

Project Update: July 2017

Main results obtained in the first semester of the project

Fieldwork have been made to eight localities (four localities with *Coffea arabica* L. and four with *Coffea canephora* Pierre ex A. Froehner; Table 1) located in Soconusco, Chiapas, Mexico (Fig. 1a-i) . We are still working in the taxonomic identification phase of all localised vascular epiphyte taxa, but to date several species have been found within 12 botanical groups (Fig. 2a-l).

We also carried out several awareness raising, environmental education and dissemination activities of the project, with the inhabitants of the localities visited, and with very encouraging results (Fig. 3a-d). These communities are mainly made up of small farmers or ejidatarios, belonging to the Mam ethnic group, which have historically carried out a little intensive traditional management of their coffee plantations. However, for roughly 10 years, drastic and negative changes in the management of these agroecosystems in the Soconusco region are becoming widespread. Some of the most widespread practices that pose a serious problem for the conservation of vascular epiphytes in shaded coffee plantations are the "desmusgue" (manual and systematic removal of mosses and vascular epiphytes that occupy coffee shrubs), excessive pruning of coffee trees and widespread substitution of *C. arabica* by *C. canephora*. With this in mind, we have worked emphatically with peasant communities to help them to know the great biological wealth they have in their plantations, to learn how to value their importance and the potential of this biodiversity and to identify the threats they face and how they, as social actors, can help to mitigate them.

Table 1. Coffee plantations of *Coffea arabica* and *Coffea canephora* (commercial polyculture system), visited in the Soconusco, Chiapas, Mexico.

Locality	Coordinates
Coffee plantation of <i>C. arabica</i>	
Tres Hermanitos	N 15° 06' 02.3'', W 092° 19' 13.5''
Benito Juárez El plan	N 15° 5' 15'', W 092° 8' 55''
Fracción Montecristo	N 15° 5' 31.5'', W 092° 9' 57.9''
Toquian y Las Nubes	N 15° 05' 07.9'', W 092° 07' 16.6''
Coffee plantation of <i>C. canephora</i>	
La Fortuna 1	N 14° 59' 22.5'', W 092° 17' 10.0''
La Fortuna 2	N 14° 59' 10.3'', W 092° 17' 03.5''
Las Bugarvillas	N 15° 06' 19.9'', W 092° 19' 24.2''
San Vicente	N 15° 03' 49.9'', W 092° 11' 28.2''

Next steps

- Visit new shaded coffee plantations (both *C. arabica* and *C. canephora*) in the Soconusco region, to increase the sample size.

- Return to several of the coffee plantations visited to corroborate the identity of several species of vascular epiphytes during their flowering periods.
- Continue the activities of education and environmental awareness with children and other settlers in the peasant communities of the study region.
- Work on the elaboration of an informative paper for *Biodiversitas* magazine, a periodical publication of popular court edited by CONABIO (National Commission for the Knowledge and Use of Biodiversity) and widely distributed in Mexico. Also, work on the elaboration of a scientific paper for the journal *Tropical Biology* that will allow to know the results of the project among the international scientific community.



Figure 1. a) Sierra Madre de Chiapas, Mexico, mountains and skirts where we are developing the study of vascular epiphytes associated with shaded coffee plantations, particularly in the Soconusco region. b) Shaded coffee plantation with commercial polyculture. c-g) Different moments of the work team, during the fieldwork. h-i) Two of the sites where we established camp with Mam families, and we stayed several days during fieldwork (La Fortuna and Fracción Montecristo).

