

蘭嶼的昆蟲

科博生物學組 蔡經甫



蘭嶼森林生物多樣性研究(國科會)

2000 蘭嶼角鴞棲地昆蟲相調查(III)

2001 蘭嶼森林昆蟲相與空間分佈



蔡經甫 攝



2002 蘭嶼森林昆蟲相與空間分布：雅美(達悟)人森林利用之影響

蔡經甫 攝

2003 不同土地利用對蘭嶼昆蟲多樣性之影響

2004 蘭嶼溪流與水芋田之昆蟲多樣性



蔡經甫 攝



Collection and Research

(Formerly Bulletin of the National Museum of Natural Science)

No. 15
December 2002



Lanyu

National Museum of Natural Science
Taichung, Taiwan, R. O. C.

初步構想

- 蘭花授粉昆蟲的物種調查、監測、生活史。若能收集到授粉原生蘭花的昆蟲資料，將有助蘭花有自我繁殖的機會。
- 借助動物園昆蟲館的飼育經驗，發展蘭嶼特有物種及保育類物種的飼育計畫。
- 發展樁象生物地理與親緣地理研究，藉此了解蘭嶼與鄰近島嶼的關係。
- 小蘭嶼是昆蟲遷入拓殖調查的理想試驗場。



Cypripedium subtropicum (Orchidaceae) employs aphid colony mimicry to attract hoverfly (Syrphidae) pollinators

Correction(s) for this article

Hong Jiang, Ji-Jun Kong, Hsin-Chun Chen, Zhen-Yong Xiang, Wei-Ping Zhang, Zhou-Dong Han, Pei-Chun Liao, Yung-I Lee

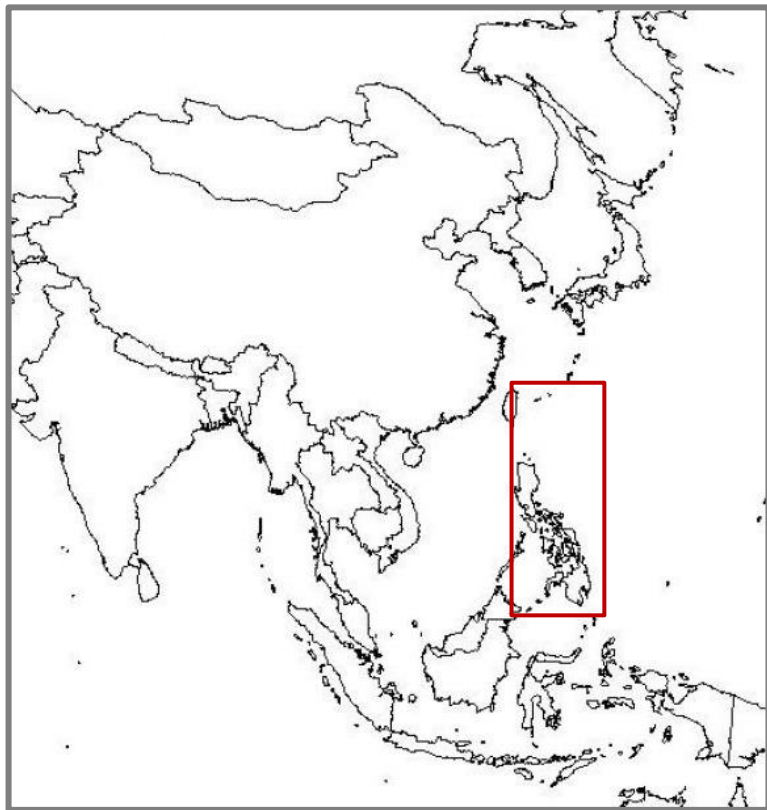
First published: 26 April 2020 | <https://doi.org/10.1111/nph.16623> | Citations: 5

- 暖地杓蘭的授粉者: 食蚜蠅
- 報酬式的擬態策略
- <https://nph.onlinelibrary.wiley.com/doi/full/10.1111/nph.16623>
- 館訊
<http://web2.nmns.edu.tw/PubLib/NewsLetter/109/394/a-1.pdf>

