



# Taxonomic revision of the Cicadas (Hemiptera: Cicadidae) from Vietnam

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# Introduction

Forest covered 37,8%.

The mountains often separated by low passes so that the landscape is very diverse.

The highest mountain - Fansipan - with the top of 3124 m.

- National Parks: 30
- Nature Reserves: 57
- Landscape Protected areas: 39

**Total: 126**





# Natural forest



**Tandao National park (north Vietnam)**



**Truong Son forest (central Vietnam)**



**Nuichua National Park (south Vietnam)**



## The lowland part produced by mangrove forest



## The lowland part produced by water rice field



The biodiversity of Vietnam remains relatively under investigated despite strong evidence for high regional species richness.

The fauna of Vietnam, one of the hotspots of biodiversity, is also expected to be rich in cicadas.

Faunal studies on cicadas in this region would also contribute to our understanding of general mechanisms that have generated high biodiversity in the region.

The insect fauna of cicada have some previous studies from Oriental region such as: Distant, (1878-1920), Jacobi (1902-1944), Duffels (1965-2007), Boulard (2000-2005), Hayashi (1974-2002), Lee, Y. J. & M. Hayashi. (2003-2004), Kato (1925-1961), Chou et al. (1997) etc.

However, cicadas in the central and southern parts of Vietnam have still been poorly studied taxonomically, preventing us from assessing cicada diversity in the region.

The building of identification capacities and of properly curated reference collections would be of both national and regional importance.



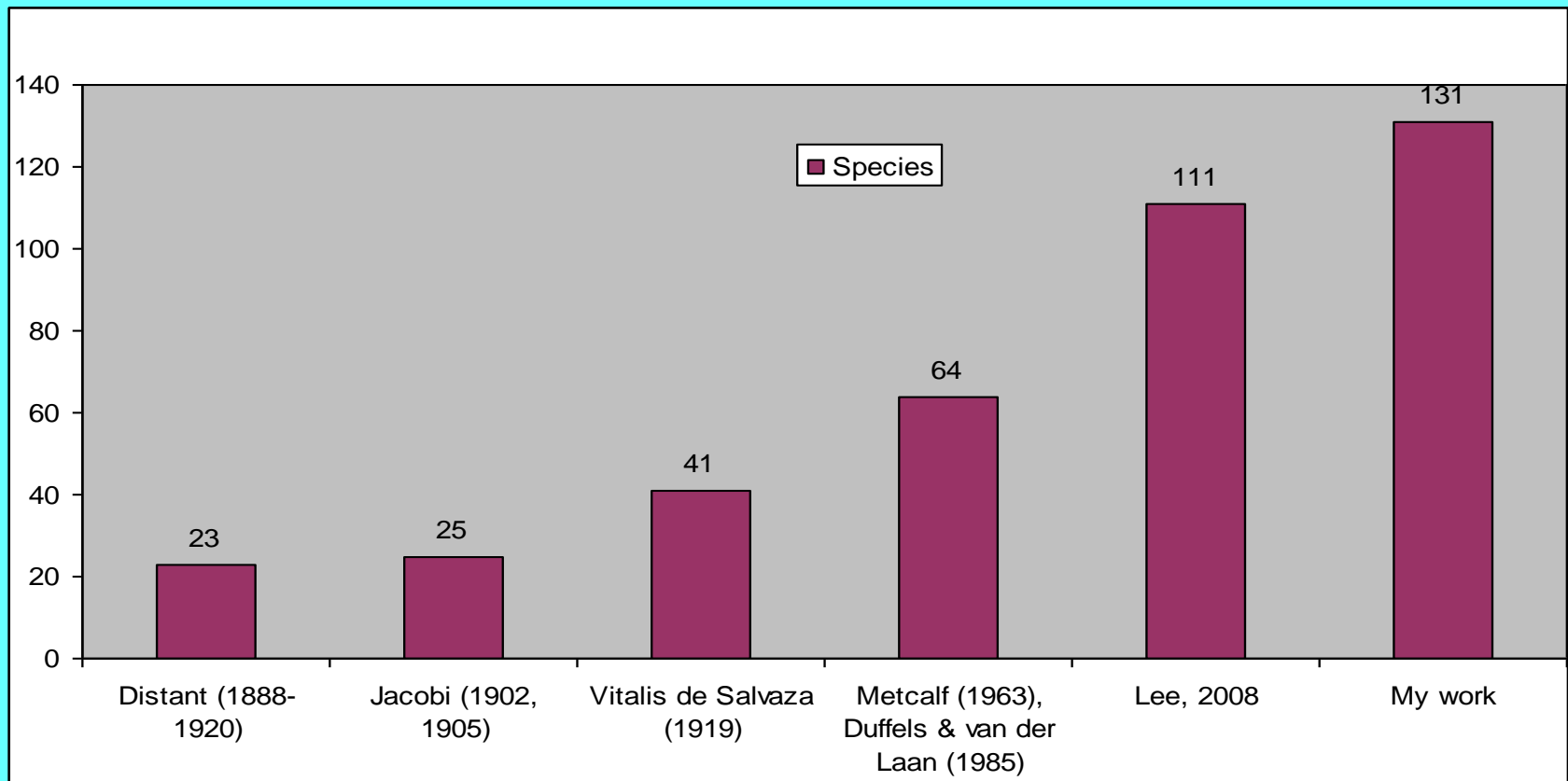
## Several publication concerning about Vietnamese cicadas

