



# Large-scale patterns of vascular epiphyte assemblages – a new research initiative

Sven Batke

# Concept of an epiphyte



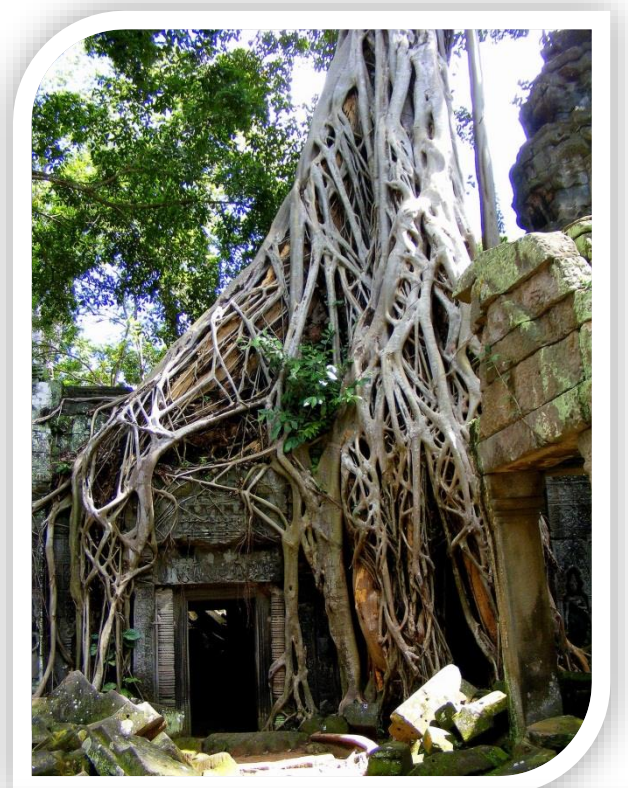
# Mechanically dependent plants

## Life-form divisions:

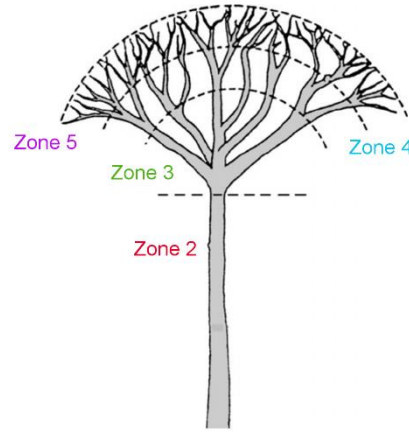
- a) holo- and hemi-epiphytes
- b) Stranglers
- c) nomadic vines
- d) Climbers
- e) hemi-parasites (i.e. mistletoes)

**Distribution:** mostly tropical (but see Zotz 2005. *Plant Ecol.*)

- Epiphytes: 9% of vascular plants (Zotz 2013. *Bot. J. Linn. Soc.*)
- Climber: 2.5% of vascular plants (Gallagher & Leishman 2012. *J. Biogeogr.*)
- No good global estimates for other life-forms!



# Studying epiphytes...some challenges...



FLORA OF HONDURAS, Central America  
 Operation Wallacea  
 Polypodiaceae

**Polypodium**  
 Epiphyte on *Liquidambar styraciflua* L.

The tree (tag number 412) was at the bottom of a steep valley ca. 100 m of transect CA5, N of the Cantiles camp site, Parque Nacional El Cusueco, Sierra de Merendón, Cortes province, W of San Pedro Sula.

Altitude: 1903 m  
 Grid reference: N15 30.946, W88 14.581

Coll.: S.P. Batke  
 Date: July 2012  
 Det.:  
 Local name:



# Need for collaboration and standardization!



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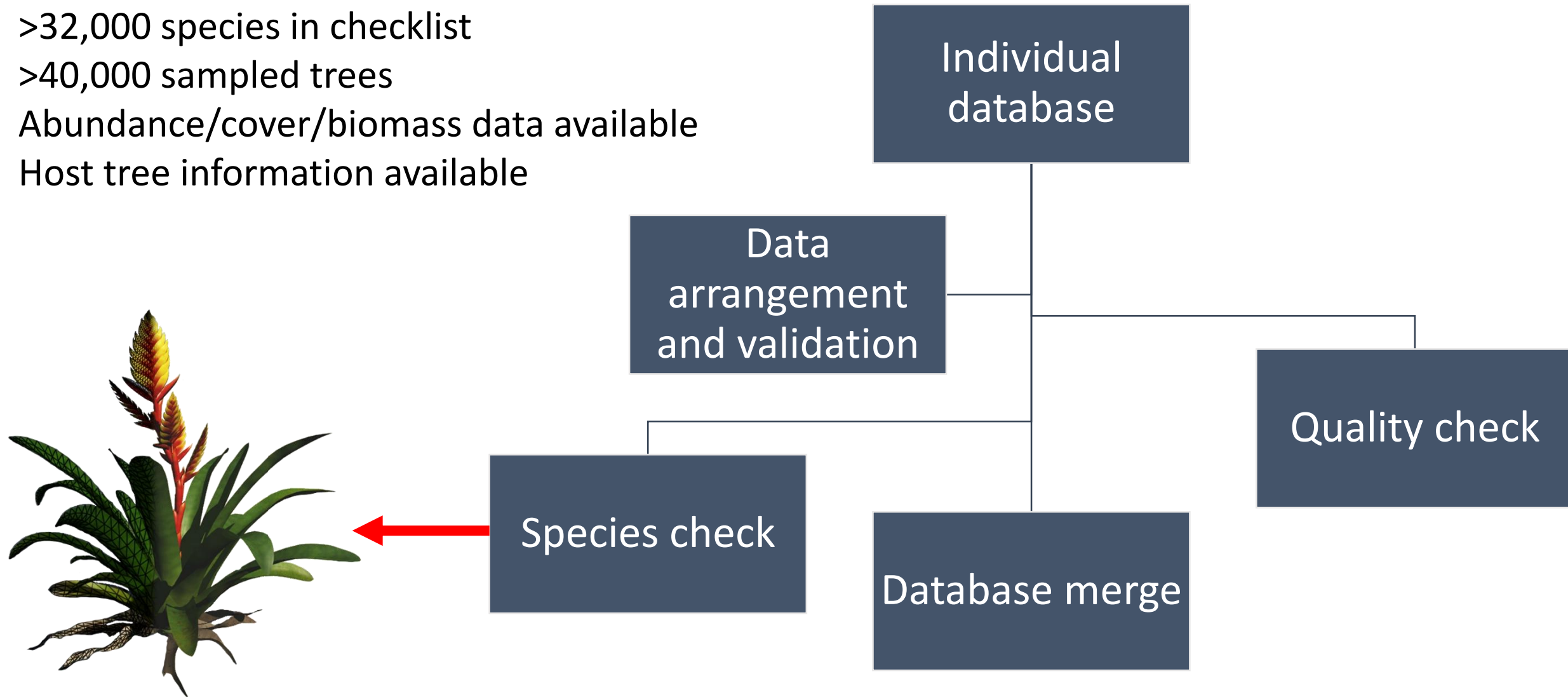
Acuña-Tarazona Margoth	Instituto de Ecología A.C.	Mexico
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Einzmann Helena	University of Oldenburg	Germany
Guzman Valeria	Goettingen University	Germany
Hietz Peter	University of natural resources and life sciences Vienna	Austria
Irume Mariana Victória	Instituto Nacional de Pesquisas da Amazônia	Brazil
Jímenez-Alfaro Borja	University of Oviedo	Spain
Kessler Michael	University of Zurich	Switzerland
Kreft Holger	Goettingen University	Germany
Kromer Thorsten	Universidad Veracruzana	Mexico
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Zotz Gerhard	University of Oldenburg	Germany
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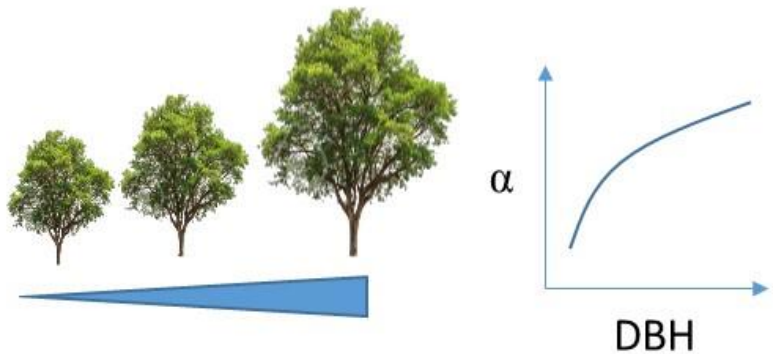
- First epiphyte workshop in Marburg 2018
- 27 participants
- 11 countries
- Highly detailed survey data
- Focus on the Neotropics

# EpIG – Epiphyte Inventory Group

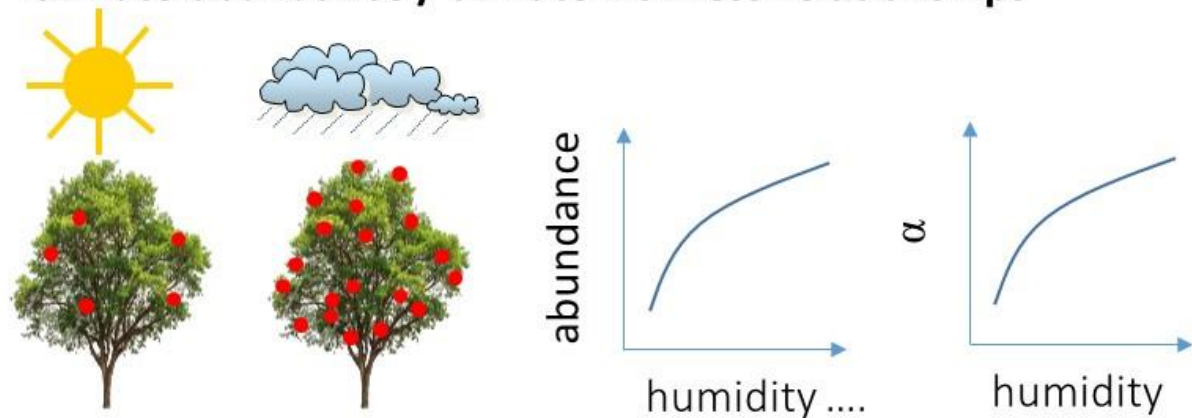
- >32,000 species in checklist
- >40,000 sampled trees
- Abundance/cover/biomass data available
- Host tree information available



