

# CEB<sub>ioS</sub> ACTIVITIES

## VIETNAM



- Grants from the Global Taxonomy Initiative  
+ policy brief
- COHERENS  
→ Red River Delta

# RBINS – VAST GTI collaboration

## A 10 years+ success story!

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- RBINS and 2 VAST institutions: IEBR and VNMMN
- Collaboration between taxonomists working on Insects



# First step: 2007

## Visit of Mr Pham Hong Thai

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- GTI project involving H.T. Pham and J. Constant with support of Dr P. Grootaert, Head of the Entomology Department.
- Training in Taxonomy and collection management.
- 5 visits to RBINS financed by GTI, one month each.
- Main subject: taxonomy of Cicadidae and Fulgoromorpha.



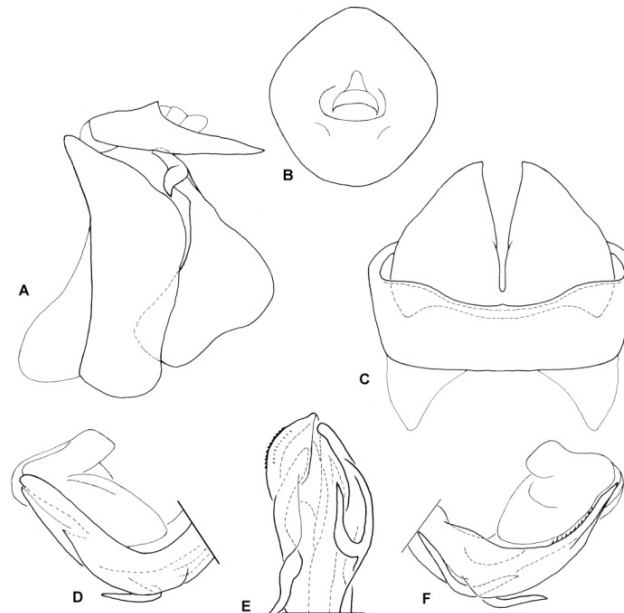
# From local to international impact

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- First papers by H.T. Pham: faunistic lists and keys in Vietnamese, based on available literature.
- Training in genitalia dissection techniques, drawing, building of a paper for international journals – Access to literature.
- First subject: description of 2 new species of Issidae from S Vietnam.



*Hemisphaerius cattienensis* sp. nov.



# New start in 2010

## GTI project in Vietnam (RBINS-IEBR)

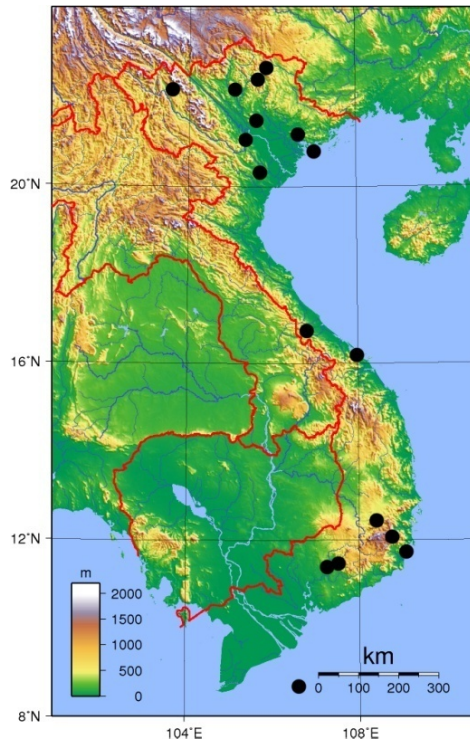
- Inventories of different groups of insects in protected areas.
- Training in field collecting techniques.
- Assessment of the entomology collections.
- Guidance in insect collection management.



# GTI project in Vietnam 2010-2017

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- 23 sampled locations all over Vietnam (+3 in 2018).
- 30 weeks of fieldwork.
- 8 symposiums / workshops in IEBR and VNMN.



# GTI project in Vietnam 2010-2017 – Results

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- 30+ papers in peer-reviewed journals.
- One new genus and 20 new species of planthoppers.
- 10 new species of cicada – identification keys.
- 6 new genera and 18 new species of stick insects.

...many more to come!



*Orthophana maichiae* Constant & Pham, 2016



*Phryganistria heusii yentuensis* Bresseel & Constant, 2014

# Dr Pham Hong Thai...

Step by step...

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- Researcher IEBR, dept of insect systematics.
- PhD in Taiwan.
- VNMN: Head of the Specimen Collections Management Department.
- VNMN: Director - Centre for Insect Diversity and Systematics.





# 2017, Hanoi: Policy Brief

- Partnership with colleagues from Vietnam, Cambodia, France and Italy.
- How to efficiently integrate the insect biodiversity in nature management?



**Vietnam, a champion for insect biodiversity: A win-win commitment**

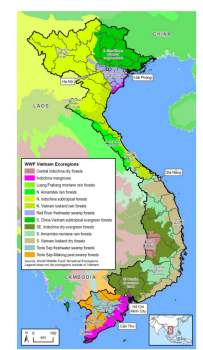
**Vietnamese Biodiversity**

- High level of endemism (species occurring only in Vietnam): 10% of Vietnam's plants; 12 mammals, 7 birds, 48 reptiles, 33 amphibians, 80 freshwater fishes...
- 164 terrestrial protected areas (e.g. 32 national parks and 58 nature reserves), covering 7.5% of the country, virtually addressing all of Vietnam's major ecosystems.
- Vietnam contains 14 terrestrial ecoregions and 110 key biodiversity areas. It is the 16th most biodiverse country and is part of the Indo-Burma hotspot designated by Conservation International.

