Project Update: January 2017

Period reported: May to December 2016

I have applied for permission to conduct this research and visit the herbarium of Universidad Nacional Mayor de San Marcos (USM, Peru) in May 2016.

We started fieldwork in June 2016. We selected sites to establish 36 plots along an altitudinal gradient from 2000 to 3150 m in the park "Bosque de Protección Alto Mayo (BPAM)".

(1) Epiphytic and terrestrial orchid and fern diversity:

We have carried out an inventory of epiphyte and terrestrial orchids and ferns in 26 plots during August, October and November 2016. We also have registered number of individuals with flowers/fruits or sori in each group. We have collected 200 specimens of orchids and ferns. We have been identifying collected specimens at the Herbarium San Marcos and Gymnosperms and Monocots department at the Museo de Historia Natural (Perú) in July, September and December 2016 and January 2017. At the moment we have identified nine orchid species and 28 fern species (Table 1).

(2) Forest structure and microclimate:

We have collected the data for forest structure in these 26 plots. We placed 14 data loggers to register forest microclimate along the altitudinal gradient in August 2016.
In the following months we plan to:

- Complete the data collection of orchids and ferns for the other 10 plots during February 2017.
- Collect data loggers in February 2017.
- Complete identification specimens on March, April and May 2017 at Museo de Historia Natural.
- Meetings with local authorities in two towns, "Afluente" and "Jorge Chavez" in February 2017 to plan the education workshops in primary schools in April 2017.
- Organise presentations to divulge preliminary results of my research in the BPAM administrative headquarters and at the "Universidad Nacional San Martin" in May 2017.
- Produce field guides with photographs of specimens collected and information about their distribution in June and July 2017.
- Due to recent internal conflicts between the local communities and the park staff, I have not been able to carry out the field work with the park rangers. However, I plan to organise a workshop for the identification of orchids and ferns at "Venceremos" Biological Station for the park rangers in April 2017. This event will depend on the presence of park rangers at the park during my visit.

Table 1. Preliminary list of orchid and ferns species of a gradient altitudinal at the park "Bosque de Protección Alto Mayo", Peru. Habit: E = epiphyte, T = terrestrial.

SPECIES	FAMILY	HABIT
ORCHIDS		
Draconanthes aberrans (Schltr.) Luer	Orchidaceae	E,T
Epidendrum frutex Rchb. f.	Orchidaceae	T
Epidendrum stenocalymmum Hágsater & G. Calat.	Orchidaceae	T
Pachyphyllum pastii Rchb. f.	Orchidaceae	E
Pachyphyllum serra Rchb. f.	Orchidaceae	T
Pterichis leucoptera Schltr.	Orchidaceae	T
Telipogon venustus Schltr.	Orchidaceae	T
Epidendrum recurvitepalostachyum Hágsater & E. Santiago	Orchidaceae	T
Lepanthopsis apoda (Garay & Dunst.) Luer	Orchidaceae	E
FERNS		
Campyloneurum aff. *angustifolium* (Sw.) Fée	Polypodiaceae	E
Campyloneurum amphostenon (Kunze ex Klotzsch) Fée	Polypodiaceae	E
Campyloneurum ophiocaulon (Klotzsch) Fée	Polypodiaceae	E
Campyloneurum repens (Aubl.) C. Presl	Polypodiaceae	E
Campyloneurum sphenodes (Kunze ex Klotzsch) Fée	Polypodiaceae	E
Niphidium crassifolium (L.) Lellinger	Polypodiaceae	E
Serpocaulon aff. *triseriale* (Sw.) A.R. Sm.	Polypodiaceae	E
Serpocaulon fraxinifolium (Jacq.) A.R. Sm.	Polypodiaceae	E
Serpocaulon levigatum (Cav.) A.R. Sm.	Polypodiaceae	E
Serpocaulon loriceum (L.) A.R. Sm.	Polypodiaceae	E
Ceradenia bishopii (Stolze) A.R. Sm.	Polypodiaceae	E
Ceradenia pilipes (Hook.) L.E. Bishop	Polypodiaceae	E
Cochlidium serrulatum (Sw.) L.E. Bishop	Polypodiaceae	E,T
Melpomene anazalea Sundue & Lehnert	Polypodiaceae	T
Grammitis paramicola L.E. Bishop	Polypodiaceae	E,T
Moranopteris taenifolia (Jenman) R.Y. Hirai & J. Prado	Polypodiaceae	E
Lellingeria phlegmaria (J. Sm.) A.R. Sm. & R.C. Moran	Polypodiaceae	E
Hymenophyllum aff. *axillare* Sw.	Hymenophyllaceae	E
Hymenophyllum fragile (Hedw.) C.V. Morton	Hymenophyllaceae	E
Hymenophyllum ruizianum (Klotzsch) Kunze	Hymenophyllaceae	E
Trichomanes diaphanum Kunth	Hymenophyllaceae	E
Trichomanes angustatum Carmich.	Hymenophyllaceae	E
Trichomanes hymenoides Hedw.	Hymenophyllaceae	E
Trichomanes lucens Sw.	Hymenophyllaceae	E,T
Jamesonia aureonitens (Hook.) Christenh.	Pteridaceae	T
Jamesonia flexuosa (Kunth) Christenh.	Pteridaceae	T
Blechnum columbiense Hieron.	Blechnaceae	T
Culcita coniifolia (Hook.) Maxon	Culcitaceae	T


Left: Plot at 3250 m. Right: *Pachyphyllum serra*, terrestrial orchid.


Left: Plot at 2900 m. Right: *Moranopteris taenifolia*, epiphytic fern.