李勇毅博士的研究



Easter Egg Weevils: *Pachyryhunchus* spp. 球背象鼻蟲

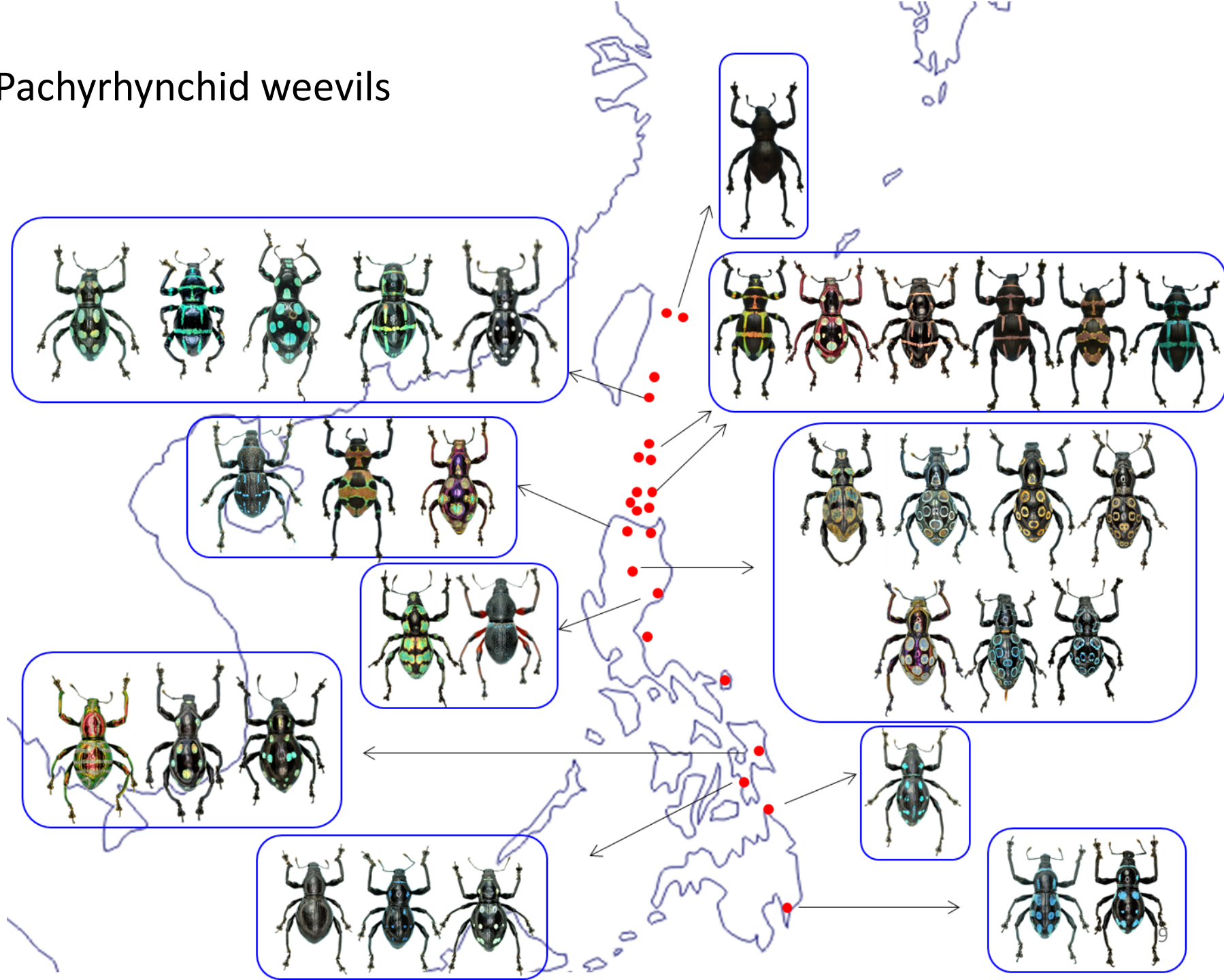


Schultze. 1923. The Philippine
Journal of Science 23:609-673.