- **Distant, 1888:** described the new first cicada species from Cochin (south Vietnam), *Gaeana delinenda*
- Distant, 1904 (1sp.n), 1905 (2spp.n), 1912 (1sp.n), 1913 (4spp.n), 1917a (5spp.n), 1917b (8spp.n), 1920 (1sp.n)
- Jacobi, 1902: described five new species from Tonkin (north Vietnam).
- **Jacobi, 1905:** published a paper about Cicadidae fauna of Tonkin (including 25 spp).
- **Vitalis de Salvaza R. (1919)** (reported 41 species belonging to 20 tribes).
- Beuk, P.L.Th. (1996, 1998, 1999) recorded 11 species in Vietnam which have supplemented 4 new species for cicada fauna in Vietnam.
- Metcalf (1963) and Duffels, J.P & P.A. van der Laan (1985): **64 Cicadidae have been recorded in Vietnam.**
- Pham Hong Thai, Ta Huy Thinh (2005) built classification key for species of some genera such as: *Pomponia*, *Dundubia*, and *Platylomia*, and tribe Huechysini of cicada from Vietnam.
- **Recently, Lee, 2008:** published a paper about A checklist of Cicadidae (Insecta: Hemiptera) from Vietnam.

***However, an adequate Cicadidae classification project has been missing so far.***



Distant (1888-1920)	Jacobi (1902, 1905)	Vitalis de Salvaza R (1919)	Metcalf (1963), Duffels & van der Laan (1985)	Lee, 2008	My work
the new first cicada species <i>Gaeana delinenda</i>	2 new species <i>Mogannia electa</i> , <i>Cosmopsaltria tonkiniana</i>				20 new record and one new species
<b>23</b>	<b>25</b>	<b>41</b>	<b>64</b>	<b>111</b>	<b>Record 21</b>



# Materials

## *Collection specimens*

This study is based mainly on the specimens collected from 1999 to 2009. The subjects are also used specimens collected before. It is now being deposited in the IEBR.



