

# Tropical ostracod diversity and paleobiogeography in the Indo-Pacific



SHIN Caren<sup>1</sup>, IWATANI Hokuto<sup>1,2</sup>, KASE Tomoki<sup>3</sup>, YASUHARA Moriaki<sup>1,2,4</sup>

<sup>1</sup>School of Biological Sciences, The University of Hong Kong, Hong Kong,

<sup>2</sup>Swire Institute of Marine Sciences, The University of Hong Kong, Hong Kong,

<sup>3</sup>Department of Geology and Paleontology, National Museum of Nature and Science, Tokyo,

<sup>4</sup>Department of Earth Sciences, The University of Hong Kong, Hong Kong

# Species are unevenly distributed spatially.

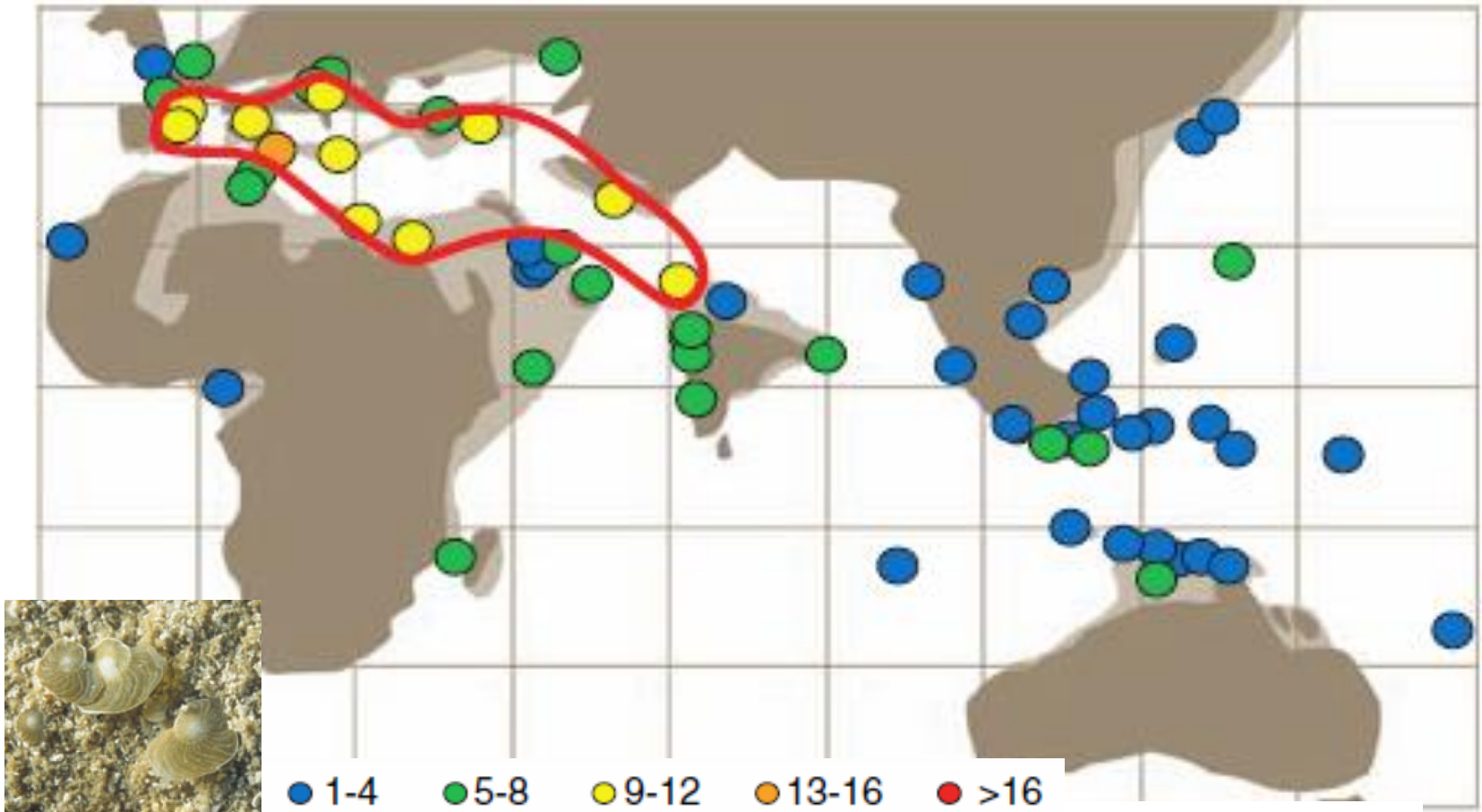
(e.g. Tittensor et al. 2010)



**“This place has a reputation as a biodiversity hot spot.”**

# Foraminifera genera diversity 'moves'

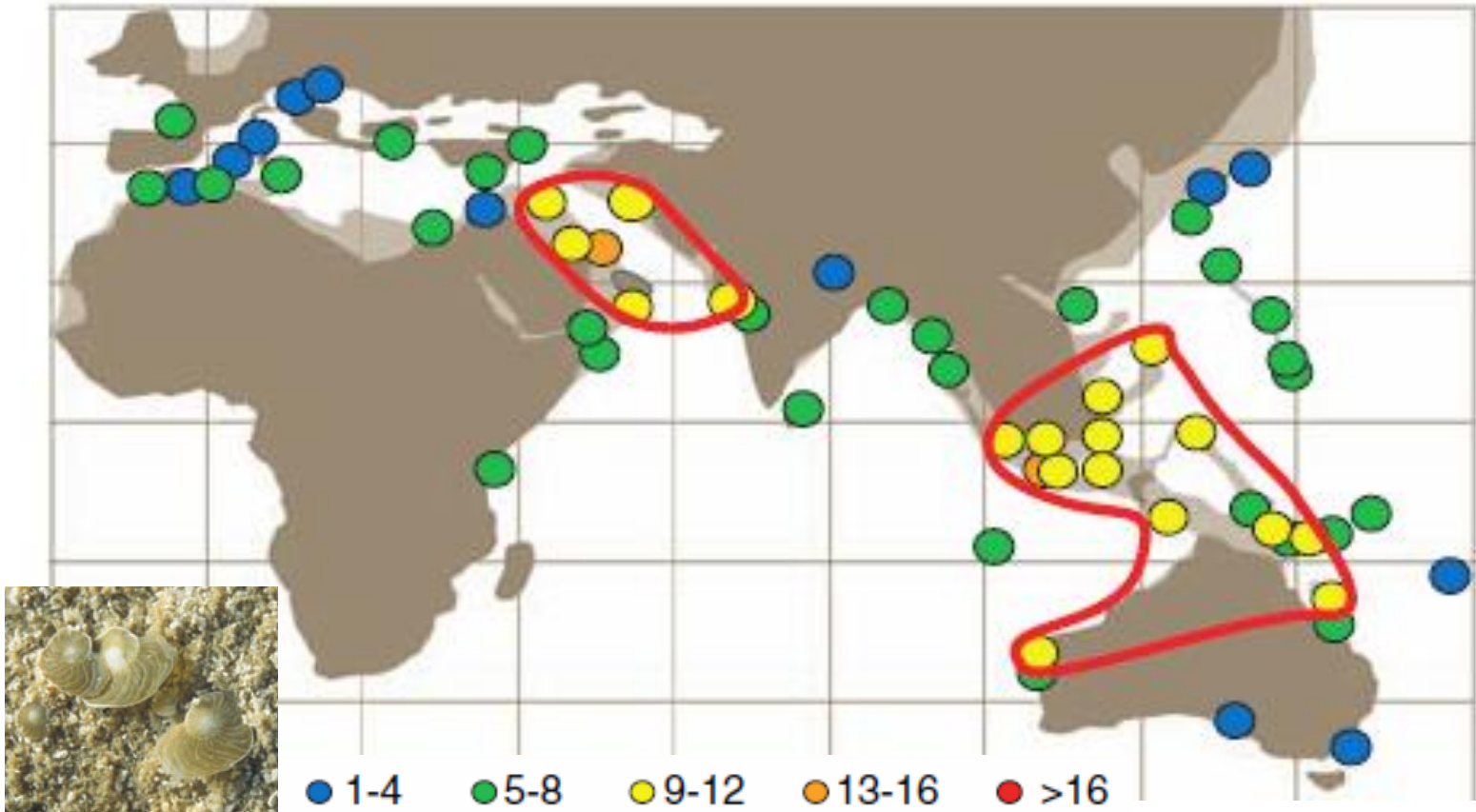
(Renema 2008)



