

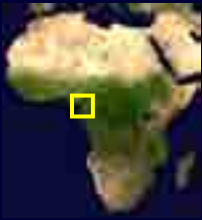
Symbiotic relationships between ants, plants and Chaetothyriales

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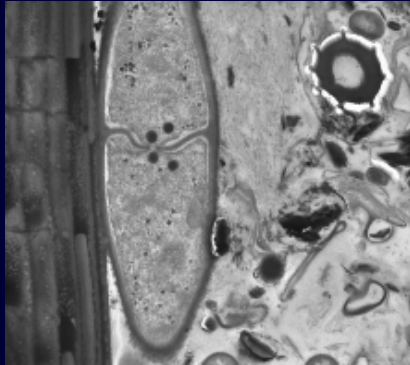


One ant: *Petalomyrmex phylax*
One plant: *Leonardoxa africana*

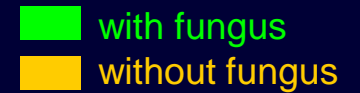
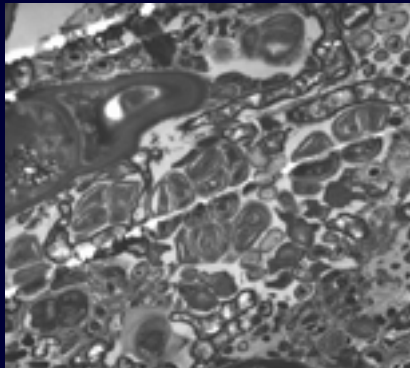




