



THE PYRALOID PLANET

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A Newsletter for Pyraloidea Fans

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Editorial

In early February 2020, my husband, Jason, and I went to Sal Island on the Cape Verde Islands in the Atlantic Ocean west of the African continent for a much-needed vacation. We did not know at the time that a large portion of the world would be under the threat of Covid-19 shortly. The island was xeric – desert-like in some places, with volcanic fields, and with mostly non-native plants. It was VERY windy, and the water VERY cold. We saw only three Lepidoptera – a danaine, a marbled white, and a blue lycaenid – one of these was being pushed by the wind across our windshield!

Before I went to Sal, I recalled that Matthias Nuss, Ole Karsholt, and Marc Meyer

published “A taxonomic revision of the Scopariinae from the Macaronesian Region (Lepidoptera: Pyraloidea: Crambidae).” They reviewed the microlepidoptera literature from the Cape Verde Islands, specifically scopariines. They found that colonization took place

by “passive dispersal on the ocean surface currents and winds.” Only one species of *Eudonia*, from the island of Santo Antão, was known from the Cape Verde Islands.

This paper was part of a festschrift in honor of Michael Shaffer who was curator of Pyraloidea, Thyrididae, and Pterophoridae at the BMNH for over 50 years. The festschrift was published in *Entomologica Scandinavica Supplements* (now *Insect Systematics and Evolution*), Volume 28 (4), December 1998, and edited by me and Marianne Horak. The festschrift was truly an international collection of research papers. In addition to Nuss et al. on the Cape Verde Islands, it included a paper by me on a new genus of Neotropical chrysaugines named *Michaelshaffera*, Marianne Horak on a genus of Australian phycitines, Jay Shaffer on a genus of African peoriines, Bernard Landry and Herb Neunzig on the Phycitinae of the Galapagos Islands, Patricia Gentili and Alma Solis on the spilomeline genus *Omiodes* in the Neotropics, Koen Maes on the gnathos in the Pyraloidea, and Ernst Arenberger on the type specimens of Old World pterophorids. It was a huge effort – I reviewed all the papers, except my own that Marianne reviewed (she also translated the Arenberger paper to English), and each was sent to one external reviewer, but it was worth it! It has been 22 years since this volume was published and it may be time for another volume on Pyraloidea.

This issue of the Pyraloid Planet includes a wide diversity of contributions by pyraloid enthusiasts. Considering how important viruses have become in our lives, there is an article on viruses and pyraloids, a NEW phylogeny of the Crambidae, two new crambids for Belgium, profiles of two pyraloid enthusiasts, one from South Korea and another from U.S.A., a Bernard Landry caricature by a renowned

cartoonist, and summaries of spilomeline and crambine papers I published this year. I often include a few papers on parasitic wasps, especially when it includes images of pyraloids and describes the biological interaction in detail. In this issue I highlight a paper in the **From the Web** section that includes a video of a parasitoid wasp “chasing!” an aquatic *Elophila* larva; link to the video is in the paper.

Finally, thanks to everyone who sent in items for the newsletter.

M. Alma Solis



GlobIZ News 2020

The Global Information System on Pyraloidea (GlobIZ) underwent some revisional checks this year. Since the last newsletter, the number of valid species included in the database increased by 504 (+ 225 synonyms). Altogether, there are 26,513 pyraloid names for 2,120 genera (+ 1,418 synonyms) and 16,459 species (+ 6,516 synonyms). During the first 10 months of 2020, 73 new pyraloid species were described, including numerous nomenclatural changes. The updated table on the next page provides an overview by subfamily. Please note the nomenclatural changes at the family-group level in the pyraloid classification introduced by Léger et al. (2020).

I very much like to thank all who contributed editing data to GlobIZ, especially **Richard Mally** who spent much time in 2020 for carefully checking possible gaps in the database.

Matthias Nuss

	genera		species	
	valid	synonyms	valid	synonyms
Chrysauginae	131	61	400	129
Epipaschiinae	95	68	715	172
Galleriinae	63	62	260	119
Phycitinae	676	388	3,405	1,535
Pyralinae	136	109	1,275	390
Acentropinae	74	39	802	215
Crambinae	175	124	2,067	1,095
Erupinae	3	4	38	5
Glaphyriinae	74	54	505	192
Heliiothelinae	3	3	30	13
Hoploscopinae	2	4	46	2
Lathrotelinae	5	7	42	9
Linostinae	1	0	4	2
Midilinae	10	4	57	12
Musotiminae	23	8	207	26
Odontiinae	88	39	389	143
Pyraustinae	171	103	1,252	625
Schoenobiinae	29	17	242	99
Scopariinae	19	24	86	208
Spilomelinae	342	300	4,137	1,525
total	2,120	1,418	16,459	6,516

Viruses, humans, and pyraloids

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was described in January 2020, just one month after the first discovery of the coronavirus disease 2019 (COVID-19). A rapid global spread resulted in a pandemic that forced societies to lock down and change normal life. Wearing masks, washing and disinfecting hands, as well as distancing from others, became a part of everyday preventative etiquette. Additionally, self-quarantine was recommended for infected persons

and those returning from high risk regions. International travel collapsed, and so did international scientific congresses and expeditions to remote places for fieldwork.

SARS-CoV-2 has a close genetic similarity to bat coronaviruses, suggesting it emerged from a bat-borne virus (Zhou et al. 2020), thus raising concerns that an increasing human population together with shrinking habitats for wild animals may increase the probability of pathogen transmission to humans (Johnson et al. 2020). **Are pyraloidologists at risk or did you ever think about washing your hands after handling fresh specimens?** To put your mind at ease, there is no evidence that requires caution concerning pyraloids.

Nevertheless, viruses are present in insects and a recent study indicates that there is a huge hidden or unknown diversity of viruses in nature. Käfer et al. (2019) systematically searched for the diversity of the negative strand RNA viruses in published insect transcriptomes representing all 34 extant orders of Hexapoda and 3 orders of Entognatha, as well as outgroups, representing 1,243 species. They found similarity in genomes of 234 viruses classified in Bunyavirales, Articulavirales and Haploviricotina, including 20 novel genera and even a novel family.

Insect-transmitted viruses are important as pathogens in public health, veterinary medicine, and food production (Käfer et al. 2019). Other viruses are pathogens of insects, and are used for biological control of insects that damage crops (Tinsley 1979, Lietze et al. 2011, Valicente 2019). For example, polyhedrosis viruses have been tested against *Ostrinia nubilalis* (Lewis & Johnson 1982) and the *Maruca vitrata nucleopolyhedrovirus* (MaviNPV) has been described in detail in the hope for the biological control of the legume

pod borer (*Maruca vitrata*) (Chen et al. 2008). Other viruses have recently been tested for the control of the invasive box tree moth (*Cydalima perspectalis*), causing high mortality rates of caterpillars (Rose et al. 2013, Oberemok et al. 2017).

Whether good or bad, viruses will continue to influence our life. Take care and stay healthy.