**Late Middle Eocene (42-39Ma)**

# Foraminifera genera diversity 'moves'

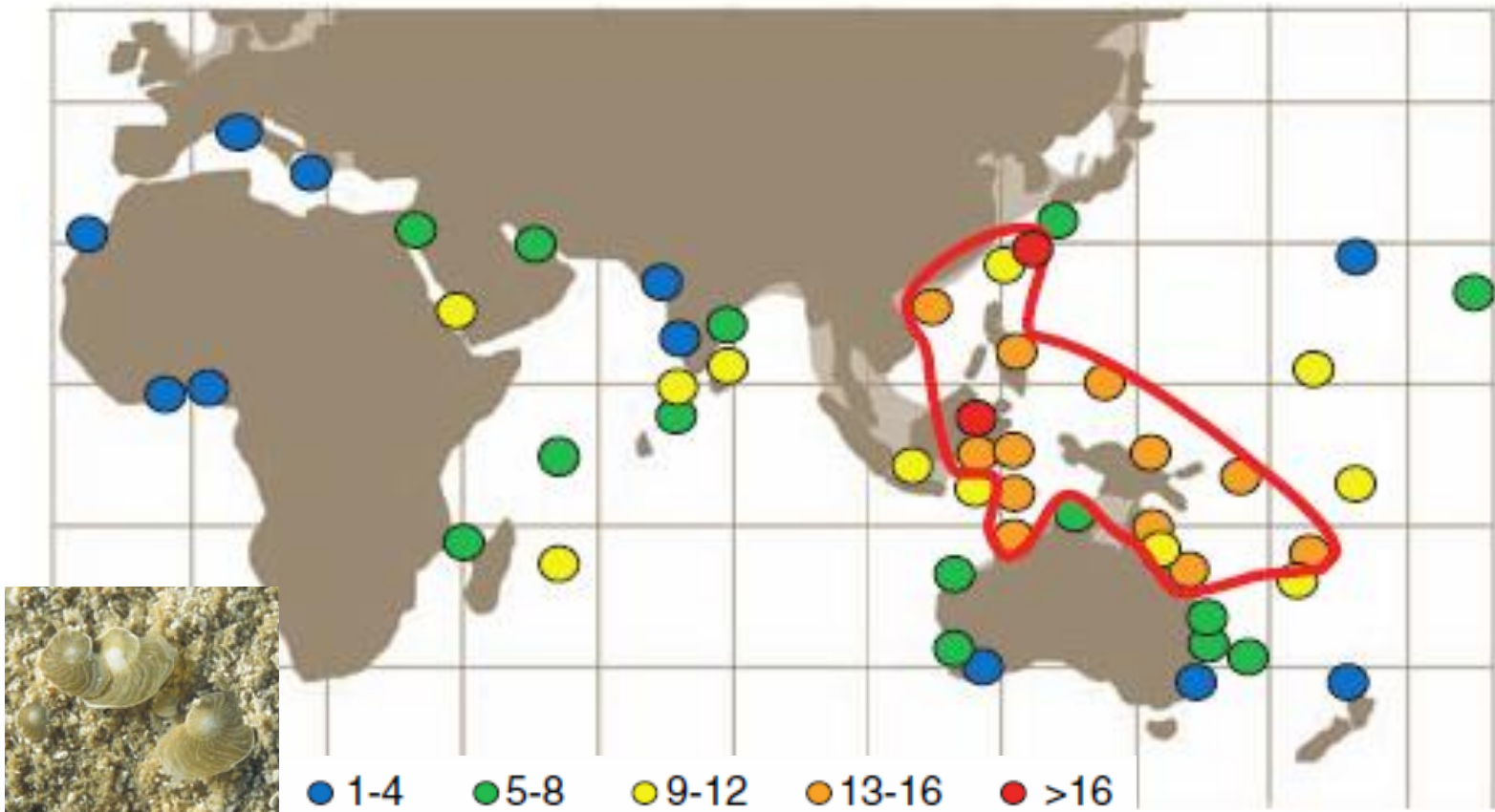
(Renema 2008)



**Early Miocene (23-16Ma)**

# Foraminifera genera diversity 'moves'

(Renema 2008)