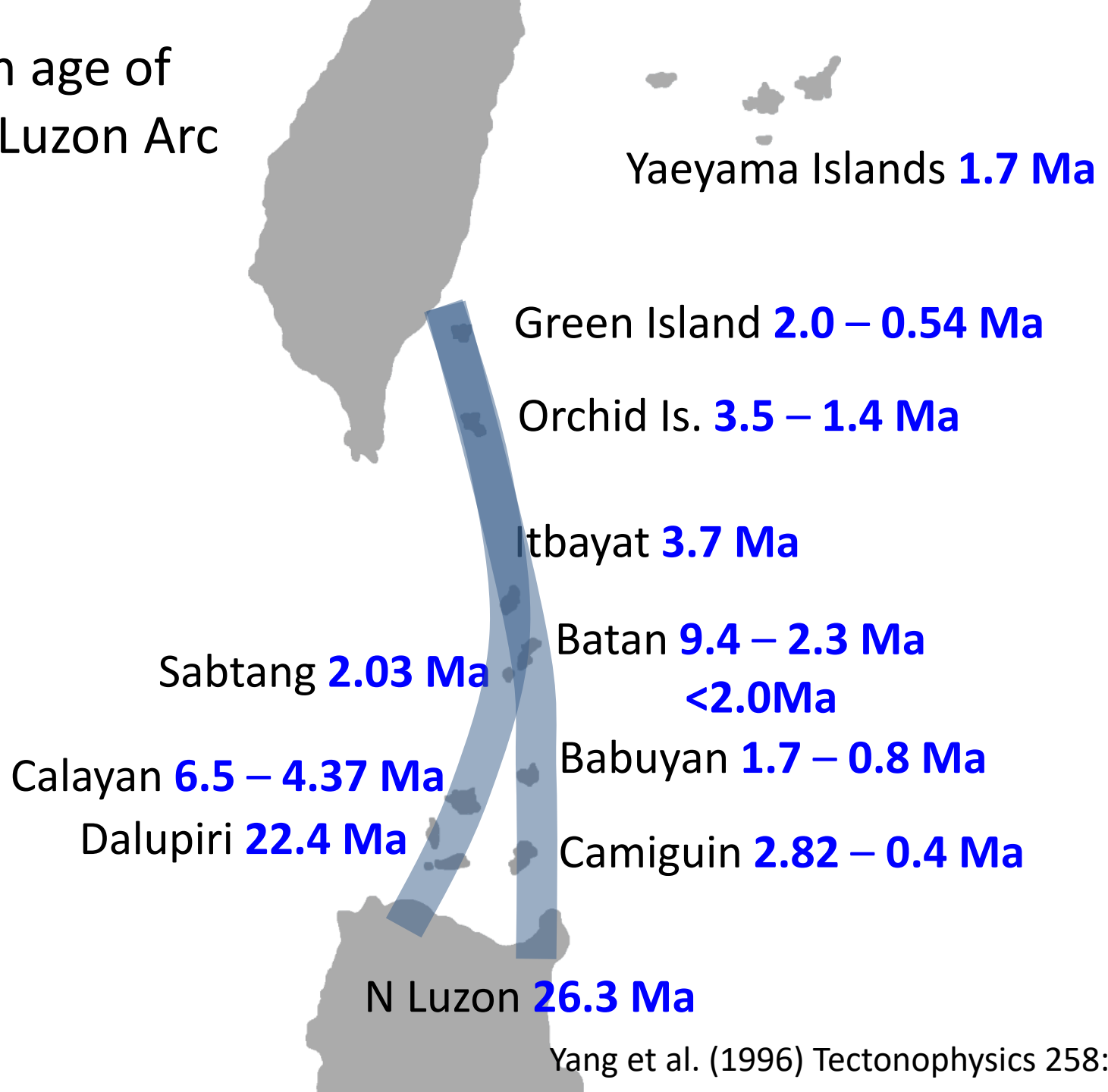
台大昆蟲 曾惠芸博士提供



Pachyrhynchid weevils

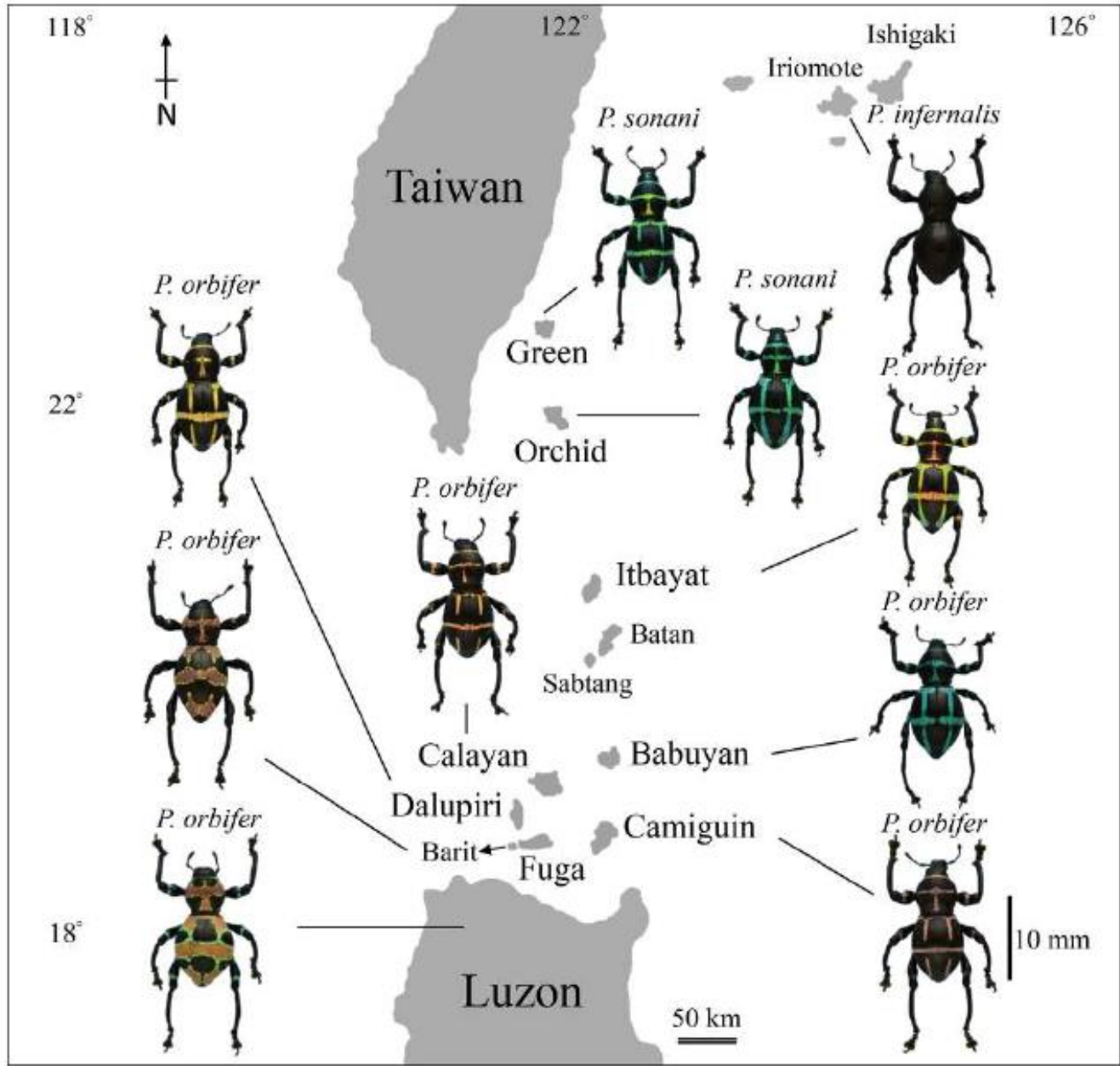


Eruption age of Taiwan-Luzon Arc

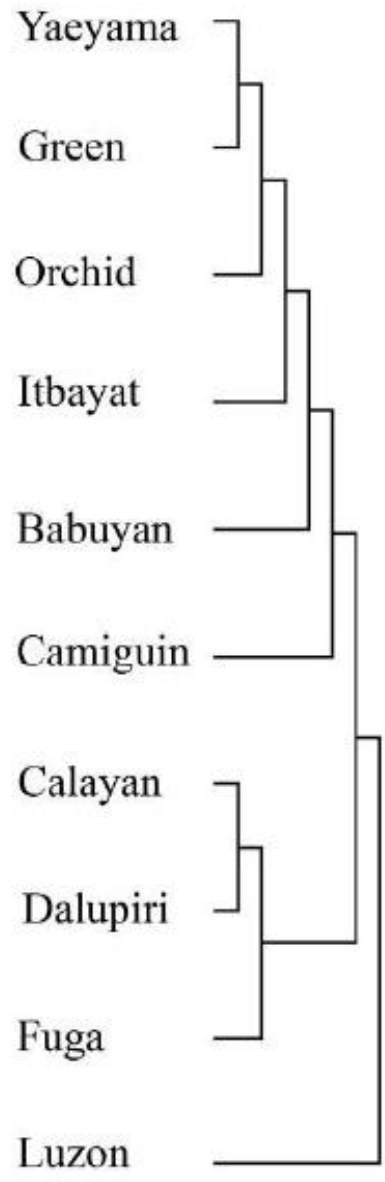


Yang et al. (1996) Tectonophysics 258: 85-101.

