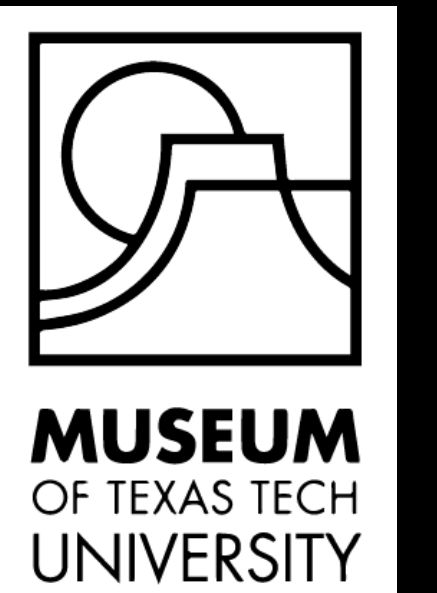




Towards an Assessment of the Impacts of Illegal Trafficking of Key Species of Butterflies and Moths

Sofia Rodriguez^{1, 3}, Luis González-Montaña², Jennifer C. Girón³

1. Plant and Soil Science Department; 2. Universidad de los Llanos, Colombia; 3. Invertebrate Zoology Collection, Natural Science Research Laboratory, Museum of Texas Tech



Background

In the early 2000's, the Invertebrate Zoology Collection of the Natural Science Research Laboratory, Museum of Texas Tech received over 40,000 insect specimens that were confiscated by the US Fish and Wildlife Service in a case of illegal collecting or improper imports of animal materials into the US. These specimens came from all over the world, mainly Latin America and Southeast Asia, and some may represent endangered species.

To assess the effect of illegal trafficking on natural populations of moths and butterflies (order Lepidoptera), we are gathering information about how many species and specimens are represented in the Confiscated Lepidoptera collection at TTU.

Insects especially Lepidoptera, are very sought after for their impressive coloration and uniqueness. The illegal trafficking of these creatures hurts ecosystems that rely on them to survive and thrive.

In their natural habitats, lepidopterans are responsible for:

- Pollination
- The success of plant species
- Medical and technological innovation