Collecting by light trap



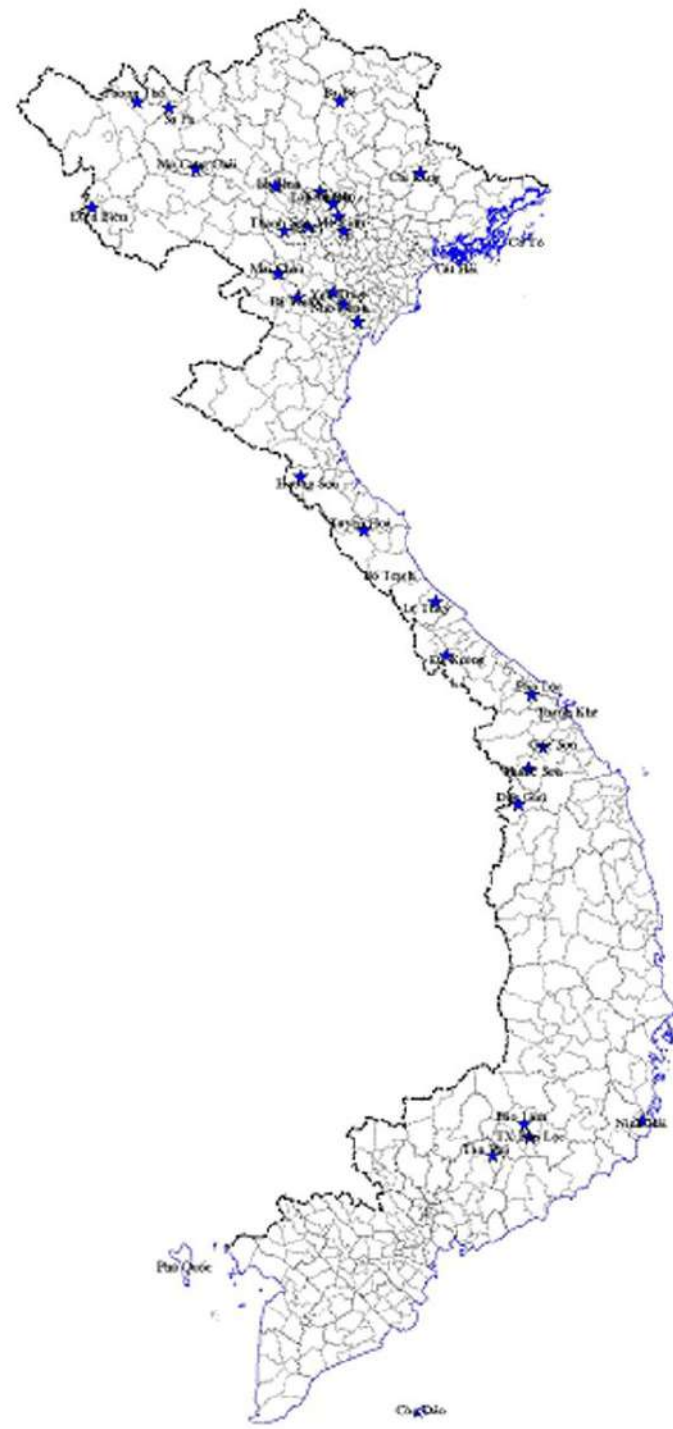
Collecting by net



# Samples collecting localities

The cicada specimens were used in this project, which collected by my colleagues and myself, and showed in map:

- total 28 localities (18 in north, 6 in central, and 4 in south)



## Collection of specimens



Collection in the Royal Belgian Institute of Natural Sciences, Brussels

## Collection in the Zoological Museum Amsterdam

- A part of the specimens examined are from the collections in:
- Museum National d'Histoire Naturelle in Paris,
  - Natural History Museum, London





Collection in the Institute of Ecology and Biological Resources, Vietnam



Cicadas boxes in IEBR, Vietnam



# Objectives of the proposed research are

- to contribute to the faunal inventory of Vietnam concerning the cicadas (based on new sampling and incorporating existing collections: e.g., MNHP, ZMA, BMNH, and IRSNB).
- to propose a genus to revise (e.g. *Mogannia*) and state that the types will probably not be sent to Vietnam by Institutions. **Types could be sent to Brussels and studied here during my visit.**
- to produce identification keys to the Cicadidae genera and species in Vietnam.

The project is aimed to build specific taxonomic capacities on the cicadas and general capacities on the curation of insect collections.

This will benefit from the coherent addition of the taxonomic and curatorial courses provided by the GTI and of the specific formation on cicadas received by working together with Mr. Jérôme Constant

## **The project will particularly focus on the following aspects**

- to complete the library of references that are necessary for taxonomic study of Vietnam cicadas.
- identification of material from Vietnam using bibliography and collection specimens
- recognition of taxonomically interesting characters
- description of new species
- to master the methods of analysis of phylogenetic relationships.