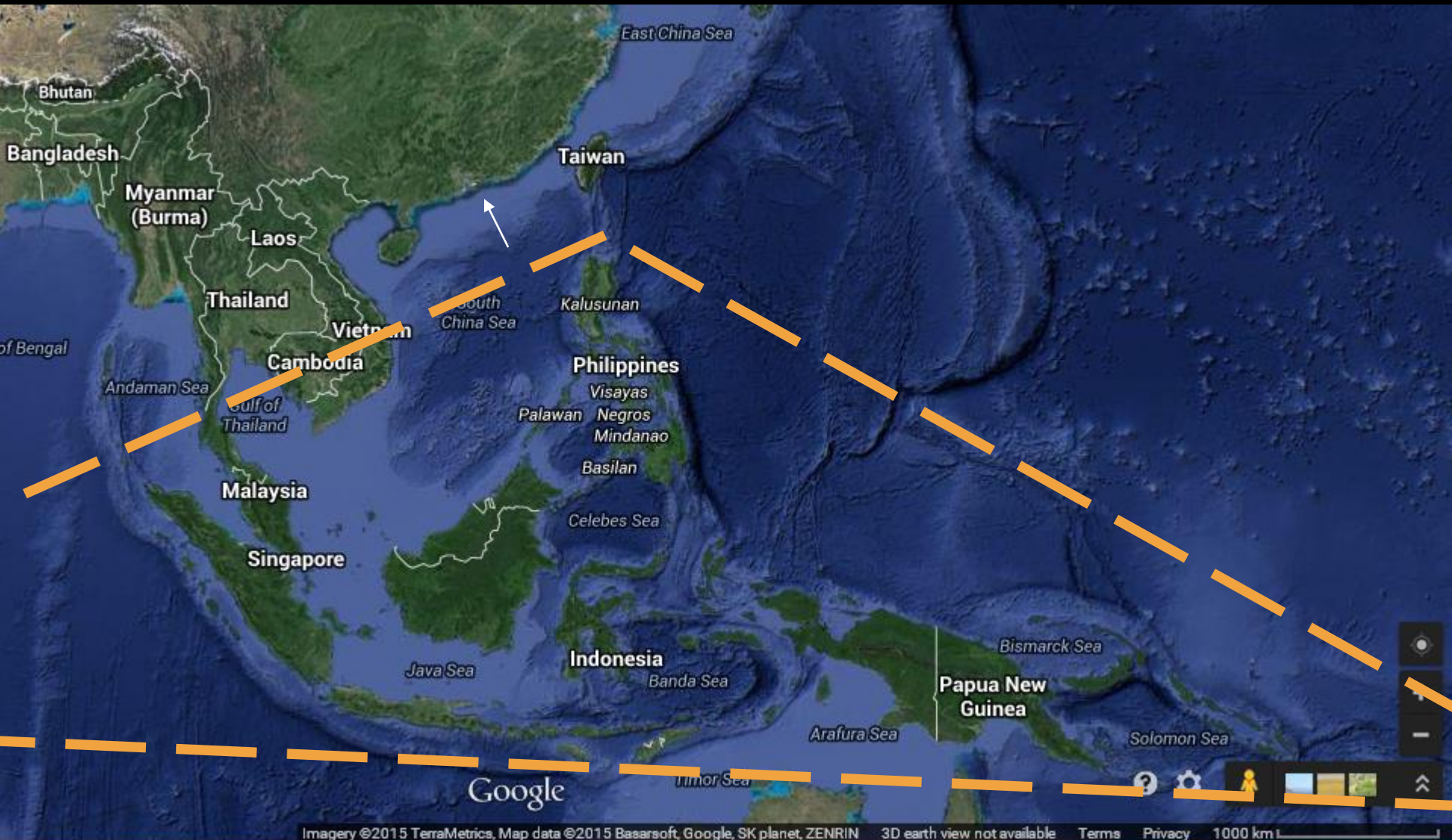


Recent



# Coral or East Indies Triangle, Indo-Australian Archipelago hotspot

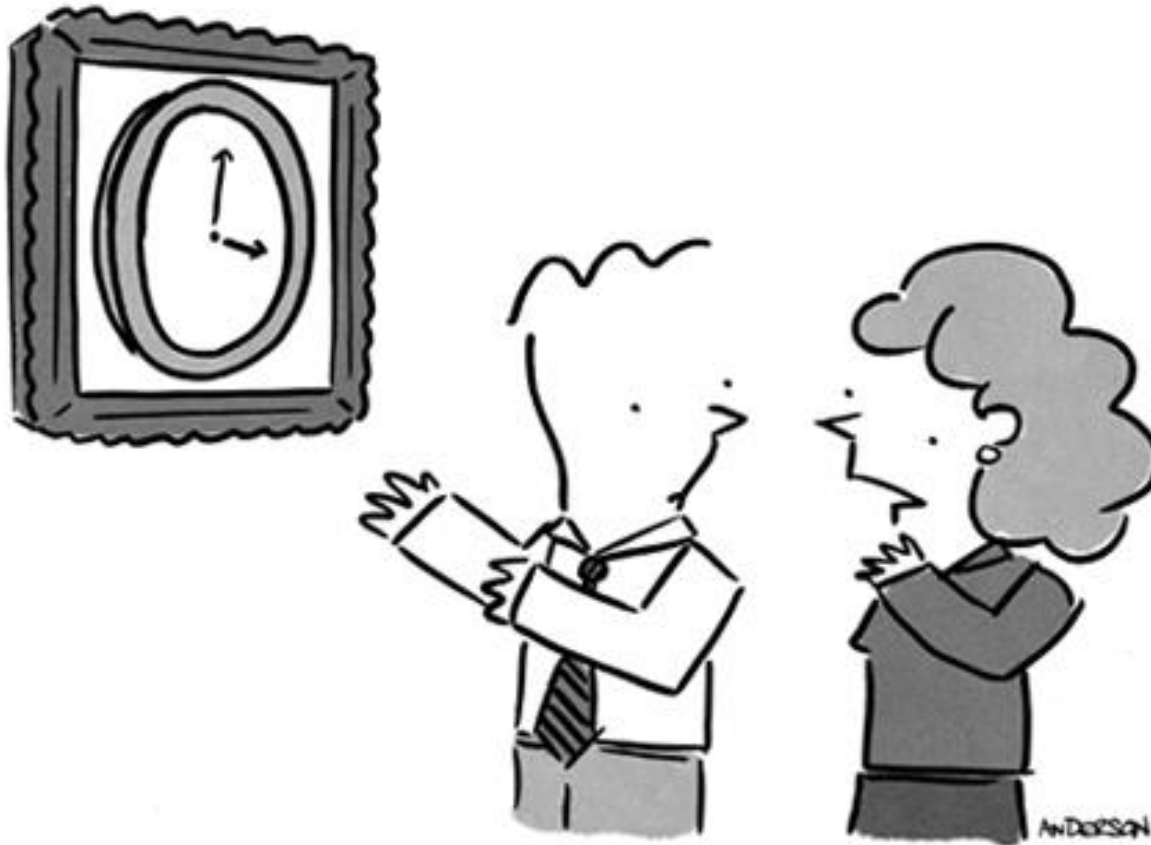
(e.g. Briggs 2005)



# Species are unevenly distributed spatially and across time. (e.g. Renema 2008)

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"When I said time frame..."