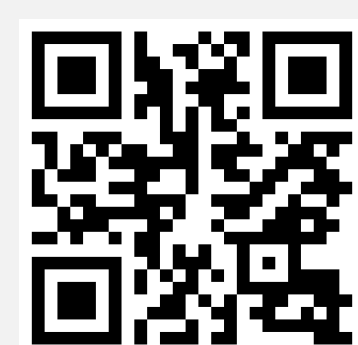
Links of interest



Invertebrate Zoology Collection
Museum of Texas Tech



IUCN Red List of
Threatened Species



iNaturalist



NatureServe Explorer

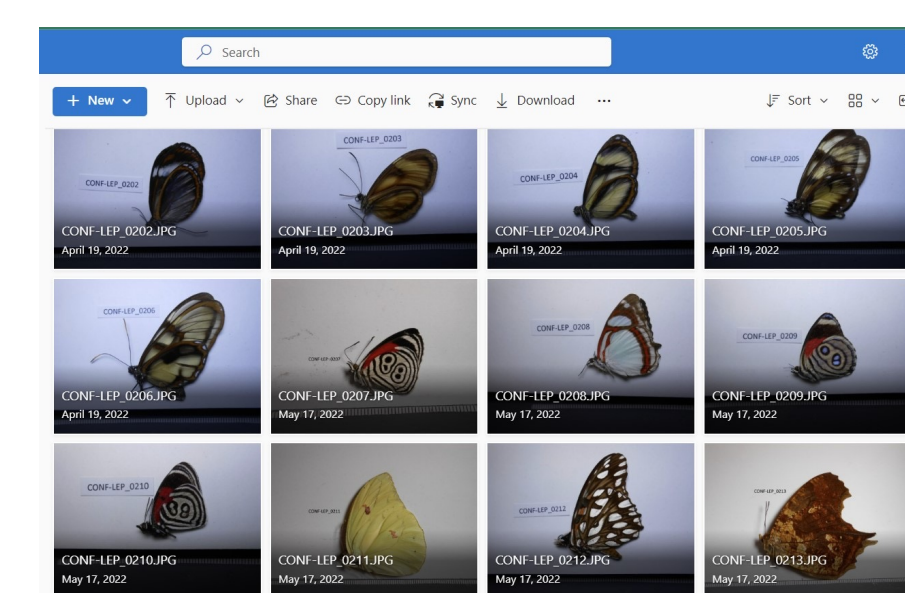


Bags of unsorted butterflies in envelopes

Sorted and organized butterflies in envelopes



Staging butterflies for photographing



Online gallery of imaged butterfly morphospecies

Lot#	Category	Date	Species
CONF-LEP_0001	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0002	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0003	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0004	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0005	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0006	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0007	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0008	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0009	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0010	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0011	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0012	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0013	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0014	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0015	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0016	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0017	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0018	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0019	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0020	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0021	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0022	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0023	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0024	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0025	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0026	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0027	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0028	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0029	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0030	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0031	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0032	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0033	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0034	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0035	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0036	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0037	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0038	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0039	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0040	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0041	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0042	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0043	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0044	Butterfly	2003-01-15	<i>Pieris</i>
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CONF-LEP_0057	Butterfly	2003-01-15	<i>Pieris</i>
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CONF-LEP_0065	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0066	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0067	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0068	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0069	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0070	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0071	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0072	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0073	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0074	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0075	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0076	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0077	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0078	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0079	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0080	Butterfly	2003-01-15	<i>Pieris</i>
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CONF-LEP_0092	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0093	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0094	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0095	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0096	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0097	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0098	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0099	Butterfly	2003-01-15	<i>Pieris</i>
CONF-LEP_0100	Butterfly	2003-01-15	<i>Pieris</i>

Online spreadsheet of butterfly data and identifications

Sort different morphospecies using distinct visual markings

Recognize a new or existing morphospecies

Photograph specimen including catalog label

Record any information mentioned on specimen packaging

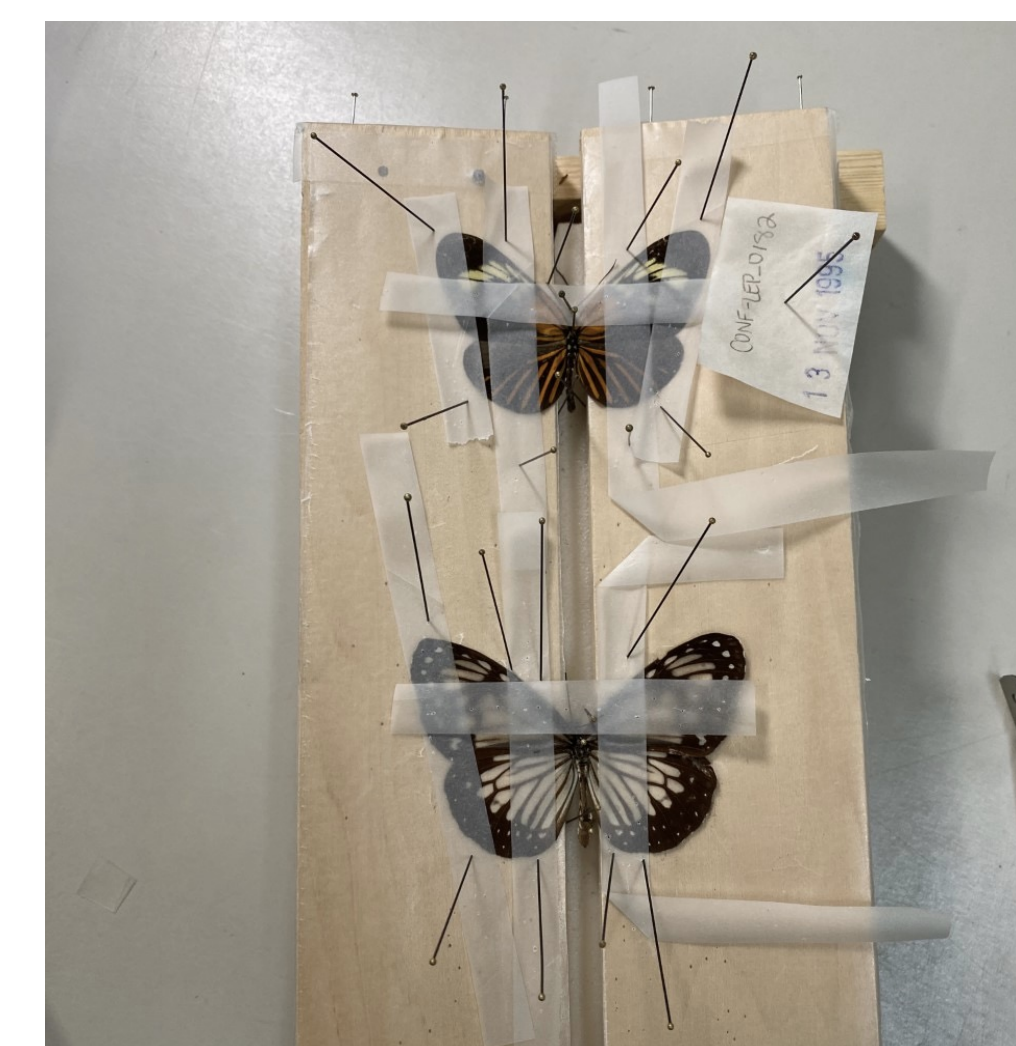
Mount one representative specimen per morphospecies



