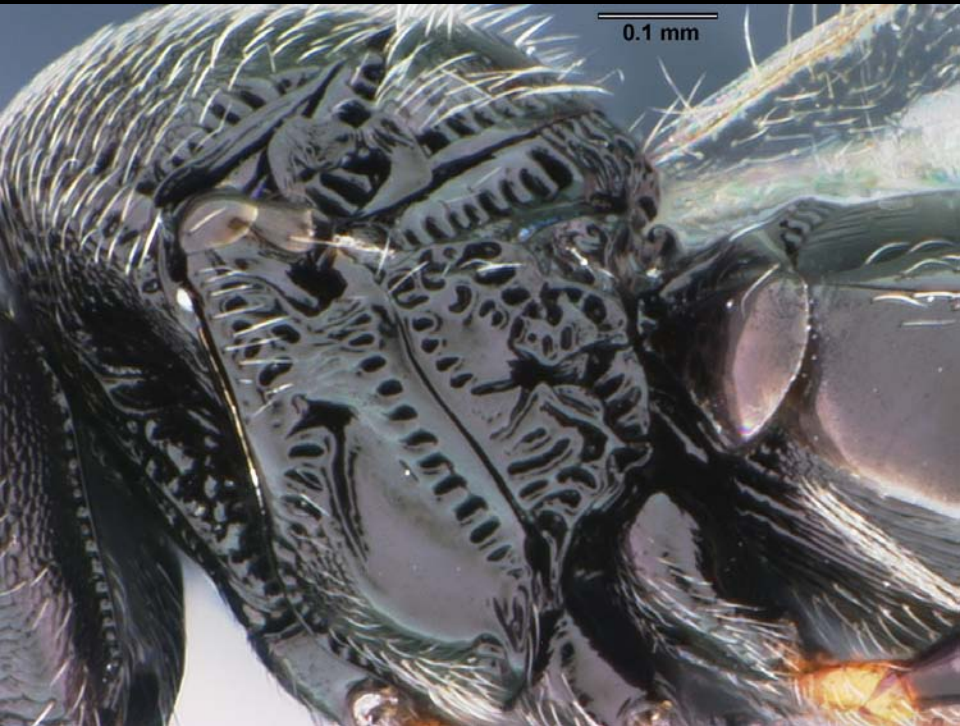



# *Trissolcus*



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# Platygastroidea

- Historically divided into two families
- Platygastridae
  - egg parasitoids
  - gall midge (Cecidomyiidae) parasitoids
  - mealybug parasitoids
- Scelionidae  Contains parasitoids of stink bug eggs
  - egg parasitoids
    - diverse array of host taxa
- Now treated as a single family: Platygastridae

# Platygastroid Parasitoids of Stink Bug Eggs

## Scelioninae

*Gryon*

## Telenominae

*Trissolcus*  
*Telenomus*  
*Psix*









# Platygastroidea



0.50 mm

# Platygastroidea



# Platygastroidea





# Taxonomy

- Foundation for species identification
  - initial naming and description of species
  - production of identification keys
  - synonymy of species that are described more than once
    - minimize confusion
- Basis for all other biological study

# Taxonomy

- Platygastroid diversity largely unexplored
  - *Oreiscelio*: 4 → 19 species
  - *Trichoteleia*: 2 → 42 species
  - New World *Paridris*: 2 → 15 species
  - *Paridris neptha* species group 1 → 15 species

# Revision of East Palearctic *Trissolcus*

- Previous taxonomy
  - Multiple authors
    - Japan                      Netherlands
    - China                      United States
    - Russia                      Ukraine
  - Rarely examined holotypes
  - Stability of species names is dubious
  - Real species distributions is unknown
  - *Trissolcus* may be prone to over-description





*Trissolcus japonicus*

- described by Ashmead 1904



## *Trissolcus halyomorphae*

- described by Yang et al 2009
- did not include examination of holotypes
- holotype of *T. halyomorphae* unavailable
- but... Kim Hoelmer obtained cohort paratypes