Matthias Nuss

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Johnson, C. K. et al. 2020. Global shifts in mammalian population trends reveal key predictors of virus spillover risk. *Proceedings of the Royal Society B*. 287: 20192736. <http://dx.doi.org/10.1098/rspb.2019.2736>

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Lietze, V.-U. et al. 2011. Salivary gland hypertrophy viruses: A novel group of insect pathogenic viruses. *Annual Review of Entomology* 56: 63–80. <https://www.annualreviews.org/doi/10.1146/annurev-ento-120709-144841>

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Rose, J., et al. 2013. On the susceptibility of the box tree moth *Cydalima perspectalis* to *Anagrapha falcifera nucleopolyhedrovirus* (AnfaNPV). *Journal of Invertebrate Pathology*. 113 (3): 191–197. <https://www.sciencedirect.com/science/article/abs/pii/S0022201113000505>

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Zhou, P. et al. 2020. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature* 579 (7798): 270–273. <https://www.nature.com/articles/s41586-020-2012-7>



NEWS FROM.....

Théo Leger

Early view publication

Léger, T., R. Mally, C. Neinhuis, & M. Matthias. 2020. Refining the phylogeny of Crambidae with complete sampling of subfamilies (Lepidoptera, Pyraloidea). *Zoologica Scripta*. 50(1): 84-99. <https://doi.org/10.1111/zsc.12452>

We are pleased to announce our paper on the Crambidae phylogeny (Fig. 1; see next page) is now available for early view. The link is provided above. In this project, we compiled a 10-gene dataset from different sources (Sanger gene sequences, transcriptomes, genomes) for taxa spanning over all Crambidae subfamilies. This included the dataset of Mutanen et al. (2010), Regier et al. (2012), and few taxa sampled in Mally et al. (2019) and Léger et al. (2019).

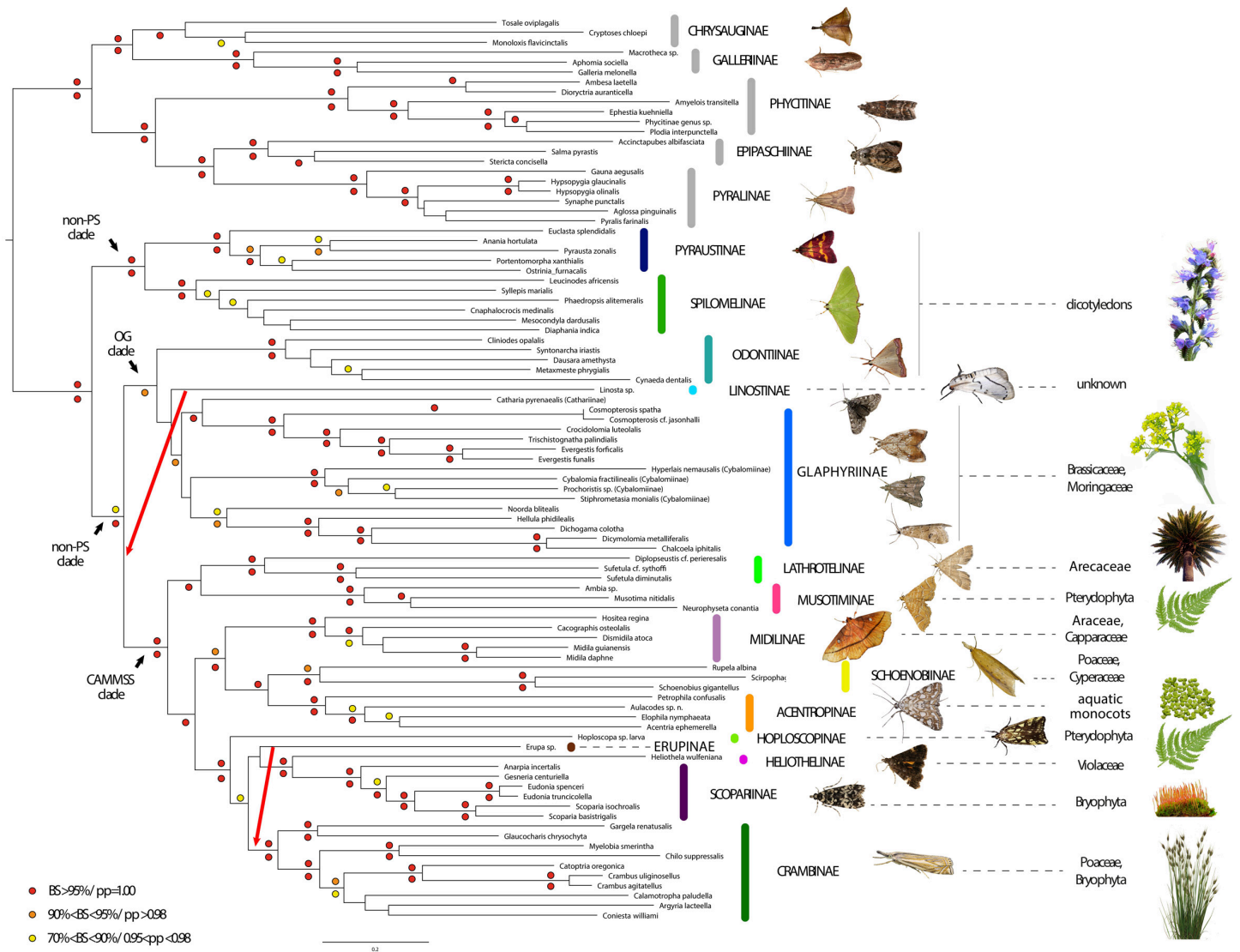


Fig. 1

Our findings are similar to those of Regier and colleagues. This is not surprising as the molecular sequences from Regier et al. were included in our dataset. Three subfamilies – Cathariinae, Cybalomiinae, Linostinae – are here included for the first time in a phylogenetic frame. Another two subfamilies – the Heliiothelinae and the Lathrotelinae – were already included in Léger et al. (2019) and Mally et al. (2019), but neither could be placed confidently in their respective studies. We found that Cathariinae and Cybalomiinae form a clade within the Glaphyriinae and are synonymized. Placing the South American Linostinae, comprising four species, was more challenging. While all analyses support the placement of this subfamily within the subclade of the Crambidae that is sister to Pyraustinae and Spilomelinae (the non-PS clade from Regier et al.), this taxon is found as part of the OG clade (for Odontinae and Glaphyriinae) in the Maximum Likelihood analysis, whereas the Bayesian analysis recovers it as sister to the CAMMSS clade (for Crambinae, Acentropinae, Midilinae, Musotiminae, Schoenobiinae, Scopariinae). Support for these placements however remain low and highlight the need for further research. The Lathrotelinae are recovered within the CAMMSS clade with strong support and form the putative sister group of Musotiminae. The Heliiothelinae s. str. are recovered sister to the Scopariinae, while the **Hoploscopinae**, stat. n., are recovered as an independent lineage. The position of the Erupini within the Midilinae as proposed by Hayden (2012) is refuted here. This stand-alone lineage belongs to the clade comprising Crambinae, Heliiothelinae, Hoploscopinae, and Scopariinae, however its affinities to the other lineages remain dubious. Interestingly, one analysis that excluded synonymous mutations recovered the Hoploscopinae and Erupinae as

sister-groups. This is an interesting future path for exploration with a larger dataset.

