

# From Pro tem to visibility: my 30 years managing the NMNH Pyraloidea Collection (Lepidoptera)



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# Curation & Maintenance of the Pyraloidea Collection ~350,000 adult specimens

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For efficient retrieval of organisms and associated materials for any purpose including research, identifications, loans, and biological information such as hosts and distribution

# Pyraloidea Adult Collection

## Physical:

- Mostly wood cabinets, but some heavy steel cabinets
- Cork bottom drawers or slats were used
- Type specimens in the main collection
- 2/3's of the collection unsorted

## Classification:

- Schaus curation according to Hampson, 1800's
- Heinrich: Phycitinae, *Rupela*
- Capps: Pyraustinae



# Pyraloidea Associated Collections

## Dissection Microscope Slides and Larval Collection

### Larval Collection

- In jars with metal caps
- Vials topped with cotton

Classification according to Dyar (1800's) & Capps (early 1900's)

### Microscope Slide Collection

- Slides according to author; not catalogued into the NMNH Lepidoptera numbering system



# 1989: Goals

- Sort Pyraloidea pro tem to subfamily in 10 years; strive for no Pyraloidea pro tem
- To curate each subfamily by genus, not biogeographical region
- To catalogue microscope slides; required locating the adults in the collection
- To separate type specimens from main Pyraloidea collection



# 1994-1996

Collections move to Museum Support Center (MSC)  
in anticipation of an Entomology collection move in the future

- ❖ Lepidoptera collections  
*Papilio*, *Catocala*, Saturniidae, Sphingidae
- ❖ Lepidoptera *pro tem* moves to MSC for sorting



## Result:

- ❖ Created expansion space for Pyraloidea sorting and curation
- ❖ Contractors able to catalog remaining microscope slides
- ❖ Update of classification for Pyraloidea larval collection with temporary labels



# 2001: Move from Hall 30 to East Wing



Hall 30 Deck





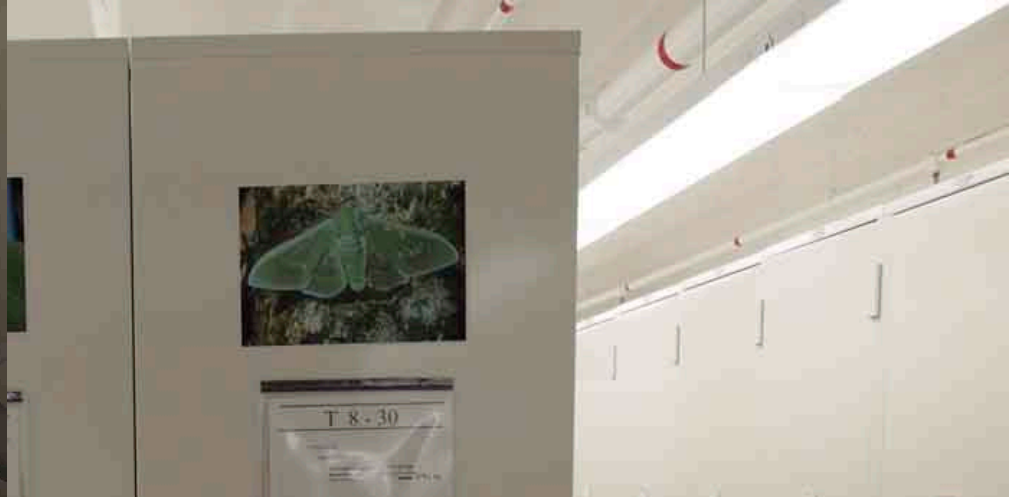
# NMNH Lepidoptera Collection: 5<sup>th</sup> floor East Wing



Lepidoptera Adult Collection



Lepidoptera Larval Collection



Pyraloidea Adult Collection  
135 tall Interior© cabinets



Pyraloidea Larval Collection  
1208 bale jars

# Post move: 2001

## Move from Hall 30 to East Wing

- ❖ Contractors transfer larval collection to bale jars and vials with plastic tops; with updated permanent jar labels
- ❖ Larval jar database created
- ❖ Slide cataloguing continued
- ❖ Unsorted material brought back from MSC to NMNH for incorporation into main Pyraloidea collection
- ❖ Specialists to sort & curate certain subfamilies were funded: M. Shaffer, B. Landry, K. Maes, H. Neunzig

# 2014: Assessment

- Sort Pyraloidea pro tem to subfamily in 10 years; strive for no Pyraloidea pro tem

**Completed, but on-going**

- To curate each subfamily by genus, not biogeographical region

**Not completed, Phycitinae remains**

- To catalogue microscope slides; requires locating the adults in the collection

**Completed, but a few adults/slides not found**

- To separate type specimens from main Pyraloidea collection

**Completed, but on-going**

# 2000: Databases & Imaging



# Pyraloidea Primary Types – 2754 type specimens

FileMaker Pro - [Pyraloidea]

File Edit View Insert Format Records Scripts Window Help

Records: 267 / 2754 Total (Unsorted)