## Expected outputs

- Discovery new taxa;
- New records for Vietnam;
- Update the cicadas systematic in Vietnam also;
- Distribution maps for cicada species in Vietnam;
- Provide baseline data and recommendations for conservation of cicada's fauna in Vietnam.
- To contribute to the faunal inventory of Vietnam concerning the cicadas.

*Hea yunnanensis* Chou et Yao, 1995



*Huechys beata*  
Distant, 1892



*Huechys sanguinea* (De Geer, 1773)



*Scieroptera formasana*  
Schmidt, 1918



*Scieroptera splendidula*  
(Fabricius, 1775)





*Ambragaena ambra* Chou et Yao, 1985\*



*Sulphogaena dolicha* Lei, 1997\*



*Gaeana cheni* Chou et Yao, 1985\*



*Gaeana hainanensis* Chou et Yao, 1985\*



*Gaeana annamensis* Distant, 1913

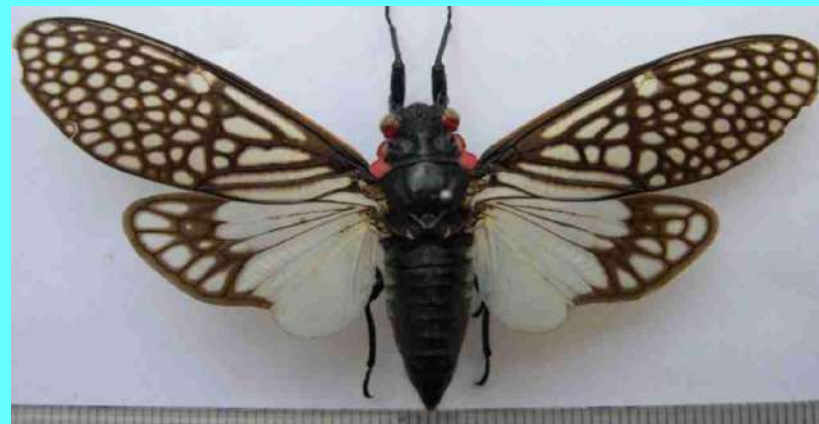


*Gaeana maculata* (Drury, 1773)





*Paratalainga yunnanensis* Chou et Lei, 1992\*



*Talainga binghami* Distant, 1890



*Proretinata vemacula* Chou et Yao, 1986\*



*Platypleura kaempferi* (Fabricius, 1794)\*



*Platypleura hilpa* Walker, 1850



*Tosena melanoptera* (White, 1846)



*Tosena splendida* Distant, 1878\*



*Megapomponia intermedia* (Distant, 1905)



*Pomponia linearis* (Walker, 1850)



*Pomponia piceata* Distant, 1905



*Pomponia backanensis* sp.nov.



*Dundubia hainanensis*  
(Distant, 1901)



*Dundubia spiculata*  
Noualhier, 1896



*Dundubia vaginata*  
(Fabricius, 1787)



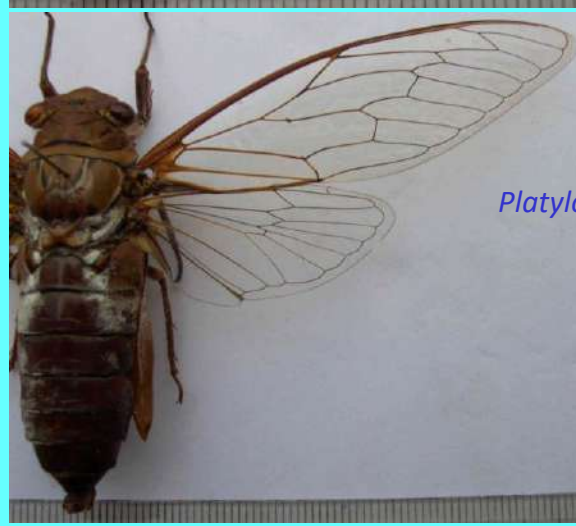
*Dundubia terpsichore* (Walker,  
1850)



*Platylomia bocki*  
(Distant, 1882)