In light of these new results, host plant use in the Crambidae is extensively discussed. The Hoploscopinae have been recently shown to feed on ferns (Mally et al. 2017). This habit, also observed in the Musotiminae, shows to have evolved twice independently. Moss-feeding habits in Crambinae and Scopariinae were hypothesized to have a common origin (Léger et al., 2019), given that the basal crambine lineage Diptychophorini are known to feed on mosses. The position of the Violaceae-feeding Heliiothelinae as sister to the Scopariinae here challenges this idea.

While the two studies published last year on the Crambinae and Scopariinae (Léger et al., 2019), and the Pyraustinae and Spilomelinae (Mally et al., 2019) shed more light on the phylogenetic relationships within these groups, further species-rich groups, such as Acentropinae (779 spp.), and the pyralid subfamilies Epipaschiinae (721 spp.), Pyralinae (1,268 spp.) and Phycitinae (3,386 spp.) are in great need of systematic revision and should be the focus of future studies. Our study may also be regarded as a farewell to Sanger-sequencing for pyraloid phylogenetic research and advocate the use of high-throughput sequencing methods in future projects tackling the pyraloid phylogeny.

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Willy De Prins

Crambids travel north

It was to be expected. During the last decade, not only are ten species on average of mainly tiny microlepidoptera discovered in Belgium every year, but also in 2020 two larger crambids reached this small European country.

Hydriris ornatalis (Duponchel, 1832) [<https://projects.biodiversity.be/lepidoptera/species/7776/>]

One specimen was caught in a light trap on 18 August 2020 in the province of Antwerpen, Belgium. This record is the most northern one in Europe thus far. This is a tropical species, which is rather commonly encountered in all the countries around the Mediterranean Sea. In most of these countries it is considered a migrant, but it might also have established resident populations in suitable habitats like on the Canary Islands.

It was once recorded from Switzerland. The caterpillar feeds on the leaves of several Convolvulaceae species, mainly on *Convolvulus* and *Ipomoea*. In the tropics, it is considered as a pest on sweet potato (*Ipomoea batata*).



Fig. 1. *Hydriris ornatalis* (Duponchel, 1832), Belgium, Province of Antwerpen, Merksem, 18 August, 2020, leg. G. De Prins.

Pseudobissetia terrestrellus (Christoph, 1885) [<https://projects.biodiversity.be/lepidoptera/species/7784/>]

Three specimens of this crambid were caught in a light trap during 2020 in the northern most Belgian province of Antwerpen. The caterpillar of this species feeds on *Zea mays* and was possibly imported into Belgium with seedlings. As there are rather many corn fields in Belgium, especially in the northern and central areas, this species might be able to easily find suitable habitats for reproduction. In Europe, the species is distributed around the Mediterranean Sea, but there are some scattered records across Central Europe as well (see map).

The distribution of this species furthermore extends eastwards, across Jordan, Syria, Iran, Kazakhstan to East Russia (Primorsky Krai).



Fig. 2. *Pseudobissetia terrestrellus* (Christoph, 1885), Belgium, Province of Antwerpen, Schoten, 03 June, 2020, leg. A. Peeters.



Fig. 3. Distribution map of *Pseudobissetia terrestrellus* (Christoph, 1885) in Europe. Cross = general indication of the country in which the species was recorded; black dot = exact location of the records.

Bernard Landry A Caricature

Herrmann, the well-known Geneva caricaturist, is best known for his work in the “Tribune de Genève”, the main local newspaper, and is currently working with the City of Geneva to produce weekly caricatures



about the covid pandemic. The caricature was done while I was entertaining the public during the “Trésors” [Treasures] exhibition in the Muséum d’histoire naturelle in Geneva. All museum scientists were asked to select specimens from our collections to be shown in this exhibition. There had to be something exceptional about the specimens. Most of them were also photographed to be shown in our beautiful anniversary book (see <https://www.facebook.com/museum.geneve/videos/3353607291396501>). We wrote the legends associated with the photos and participate in activities to meet our visitors, such as in the exhibition. Herrmann was asked to visit and produce a drawing about his impressions of the exhibition on October 7. Each Wednesday afternoon a different artist was scheduled

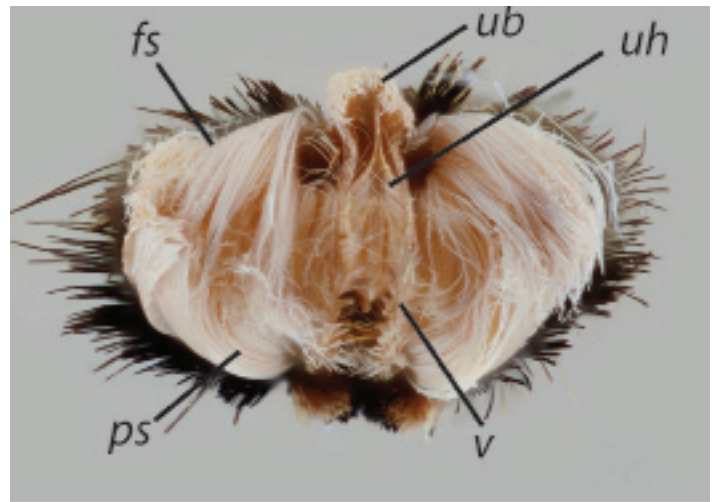
to do the same and the drawings are displayed like portraits in a corridor as one exists the exhibition.

This temporary exhibition is part of a trio of exhibitions designed to celebrate our museum's 200th anniversary (see <http://institutions.ville-geneve.ch/fr/mhn/votre-visite/museum-dhistoire-naturelle/expositions-temporaires/bicentenaire/> & <https://www.facebook.com/museum.geneve/>). The Muséum d'histoire naturelle in Geneva is the largest in Switzerland, with some 15 million specimens and with public displays usually attracting about 300,000 visitors each year. The Museum holds several important insect collections, especially in Coleoptera, Hymenoptera, and smaller orders. The Lepidoptera collection is not exceptional (about 500,000 specimens and 482 primary types), but holds good representation for World butterflies and many macro moth families, such as the Noctuidae, especially the mostly Palearctic Jacques Plante (1920–2003) collection of 62,688 specimens. The Pyraloidea collection represents about 26,000 specimens of more than 2400 species and 82 primary types. All Lepidoptera primary types are catalogued (see <https://zenodo.org/record/2784458#.XNrfUXrGDol>) and photos of about half of them have been taken and are now linked to our database. Incidentally, we have recently obtained the database Specify to replace our Filemaker database; data migration has started.

Alma Solis

Some New Spilomelinae and Crambinae

I published a few papers this year on the Spilomelinae and Crambinae. I revised *Asturodes*, a beautiful group of moths (Fig. 1, type species), and described 3 new species (Solis et al. 2020a); their larvae feed on leaves



of *Gouania* and *Colubrina* (Rhamnaceae). One species, *Asturodes junkoshimurae* Solis, was named in honor of Dr. Junko Shimura, Secretariat of the Convention on Biological Diversity (CBD), United Nations, for her dedication in support of biological diversity. Also, I discovered a petaloid scale formed by a group of coalesced setae as part of the abdominal androconial organs of the male genitalia (Fig. 2).

