

Stockholm, Sweden

2016



2016

BIG4 Progress Report:

Origin and diversification of hoverflies:

A revision of *Allobaccha* & *Asarkina*

(Diptera: Syrphidae)

Trevor Burt

PhD Candidate

University of Bonn, Germany

Koenig Museum (ZFMK)



Ximo Mengual, PhD

Koenig Museum (ZFMK)

Curator of Diptera



My Project



- Revision of *Allobaccha* Curran & *Asarkina* Macquart of the Afrotropical and Indomalayan regions
- Design baits (probes) for Target Enrichment based on transcriptomes and genome of Syrphidae (*Eristalis tenax*)
- Infer relationships within Syrphinae (*sf.*)
- Publish the results in several articles directly generated from research
- Collate into Doctoral Thesis

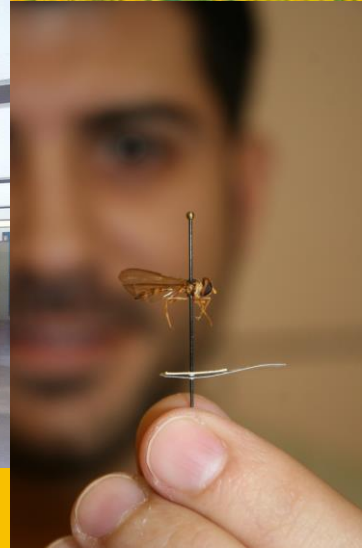
Things done so far . . .



- Became more familiar with syrphids
- Read literature
- Identify problems within genera (*Allobaccha*)
- Complete Bait Design (probes): Order Bait Kit
- Create a general approach plan (RIO)
2nd Draft of “Origin and diversification of hoverflies: a revision of the genera *Asarkina* and *Allobaccha* – A BIG4 Consortium PhD project”