*Trissolcus halyomorphae* = *Trissolcus japonicus*







- Trissolcus japonicus* 1904
- ~~*Trissolcus plautiae*~~ 1954
  - ~~*Trissolcus halymorphae*~~ 2009

# Status of Revision

- All holotype/lectotypes of *Trissolcus* (worldwide) in USNM have been imaged
- 5 additional holotypes from East Asia examined/imaged
- Additional type material in
  - St. Petersburg ←
  - Kiev
  - Lund
  - Hanoi ←
  - Vienna

# Hymenoptera Online Database

*hol.osu.edu*

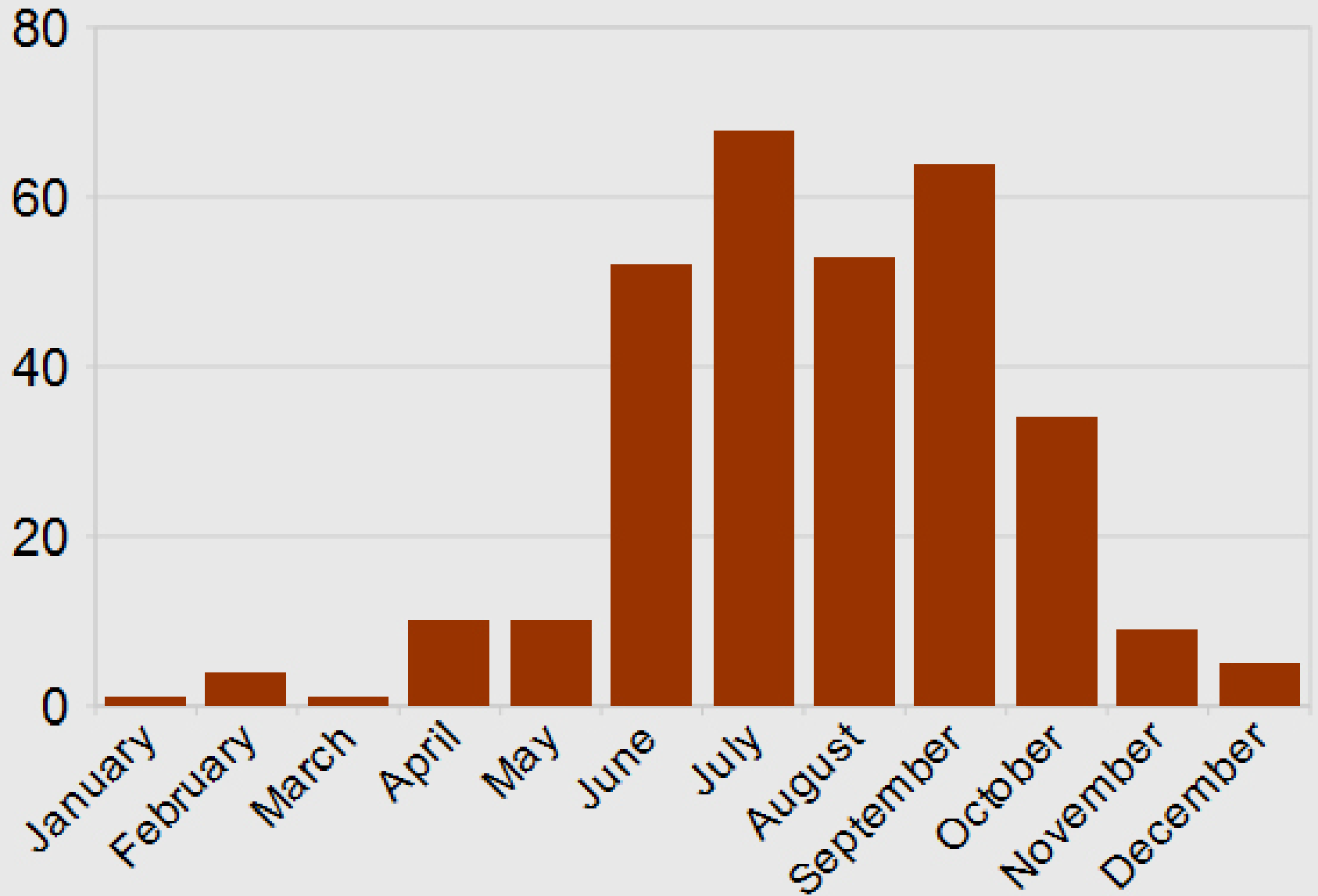
- **Every specimen is barcoded (CUID)**
- **Label data is georeferenced and databased**