# Ostracods (Crustacea)?

Approx. 0.2-1.0mm

Two calcite ( $\text{CaCO}_3$ ) valves

Est. Ordovician (485-444Ma)!

Abundant & ubiquitous

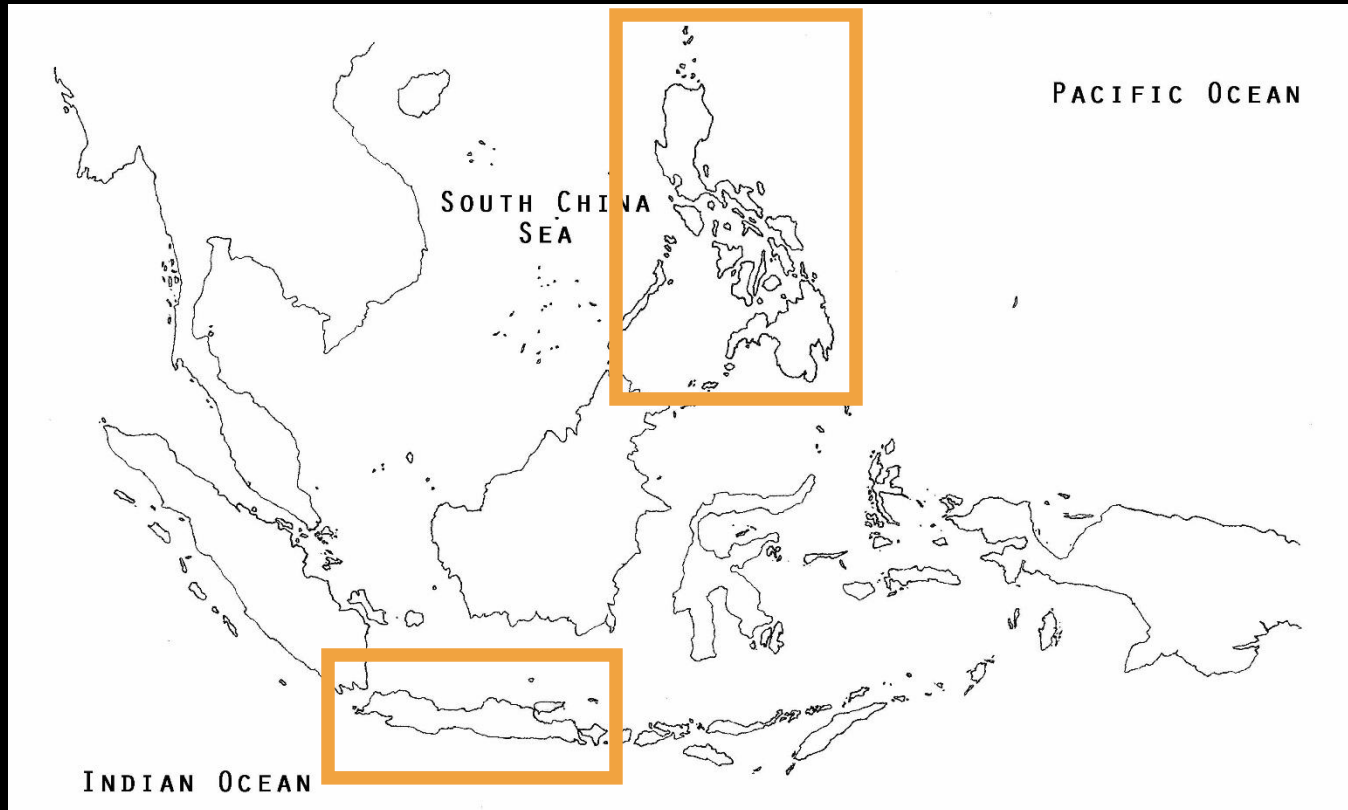
30,000+ fossil & living species

Indicators & reconstructions





# This project in the Indo-Pacific



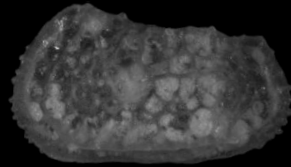
**Shallow marine ostracods**

**150+ outcrop samples, Indonesia & Philippines**

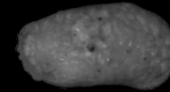
**Miocene to Plio-Pleistocene (16.0-5.3 Ma and 5.3-0.01 Ma)**

# Results so far...

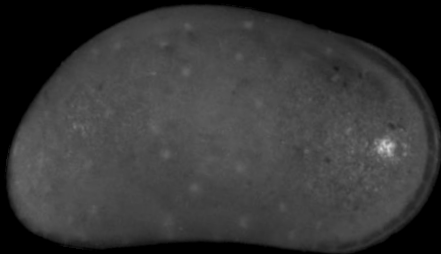
27 (of 44) samples  
5000+ specimens  
80+ unique genera



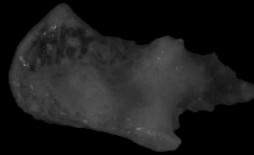
*Tenedocythere* sp.



*Kotoracythere inconspicua*



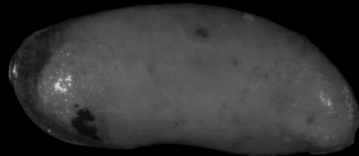
*Krithe* sp.



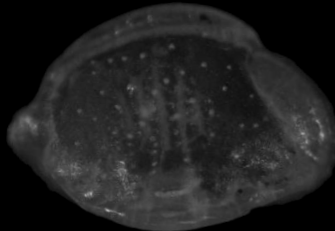
*Paracytheridea hispida*



*Pistocythereis euplectella*



*Argilloecia* sp.