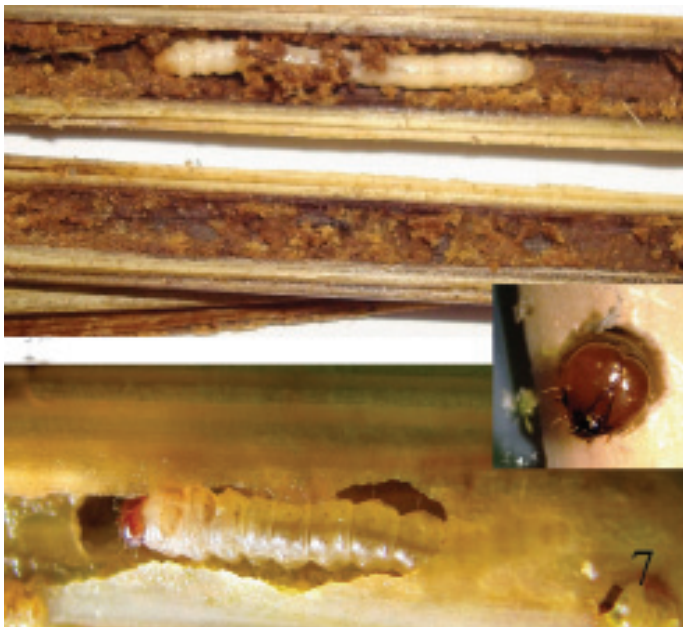
The second spilomeline paper was a highly collaborative project on *Archernis humilis* (Solis et al. 2020b) (Fig. 3, adult, 4, cornuti), which was rediscovered during surveys for biological control agents against *Paederia foetida* (Rubiaceae), or skunk vine, in south-east Asia. It was the first report of the food plant and a rare host plant preference study was conducted. Most of the specimens in museums were collected in the 1800's, with a few in the 1930's, but, with new material available from a laboratory colony, we described the adult morphology in much greater detail, including internal genitalia structures, larvae and pupae, and an image of the egg for the first time, and Richard Mally provided a phylogenetic analysis showing *Archernis* is closely related to *Trichaea* and *Prophantis*.



I also described two new crambines from South America in the genera *Eoreuma* and *Haimbachia*, including images of the few other species described in these genera from this part of the world. I described *Eoreuma insuastii* Solis & Osorio-Mejia from Colombia (Solis et al. 2020c). The larvae (Fig. 5) were discovered feeding on young stalks of sugarcane that are grown for brown sugar loaf, or “panela,” a major food product. We provided images of larvae and pupae, as well as damage to young stalks for field identification. Only three species of *Eoreuma* have been previously described from South America; I provided images of their type specimens, their labels, and genitalia.



The second new crambine, *Haimbachia spartinensis* Solis & Canepuccia (Solis et al., 2020d) (Fig. 6), was discovered when larvae were found feeding in a saltmarsh cordgrass species of *Spartina* (Spartinaceae). This crambine species has been found to have a major impact in marshes where it is responsible for detritus production and altering organic matter flow between terrestrial and aquatic ecosystems. This was the first description and illustration of a *Haimbachia* larva (Fig. 7). Only one other *Haimbachia* species has been described from South America, *H. maroniella*; I provided images of its type specimen, labels, and male genitalia.



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Solis, M. A., P. D. Pratt, J. Makinson, M. Purcell, M. B. Rayamajhi, & R. Mally. 2020b. *Archernis humilis* Swinhoe (Lepidoptera: Crambidae), a spilomeline moth discovered feeding on *Paederia foetida* L., or skunk vine, an invasive species in the United States. *Proceedings of the Entomological Society of Washington*. 122 (3): 732-749.

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PROFILES.....



Jae-Ho Ko

I'm in a Ph.D. program with Prof. Bae at Incheon National University, Incheon, Korea. When I was younger, I was very interested in

insects from Oriental and Neotropical regions. I saw in books and documentaries that insects are very large, colorful, and that there are many undiscovered species.

I joined the laboratory of Professor Bae to study insects and, luckily, I was able to participate in a survey in Southeast Asia.

The first time I went on the survey to Laos, the moths in southeast Asia were very colorful and interesting. The most interesting moth was *Dichocrocis zebralis*. I was intrigued by this species that has a pattern similar to the zebra, so I began to study these moths for the first time.

Currently, I am studying Crambidae: Spilomelinae and Pyraustinae from southeast Asia, and I am planning to graduate from the Ph.D. program in 2020.

The title of my Ph.D. is “Taxonomic study of the Subfamilies Pyraustinae & Spilomelinae from Laos”; it will cover a total of 200 species of 91 genera from Laos.

I conducted research and published on the following taxa this year:

1. Ko, J.H., Bayarsaikhan, U., Park, B.S., Lee, T.G., Cha, Y.B., Jang, C.M., Lee, J.G. & Bae, Y.S. (2020) *Exoasota pursatensis* Ko & Bae, new genus and species of the Spilomelinae (Lepidoptera: Pyraloidea: Crambidae) from Indochina. *Zootaxa* 4838 (1): 119–127.
2. Ko, J.H., Bayarsaikhan, U., Lee, T.G., Cha, Y.B., Kim, H.U., Park, B.S., Kwon, H.W. & Bae, Y.S. (2020) New record of the genus *Leucinodella* Strand from Laos (Lepidoptera, Crambidae, Spilomelinae), with description of a new species. *Zootaxa* 4834 (3): 356–364.
3. Ko, J.H. & Bae, Y.S. (2020) First report of the genus *Neadeloides* Klima, 1939 (Lepidoptera, Crambidae, Pyraustinae) in Laos, with description of a new species.

During my studies, I found information

in *GlobIZ*, the pyraloid database, very helpful. I hope my research on the Pyraustinae and Spilomelinae of southeast Asia will be useful to other researchers in their systematic or taxonomic studies.



Dr. Chuck Sexton

I am a retired ecologist and biogeographer. I worked in the private and public sectors in wildlife conservation for a 40+ year career, mostly in Texas, U.S.A., and mostly with endangered bird species. About 20 years ago, I rekindled a childhood interest in moths and began documenting them at my workplace (Balcones Canyonlands NWR near Austin, Texas), my home, and during my travels. I am active on iNaturalist.org and a frequent contributor to BugGuide.net.

I have always enjoyed tough identification challenges whether it was winter sparrows or grasses. Being primarily a field biologist (and not a systematist), I have focused my attention on challenges in field identification that seem to have been overlooked or underappreciated. I published my first paper on moths focusing on the discrimination of North American species in the arctiid genus *Cis-*

thene (Southern Lepidopterist's News. 2017. 39(4):309-322). My most recent work has been about the identification and biogeography of the crambid genus *Petrophila* in the United States.

From the Twittersphere.....

César Favacho shared the photo below taken at his house in Belém, Brazil. He has more pics on iNaturalist (username: cesarfavacho). This beautiful epipaschiine is *Mediavia discalis* (Hampson). I described this genus (Solis, M. A. 1993. A phylogenetic analysis and reclassification of the genera of the *Pococera* complex. J. N.Y. Entomol. Soc. 101(1): 1-83.) to include 15 species previously in the “dump” genera *Jocara* and *Stericta*. The second segment of the labial palpus is elongate and concave to hold the scent scales of the maxillary palpus. Like other epipaschiine species, the scape is elongated, but short and hard to see in the photo; see also the tuft of scales on the metathorax.