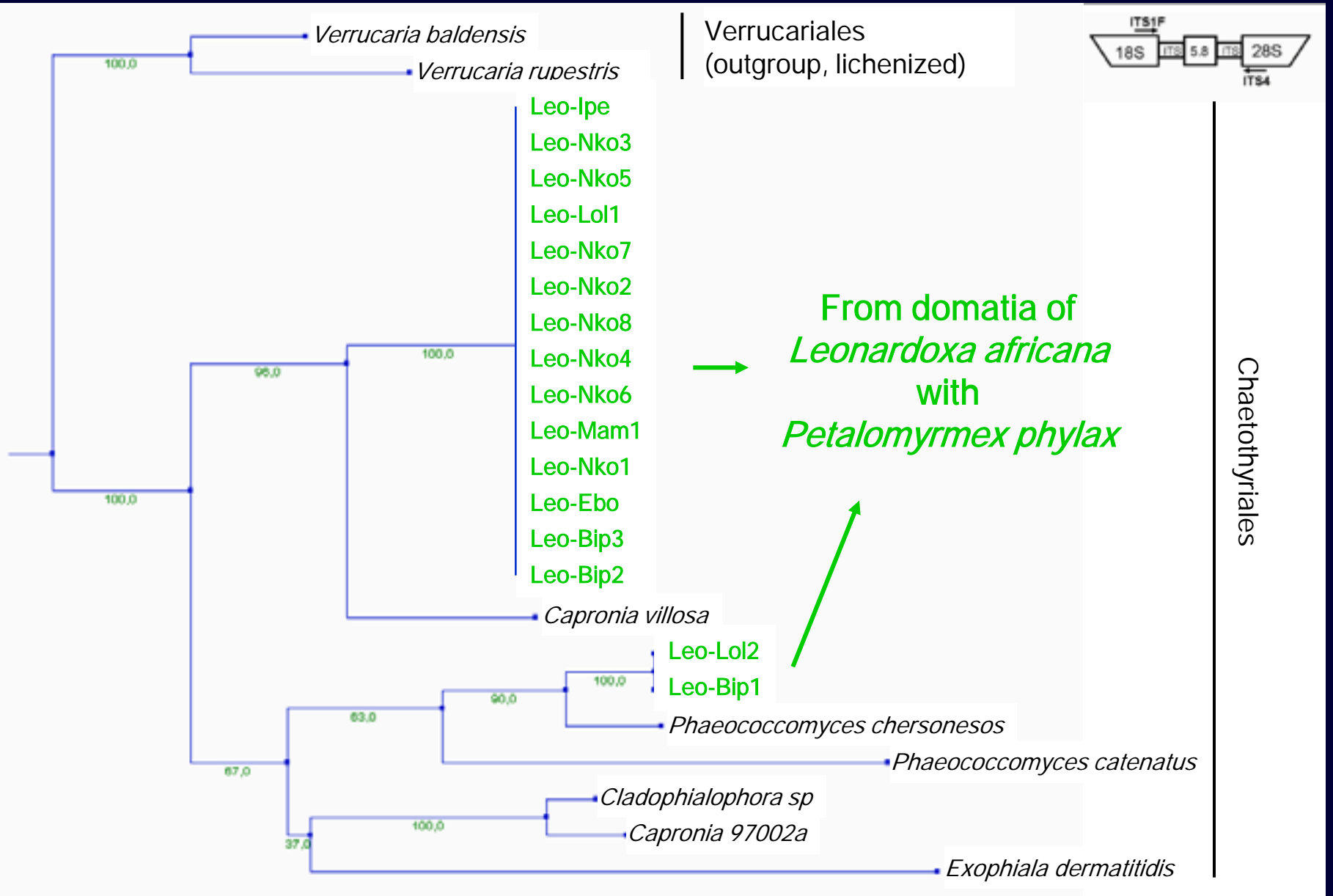
Petalomyrmex phylax
mutualist



Cataulacus mckeyi
parasite



Ant/fungus specificity



The ants feed the fungus and the plant

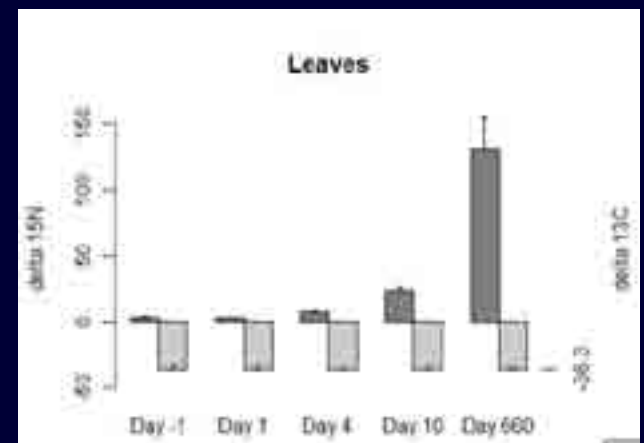
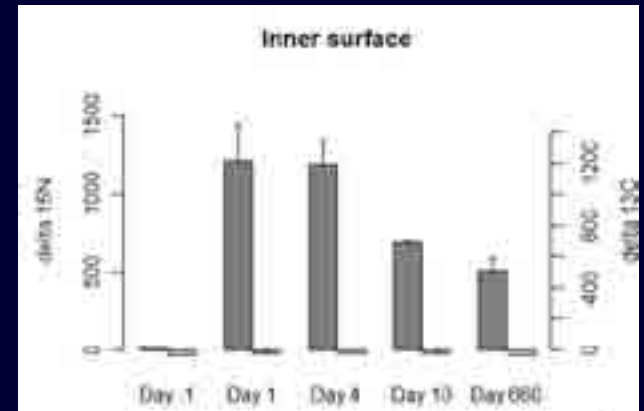
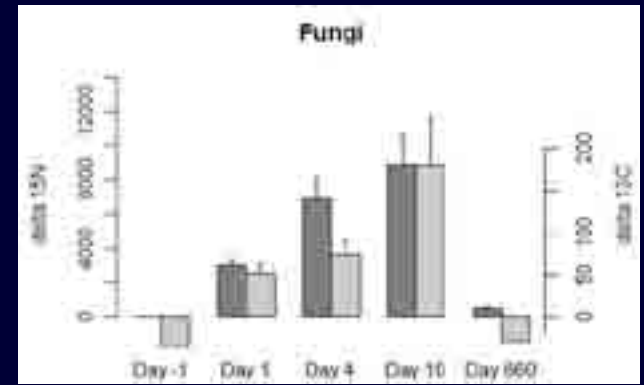
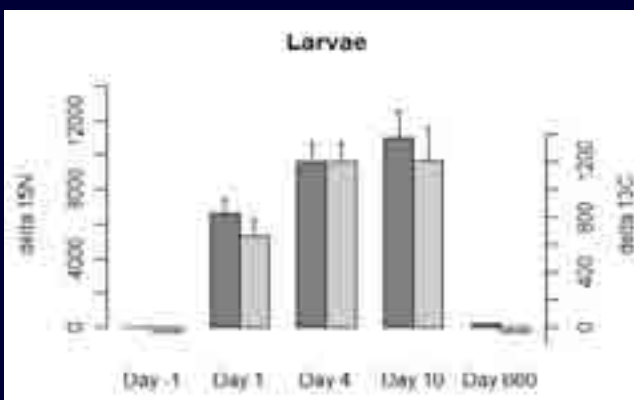
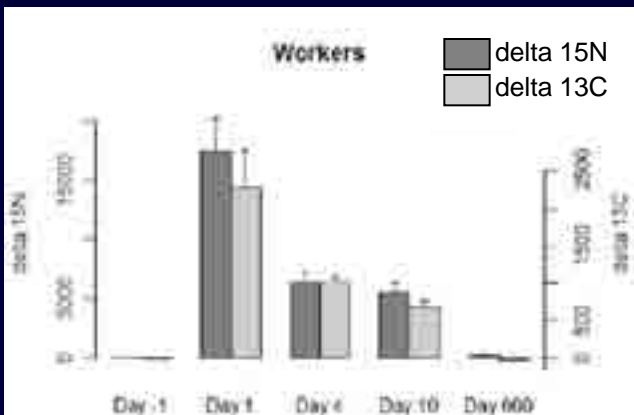