Layout: Entry Form View As: [Icons] AA Edit Layout

Pyraloidea Types at the United States National Museum of Natural History

Type Number	Sex	Count Number	Type Designation
26930			

USNM Slide Number	Alternate Slide Number	Type of specimen
113614		

of

Genus	Species
<i>Argyractis</i>	<i>rinconadalis</i>

Author	Year
Schaus	1924

Old Status Field Conv  
Invalid; valid in *Argyractoides* Lange, 1956


Country	State/Province	County/Division
Mexico	Veracruz-Llave	

Site	Date
Rinconada	

Habitus Labels Genitalia Source

Insert Habitus Photo

Habitus ID  
*rinconadalis* Schaus 1924 *Argyractis* hab.jpg



Notes:

75 Browse

FileMaker Pro - [Pyraloidea]

File Edit View Insert Format Records Scripts Window Help

Records: 315 / 2754 Total (Unsorted)

Layout: Entry Form View As: [Icons] AA Edit Layout

Pyraloidea Types at the United States National Museum of Natural History

Type Number	Sex	Count Number	Type Designation
17672	Male		

USNM Slide Number	Alternate Slide Number	Type of specimen
		Holotype

of

Genus	Species
<i>Locastra</i>	<i>viriditincta</i>

Author	Year
Schaus	1912

Old Status Field Conv  
Invalid; Original name combination; Valid combination in *Bibasilaris*

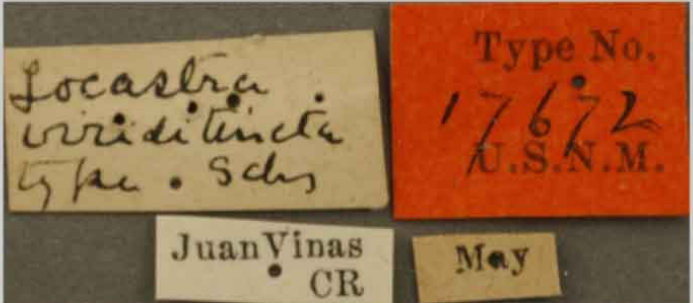
Country	State/Province	County/Division
Costa Rica	Cartago	

Site	Date
Juan Vinas	May

Habitus Labels Genitalia Source

Insert Labels Photo

Label ID  
*viriditincta* Schaus 1912 *Locastra* lab.jpg



Notes:

75 Browse

# Pyraloidea Dissection Slides - ~20,000 slides

	A	B	C	D	E	F	G	H
1	slide number	Family	Genus	Species	Author	sex	locality	gen sl
59	97,258	Crambidae	Diatraea	saccharalis	(Fabricius)	M & F	Buenos Aires, Argentina	Genitalia slide
60	97,259	Crambidae	Diatraea	saccharalis	(Fabricius)	M	Tucuman, Argentina	Genitalia slide
61	97,260	Crambidae	Diatraea	saccharalis	(Fabricius)	M	Las Brenas, Argentina	Genitalia slide
62	97,261	Crambidae	Diatraea	saccharalis	(Fabricius)	F	Rio Manes, Amaz. Brazil	Genitalia slide
63	97,262	Crambidae	Diatraea	saccharalis	(Fabricius)	F	Nova Teutonica, Brazil	Genitalia slide
64	97,263	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
65	97,264	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
66	97,265	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
67	97,266	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
68	97,267	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
69	97,268	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
70	97,269	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
71	97,270	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
72	97,271	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
73	97,272	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
74	97,273	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
75	97,274	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
76	97,275	Crambidae	Diatraea	saccharalis	(Fabricius)	F		
77	97,276	Crambidae	Diatraea	saccharalis	(Fabricius)	M		
78	97,277	Crambidae	Diatraea	saccharalis	(Fabricius)	M		



Wish list: imaging of structures on microscope slides



# Species Inventory - ~6700 species

Pyraloidea\_Species\_Inventory\_functional\_MARCH

6694 6700 Total (Sorted)

Records Show All New Record Delete Record Find Sort

Layout: Species\_Inventory View As: Preview

## USNM Pyraloidea Species Inventory

Family	Pyralidae
Subfamily	Phycitinae
Genus	Moerbes
Species	emendata
Author	Heinrich
Year	1956

last name only  
"1900" not "00"

Region	Neotropical
Country	
State	

Cabinet	W9
Slot	28

Comments

Picture Taken?