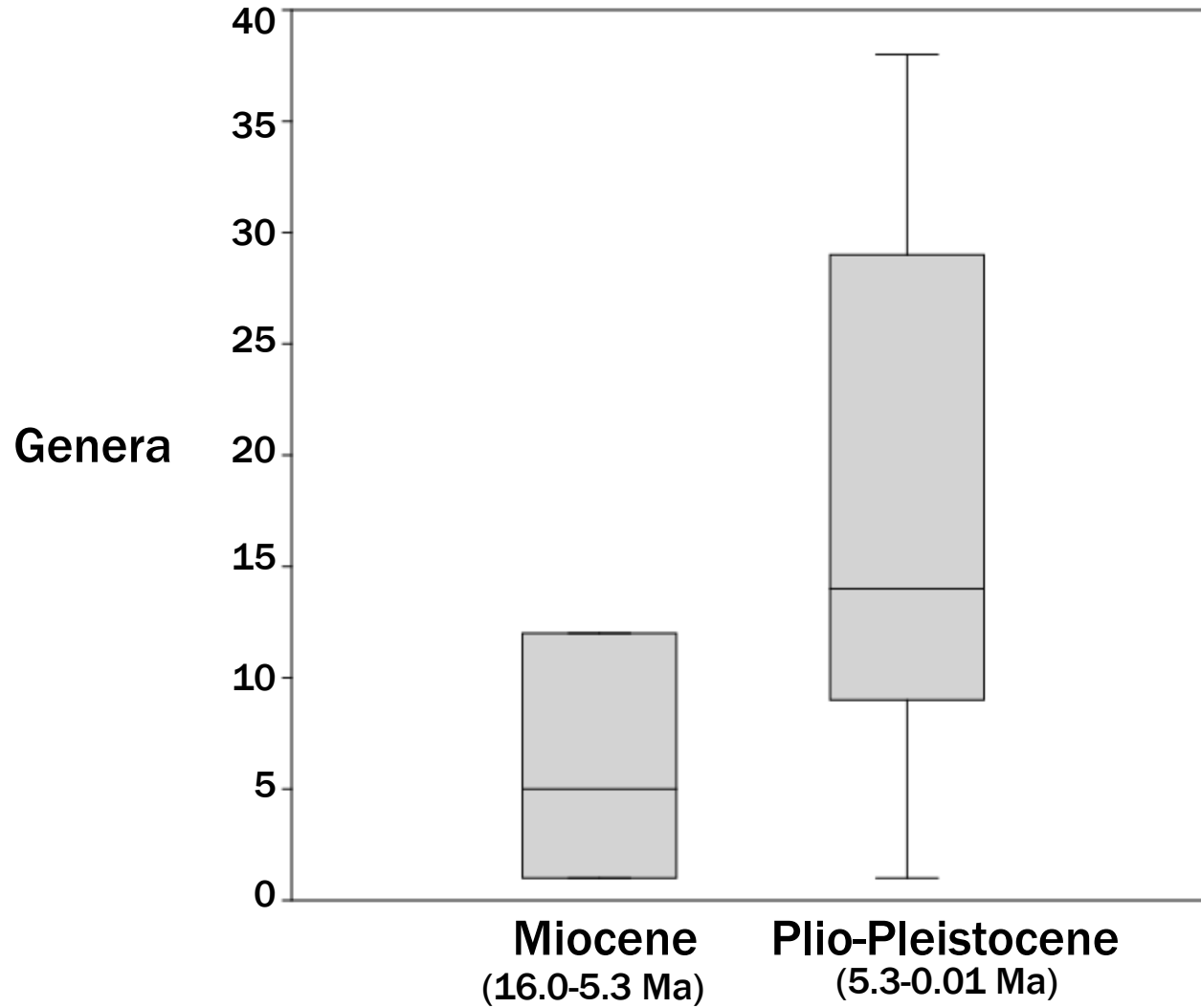


*Cytheropteron uchioi*

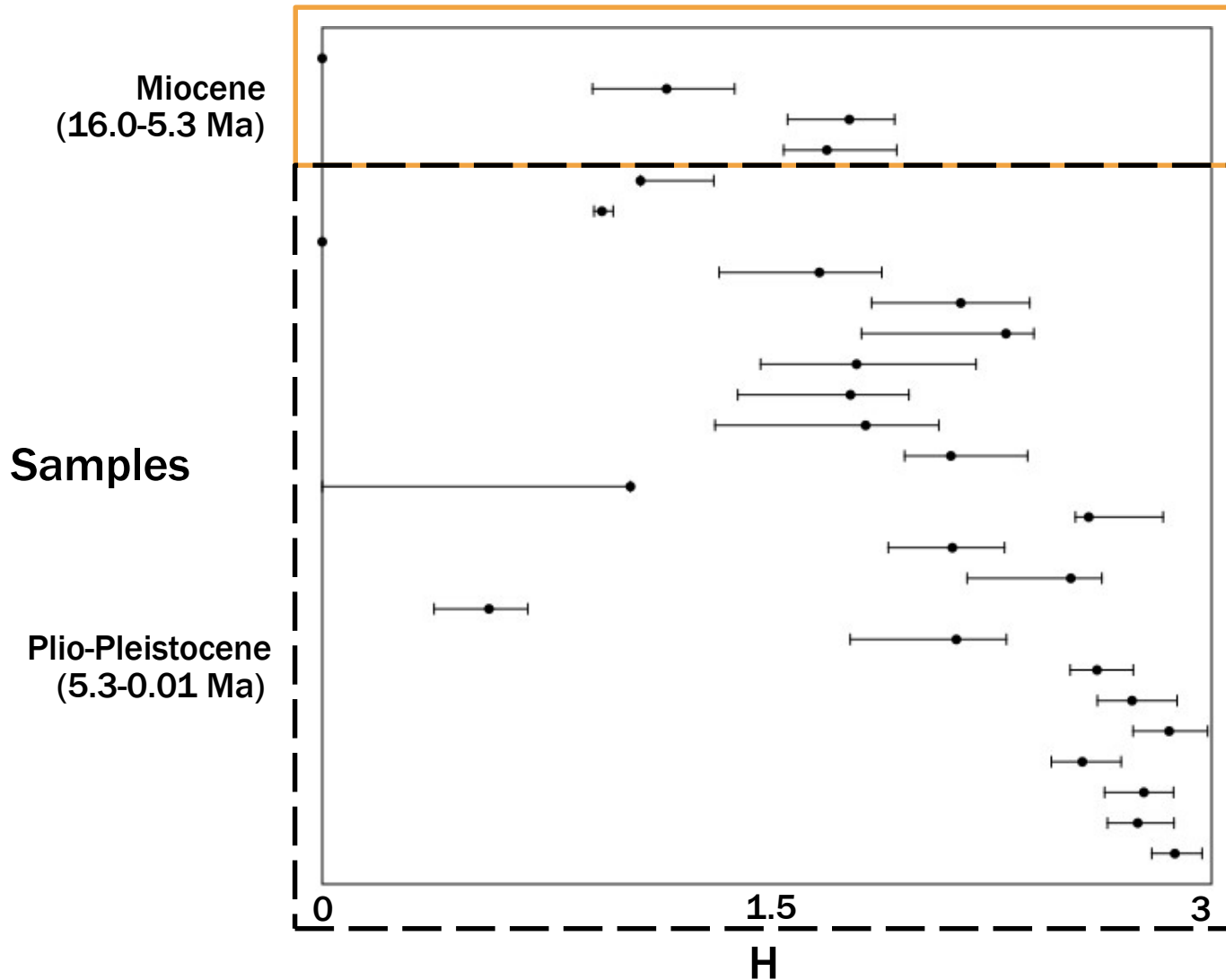


*Argilloecia* cf. *parallela*

# Genera diversity over time

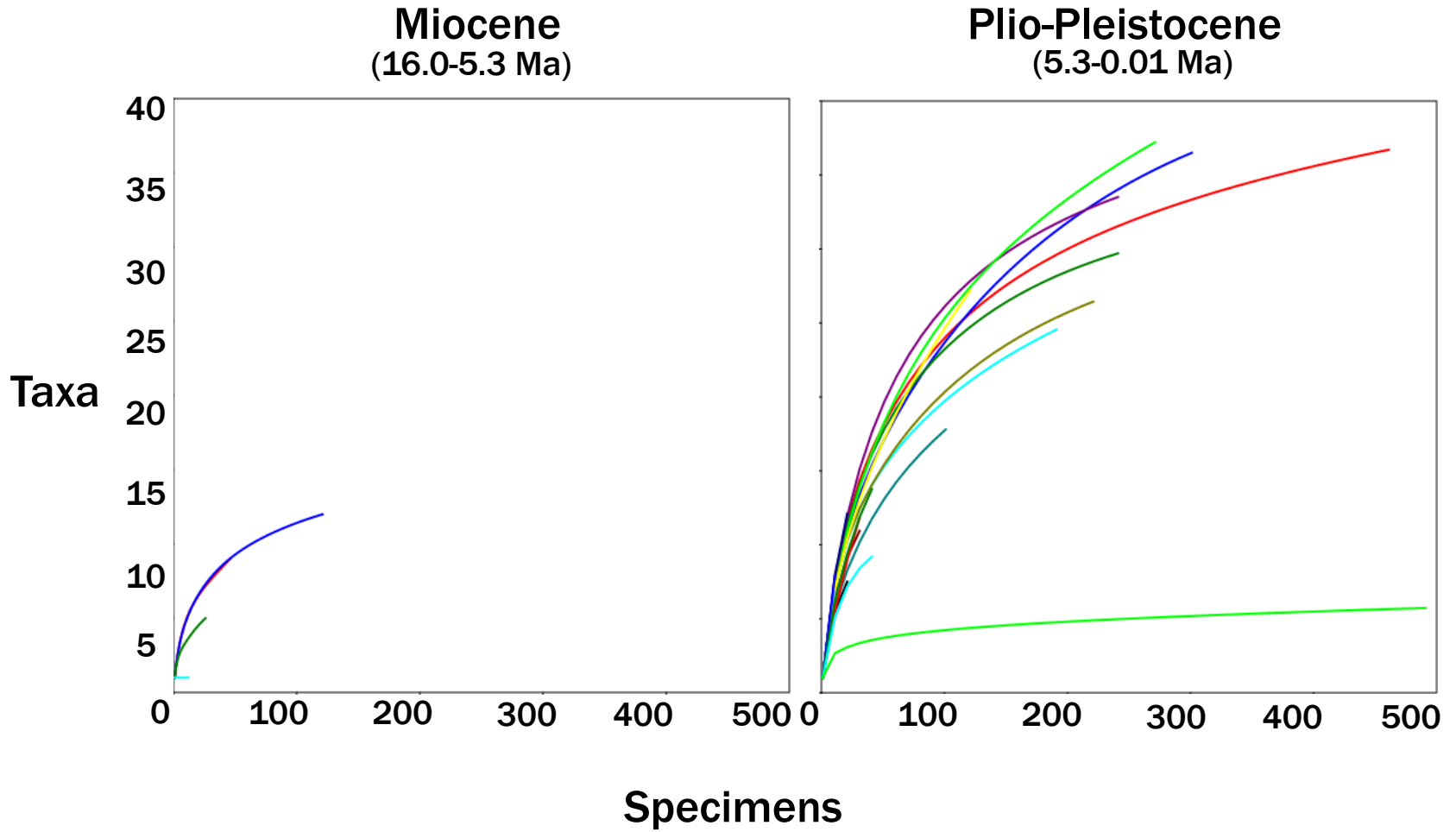