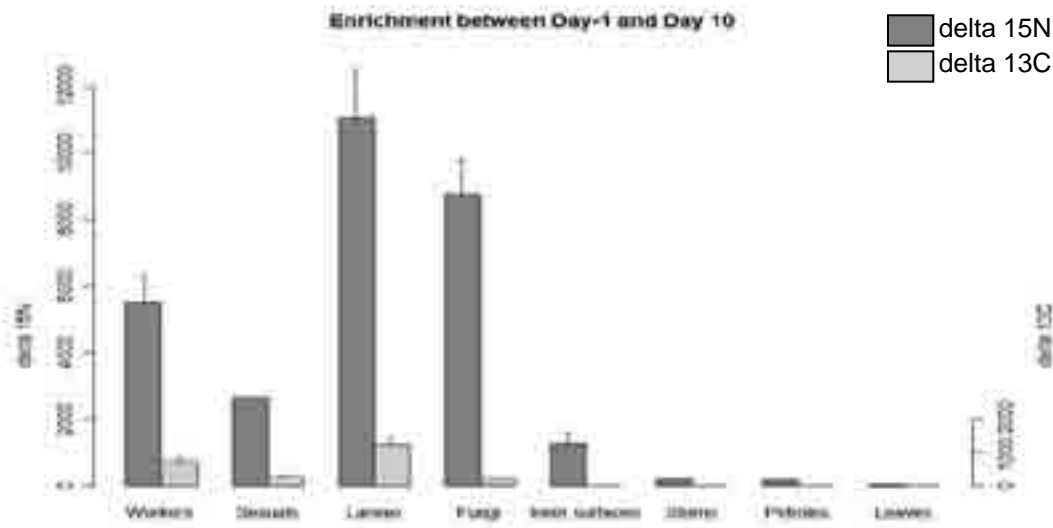
▶ Workers have incorporated the nutrients and fed the larvae

▶ Nutrients are transferred immediately to the fungus...