Morpho rethenor
CONF-LEP_0008



Archaeopreona demophon
CONF-LEP_0274



Mounted butterflies

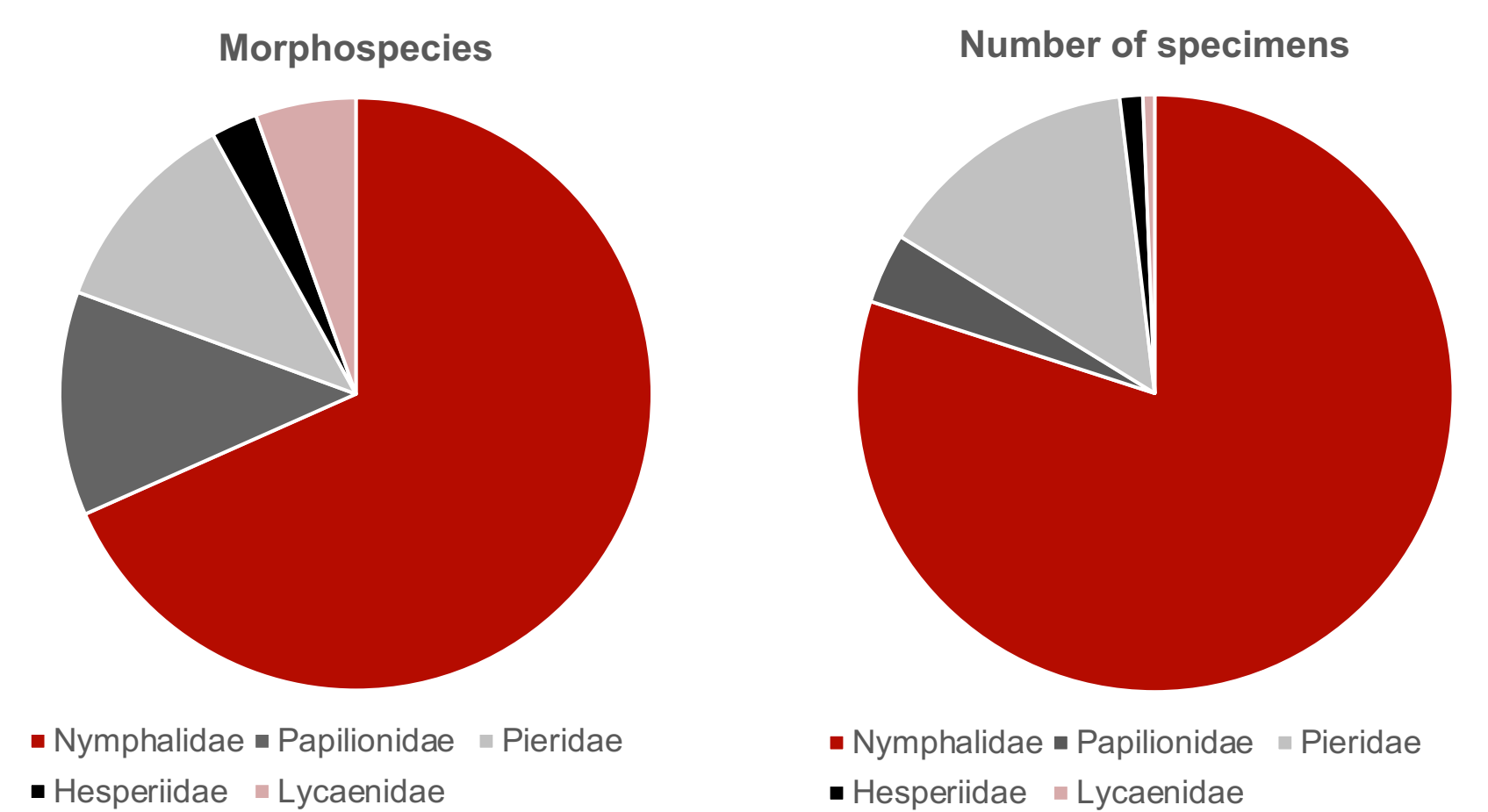


Staging butterflies for photographing

Sorting and Digitization

Specimens in the Confiscated Lepidoptera Collection typically come packaged in bulk and in need of sorting, organizing, digitizing and identifying for possible use in future research. However, since these specimens were brought in illegally, many have little to no data associated to them.

So far, we have found over 400 morphospecies (distinct morphological groups) out of 4,047 specimens organized, with thousands more yet to be sorted. We are currently working to identify the specimens to family and possibly genus and species.



Future perspectives

This project is still on-going. Once we have processed all the confiscated specimens at TTU, this information will be a baseline to assess the effect of illegal trafficking on natural butterfly and moth populations.

Acknowledgement

We are grateful to Dr. Scott Longing, at the Plant and Soil Science Department.