From the Web...

Galleria mellonella once again made the news as a plastivore due to a paper by Cas-sone et al. Role of the intestinal microbiome in

low-density polyethylene degradation by caterpillar larve of the greater wax moth, *Galleria mellonella*. Proc. R. Soc. B. 287: 20200112. <http://dx.doi.org/10.1098/rspb.2020.0112>

See this video of an *Elophila turbata* (Butler) larva being parasitized by a braconid in the Supplementary Material of Fernandez-Triana, J. T. Kamino, K. Maeto, Y. Yoshiyasu, N. Hirai. 2020. *Microgaster godzilla* (Hymenoptera, Braconidae, Microgastrinae), an unusual new species from Japan which dives underwater to parasitize its caterpillar host (Lepidoptera, Crambidae, Acentropinae). Journal of Hymenoptera Research. 79: 15–26. doi: 10.3897/jhr.79.56162



Elophila oblitalis from Texas, U.S.A.
(photo by J. P. W. Hall)

iCollections: British and Irish Pyraloidea (Moths) Collection: Each specimen record has been published with an image capturing both the specimen (dorsal habitus) and its associated labels, and creating an inventory record with a unique identifier (Data Matrix barcode), taxon information and locality within the collection. Some specimens will have additional images capturing the reverse side of labels. <https://data.nhm.ac.uk/dataset/british-and-irish-pyraloidea-moths-collection>.

Pyraloidea Specimen Data (Alas, no images), Smithsonian Institution, NMNH, is now available for all barcoded and databased-specimens of Nearctic *Crambus* (7595 curated specimens) and the Pyraloidea of Virginia (4894 records of identified and/or confirmed donated by the Virginia Department of Wildlife Resources) <https://collections.nmnh.si.edu/search/ento/>



Crambus praefectellus, Maryland, U.S.A.

Finally.....

New Book

Stojanović, D. V. & Šumarac, P. R. 2020. *The Fauna of Lepidoptera of the Kopaonik National Park*. Part I. 300 Butterflies and Moths of the High Kopaonik. Kopaonik National Park and Institute of Lowland Forestry and Environment, University of Novi Sad, Raška-Novi Sad. ISBN 978-86-900741-0-5. 441 pages; with color images of the habitus of the recorded butterflies and moths, a color UTM distribution map provided for each lepidopteran species inhabiting the Kopaonik National Park; smooth paper; hard cover in color; slip cover in color. In Serbian, with English resume. PRICE: 60 EUR + post charge. There is a discount of 20% if you are willing to order three or more book copies.



A “smattering” of publications

Epipaschiinae

Akin, K., E. Seven, & A. Çakir. 2019. A new record of the genus *Lepidogma* Meyrick, 1890 from Turkey with description of the genitalia (Lepidoptera: Pyralidae, Epipaschiinae). *SHILAP Revista de Lepidopterologia*. 47(188): 597-600. [*Lepidogma wiltshirei* Amsel]

Galleriinae

Roh, S. J., H. Park, S.-H. Kim, Y.-S. Choi, J.-H. Song. 2020. A new species of *Galleria* Fabricius (Lepidoptera, Pyralidae) from Korea based on molecular and morphological characters. *ZooKeys*: 970: 51-61.

Pyralinae

Leraut, P. 2019. Contribution à l'étude

des Pyralinae d'Afrique et de Madagascar, avec description d'un genre nouveau et de 22 espèces nouvelles (Lep.: Pyraloidea, Pyralidae). *Revue Française d'Entomologie Générale*. 1(3): 211-233. [holotype images and *Kilimandjaria* P. Leraut, new genus].

Pellinen, M., J. R. Zahiri, & P. Sihoven. 2020. A new species of *Sacada* Walker, 1862, from Thailand (Lepidoptera: Pyralidae: Pyralinae). *Evolutionary Systematics*. 4(2): 71-77.

Qi, M. & H. Li. 2019. Taxonomic study of the genus *Fujimacia* Marumo, 1939 (Lepidoptera: Pyralidae) in China, with descriptions of four new species. *Zootaxa*. 4661(1). 171-181.

Qi, M., X. Zuo, & H. Li. 2020. Taxonomic study of genus *Peucelea* Ragonot, 1891 (Lepidoptera, Pyralidae) in China, with descriptions of three new species. *ZooKeys*. 976: 147-158.

Qi, M. & H. Li. 2020. Genus *Vietnamodes* Leraut, 2017 (Lepidoptera, Pyralidae) new to China, with description of a new species. *Zootaxa*. 4803(1): 190-196.

Seizmair, M. 2019. Erstmeldungen der gattungen *Pithyllis* Grünberg, 1910 und *Tyndis* Ragonot, 1881 von der Arabischen Halbinsel (Lepidoptera: Pyralidae, Pyralinae). *SHILAP Revista de Lepidopterologia*. 47(188): 601-605. [New records from Oman]

Singh, N., K. Chandra, J. S. Kirti, & R. Ranjan. 2019. A new species of the genus *Tocolosida* Walker, a Pyralinae from the Western Ghats, India (Lepidoptera: Pyralidae) and the revised status of *Lixa* as a synonym. *Zootaxa*. 4656(1): 189-192.

Singh, N., J. S. Kirti, R. Ranjan, K. Chandra, & W. Speidel. 2020. On the taxonomy of the genus *Sacada* Walker, 1862 from India, with descriptions of a new genus and two new species (Pyralinae, Pyralidae, Lepidoptera). *Zookeys*. 962: 139-163. [*Pseudosaccada* Singh, Kirti, & Rangan, new genus]

Phycitinae

Bidzilya, O., Y. Budashkin, & V. Yepishin. 2020. Review of the tribe Anerastiini (Lepidoptera: Pyralidae: Phycitinae) from Ukraine. *Zootaxa*. 4718(1): 1-24.

Bidzilya, O., Y. Budashkin, Y., & V. Yepishin. 2019. A review of the genus *Ancylosis* Zeller, 1839 (Lepidoptera: Pyralidae: Phycitinae) from Ukraine. *Zootaxa*. 4657(3): 437-473.

Bidzilya, O., Budashkin, Y., Slamka, E. Tsevtkov, & V. Yepishin. 2020. Notes on taxonomy and distribution of some Palaearctic *Ancylosis* Zeller, 1839 (Lepidoptera: Pyralidae: Phycitinae). *Zootaxa*. 4822(4): 451-481.

Fischer, H. 2020. Revision und historie der gattung *Hypargyria* Ragonot, Ragonot mit der erstmeldung von *Hypargyria metalliferella* Ragonot, 1888 für Malediven. *Atalanta*. 51: 89-93.

Gastón, J. & A. Vives Moreno. 2019. Contribución al conocimiento de los Lepidoptera de España, con la descripción de un género y una nueva especie para nuestra fauna (Lepidoptera: Pyralidae, Phycitinae). *SHILAP Revista de Lepidopterologia*. 47(188): 705-709. [*Propeacrobasis notarioi* Gastón & Vives]

Hayden, J. E. & J.-F. Landry. 2020. *Arcola malloi* (Pastrana), the alligatorweed stemborer, a new synonym of *Macrorrhinia endonephele* (Hampson) (Lepidoptera: Pyralidae: Phycitinae). *Insecta Mundi*. 0768: 1-25.