*Platylomia radha* (Distant,  
1881)





*Cryptotympana holsti* Distant, 1904



*Cryptotympana recta* (Walker, 1850)\*



*Cryptotympana mandarina* Distant, 1891



*Salvazana mirabilis* Distant, 1913









Collecting in TruongSon forest  
(Quang Tri province), 2005



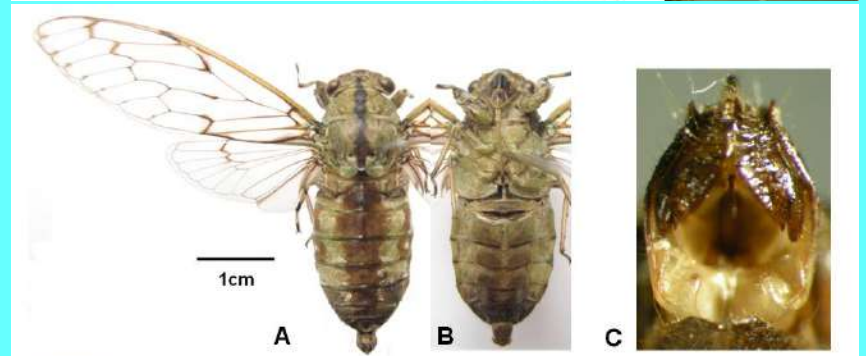
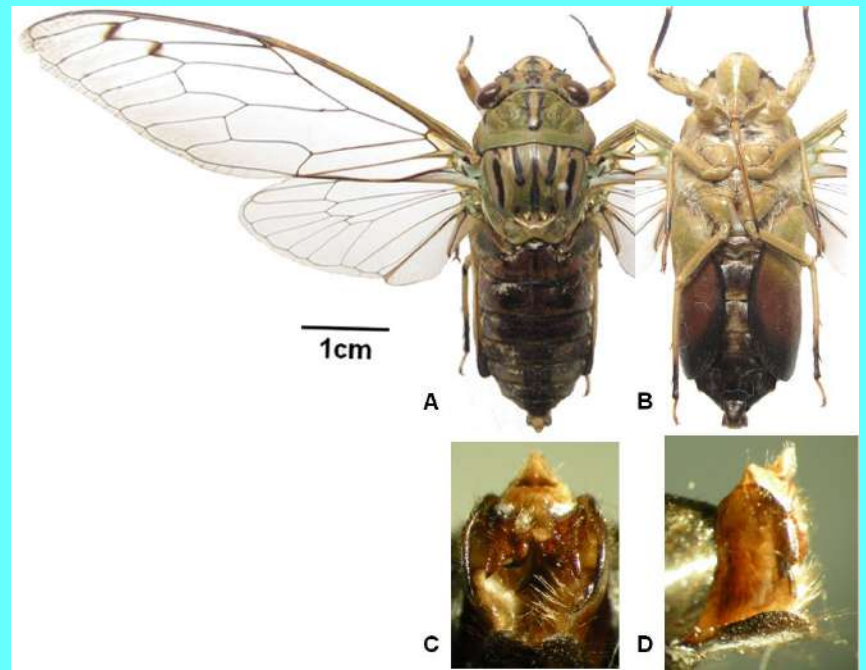
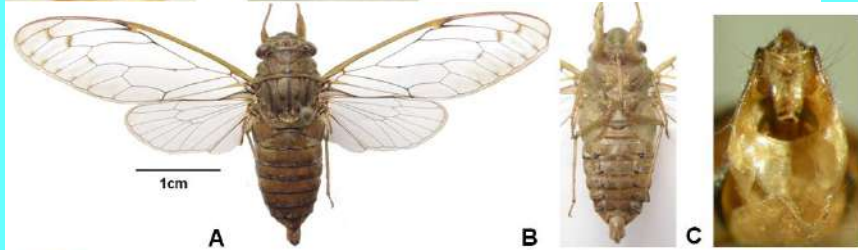
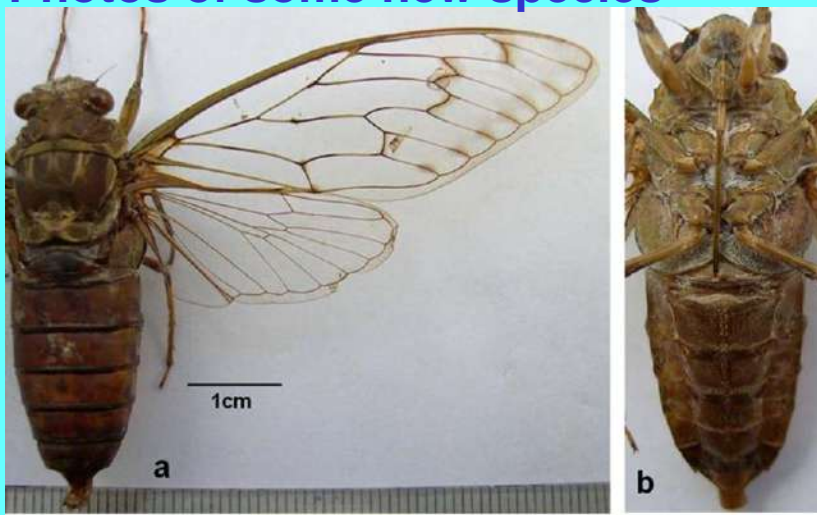
working in lab. Hanoi, Vietnam