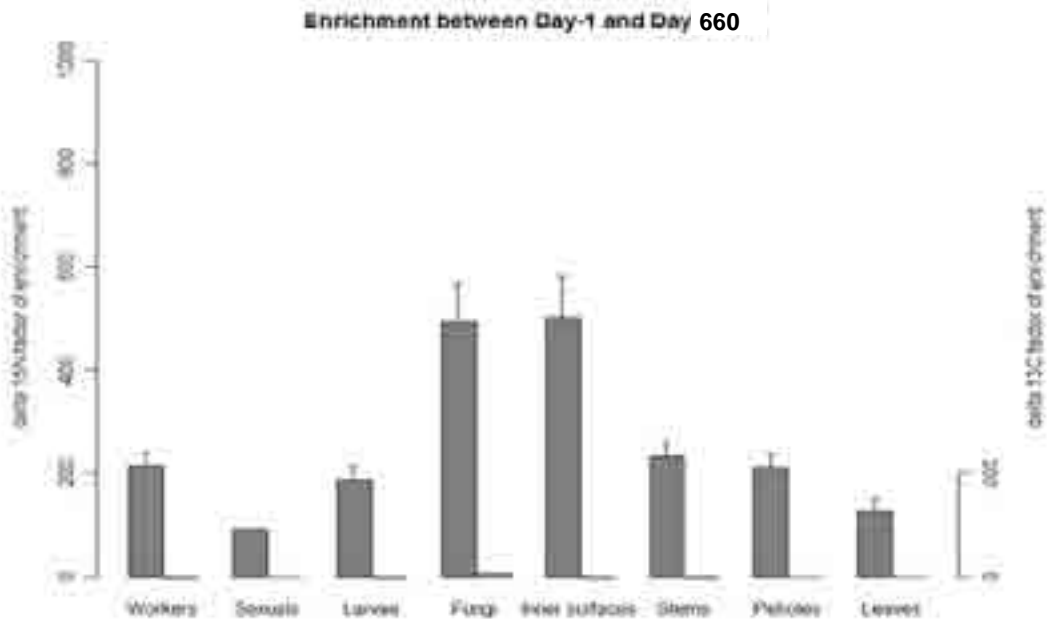
▶ ... but also to the inner surface...