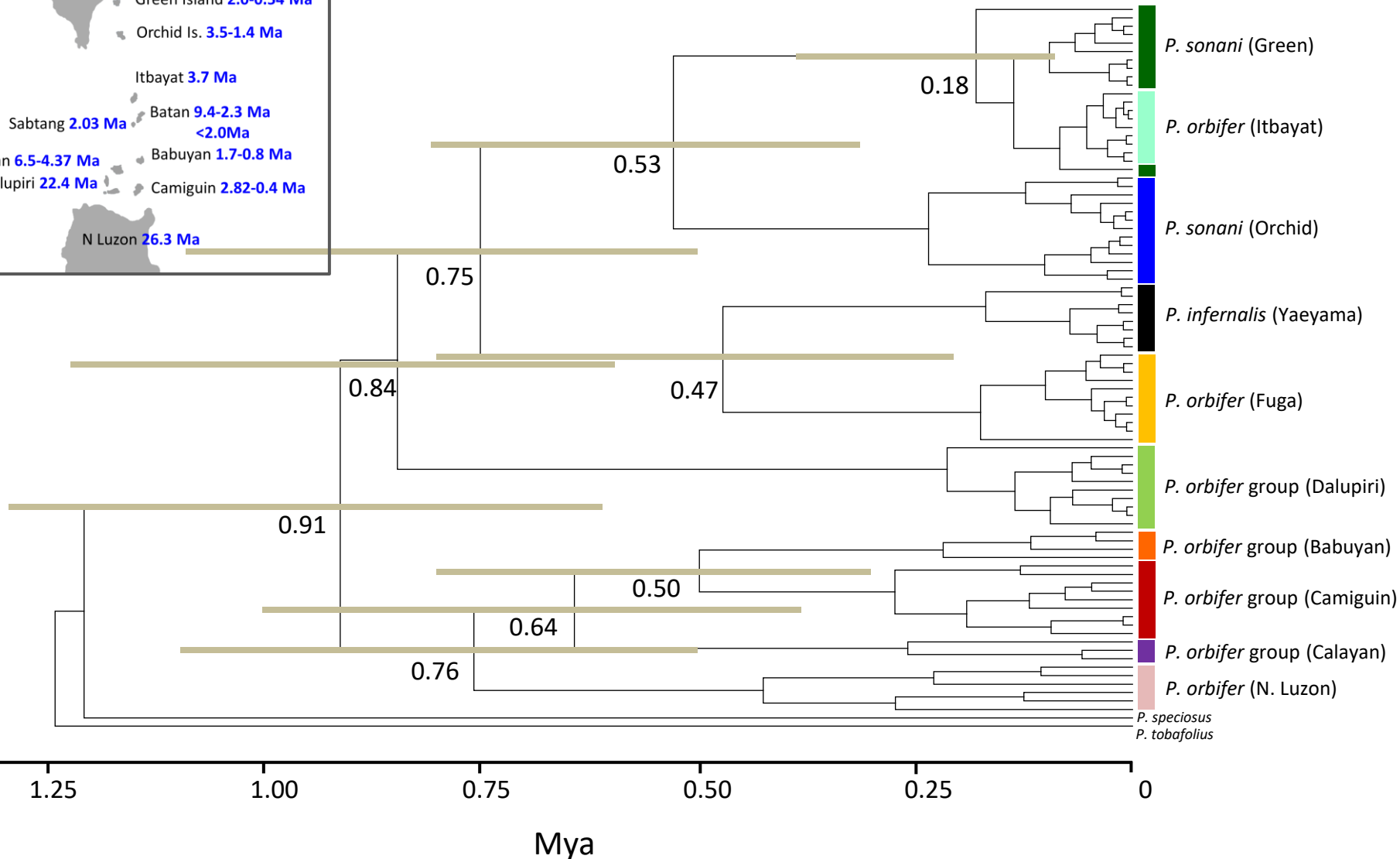
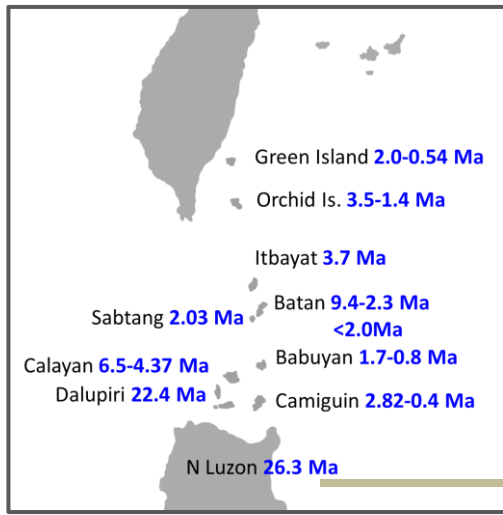
(a)



(b)