# Genera diversity between samples: Shannon's H



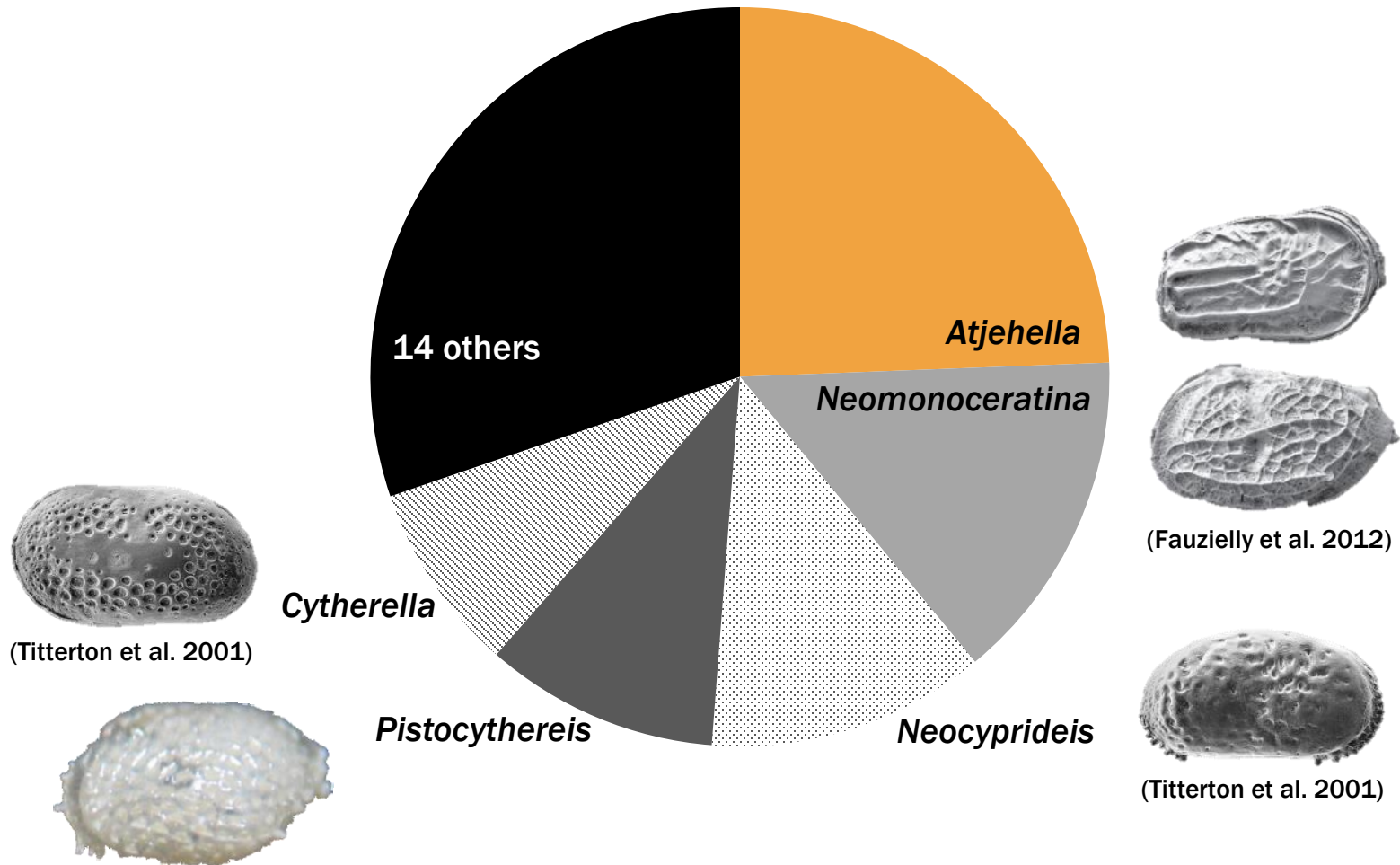


# Rarefaction

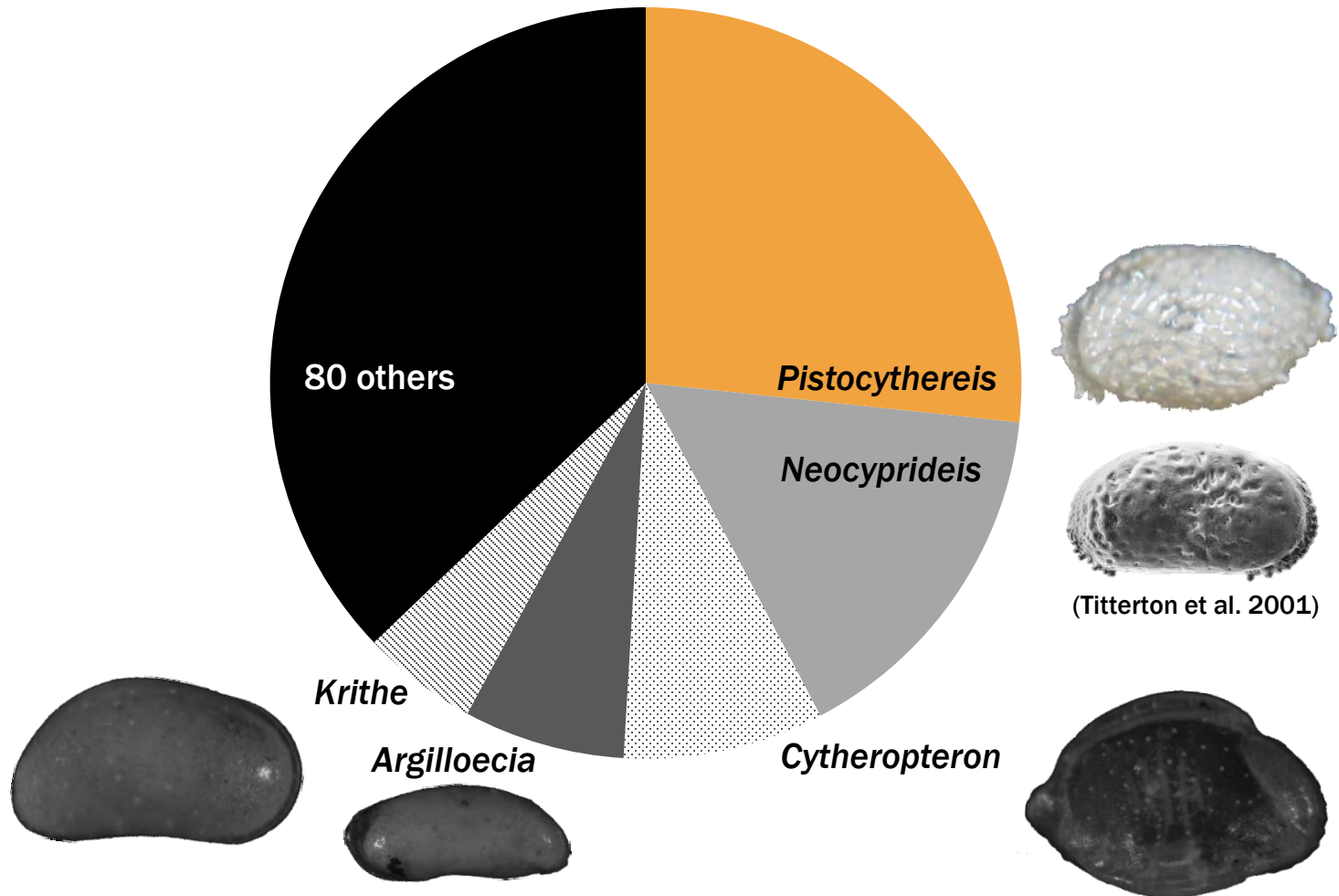


# Relative genera abundance in the Miocene (16.0-5.3 Ma)

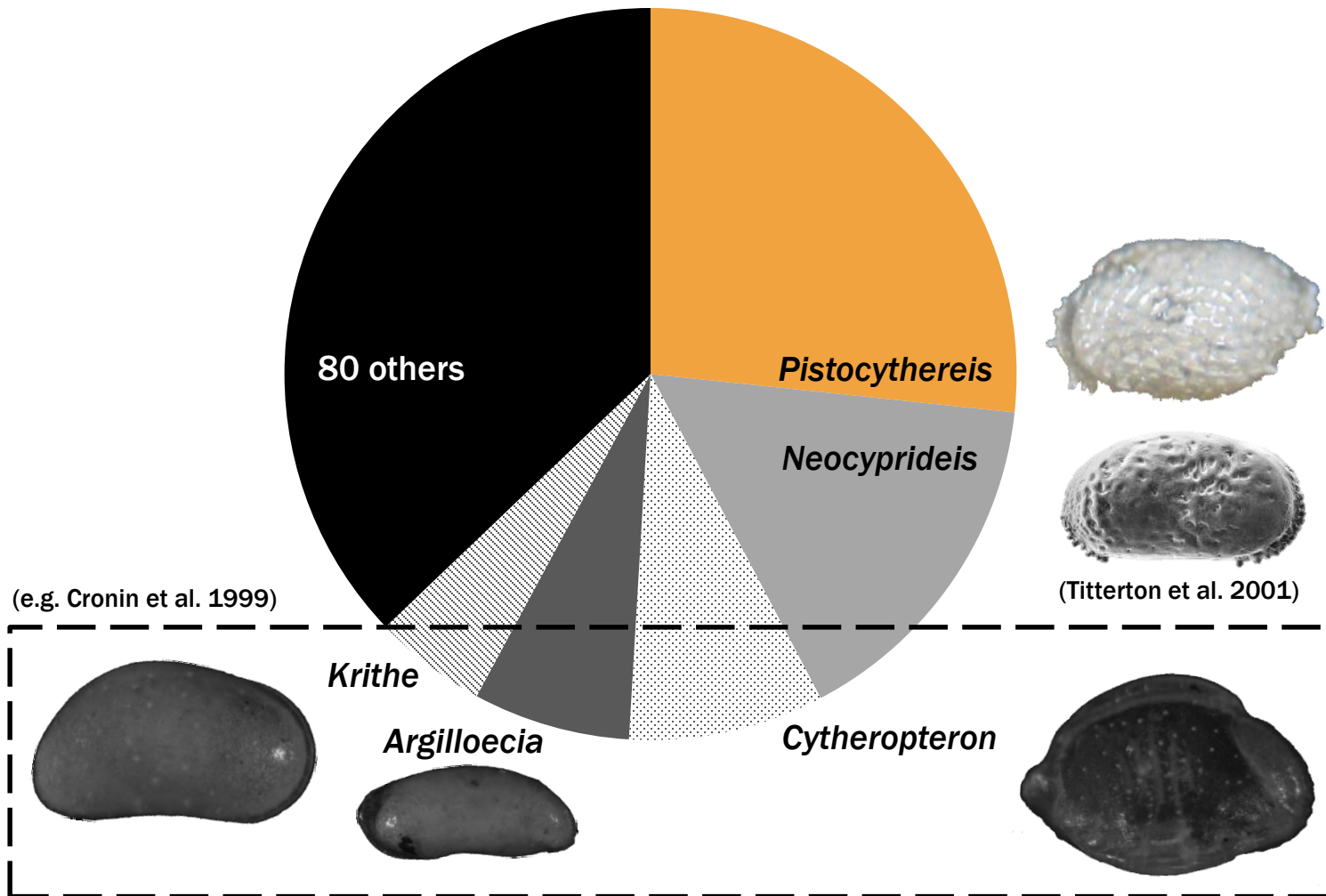
(N=4)