▶ ... and more slowly to the plant

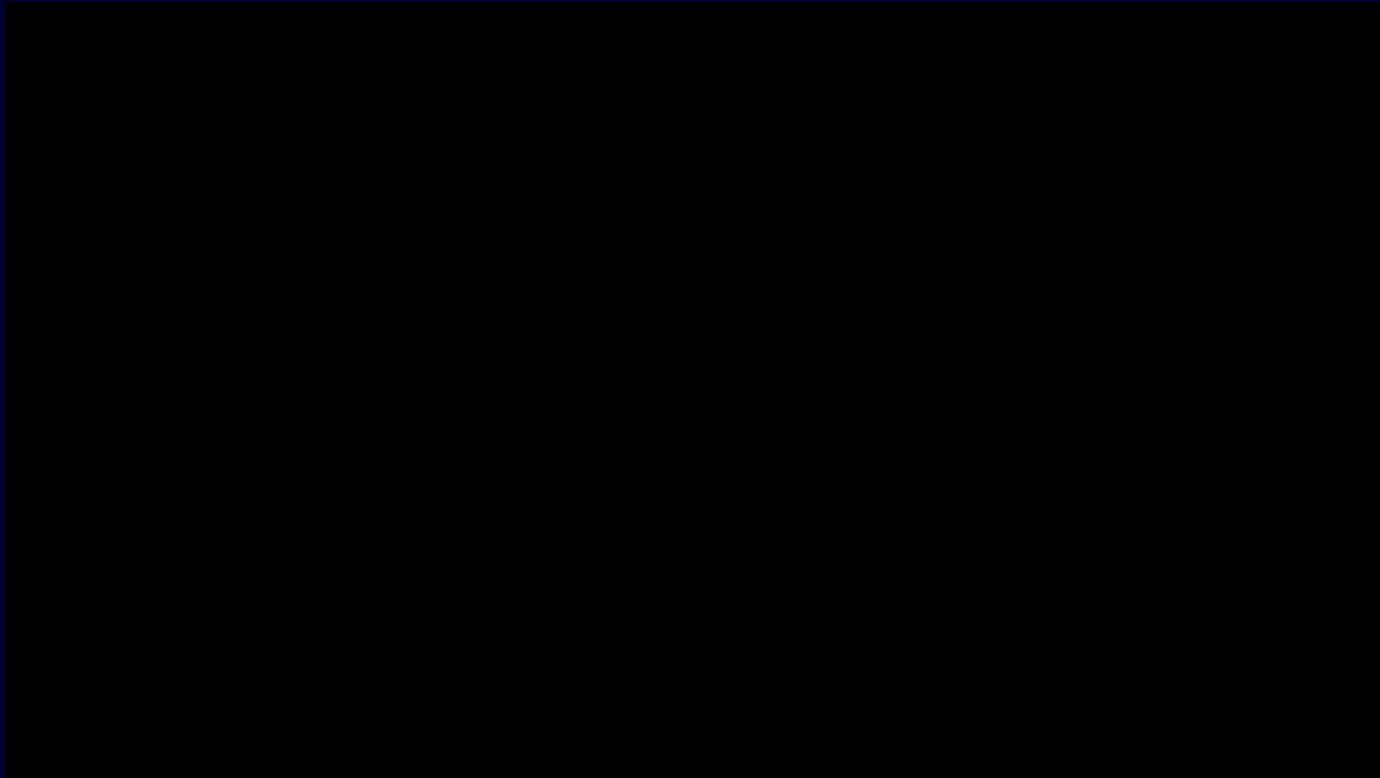




- ▶ Nutrients are transferred preferentially toward fungus rather than to inner surface of domatia
- ▶ Transfer to the plant is slow



- ▶ C is gone
- ▶ N is recycled



The ants eat fungus

		Plant	fungus (+ plant debris)	Workers	Brood
Steroid precursors	Squalene	X	X	X	
	Lanosterol			X	
Typical of fungi	Ergosterol		X	X	X
	E3			X	X
Typical of plants	Stigmasterol	X			X
	Plant sterol 2	X			
	Sitosterol	X	X		X



What is said in the historical record ?

Miehe 1911

Bailey 1920

Bailey 1922

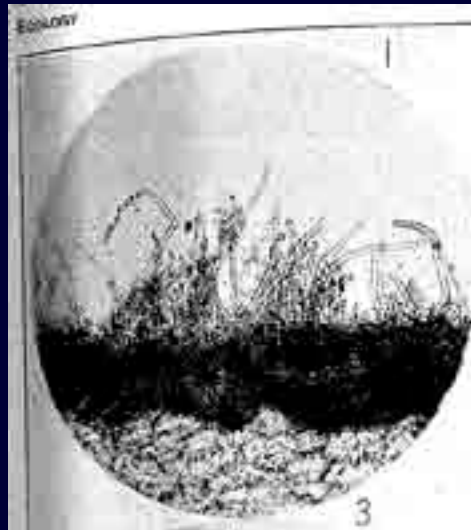
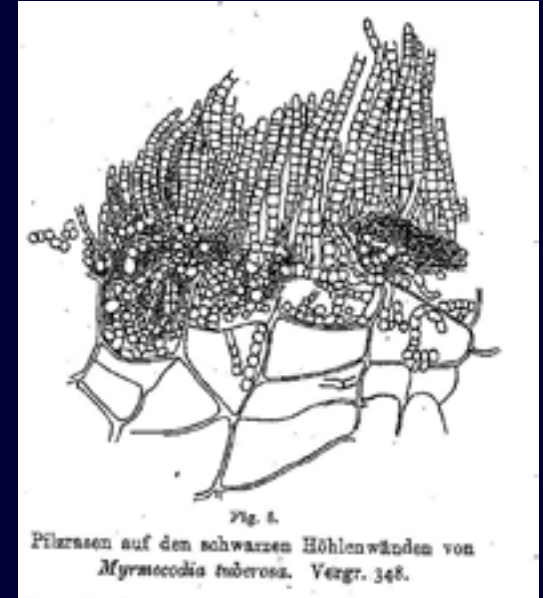
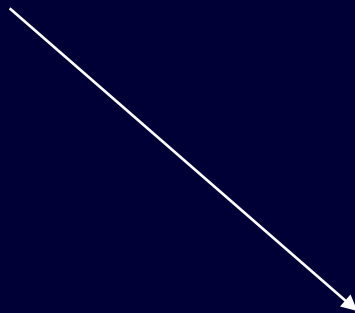
Bequaert 1922