Divergence time estimation

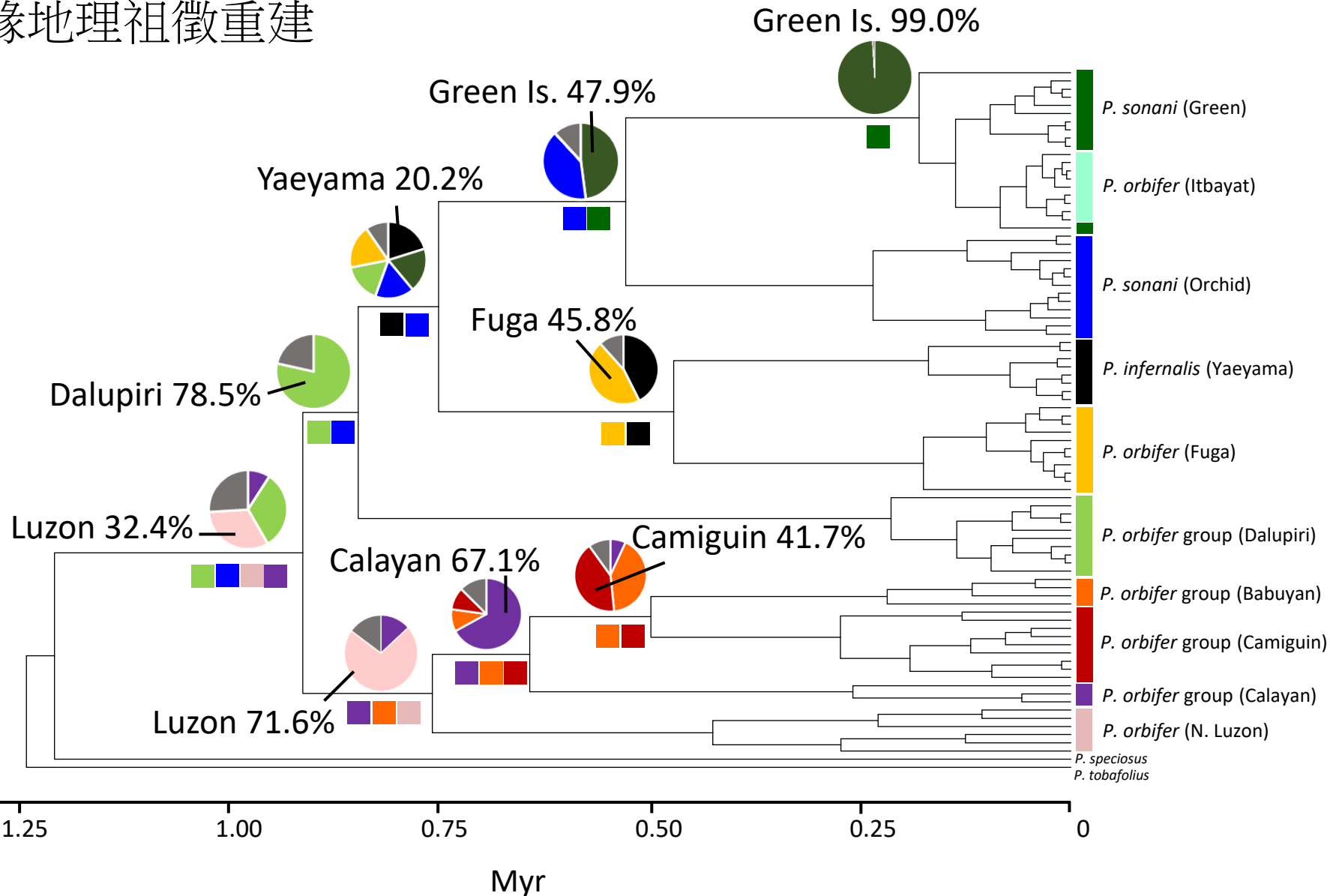


Tseng et al. 2017:

<https://onlinelibrary.wiley.com/doi/abs/10.1111/jbi.13110>

Ancestral area reconstruction

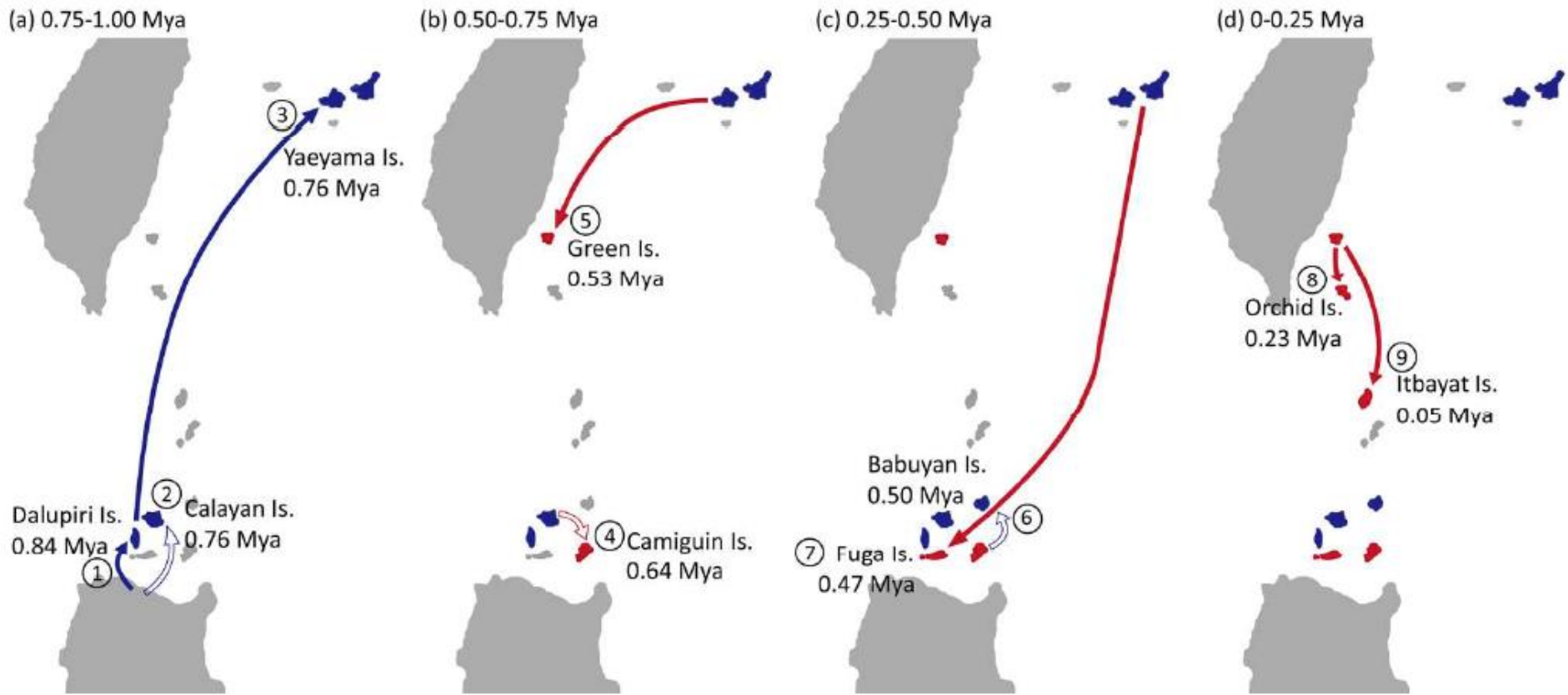
親緣地理祖徵重建



Tseng et al. 2017:

<https://onlinelibrary.wiley.com/doi/abs/10.1111/jbi.13110>

Colonization history



1. Both northward and southward colonizations were detected
2. Stepping-stone model was rejected
3. Divergence times were not correlated with the ages of islands.