# Relative genera abundance in the Plio-Pleistocene (5.3-0.01 Ma) (N=23)

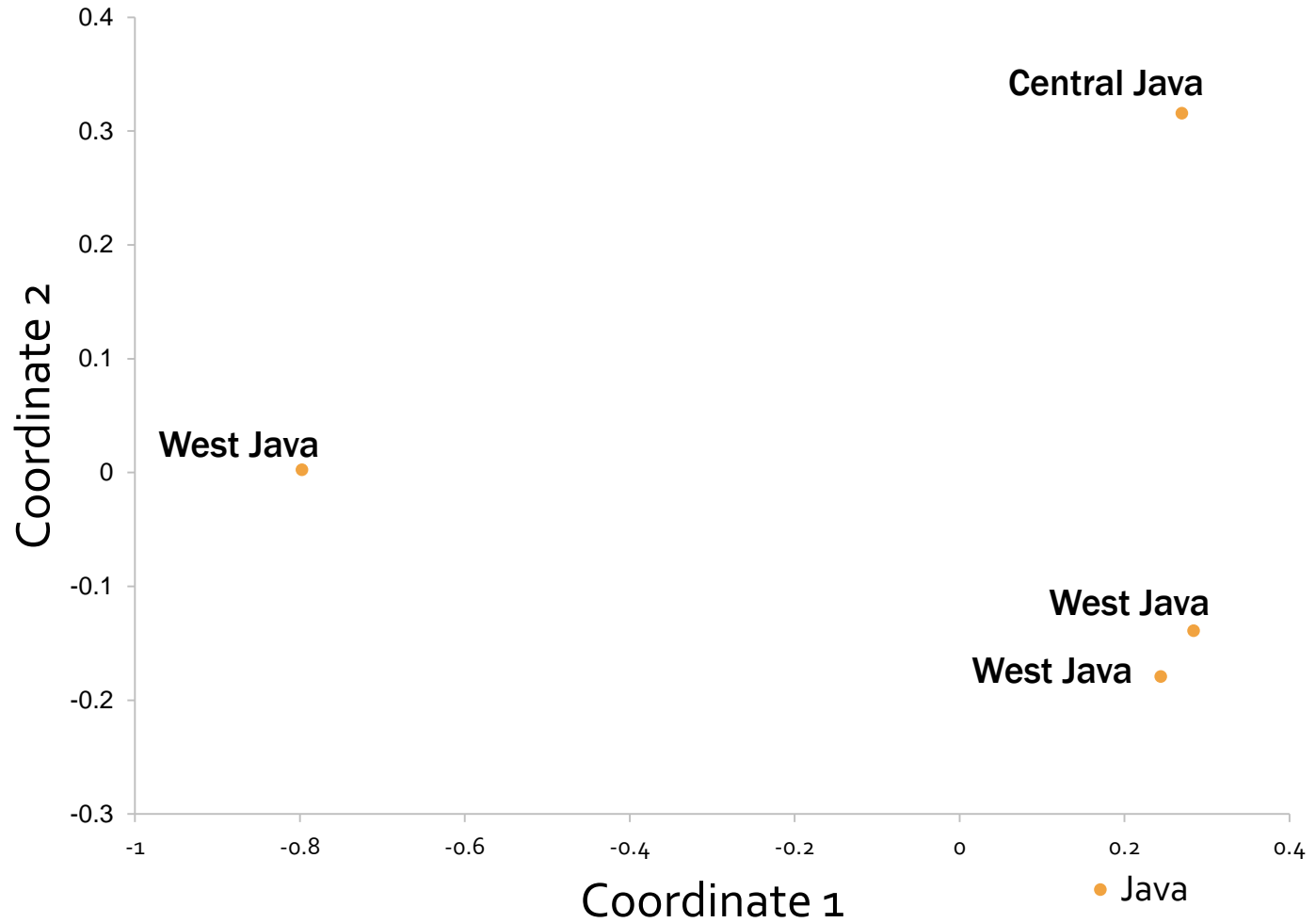


# Relative genera abundance in the Plio-Pleistocene (5.3-0.01 Ma) (N=23)





# nMDS of Miocene (16.0-5.3 Ma) samples





# Conclusions

**Less diverse in the Miocene (16-5.3 Ma)**

**More diverse in the Plio-Pleistocene (5.3-0.01 Ma)**

**Unclear causes**

**Communities, environments, climate...?**

**Finer resolution species diversity needed in space & time**

**Thank you!**

**Questions or comments?**