Wheeler 1942

Janzen 1972

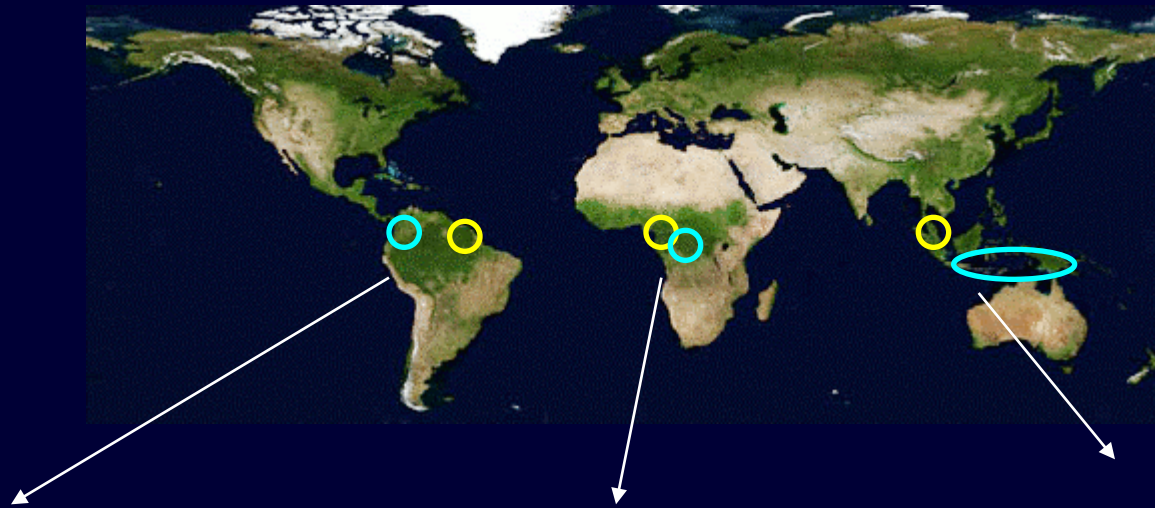
Huxley 1978

Schremmer 1984



Acacia
Triplaris
Cecropia
Nauclea
Enterolobium
Myrmecodia
Hydnophytum
Cuviera
Vitex
Plectronia
Barteria
Sarcocephalus

Fungi from within domatia are widely distributed



Polygonaceae } Pseudomyrmecinae
 Fabaceae }
 Cecropiaceae } Dolichoderinae
 Boraginaceae }

Fabaceae — Formicinae
 Rubiaceae — Myrmicinae
 Passifloraceae } Pseudomyrmecinae
 Lamiaceae }

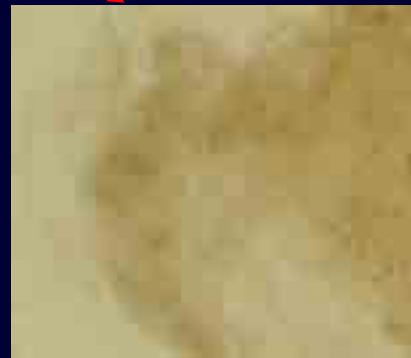
Fabaceae }
 Euphorbiaceae } Formicinae
 Crypteroniaceae }
 Achariaceae }
 Rubiaceae — Dolichoderinae



Chaetothyriales as staple food for ants ?



Plant: *Tachigali* sp
Ant: *Pseudomyrmex penetrator*



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