蘭嶼的球背象鼻蟲 (組圖取自Dash Huang, 黃福盛)



A



B



C



D



E



F

A. 白點球背象鼻蟲 *Pachyrhynchus chlorites*

B. 小圓斑球背象鼻蟲 *Pachyrhynchus tobafolius*

C. 大圓斑球背象鼻蟲 *Pachyrhynchus sarcitis kotoensis*

D. 條紋球背象鼻蟲 *Pachyrhynchus sonani*

E. 斷紋球背象鼻蟲 *Pachyrhynchus nobilis yamianus*

F. 偽硬象天牛 *Doliops similis*

條紋硬象鼻蟲的寄主發現(Hsu et al 2017)

<https://onlinelibrary.wiley.com/doi/abs/10.1111/ens.12262>



Photo by C-F Hsu

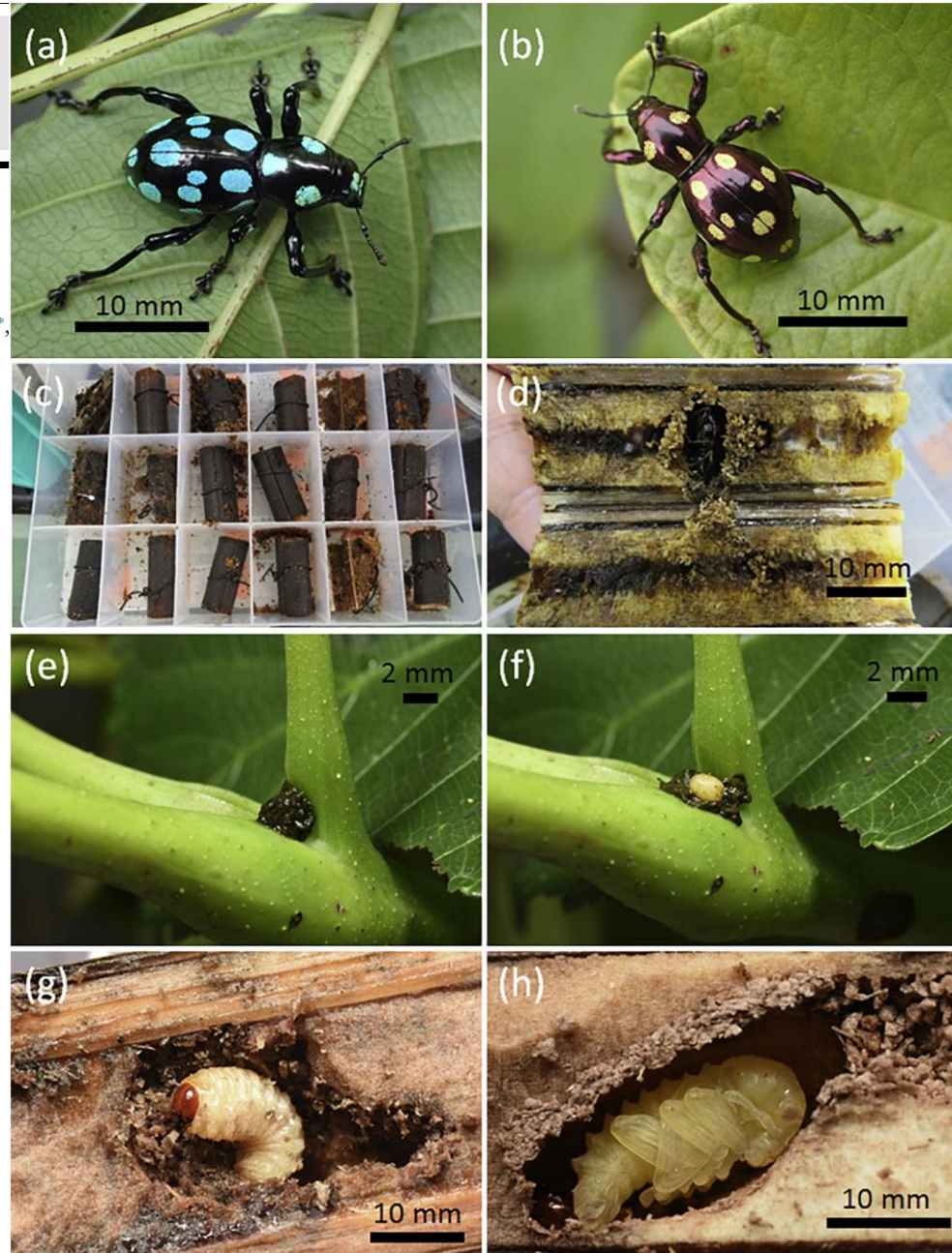


Full length article




Captive breeding of two insular populations of *Pachyrhynchus sarcitis* (Coleoptera: Curculionidae) from Lanyu and Babuyan Islands

Lung-Chun Huang^a, Wen-San Huang^b, Chung-Ping Lin^c, Olga M. Nuñez^d, Hui-Yun Tseng^{b,*}, Hsin-Chieh Tang^{a,*}

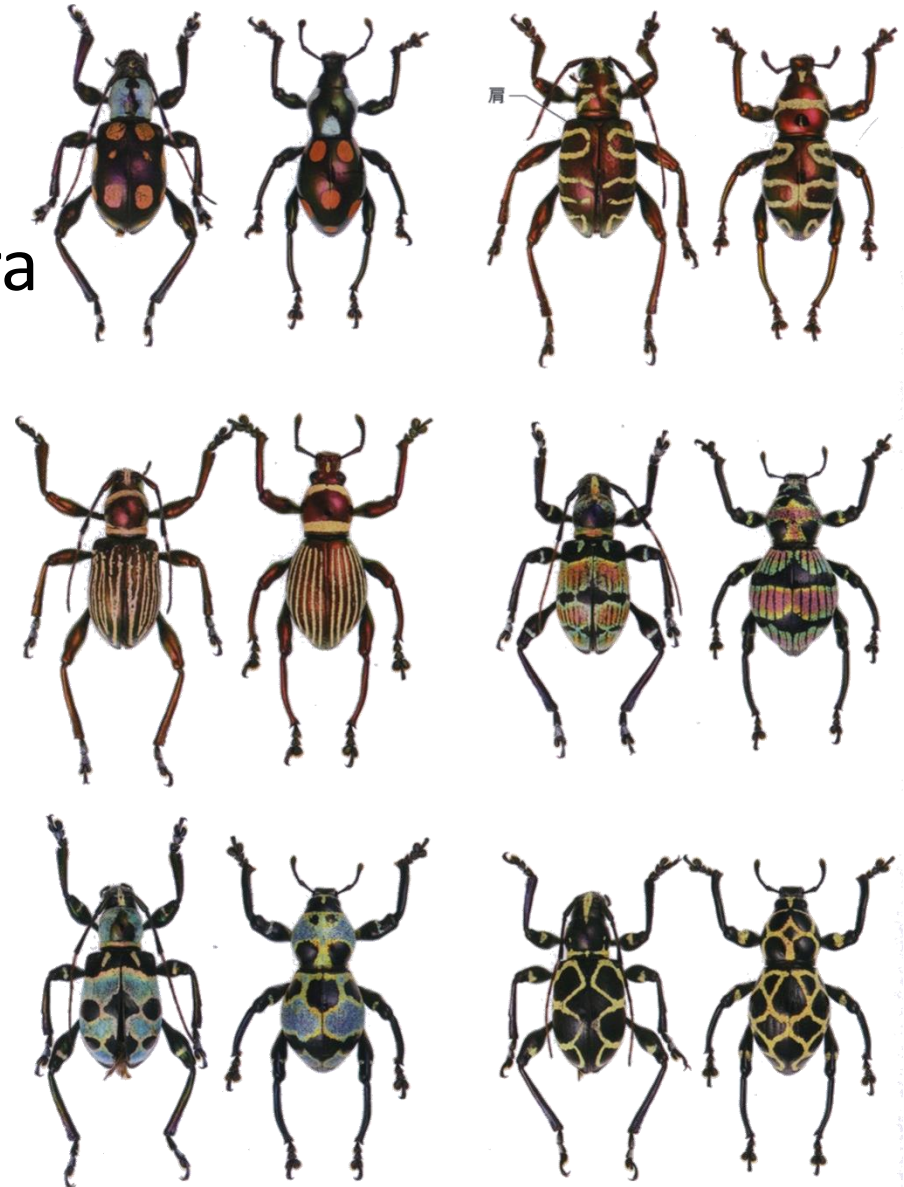
- 球背象鼻蟲的人工飼育
- http://140.122.64.121/en/files/writing_journal/114/1453_36d7e0ef.pdf