Specimen Image File Name  
emendata\_Heinrich\_1956\_Moerbes\_hab01.tif

Label Image File Name Copy  
emendata\_Heinrich\_1956\_Moerbes\_lab01.tif

Taxon Identifier: PyralidaePhycitinaeMoerbesemendata

Author from Names DB: Heinrich

Year from Names DB	1956
Taxon# from Names DB	20735
Taxon#	20735
Valid Name # from Names DB	20735
Valid#CalcfromNames	20735

This Pyraloidea collection consists of:

50% of the world fauna

&

about 85% of the New World fauna



Fca. La Campana, El  
Ensayo, 7 kmNW Dos  
Rios, Alajuela Prov.  
COSTA RICA, 700m  
15-17 Mar 1986  
DHJanzen&W.Hallwachs

# Pyraloidea Larval Collection: 1208 jars

FileMaker Pro - [pyralarvae Copy\_April\_2014]

File Edit View Insert Format Records Scripts Window Help

7  
0  
Records

648 / 1208  
Found (Unsorted)

Show All New Record

Data Entry View As: [Table View] [List View] [Grid View] Aa Edit Layout

**Pyraloidea Collection Data**

Family	Crambidae	Geographic Realm	ORI
Subfamily	Crambinae	Number of Specimens	
Tribe			
Original Genus	Schoenobius		
Genus	Chilo		
Species	luteellus		
Author	Motschulsky, 1866		
Cabinet #		Shelf #	Jar # 008a
State	Japan		
Remarks			

100 Browse



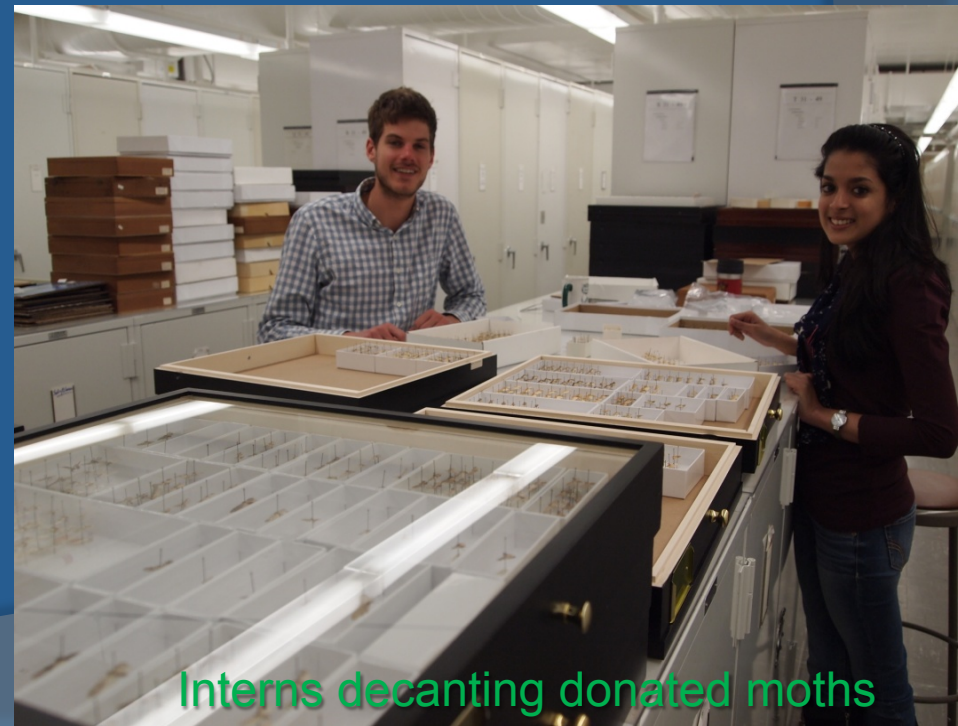
Wish list:  
database of each vial with associated information



# NMNH Pyraloidea Collection

## Continuing activities:

- ❖ Curation of the Phycitinae by genus (Neotropical & Old World phycitines)
- ❖ Incorporation of new, incoming and Solis types into type collection and database
- ❖ Cataloging of Solis research slides
- ❖ Incorporation of new immatures into larval collection primarily from interceptions at U.S. ports
- ❖ Incorporation of incoming vouchers/collections/donations: e.g. Leuschner, Sullivan, Richers



Interns decanting donated moths

# Alignment of research and collection enhancement

-Incorporation of the Janzen/Hallwachs collection of reared Pyraloidea

-Research on evolution of host plant feeding patterns for the Pyraloidea of the Guanacaste Conservation Area



# Observations from a one trick pony

Art Shapiro, 2014, "The long and short of it: observations of a one trick pony"  
Lepidopterists' Society News, Vol. 56

- 1. Things often turn out to be different from what one thought they were.*
- 2. The short time frames of grant cycles and the publication demands...work against doing long-term projects. Now that they have assumed great urgency, such barriers are beginning to be lifted. But old ways die hard.*
- 3. Creativity, spontaneity, and variety are all wonderful things. But sometimes doing exactly the same thing for 50 years turns out to be worthwhile.*

# Observations from a pony with many tricks

Alma Solis, 2014

1. Things **WILL BE DIFFERENT** down the line, get started NOW with the tools at hand.
2. Large projects require long-term planning, flexibility, and **DISCIPLINE** to stick to it. Work with or around publication and granting cycles.
3. Creativity, spontaneity, and variety are great, but don't reinvent the wheel, **MODIFY**.
4. **Keystroke** scientific names only **once**.
5. **Use** the same curated collection for as many different **activities/research** questions as possible.



# Acknowledgments

- Jon “Buck” Lewis, SEL, USDA
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.....and many others

