savela, M. 2025. Lepidoptera and some other life forms (http://ftp.funet.fi/index/Tree_of_life/intro.html).

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atic Entomology. 17: 79-90. doi: <https://doi.org/10.1111/j.1365-3113.1992.tb00323.x>.

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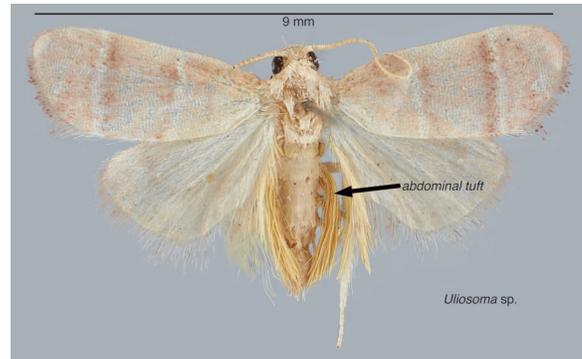
Alma Solis

In the Spilomelinae, I collaborated with Matthew Cock and others on a second paper about *Orphanostigma* (Cock et al. 2025) (see Matthew's article above), and with Bernard Landy on a paper about two distinctive new species of *Palpita* that he collected in the Dominican Republic (Landry & Solis, 2025) (see Bernard Landry's article above).

In the Acentropinae, I completed a chapter with Yutaka Yoshiyasu on Lepidoptera for a book titled *Keys to Hexapoda of South-east Asia and subtropical China* (Solis & Yoshiyasu, in press), worked with Richard Mally to update the Acentropinae in GlobIZ, and became part of FADA (with Matthias Nuss and Richard Mally), or Freshwater Animal Diversity Assessment database, adding taxonomic/biogeographic data to a worldwide list of aquatic Lepidoptera.

In the Chrysauginae, I have been collaborating with Jadranka Rota and Niklas Wahlberg (see their article above). They provide an update to this research about another biologically interesting pyralid group. Additionally, I recently submitted a paper on a new chrysaugine species of *Uliosoma* discovered feeding on rambutan in Mexico (Solis, submitted). This is notable because of the economic importance of rambutan fruit as food and because there was no information on what *Uliosoma* species fed on or where they lived (see image right). Although this is a New World pyralid

genus, rambutan is an Old World plant species (with reported Old World pyraloid feeders). I will write more about one of the tiniest chrysaugines known next year. I also curated two genera, *Caphys* and *Arta*, to answer questions about species identity and distribution.



Uliosoma rhodoesis Dyar from Panama

This year at the NMNH we had numerous Lepidoptera collections donated, and they were of particular interest to me because they were mostly from the southwestern U.S. Additionally, the largest donation this year was from Bo Sullivan, with moths mostly from North Carolina, U.S., but also from Costa Rica and Colombia. Although Bo had been sending his material of larger pyraloids to me over the years, there remained a few pyraloid groups with smaller moths, such as the Pyralidae, Schoenobiinae, and Acentropinae, constituting over 5,000 specimens in about 30 drawers (1 NMNH cabinet=29 drawers).

I am collaborating on a U.S. Department of Agriculture project for the biological control of cogongrass, and they have been searching for biocontrol agents in Asia and Australia, so this year I sorted and incorporated the Old World Crambinae unsorted/unincorporated material. This included the significant David Gaskin collection from New Zealand & other parts of the world donated to the NMNH after he passed away. The NMNH Crambinae col-

lection now includes about 13 curated cabinets; I used GlobIZ Crambinae (by B. Landry & others) and Léger et al. (2019) to curate it at higher levels. One of the more interesting finds was probably the largest series of the brachypterous *Exsilirarcha graminea* Salmon & Bradley, 1956 (see below), collected in 1970 in New Zealand by Gary Hevel, a retired Dept. of Entomology (NMNH) employee. Munroe stated that it could equally be a Crambinae or a Scopariinae, and it is currently *Incertae sedis* in Crambidae in GlobIZ.

Robert Hoare stated: “only found one pinned specimen of this species in NZAC (the specimen figured on the Wikipedia page); I am expecting back an ancient loan made to Munroe in the 1970’s fairly soon and hope that this may have more material of the species.” (pers. comm., 05/14/2025). I will be sending some material to Théo Léger for molecular analysis.