Mimicry

-  Hardness with fused elytra
-  Resemblance in color and markings
-  Aposematics

(Wallace 1889, Schultze 1923, Welch et al. 2007)



Orchid Island

擬硬象天牛



Camiguin Island

(Starr and Wang 1992)



模仿球背象鼻蟲的蟋蟀 (呂宋)



Photo by T-R C

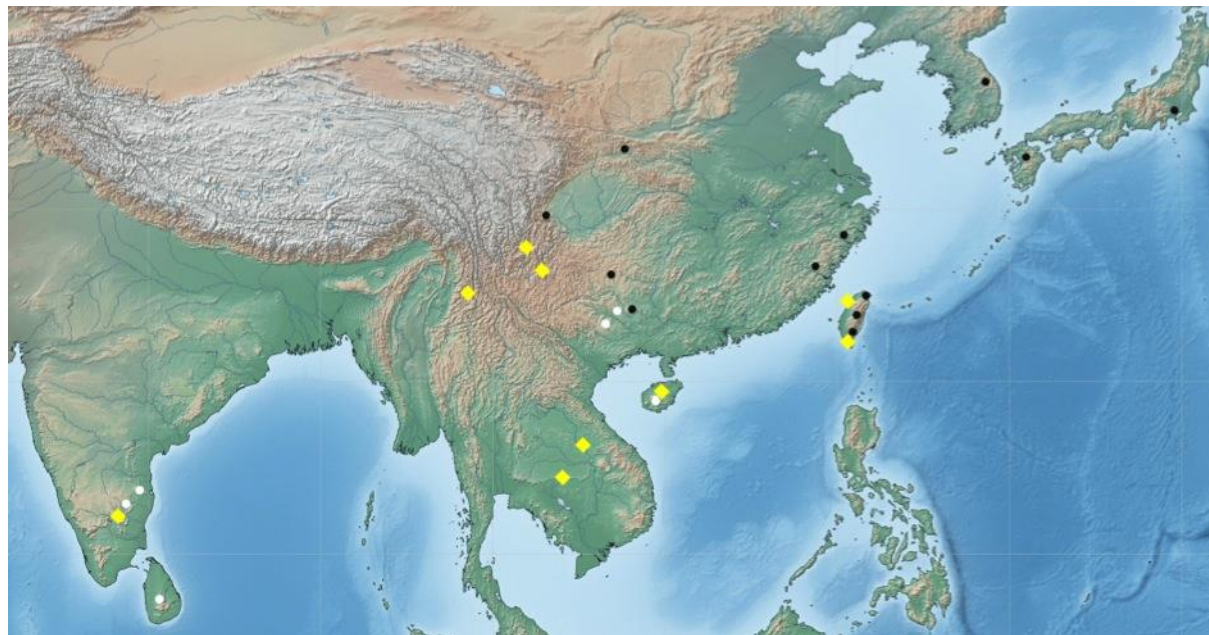
蘭嶼的特有椿象



台灣腫腮長蝽 (Tsai & Redei 2017)