Leraut, G. 2020. Révision du genre *Brachiolodes* Amsel, 1953 et des espèces attribuées au genre *Veldticola* Hampson, 1930 (Lep.: Pyralidae Phycitinae). *Revue Française d'Entomologie Générale*. 2(2): 21-32.

Leraut, G. 2020. Brève communication – Considérations sur le genre *Acrobasis* Zeller, 1839 au Japon et désignation d'un nom nouveau pour le taxon *Conobrathra tricolorella*

Inoue, 1982 (Lep.: Pyralidae Phycitinae). *Revue Française d'Entomologie Générale*. 2(2): 38-40.

Huemer, P. 2019. DNA-Barcoding as a significant contribution to regional faunistics: new records of moths for Burgenland and Austria (Insecta: Lepidoptera). *Beiträge zur Entomofaunistik*. 20: 21-39. [Pyralidae: *Delplanqueia inscriptella* (Duponchel, 1836)]

Paz-Neto, A. A., M. T. S. Freitas, M. G. C. Gondim Jr., J. W. S. Melo, R. B. Querino, & Q. Balbino. 2019. Which Species of Coconut Moth Occurs in Brazil: *Atheloca subrufella* vs. *Atheloca bondari* (Lepidoptera: Pyralidae)? *Neotropical Entomology*. 48: 1039-1045.

Pinzari, M. & M. Pinzari. 2019. Genus *Delplanqueia* Leraut, 2001 and *D. inscriptella* (Duponchel, 1836) (Lepidoptera, Pyralidae) in Italy. *Journal of Entomological and Acarological Research*. 51(2): 60-68.

Plant, C. W., S. Beshkov, & A. Nahirnic. 2020. A new species of *Elegia* (Lepidoptera, Pyralidae, Phycitinae) from the Balkan Peninsula. *Nota Lepidopterologica*. 43: 311-318. [images of habitat in Macedonia and Albania]

Plant, C. W. & I. Richter. 2020. *Asalebria pseudoflorella* Schmidt, 1934 (Pyralidae: Phycitinae) in the Balkans. *Entomologists' Record Journal Variation*. 132: 153-155.

Tsvetkov, E. 2020. Two new species of the genus *Psorosa* Zeller, 1846 (Lepidoptera: Pyralidae, Phycitinae) from South Kazakhstan. *Zootaxa*. 4786(4): 546-554.

Vargas, H. A. 2020. *Ragonotia campodonicoi* Cepeda (Lepidoptera: Pyralidae: Phycitinae) in the Andes highlands of northern Chile, expanded distribution and first documented host plant. *Journal of the Lepidopterists' Society*. 74(3): 189-192.

Ylla, J., R. Macià, J. Gastón, & M. R. Honey. 2019. *Delplanqueia enderleini* (Rebel,

1934) en la isla de Mallorca (Balears, España) (Lepidoptera: Pyralidae, Phycitinae). *SHILAP Revista de Lepidopterologia*. 47(188): 651-655.

Ylla, J., J. Gastón, & R. Macià. 2019. The genus *Pempeliella sensu lato* in the Iberian Peninsula and Balearic Islands, description of *Huertasiella ylla* Gastón & Macià, gen. n., and designation of the neotypus of *Pempelia enderleini* Rebel, 1934 (Lepidoptera: Pyralidae, Phycitinae) *SHILAP Revista de Lepidopterologia*. 47(185): 129-159.

CRAMBIDAE

Crambinae

Yang, J., L.-L. Jie, & W. Li. 2019. Notes on the genus *Gargela* (Lepidoptera: Crambidae), with descriptions of two new species from China. *Journal of Natural History*. 53(33-34): 2099-2104.

Bassi, G. & P. Huemer. 2020. Notes on some *Catoptria* Hübner, 1825 (Crambidae, Lepidoptera) from the Central Apennines (Italy), with the descriptions of *Catoptria samnitica* n. sp. and the male of *Catoptria apenninica* Bassi, 2017. *Nota Lepidopterologica*. 43: 253-263.

Heumer, P. & R. Bryner. 2019. *Agriphila alpine* Bleszynski, 1957 stat. nov. in den Alpen (Italien, Südtirol)- ein bemerkenswerter wiederfund nach einem jahrhundert (Lepidoptera, Crambidae). *Gredieriana*. 19: 95-107. [species rediscovered after 100 years was considered a subspecies; now considered a species with morphological and molecular characters; biology; beautiful images of ALL life stages]

Landry, B. & T. Andriollo. 2020. A review of the genus *Microcrambus* Bleszynski, 1963 (Lepidoptera: Pyraloidea, Crambinae) in Colombia, with descriptions of two species.

Revista UDCA. 23(2): e1628.

Landry, B., T. Léger, & M. Nuss. 2020. Case 3819–Euchromiini Léger, Landry, & Nuss, 2019 (Insecta, Lepidoptera, Crambidae) and Euchromiinae Butler, 1876 (Insecta, Lepidoptera, Erebididae): proposed resolution of homonymy by emending the former to Euchromiini. Bulletin of Zoological Nomenclature 77: online. [Comments requested on this proposal]

Solis, M. A., P. A. Osoria-Mejía, Z. X. Sarmiento-Naizaque, & N. Barreto-Triana. 2020. A new species of *Eoreuma* Ely (Crambidae: Crambinae) feeding on sugarcane from Colombia. Proceedings of the Entomological Society of Washington. 122(2): 471-481.

Solis, M. A., A. D. Canepuccia, J. L. Farina, & O.O. Iribarne. 2020. A new species of *Haimbachia* Dyar (Pyraloidea: Crambidae: Crambinae) feeding on *Spartina* Schreb. (Spartinaceae) from Argentina. Proceedings of the Entomological Society of Washington. 1122(4) 916-928.

Hoploscopinae

Léger, T., C. Kehlmaier, C. S. Vairappan, & M. Nuss. 2020. Twenty-six new species of *Hoploscopa* (Lepidoptera, Crambidae) from South-East Asia revealed by morphology and DNA barcoding. ZooKeys: 1-99.

Pyraustinae

Coates, B. S. & C. A. Abel. 2019. Differentiation of European corn borer (Lepidoptera: Crambidae) and American lotus borer (Lepidoptera: Crambidae), *Ostrinia penitalis*, from North American Field Collections. Journal of Economic Entomology. 112(4): 2007-2011 [Molecular]

Han, X., R.-Z. Chen, L.-B. Li, X. Wei, M.-B. Qu, M. G. Klein, & K.-Q. Wang. 2020. Phylo-

genetic relationships and biological features reveal that male *Ostrinia furnacalis* (Lepidoptera: Crambidae) in Northeast China can be categorized into postmedial line-based clades. Zootaxa. 4786(1): 53-68. [interesting paper with molecules, male genitalia, and postmedial line correlations]

Jie, L. L. & W.-C. Li. 2019. A new species of *Crypsiptya* Meyrick, 1894 from China (Lepidoptera: Crambidae). SHILAP Revista de Lepidopterologia. 47(188): 631-633.

Jie, L.-L., J.-B. Yang, & W.-C. Li. 2020. *Torul squama* Zhang & Li (Lepidoptera: Crambidae) in China, with a discussion on its distribution based on climatic variables. Oriental Insects. 54 (3): 389-397.