Exsilirarcha graminea Salmon & Bradley, 1956

The other large curation project was the re-curation of the entire NMNH Phycitinae collection from an outdated geographic organization into an updated taxonomic organization. This was accomplished with the assistance of 2 interns who were a part of the NMNH Summer High School Internship Program (see next page). They consolidated the Nearctic collection (9 cabinets curated with Herb Neunzig’s expertise in 1995) with the Neotropical (5 cabinets) and Old World (1 cabinet) collections, which were last curated by Carl Heinrich (1956) for the Phycitinae of the Western Hemisphere. They consolidated 2/3rds of the collection (14 cabinets) during their month tenure and I hope to complete the remainder in 2026.

Finally, I was also involved in a paper to summarize food plant records associated with reared Lepidoptera larvae at the Area de Conservación Guanacaste in northwestern Costa Rica over 38 years (Quick et al. 2025). In the Pyraloidea, this data is based on identifications by E. G. Munroe and myself of reared Pyraloidea. [In 1990, I collaborated on a Microlepidoptera course (with Jerry Powell and Linda Pitkin) for parataxonomists so that the micropylaloids would be collected!] The paper includes graphs of species richness by family in three major areas, rain forest, dry forest, and cloud forest (i.e., the Crambidae features prominently in these forest types) and a mosaic plot of food plant preferences that includes Pyralidae and Crambidae.

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Nebiat Berhanu (right) and Theopaneia Tousou (left), NMNH Summer High School Interns, working on the Phycitinae collection

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News from students..... Jacob Bethin



My master's thesis at the University of Florida at Gainesville is in press in *Systematic Entomology*, below is the abstract:

“A phylogeny of the aquatic moth subfamily Acentropinae (Lepidoptera: Crambidae)” by Jacob Bethin, James E. Hayden, David Plotkin, Jose I. Martinez, Taylor L. Pierson, Akito Y. Kawahara.

“The majority of moths are terrestrial throughout their life cycle. An exception is the subfamily Acentropinae (Lepidoptera: Crambidae), a diverse group of aquatic moths comprising nearly 700 species. Acentropinae represent the largest lineage of moths with at least one life stage adapted to an aquatic environment. Despite their unique biology, their evolutionary relationships remain poorly understood. The most comprehensive study on acentropine phylogeny is over 70 years old and predates the use of modern analytical methods. Few studies since then have attempted to reconstruct the phylogeny of Acentropinae, and those that did are limited in taxon and character/gene sampling. We tested hypotheses of acentropine relationships by reconstructing a genus-level phylogeny based on 360 loci and 22 genera of Acentropinae. Our phylogeny provides strong support for the monophyly of Acentropinae, a basal division between two tribes Argyractini Lange, 1956 and Acentropini Stephens, 1836. The tribe Nymphulini Duponchel, syn. nov., is found to be a junior synonym of Acentropini. Within this tribe, we find support for some previously defined family-group clades (the “terrestrial” clade, the “flowing water” clade, and the Aulacodes clade), and we discuss novel morphological features that are potential synapomorphies of these clades. Our study provides a foundation for future research on the ecology and evolution of aquatic Lepidoptera.”

Call for specimens!

I am continuing research on Pyraloidea for one of my Ph.D. chapters. This research is primarily focused on systematic/phylogenomic analyses of the wet-habitat clade (Mussotiminae, Schoenobiinae, Midilinae, and Acentropinae). If anyone has specimens either recently pinned (preferably within the last 20 years) or preserved for genetic use (frozen in ethanol), or can collect fresh specimens, please reach out to me! I am especially interested in specimens of Argyractini (Acentropinae) from North and South America, which includes the genera: *Argyractis*, *Argyractoides*, *Eoparargyractis*, *Neargyractis*, *Oxyelophila*, *Petrophila*, and *Usingeriessa*. Finally, **I am looking for one specific species, *Argyractis coloralis* (Guenée) found on the islands of Madagascar and Mauritius, which is the only Argyractini species that is not found in the Americas.** Please reach out to me if you have any questions or would like to discuss a potential collaboration. Email: JBethin@agcenter.lsu.edu (Advisor: Dr. Stephen Baca (sbaca@agcenter.lsu.edu))



Petrophila confusalis (Walker)

Beatriz Seno

Musotiminae of the Philippines

I am a graduate student from Ateneo de Manila University, Philippines working under the supervision of Théo Léger at the Museum für Naturkunde, Berlin on Musotiminae.