Aroactus nanus ◆
Arocatus pseudosericans ●



Arocatus elegantulus 新種 ▼

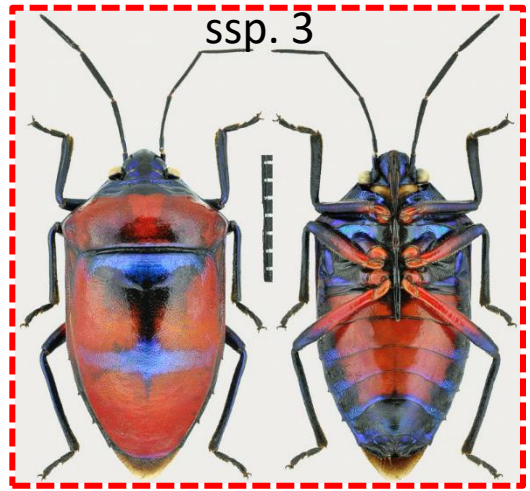
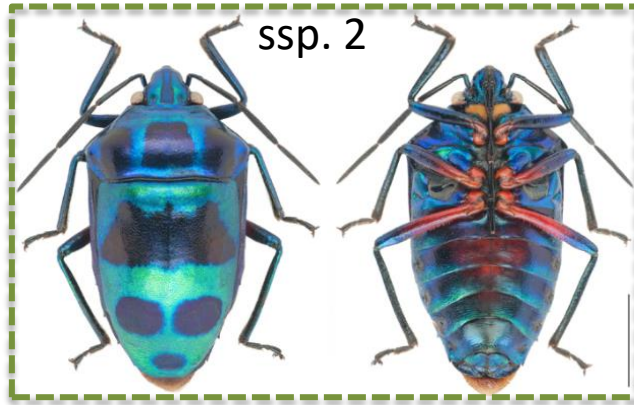
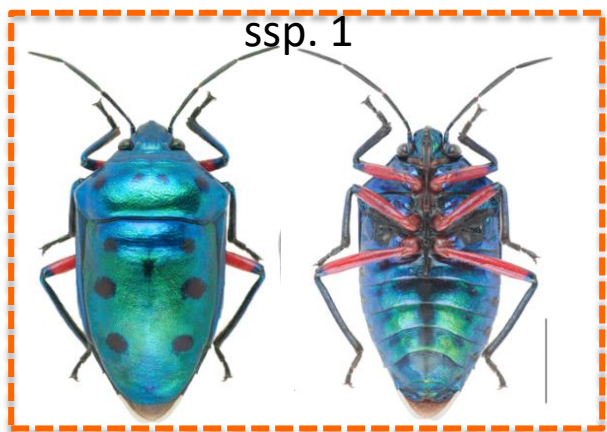
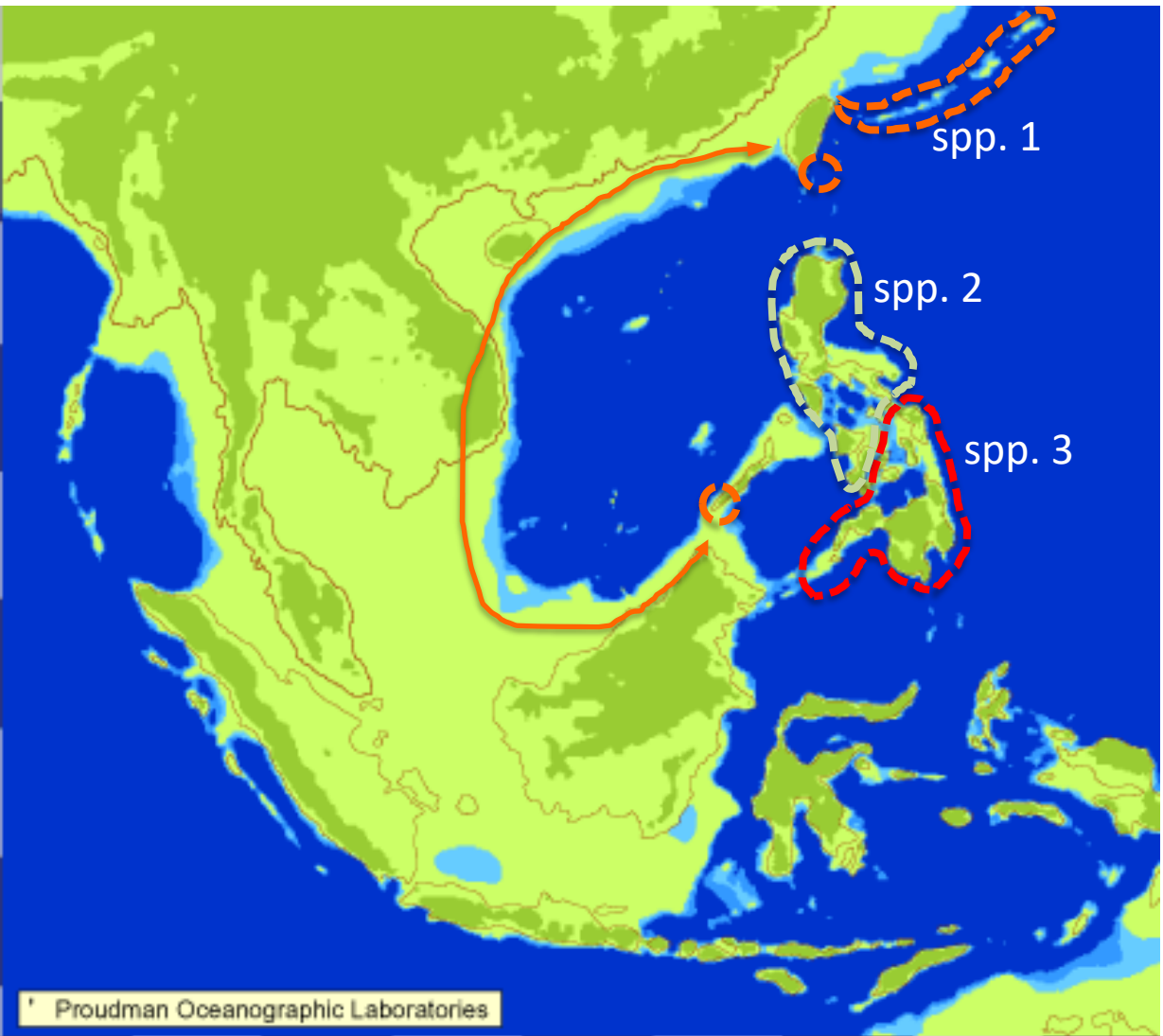


麗腫腮長蝽的分布

- 麗腫腮長蝽是研究跨洋性播遷議題的好題材
- 需調查植物的分布模式

七星美盾蝽種群 *Calliphara excellens* group

琉球 - 蘭嶼 - 菲律賓分布模式



珠光鳳蝶 *Troides magellanus sonani*

蘭嶼特有亞種

保育等級: 瀕臨絕種, IUCN: 近危



蔡經甫 攝

蘭嶼大葉螽蟴 *Phyllophorina kotoshoensis*

台灣特有種
第三級保育類: 應予保育



蔡經甫 攝

蘭嶼特有的甲蟲



其他特殊物種：蘭嶼螢斑蛾 *Chalcosia thaivana owadai*



蘭嶼筒胸竹節蟲 *Phasmotaenia lanyuhensis*



雅美蛛 *Phlogiellus watasei*

台灣唯一特有的捕鳥蛛科物種



蔡經甫 攝

非昆蟲的節肢動物：馬陸



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