# Species Distribution Maps



# Phenology



# Host Associations

Associations (19) [show options](#)

Taxon	Valid Name	Association Type	Taxonomic Hierarchy	Association IDs	Reference
<i>Acrosternum hilare</i> (Say)	<i>Chinavia hilaris</i> (Say)	emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Pentatominae: Nezarini: Chinavia		
<i>Edessa mediatubunda</i> (Fabricius)		emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Edessinae: Edessa		Golin, Loiácono, Margaría & Aquino, 2011: 618
<i>Euschistus Dallas</i>		emerged from egg of / host egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Pentatominae: Carpocorini		
<i>Euschistus conspersus</i> Uhler		emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Pentatominae: Carpocorini: Euschistus		
Pentatomidae		emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea		
Pentatomidae		unspecified association	Hemiptera: Heteroptera: Pentatomoidea		
<i>Podisus maculiventris</i> (Say)		emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Podisus maculiventris</i> (Say)		emerged from sentinel egg mass of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Podisus maculiventris</i> (Say)		parasite of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Podisus maculiventris</i> (Say)		unspecified association	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Podisus serieiventris</i> Uhler		emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Podisus spinosus</i> (Dallas)	<i>Podisus maculiventris</i> (Say)	emerged from egg of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Asopinae: Podisus		
<i>Quercus agrifolia</i> Nee.		collected on	Fagales: Fagaceae: Quercus		
<i>Thyanta accerra custator</i> (Fabricius)	<i>Thyanta custator</i> (Fabricius)	emerged from sentinel egg mass of	Hemiptera: Heteroptera: Pentatomoidea: Pentatomidae: Pentatominae: Pentatomini: Thyanta		
alder	<i>Alnus</i> Mill.	collected on	Fagales: Betulaceae: Alnus		
maple	<i>Acer</i> Linnaeus	on young	Sapindales: Aceraceae: Acer		
pecan	<i>Carya illinoensis</i> (Wangenh.) K. Koch	collected on	Juglandales: Juglandaceae: Carya		
red pine	<i>Pinus resinosa</i> Aiton	collected on	Pinales: Pinaceae: Pinus		
wax myrtle	<i>Myrica heterophylla</i> Raf.	collected on	Myricales: Myricaceae: Myrica		

# Taxonomic Tools

## Literature

Literature (7)    show synonyms:     show all annotations:     view type:  annotation-view  bibliography-view

### Filter

Authors:

- Thoron pallipes* Ashmead**, 1887: 99. Original description.
- Thoron pallipes* Ashmead**: Ashmead, 1893: 168. Description.
- Thoron pallidipes* Dalla Torre**: Dalla Torre, 1898: 512. Unjustified emendation.
- Thoron pallipes* Ashmead**: Kieffer, 1926: 171, 173. Description, keyed.
- Paridris pallipes* (Ashmead)**: Krombein & Burks, 1967: 298. Generic transfer.
- Paridris pallipes* (Ashmead)**: Masner & Muesebeck, 1968: 42. Type information.
- Paridris pallipes* (Ashmead)**: Talamas, Masner & Johnson, 2012: 35, 38, 71. Description, diagnosis, synonymy, keyed, type information.



# Taxonomic Tools

## Literature

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- + *Paridris pallipes* (Ashmead): Talamas, Masner & Johnson, 2012: 35, 38, 71. Description, diagnosis, synonymy, keyed, type information.