Material Collecting



Types, Material loans, collection trips



Taxonomy: Allobaccha



~45 sp. +



~37 sp. +

Taxonomy: Allobaccha



~45 sp. +



~~~37 sp. +~~

# *Taxonomy: Allobaccha*



~45 sp. .... ~80+



~80sp. +

# *Asarkina*



~45 *sp.* +



~27*sp.* +



# Communication

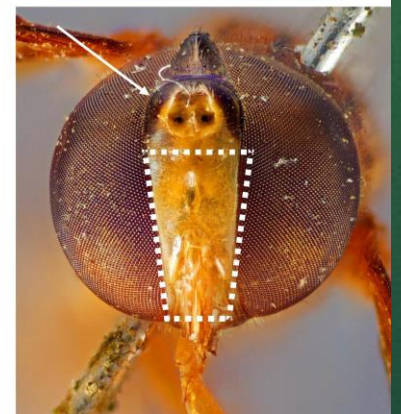
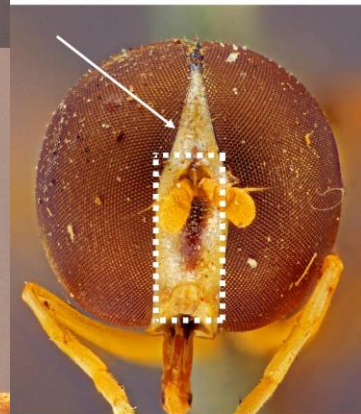
*Allobaccha triangulifera* (♂)  
Lectotype, NHM, London



*Allobaccha triangulifera* (♂)  
Lectotype, NHM, London

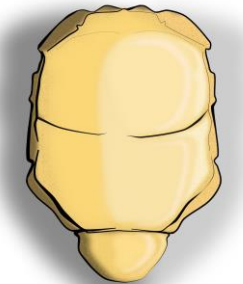
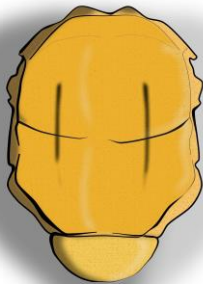
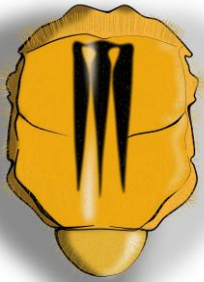
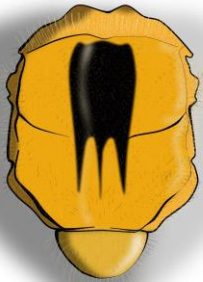
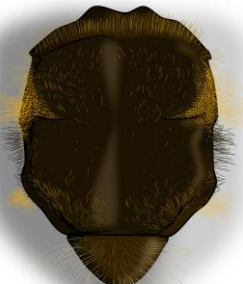
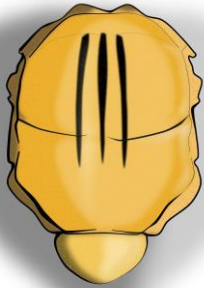
*Allobaccha picta* var. *superpicta* (♀)  
Holotype, NHM, London

*Allobaccha picta* var. *superpicta* (♀)  
Holotype, NHM, London





# Communication





# Taxonomy Timeline

- Revision of Afrotropical *Allobaccha* -December 2016
  - Photos, Fig. drawings, Barcodes
- Revise Afrotropical *Asarkina* - 2017
  - Prepare manuscript
- Revise Indomalayan *Allobaccha* - 2017
  - Prepare manuscript
- Revise Indomalayan *Asarkina* - 2018
  - Prepare manuscript

# Goals & Timeline . . .

- \*Schedule more tenuous. . . .
- Wet lab training, CNC: October-November 2015
- Continue Wet lab training, ZFMK: January-February 2017
- Learn Hybrid Target Enrichment techniques (Various)
- Structured Course work 2016
- Cluster (Putty & Swish): January 2016
- NGS Stats and Analysis: June-July 2016
- PERL Course: Oct, 17- Nov, 11, 2016



# Timeline . . .

- \*Secondments:
- Royal Museum of Central Africa; Kurt Jordaens:  
Extraction and Barcoding
  - 1 Month (~March, 2017)
- U of Helsinki; Finnish Museum of Natural History:  
Gunilla Ståhls: Morphology, curatorial work
  - 1 Month (~November, 2017)

# Goals for Phylogenomics

- Complete Bait Design (probes): Order Bait Kit
- Selecting taxa (Up to 120 taxa) (~190 samples)
- Wetlab
- Alignment (ASSUMING EVERYTHING WORKS!)
- Analysis (Spring-Summer, 2017)
- Infer Phylogeny of genera (*Allobaccha* & *Asarkina*)  
-2018



Specialized Training

?

Recognize BIG  
Problems as  
“Opportunities”

+Broad Skills

Tackle BIG  
“Problems”

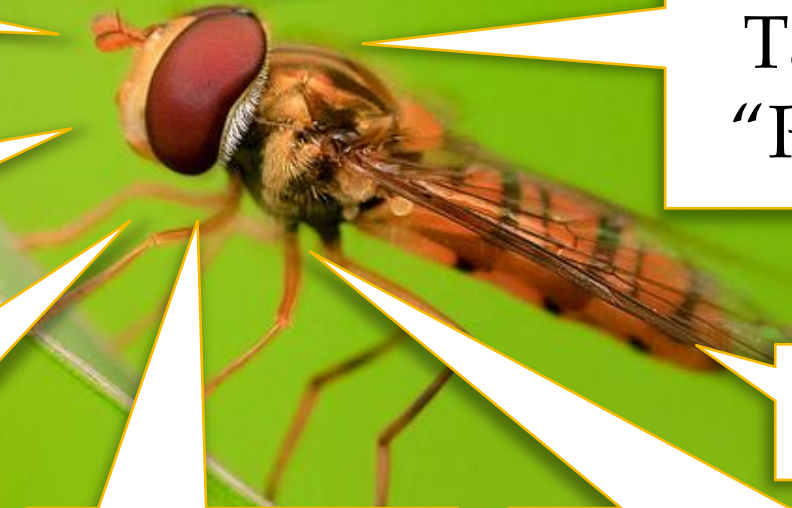
Broad  
Application

Leadership

Network of  
Researchers

Enterprise  
Network

Communication/  
Presentation



# Next Year

- Ask me about:
  - My revision of *Indomalayan Allobaccha* . . .
  - Success/Failure of Bait Kit, wet lab work . . .
  - “Origin and diversification of hoverflies: a revision of the genera *Asarkina* and *Allobaccha* – A BIG4 Consortium PhD project” –A **RIO** PUBLICATION
  - Publication: “A revision of the Afrotropical *Allobaccha*”
  - 1<sup>st</sup> Secondment: Kurt Jordaens, RCMA, Belgium





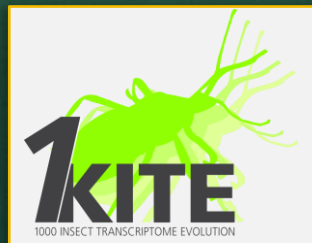
# Thank you



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- with work carried out at the **Koenig Museum** (ZFMK),



# Thanks to . . .



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- *Gunilla Ståhls, U of Helsinki*
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