**What about insect diversity and its importance?**

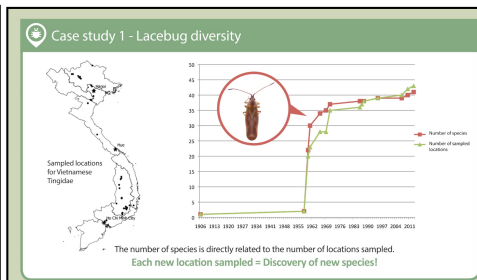
- An estimated 80% of species on earth are insects.
- About 20,000 species recorded from Vietnam represent only 10% of estimated diversity (200,000 species expected!).

INSECTS = half of known species



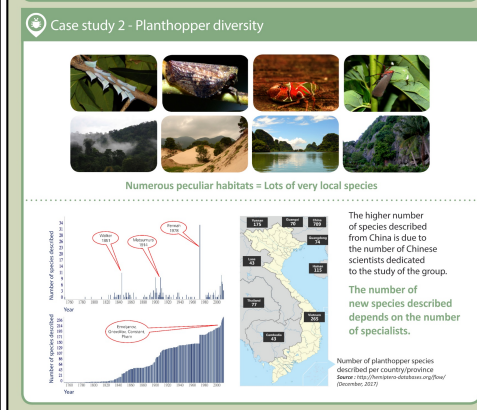
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**Case study 1 - Lacebug diversity**



The number of species is directly related to the number of locations sampled. Each new location sampled = Discovery of new species!

**Case study 2 - Planthopper diversity**



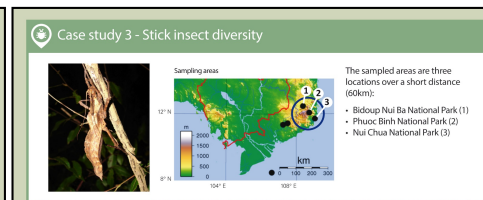
Numerous peculiar habitats = Lots of very local species

The higher number of species described from China is due to the number of Chinese scientists dedicated to the study of the group.

The number of new species described depends on the number of specialists.

Number of planthopper species described per country/province (Source: <http://china-entomology.com/eng/> (December 2017))

**Case study 3 - Stick insect diversity**



The sampled areas are three locations over a short distance (60km):

- Bidoup Nui Ba National Park (1)
- Phuoc Binh National Park (2)
- Nui Chua National Park (3)

Example of high rate of endemism in three protected areas of southern Central Vietnam.

Each location contains its own unique species

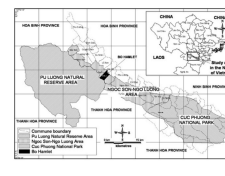
Endemism in three protected areas of southern Central Vietnam. Three species of Leaf Insects ("Ba Lo" - Vietnam Red Book)

Urgent need for more protected areas

Ngoc Son - Ngo Luong Nature Reserve Recently created (2006)

- Connection between Phu Luong Nature Reserve and Cuc Phuong National Park (corridor)
- Phu Luong no data
- Cuc Phuong: 33 species
- Ngoc Son - Ngo Luong: 42 species

Corridors connecting protected areas are recommended



The biodiversity is already very rich but still very poorly known. It is fragile and threatened by deforestation, slash and burn agriculture, mining, poaching and pollution.

**Efficient protection of biodiversity requires the commitment of scientists and conservationists.**

**SCIENCE**

- Improve collecting and taxonomic capacities
- Explore and inventory unique habitats
- Describe the new species!
- International collaboration
- Complete hotspot status with insect diversity

**MANAGEMENT TOOLS**

- Taxonomic lists, online access, digitalization for Vietnam and for each park

**CONSERVATION**

- Communication
- Education
- Public awareness
- Develop the Convention on Biodiversity (CBD) Clearing House Mechanism (CHM) - Internet platform to share data!
- Ecotourism

- Vietnam = Hotspot also for insects!
- Each new location sampled = discovery of new species!
- More taxonomic experts = more new species!
- More efforts = more species
- Important to create more protected areas
- Important to connect protected areas with corridors

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This project runs with financial support from the **Belgian Directorate-General for Development Cooperation (DGCD)**, part of the Global Taxonomy Initiative of the CEBioS programme.

MNH participants were funded by the **USA FVET** (International Associate Laboratory France-Vietnam "Tropical Ecology Laboratory")

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- <http://cebios.naturalsciences.be>
- Layout: Irénée Vanacker & Anika Berthet, CEBioS, 2017

With the support of THE BELGIAN DEVELOPMENT COOPERATION. **be CEBioS** 

# The Future GTI project

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- Go on sampling poorly documented zones (Vietnam = Biodiversity Hotspot).
- Description of the Vietnamese entomofauna.
- Spreading of the Policy Brief's recommendations.



# The Future

## Centre for Insect Diversity and Systematics

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- National reference collection.
- Research centre on insect taxonomy and other aspects of entomology (faunistics, biology, phenology).
- Building a digital collection of the types of Vietnamese species preserved abroad.



Cam on! Thank you!  
Dank U! Merci!

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