## Repositories

Specimen ID	Collection	Taxon	Valid Name	Type	Taxonomic Hierarchy	Reference
USNM Type No. 24541	USNM	<i>Idris laeviceps</i> Ashmead	<i>Paridris pallipes</i> (Ashmead)	Holotype	Hymenoptera: Platygastroidea: Platygastridae: Scelioninae: Paridris	Ashmead, 1893: 235
M.C.Z. Type 31016	MCZC	<i>Idris nigricornis</i> Brues	<i>Paridris pallipes</i> (Ashmead)	Lectotype	Hymenoptera: Platygastroidea: Platygastridae: Scelioninae: Paridris	Brues, 1903: 125
USNM Type No. 22798	USNM	<i>Paridris brevipennis</i> Fouts	<i>Paridris pallipes</i> (Ashmead)	Holotype	Hymenoptera: Platygastroidea: Platygastridae: Scelioninae: Paridris	Fouts, 1920: 66
USNM Type No. 24485	USNM	<i>Thoron pallipes</i> Ashmead	<i>Paridris pallipes</i> (Ashmead)	Holotype	Hymenoptera: Platygastroidea: Platygastridae: Scelioninae: Paridris	Ashmead, 1887: 99

# Image Database specimage.osu.edu


Specimage - List Specimen Images - Mozilla Firefox

File Edit View History Bookmarks Tools Help


specimage.osu.edu specimage.osu.edu/listSpmImages.html

Search:    [Advanced Search](#)

Specimen 1:



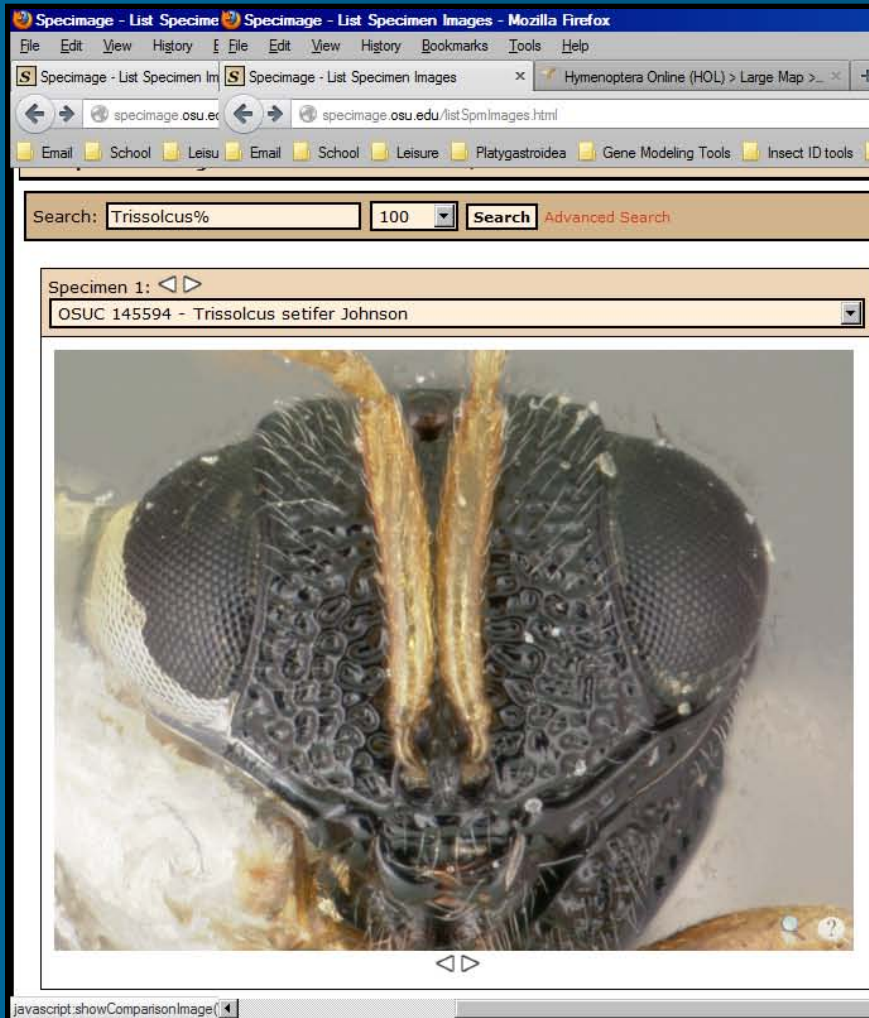
Specimen 2:



javascript.showComparisonImage()