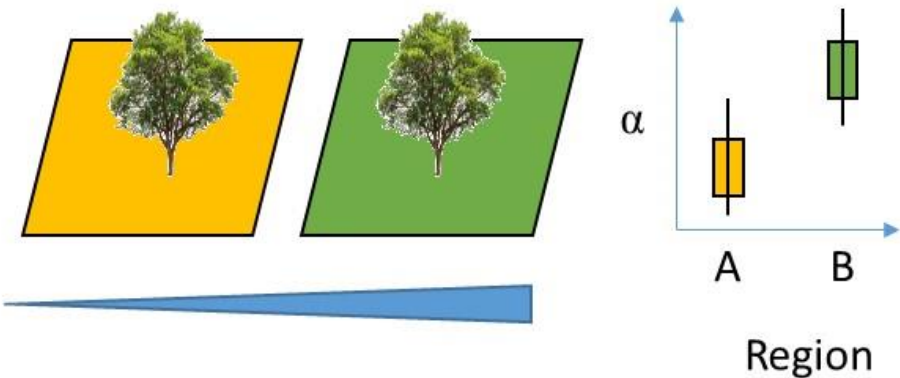
### Tree ontogeny, size-richness relationships



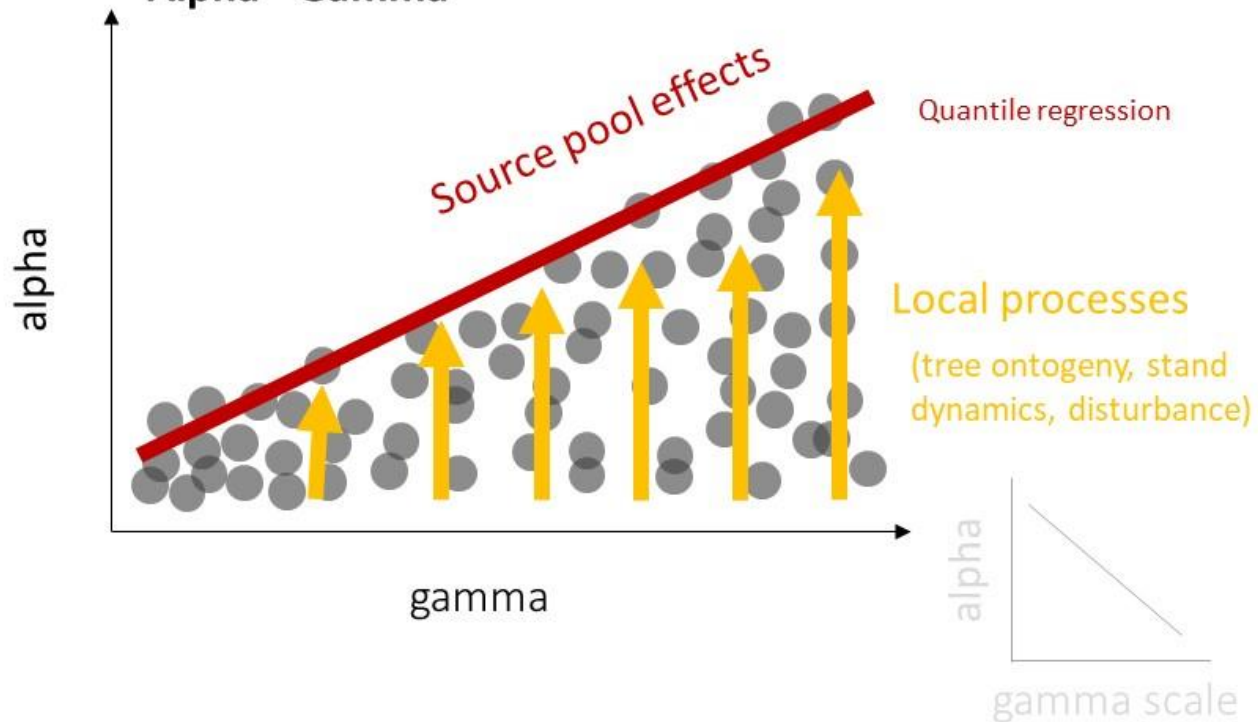
### Climate-abundance / climate-richness relationships



### Regional biogeographic history



### Alpha - Gamma



# To get involved...

Glenda Mendieta-Leiva (Marburg University)  
Sven Batke (Edge Hill University)

Twitter: @EpigGroup

Youtube video: <https://youtu.be/3CU1fZVxm50>



Edge Hill University

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