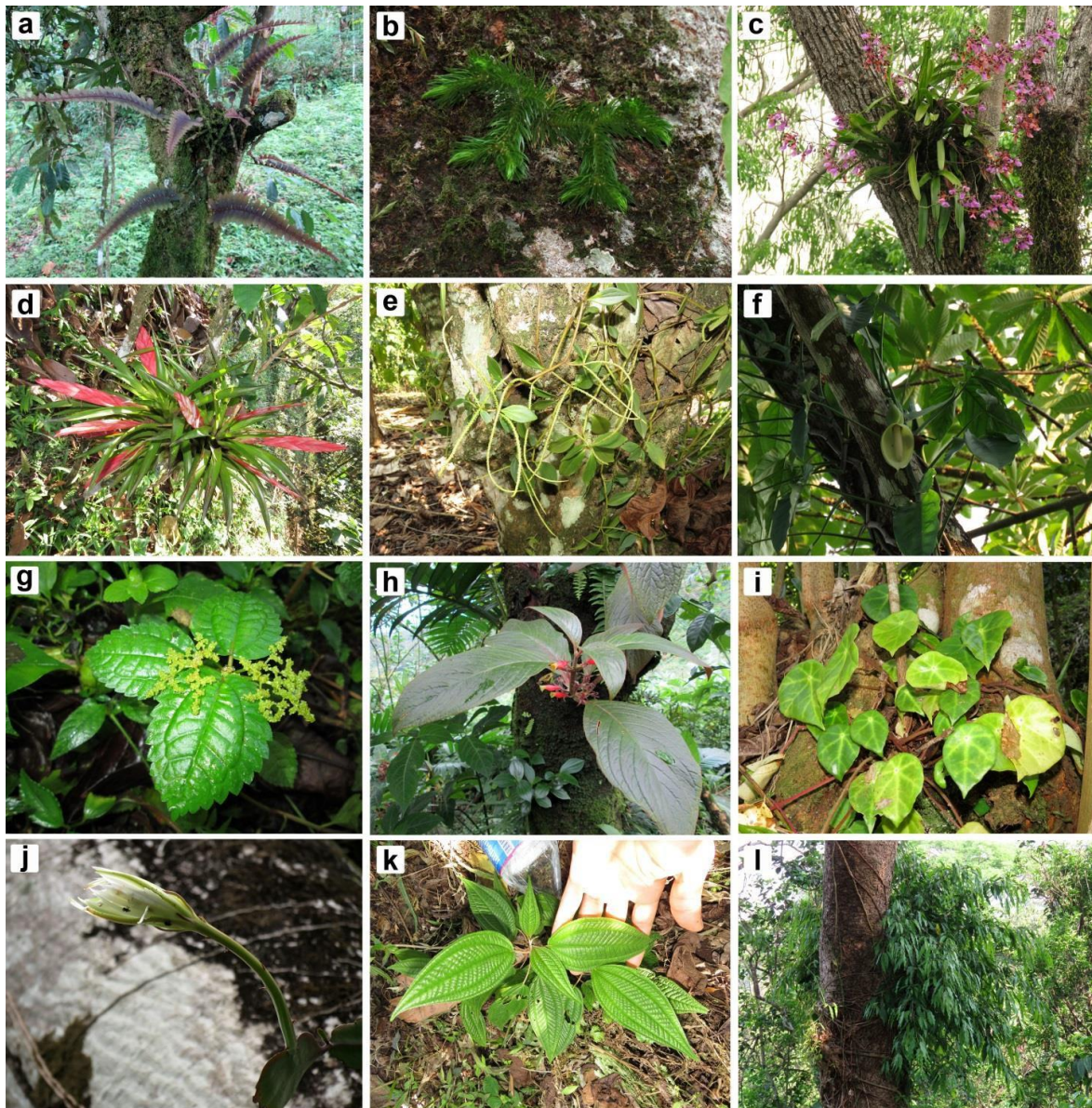


Figure 2. Botanical groups of vascular epiphytes inhabiting in shaded coffee plantations in Soconusco, Chiapas, Mexico. a) Ferns. b) Lycophytes. c) Orchids. d). Bromeliads. e) Peperomias. f) Aroids. g) Pileas. h) Gesneriads. i) Begonias. j) Cacti. k) Melastomes. l) Moraceous.



Figure 3. a) One of the Mam families with whom we lived during the field work. b-d) Education and environmental awareness activities carried out with different communities in Soconusco, Chiapas, Mexico.