Among pyraloids, musotimines are notable for their ‘delicate’ appearance as adults and fern-feeding behavior as larvae (Munroe & Solis, 1999). Only three species had been formally reported from my country since the first documentation in 1931 (Robinson et al., 1994; Solis et al., 2004; West, 1931). However, it is known through existing collections and citizen science reports that their diversity in the country is grossly underestimated.

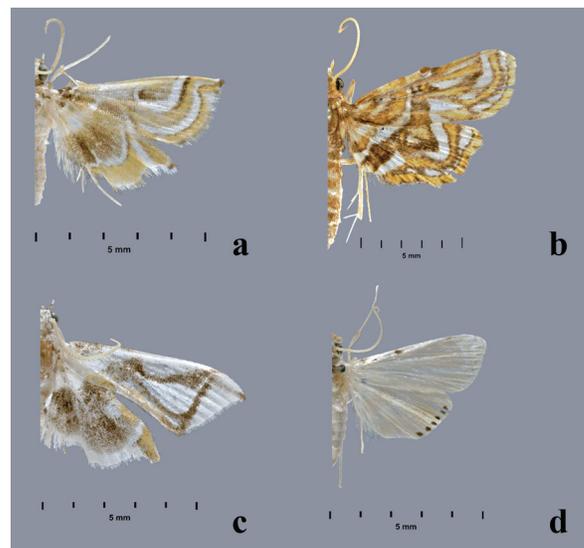


Beatriz Seno pinning moths during field work in the Philippines.

For my master’s thesis, I spent three months at the Museum für Naturkunde, Berlin, to examine collected material, most of which were sampled by Wolfram Mey and colleagues. Using COI barcodes and morphology, 41 operational taxonomic units (OTUs) were delineated. In order to link these molecular-delimited species to described ones, Théo examined the type specimens of Oriental Musotiminae in the NHMUK (The Natural History Museum London). We found 11 matches to described species while 30 other species

could not be assigned a name and are presumably new. However, eight did not have intact male specimens and only 22 are presumably new species that will be described and/or diagnosed (without formal description) in the project. Overall, the findings constitute an eleven-fold increase in species records for the Philippines, but many more species remain undiscovered!

Among the most unexpected discoveries is the diversity of *Drosophantis*. Small and dark but with blue iridescent scales, the group is thought to be monotypic because of their relatively uniform appearance. However, differences in male and female genitalia are unambiguous. At least seven new species are reported from various islands of the Philippine archipelago. Moreover, barcodes seem to indicate little to no species overlap with material from Java, preempting further work to be done on the genus.



Previously undescribed species from the Philippine archipelago. (a–b) *Ambia* spp. (c) *Musotima* sp. (d) *Cataclysta* sp.

In addition, 24 species were subjected to Whole Genome Sequencing to look into phylogenetic relationships among genera and address the longstanding conundrum on whether *Ambia* and *Musotima* should be synonymized. To this end, Robert Hoare provided images of the male genitalia of *Musotima aduncalis*, the type species of *Musotima*. Genitalia characters and molecular findings were congruent on the two genera being distinct from each other. *Ambia* has been treated as 'dump' genus for many years (Solis et al., 2004), but the data we generated provide support to its eventual splitting into several groups. Lastly, molecular analysis also provided strong support for the close relation between *Uthinia* and *Musotima* which aligns with the comments of Nuss (1998).

I genuinely enjoyed studying musotimines and found it exciting to piece together which ones seemed more closely related morphologically and compare those observations with molecular findings. I look forward to doing further work on this subfamily and bringing attention to the unique biodiversity of pyraloids in Southeast Asia.

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Siamusotima aranea Solis & Yen, 2005

New Website

Herts & Middlesex Moths

Please visit us at hertsmiddxmoths.uk and explore. There is a significant number of people who have an interest in Lepidoptera in Britain. For over one hundred years they have been the main source of information on lepidopteran biodiversity in Britain. The efforts of these "citizen scientists" are coordinated by a suite of County Moth recorders, or CMRs, who also act in a voluntary capacity. For this purpose, there are 112 counties (cantons) affecting the entire of Britain and Ireland. I am the CMR for two of these. This new web site is part of the coordinated efforts to understand moths in the English counties of Hertfordshire and Middlesex (note that the county of Middlesex includes almost all of London).