5:00 PM

# Image Database specimage.osu.edu



Searchable by:

taxon name

geographical area

CUID

morphological structure



# vSysLab

vSysLab: a virtual Systematics Laboratory, v. 1.5 > PBI: Revision of the Genus Trichoteleia - Phylogenetic > Data Matrix - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://vsyslab.osu.edu/show\_matrix.html?project\_id=62

Specimage - List Specimen Images vSysLab: a virtual Systematics La...

### Project Data Matrix

OTU Name	10193	10185	10187	10188	10181	10182	10180	10175	10079	10078	10081	10331	10019	9708	10019	9709	9710
1. [Anteris 1]	0	2	0	0	0	1	1	1	1	0	1	0	2	1	0	3	4
2. [Xanteris minimus]	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add	add
3. [Xanteris magnus]	0	2	0	0	0	0	add	1	1	1	0	0	0	0	0	0	0
4. <i>Tuora blaze</i> (MS) [Tuora blaze (MS)]	add	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	4
5. [Tuora brachyterous]	add	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
6. [Tuora buddha]	add	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
7. <i>Tuora crinis</i> (MS) [Tuora crinis (MS)]	0	add	0	add	add	add	1	1	0	0	0	2	1	0	0	0	1
8. [Tuora darky]	add	add	1	0	0	0	1	1	0	1	0	0	1	0	0	0	1
9. <i>Tuora gigantor</i> (MS) [Tuora gigantor (MS)]	add	0	1	0	0	0	1	1	0	0	0	3	1	0	0	0	1
10. [Tuora laotian smoothifrons]	add	2	0	0	0	0	1	1	0	1	0	3	1	1	0	1	1
11. <i>Tuora metaspine</i> (MS) [Tuora metaspine (MS)]	add	2	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1

Ventral Limit Of Occipital Carina [edit character](#)

OTU Name: [Tuora darky]

Category: Head

States:

0. absent below midpoint of foramen magnum

Find: carina    Next    Previous    Highlight all    Match case

Done



# vSysLab

The screenshot displays the vSysLab interface. The main window is titled "Project Data Matrix" and contains a table with columns for OTU Name and various character numbers (e.g., 10103, 10185, 10187, 10188, 10181, 10182, 10180, 10175, 10079, 10078, 10081, 10331). The rows list different taxa, including [Ansteris 1], [Ansteris malmgreni], [Ansteris magnus], [Tuora blaze (MS) [Tuora blaze (MS)]], [Tuora brachypterus], [Tuora budha], [Tuora crinita (MS) [Tuora crinita (MS)]], [Tuora darky], [Tuora giganter (MS) [Tuora giganter (MS)]], [Tuora laetian smoothifrons], and [Tuora metaspine (MS) [Tuora metaspine (MS)]]. A pop-up window titled "Ventral Limit Of Occipital Carina" shows a specimen image and a character description: "OTU Name [Tuora darky] Category Head State: 0 absent before midpoint of Foramen magnum".

Species Descriptions  
- Material Examined

Matrix for phylogenetic analysis

Lucid key



- Host Associations
- Emergence Data
- Parasitoid Diversity



- Taxonomic Data
- Distributional data for Parasitoids and Hosts

## Hymenoptera Online Database



### Ecological Questions

How do parasitoid assemblages change following introduction of biocontrol species?

How do temperature/biogeographical gradients affect parasitoid assemblages?

# The Near Future

- Lucid Key to species of North America
  - each species/character system illustrated with high resolution images
  - freely available online