working in the Dept. Entomology, RBINS

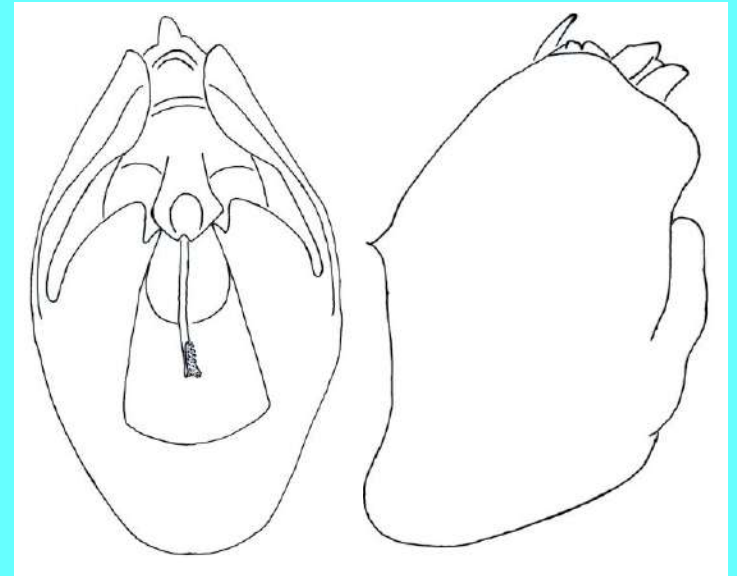
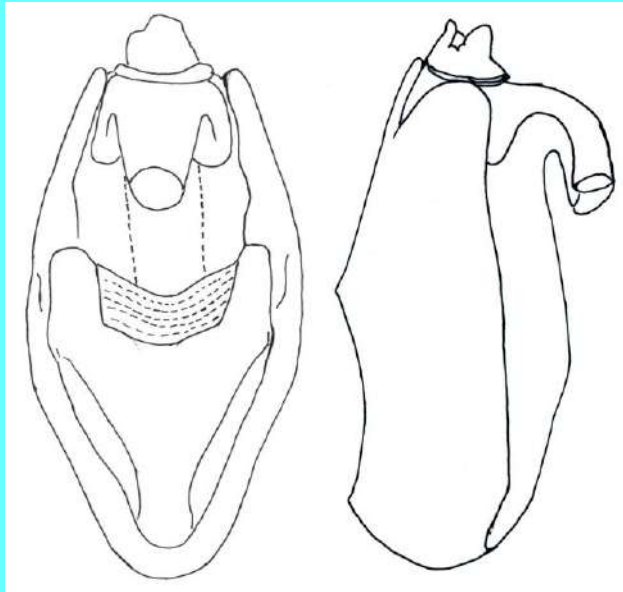
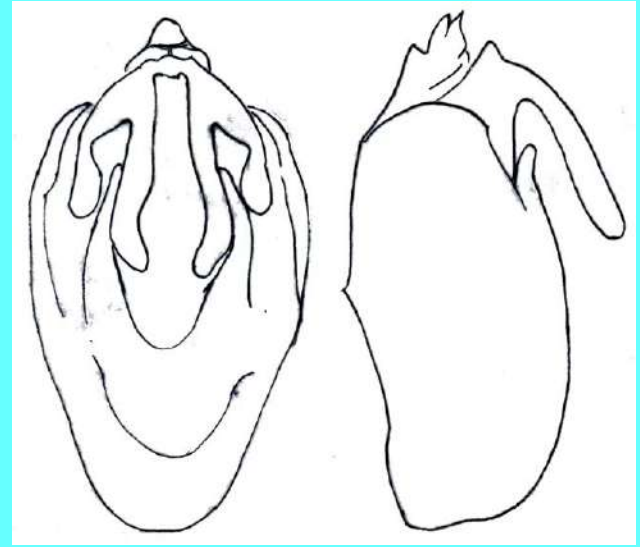
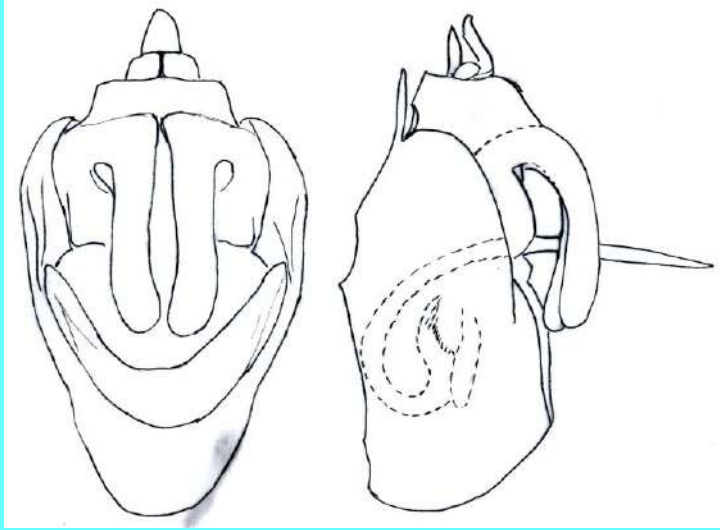


