

**International Association for Plant Taxonomy**  
**Research Improvement Grants for Plant Systematics 2016.**  
**Final report**

Dr. Carolina Guerreiro  
Instituto de Botánica Darwinion (SI)  
Buenos Aires, Argentina

March 3rd, 2017.

The 2016 IAPT Research Improvement Grants for Plant Systematics allowed me to perform a research visit to several botanical institutions in Peru, from June 19<sup>th</sup> to July 7<sup>th</sup>, 2016. These were: MOL (Universidad Nacional Agraria La Molina), USM (Universidad Nacional Mayor de San Marcos), both in Lima, and CUZ (Universidad Nacional San Antonio Abad del Cusco), in Cusco. There, I had the opportunity to study botanical specimens of *Chusquea* Kunth (Poaceae, Bambusoideae, Bambuseae), the largest bamboo genus in the world, comprising *ca.* 174 species. It ranges from Mexico to Argentina and Chile, and from sea level to over 4000 m. Species of *Chusquea* are found in montane forests, high-altitude grasslands and temperate beech forests.

The long-term goal of my research is to contribute to the systematic study of *Chusquea*. Reconstructing the phylogeny of bamboos, particularly in this genus, requires evaluating morphological (micro and macromorphology) and anatomical (leaf and cauline) data in addition to the chloroplast and nuclear sequences. During my stay in Peru, I was able to analyze specimens of *Chusquea*, in order to gather information on distribution and morphological characters to distinguish the species, to elaborate identification keys and to build a morphological matrix to be used in phylogenetic studies. Also, in my research visit to USM, I was able to determine to species level 70 specimens of *Chusquea* collected in Peru. At CUZ, I could identify 15 specimens. Finally, at MOL, I studied in detail the type specimens of 8 species of the genus. Also, I was asked by Dr. Mercedes Flores, head curator of MOL, to give a conference about my work with woody bamboos from southern South America.

Because of its great diversity, much taxonomic work remains to be done. There remains a need to organize and reference the large amount of morphological variation present in *Chusquea* for floristic, systematic and ecological studies. The possibility of studying and analyzing *Chusquea* specimens from Peru granted me the chance to examine in detail morphological characters that will lead me to answer questions on the systematics of the species of *Chusquea* from South America.

Previous to my visit to Peruvian herbaria, I have established a working relationship with Dr. Juan José Alegría Olivera, an expert in Peruvian grasses based at MOL. This relationship led to the publication of two new species of *Chusquea* subg. *Platonia* (Guerreiro *et al.*, 2014; *Phytotaxa* 183: 224-238). During my research visit, financed by IAPT, I had the opportunity to meet and work alongside Dr. Alegría Olivera to strengthen our scientific interaction. In the months following my trip, I have been working, along with my advisor, Dr. Andrea S. Vega, and Dr. Alegría Olivera in the description of two new species of *Chusquea* subg. *Magnifoliae* from Peru (Alegría Olivera *et al.*, 2017: submitted to *Systematic Botany*) and the lectotypification of 8 species of *Chusquea* native to Peru (Guerreiro & Vega, 2017: submitted to *Phytotaxa*).

Currently, we are working on the description of one new species, new records, as well as a taxonomical synopsis of *Chusquea* subg. *Magnifoliae* and *C.* subg. *Platonia* for Peru (Guerreiro *et al.*, in prep.). Moreover, the morphological information gathered during my trip, together with molecular data, will be used in phylogenetic studies, currently being undertaken, aiming to obtain a more robust hypothesis of the evolution of the species of the genus *Chusquea* (Guerreiro *et al.* in prep.).

### Brief financial report

- Round-trip air ticket Lima – Cusco – Lima, flying Lan Airlines: US\$ 110.
- Lodging expenses in Hotel Panamericano in Lima for 14 days, meals and local transportation: US\$ 590.
- Lodging expenses in Hotel Unumizu, Cusco, for 5 days and meals: US\$ 300.

Total: US\$ 1000.

Round-trip air ticket Buenos Aires (Argentina) – Lima (Peru) flying Aerolineas Argentinas was financed by a grant from Argentina’s National Scientific and Technical Research Council (PIP CONICET 11220110100783) to my advisor, Dr. Andrea S. Vega.



Peruvian herbaria visited, working with specimens and with Dr. Juan José Alegría Olivera (MOL).

Dr. Carolina Guerreiro

Dr. Andrea S. Vega  
Advisor