Colin W. Plant

A “smattering” of publications

PYRALIDAE

Phycitinae

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Pyraloid Enthusiasts

Please refer or forward the details to us about anyone who wishes to be put on the Pyraloid Planet distribution list.

Welcome to James K. Adams, Lars Crabo, Jean-Paul Devalée, Abdukirim Gulzar, Bruno K. Rasmussen, Christalle Beatriz Seno and Shuli Zhang who are newly added to this list.

Removed from the Pyraloid Planet distribution list: Tim Cashatt, Rebecca Bennik, and Xicui Du because their emails bounced back. Let us know, if you have an updated email address for any of these pyraloid fans.

The passing of two pyraloid fans was brought to my attention. Terence Hollingworth said about Dr. Alain Cama who passed away at the end of 2024; "he was a much loved and respected colleague that will be sorely missed." Ole Karsholt wrote an obituary about Vilhemsen Flemming: Karsholt, O. & B. Skule. 2025. Flemming Ernst Vilhemsen--14.9.1942-22.5.2024. Lepidoptera. 12:261-268.



Alain Cama



Vilhemsen Flemming

If you have any corrections, suggestions, comments on this issue, let us know as soon as possible. More importantly, send additions for next year's edition anytime during the year. The next deadline will be set by Richard Mally; keep an eye out for an email requesting new items.

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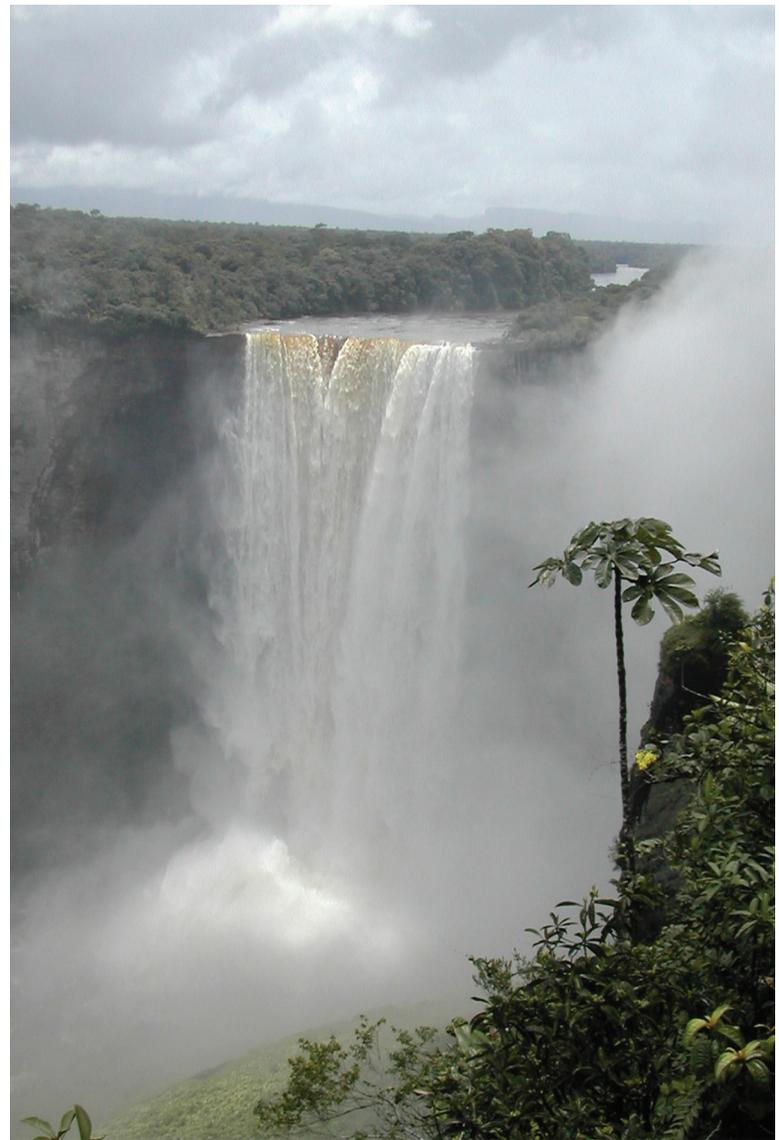
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Kaitetur Falls, Guyana (South America)
 (Image by A. Solis from a plane).
 Visited by A. Solis during fieldwork in 2002
 [The falls is 771 feet from top to first break &
 twice the height of Victoria Falls (Africa)]