Ko, J. H. & Y. S. Bae. 2020. First report of the genus *Neadeloides* Klima, 1939 (Lepidoptera, Crambidae, Pyraustinae) in Laos, with description of a new species. Zootaxa. 4861(3): 444-450.

Maeda, K. & Y. Yoshiyasu. 2020. Occurrence of *Pyrausta inornatalis* (Fernald)(Lepidoptera: Crambidae, Pyraustinae) in Mori-yama City, Shiga Prefecture, supposed to be introduced from North America -the second distributional record in Japan. Yugato. 240: 43-45.

Morawietz, B. 2019. Erster nachweis de zünslers *Circobotys butleri* (South 1901) in Deutschland. Nachrichtenblatt Bayerischen Entomologen. 68: 41-46 [*C. butleri* is recorded in Germany for the first time. Observations and possible establishment in Belgium and Europe are discussed].

Qi, M. & H. Li. 2020. Taxonomic study of the genus *Pagyda* Walker, 1859 (Lepidoptera: Crambidae: Pyraustinae) from China, with descriptions of two new species. Oriental Insects. 54(1): 16-40.

Singh, N., J. S. Kirti, K. Chandra, H. Singh, & R. Ranjan. 2019. On the taxonomy of

the genus *Neadeloides* Klima, 1939 (Crambidae: Pyraustinae) with description of a new species from India. *Zootaxa*. 4664(2): 285-292.

Spilomelinae

Aoshima, M., H. Naka, & K. Tsuchida. 2020. Molecular phylogeny of the yellow peach moth, *Conogethes punctiferalis* (Lepidoptera: Crambidae): distribution of two genetic lineages across Japan. *Applied Entomology and Zoology*. 55: 231-240.

Jie, L.-L., J.-B. Yang, & W.-C. Li. 2020. First record of the genus *Tetracona* Meyrick (Lepidoptera, Crambidae) from China, with description of a new species. *ZooKeys*. 941: 101-105.

Ko, J. H., U. Bayarsaikhan, B. S. Park, T. G. Lee, Y. B. Cha, C. M. Jang, J. G. Lee, & Y. S. Bae. 2020. *Exoasota pursatensis* Ko & Bae, new genus and species of the Spilomelinae (Lepidoptera: Pyraloidea: Crambidae) from Indochina. *Zootaxa*. 4838 (1): 119–127.

Ko, J. H., U. Bayarsaikhan, T. G. Lee, Y. B. Cha, H. U. Kim, B. S. Park, H. W. Kwon, & Y. S. Bae. 2020. New record of the genus *Leucinodella* Strand from Laos (Lepidoptera, Crambidae, Spilomelinae), with description of a new species. *Zootaxa*. 4834 (3): 356–364.

Liu, P., M. Qi, & S. Wang. 2020. Four new species of the genus *Agrotera* Schrank, 1802 (Pyraloidea: Crambidae: Spilomelinae) from Hainan Island. *Zootaxa*. 4731(4): 556-564.

Lu, X.-Q., J.-P. Wan, & X.-C. Du. 2019. Three new species of *Herpetogramma* Lederer (Lepidoptera, Crambidae) from China. *ZooKeys*. 865: 67-85.

Seizmair, M. 2019. Eine neue spezie der gattung *Alytana* Shaffer & Munroe, 2007 aus dem Oman (Dhofar) (Lepidoptera: Crambidae, Spilomelinae). *SHILAP Revista de Lepidopterologia*. 47(187): 443-448.



Palpita flegia, wing length 23 mm, the largest *Palpita* in the Western Hemisphere

Singh, N., J. S. Kirti, H. Singh, & R. Ranjan. 2019. Two new genera for the *Botyodes* species complex (Lepidoptera: Pyraloidea: Crambidae). *Zootaxa*. 4623 (2): 827-395.

Solis, M. A., E. Phillips-Rodríguez, W. Hallwachs, T. Dapkey, & D. H. Janzen. 2020. *Asturodes* Amsel (Lepidoptera: Crambidae: Spilomelinae): three new species from the Western Hemisphere and food plant records from Area de Conservación Guanacaste, Costa Rica. *Proceedings of the Entomological Society of Washington*. 122(1): 147-171.

Solis, M. A., P. D. Pratt, J. Makinson, M. Purcell, M. B. Rayamajhi, & R. Mally. 2020. *Archernis humilis* Swinhoe (Lepidoptera: Crambidae), a spilomeline moth discovered feeding on *Paederia foetida* L., or skunk vine, an invasive species in the United States. *Proceedings of the Entomological Society of Washington*. 122 (3): 732-749.

Yang, Z., M. Ullah, J.-F. Landry, S. E. Miller, M. E. Rosati, & Y. Zhang. 2019. Reassessment of the moth genus *Bacotoma*, with a new species from Hainan Island (Lepidoptera: Crambidae: Spilomelinae). *Insect Systematics and Evolution*. 51 (3): 1-24.

Geographical

Beshkov, S., C. W. Plant, A. Nahirnić, A. King, & P. Jakšić. 2020. A contribution to knowledge of Balkan Lepidoptera: moths collected in May-June 2028 in Austria, Slovenia, Serbia, North Macedonia, and Albania. *Entomologists' Record Journal Variation*. 132: 24-45. [new records of Pyralidae and Crambidae for some of these countries]

Corley, M. F. V., J. Nunes, J. Rosete, & S. Ferreira. 2019. New and interesting Portuguese Lepidoptera records from 2018. *SHILAP Revista de Lepidopterologia*. 47(188): 611-630. [New: *Psorosa ferrugatella* (Turati), *Udea prunalis* (D. & S.), *Agriphila argentistrigellus* (Ragonot)]

Falck, P., F. Slamka, & O. Karsholt. 2019. New data on Pyraloidea from the Canary Islands, Spain (Lepidoptera: Pyraloidea). *SHILAP Revista de Lepidopterologia*. 47(185): 33-48.

Huemer, P. 2019. Umhausen-Farst – Der "Adlerhorst des Ötztales" in Tirol: ein Hotspot für Schmetterlinge (Lepidoptera). *Wissenschaftliches Jahrbuch der Tiroler Landesmuseen*. 12: 48-83.

Revilla, T. & J. Gastón. 2019. New contributions to the microlepidoptera fauna of Spain and other interesting contributions (Insecta: Lepidoptera). *SHILAP Revista de Lepidopterologia*. 47(185): 57-64.

Segerer, A. H., T. Grünwald, T. Guggermoos, A. Haslberger, P. Lichtmannecker, & A. Von Scholley-Pfab. 2019. Ergänzungen, aktualisierungen korrektoren zur checkliste der schmetterlinge Bayerns (7. Beitrag). *Nachrichtenblatt Bayerischen Entomologen*. 68(3/4): 82-90. [Reports a rare immigrant, *Etiella zinckenella* (Tr.), in Bavaria.]

Yepishin, V., O. Bidzilya, Y. Budashkin, O. Zhakov, V. Mushynskiy, & S. Novytskyi. 2020. New records of little known pyraloid moths

(Lepidoptera: Pyraloidea) from Ukraine. *Zootaxa*. 4808(1): 101-120.