# Photos of some new species





## Figs of some new species



# Results

CONSTANT, J. and PHAM, H. T., 2008. A new species of *Polydictya* (Hemiptera: Fulgoromorpha: Fulgoridae) from Vietnam. *Nouvelle Revue d'Entomologie*. T 35: 27-31.

PHAM, H.T., and CONSTANT, J., 2009. Two new species of *Hemisphaerius* from Vietnam (Hemiptera: Fulgoromorpha: Issidae) (submitted to *Oriental Insect*).

PHAM, H.T., The genus *Inthaxara* Distant, 1913 (Hemiptera: Cicadidae) from Vietnam, with the description of a new species (completed the ms)

## The suggestion

+ to continue support me to carry out the study for PhD dissertation on Cicadidae family from Vietnam in the near future.





## Signature

### MEMORANDUM OF UNDERSTANDING

between

Institute of Ecology and Biological Resources, Hanoi (IEBR), Vietnam  
and

The Department of Entomology,  
Royal Belgian Institute of Natural  
Sciences, Brussels (ISNB)



# Acknowledgments

- Minister for The Belgian Development Cooperation, the Royal Belgian Institute of Natural Sciences, Brussels (RBINS) as Belgian National Focal Point to the Global Taxonomy Initiative (GTI), are supported me to come to Belgium to continue the taxonomic revision of the Cicadidae family from Vietnam.
- Dr. GROOTAERT supported for my research; a workspace, optical equipment, and given me an in depth training in modern methods employed in the taxonomy of insects.
- Mr. Jerome Constant of the Entomology Department of the RBINS has guided and assisted me to build specific taxonomic capacities on the planthoppers and general capacities on the curation of insect collections.



**Thank you for your attention!**