Wöger, R., R. Wöger, & M. Nuss. DNA barcodes for Aotearoa New Zealand Pyraloidea. 2020. *Biodiversity Data Journal* 8: e58841. [Scoparinae & Crambinae]

Biology

Aini, A. N., S. Mongkolsamrit, W. Wijanarka, D. Thanakitpipattana, J. J. Luangsa-ard, & A. Budiharjo. 2020. Diversity of akantomyces on moths (Lepidoptera) in Thailand. *MycoKeys*. 71: 1-22. [entopathogenic fungi of insects, including interesting images of fungi on Pyralidae]

Choi, S.-W., S.-S. Kim, & J.-A. Jeon. 2020. Four new records of Crambidae (Lepidoptera) from Korea. *Journal of Asia-Pacific Biodiversity*. 13(3): 01-405. [recorded for the first time in Korea: *Lamprophaia albifimbrialis* (Walker, 1866), *Aurorobotys aurorina* (Butler, 1878), *Nosophora euryterminalis* (Hampson, 1918), and *Hydriris ornatalis* (Duponchel, 1832)]

Claessens, J., J. J. Bacallado, D. Bogarin, L. Dedroog, R. Heijungs, R. Langelaan, E. J. van Nieukerken, K. van den Berg, & B. Gravendeel. 2019. Pollination of *Habenaria tridactylites* on the Canary Islands. *Nordic Journal of Botany*. 37(8): e02401. [Scopariinae/Evergestinae pollinators]

González-Hernández, Á., V. López-Martínez, V., M. A. Solís, D. Guillén-Sánchez, & A. Burgos-Solorio. 2019. First Report of Range Expansion of the Cactus Webworm, *Loxomorpha flavidissimalis* (Grote) (Pyraloidea: Crambidae), to Central Mexico and Central Texas, USA. *Florida Entomologist*. 102(3): 638-641.

Fernandez-Triana, J. T. Kamino, K. Maeto, Y. Yoshiyasu, & N. Hirai. 2020. *Microgaster godzilla* (Hymenoptera, Braconidae, Microgasterinae), an unusual new species from Japan

which dives underwater to parasitize its caterpillar host (Lepidoptera, Crambidae, Acentropinae). *Journal of Hymenoptera Research*. 79: 15–26.

Gaona-García, G., V. Vanoye-Eligio, M. Lara Villalón, E. Ruíz-Cancino, G. Sánchez-Ramos, & M. A. Solís. 2020. *Eiphosoma dentator* (Fabricius) (Hymenoptera: Ichneumonidae), first report as a parasitoid of cactus-feeding *Loxomorpha flavidissimalis* Grote (Lepidoptera: Crambidae) in northeastern Mexico. *Proceedings of the Entomological Society of Washington*. 122(2): 515-518.

Jie, L., J. Yang, & W. Li. 2020. Potential distribution analysis of an invasive alien species *Parapediasia teterrella* (Lepidoptera, Crambidae) in East Asia. *Journal of Asia-Pacific Entomology*. 23(1): 219-223.

King, G. E. 2019. The possible role of green roofs in providing an ideal habitat or the crambid *Pyrausta aurata* (Scopoli) (mint moth) in central Birmingham (Lepidoptera: Crambidae). *British Journal of Entomology and Natural History*. 32 (4): 380-381.

Noboa, M. & W. Viera, W. 2020. Biology of *Neoleucinodes elegantalis* (Guenée 1854) (Lepidoptera: Crambidae): pest of economic importance of naranjilla, an Amazonian fruit of Ecuador. *International Journal of Tropical Insect Science*. 40: 717-722.

Pirovani, V. D., M. Fancelli, B. M. Moreira, L. F. V. Silveira, & D. Pratisoli. 2020. *Azamora penicillana* occurrence in sour passion fruit in the state of Minas Gerais. *Revista Brasileira de Fruticultura*. 42(1): e-567.

Reddy, P. M., M. S. Murthy, A. Prabhuraj, & S. & J. P. Narayan. 2019. Taxonomic studies on Spilomelinae fauna associated with economically important flower crops of zone 1, 2 and 3 of Karnataka, India. *Journal of Entomology and Zoology Studies*. 7(6): 55-60. [*Glyphodes*, *Nausinoe*, *Palpita*]

Reddy, P. M., M. S. Murthy, A. Prabhuraj, & S. & J. P. Narayan. 2020. Taxonomic studies on Spilomelinae (Pyraloidea: Crambidae) fauna associated with economically important flower crops of zone 1, 2 and 3 of Karnataka, India. *Journal of Entomological Research*. 44(2): 299-305. [*Cirrhochrista brizoalis* Walker on fig, *Conogethes punctiferalis* (Guenee) on guava, mango and pomegranate, *Diaphania indica* Saunders on watermelon, *Glyphodes caesalis* Walker on jack fruit, *Syllepte lunalis* (Guenee) on grapes, and *Synclera univocalis* (Zeller) on ber]

Ricardo-Molina, J., L. Murillo-Ramos, & P. Álvarez-Pérez. 2019. Caterpillars and host plants of lepidoptera from dry tropical forest fragments in Sucre, Colombia (Insecta: Lepidoptera). *SHILAP Revista de Lepidopterologia*. 47(185): 5-24. [*Desmia*, *Plodia*, images of larvae]



Large *Petrophila* webs on flat rocks in Tarahumara, northeastern Mexico

Mitochondrial genomes

Gschloessl, B., P. Audiot, S. Nidelet, G. J. Kergoat, & R. Streiff. 2020. Complete mitogenome data from a European specimen of *Ostrinia scapularalis* (Walker, 1859) (Lepidoptera,

Pyraloidea, Crambidae, Pyraustinae). Data in Brief. 33: 106527.

Li, C., L. Lili, Y. Ren, Z. Lu, Y. Song, L. Liu, S. Lv, Y. Yu, & X. Men. 2020. Characterization of the complete mitochondrial genome of Asia corn borer, *Ostrinia furnacalis* (Lepidoptera: Crambidae). Mitochondrial DNA Part B: Resources. 5(1): 936-937.

Wu, Y.-P., J.-J. Lu, J. Yang, & R.-J. Fan. 2020. Complete mitochondrial genome of *Dioryctria yiai* (Lepidoptera: Pyralidae). Mitochondrial DNA Part B: Resources. 5(1): 1062-1064.

Yang, L., J. Dai, Q. Gao, G. Yuan, J. Liu, Y. Sun, Y. Sun, L. Wang, C. Qian, B. Zhu, C. Liu, & G. Wei. 2020. Characterization of the complete mitochondrial genome of *Orthaga olivacea* Warren (Lepidoptera Pyralidae) and comparison with other Lepidopteran insects. PLoS ONE. 15(3): e0227831

Pyraloid Enthusiasts

Please welcome **Andy Brower** and **Jae-Ho Ko** to this list of pyraloid enthusiasts. Refer or forward the details to me about anyone who wishes to be put on the Pyraloid Planet distribution list.

If you have any suggestions, comments, and, more importantly, additions for next year's edition, please send to me ASAP or during the year, so you don't forget. The next deadline will be October/November 2021.

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GlobIZ Meeting, Dresden, 2006, hard at work



Breaktime & one of my favorite pics

