

Project Update: November 2014



Figure 1 - Pollination of *Chloraea virescens* by the invasive European bumblebee *Bombus terrestris* (Parque Nacional Lago Puelo).

Fieldwork was conducted from the beginning of spring in September 2013 to the end of summer in March 2014. It began in Rio Grande do Sul in Brazil (latitude -29° S), continued in Argentina in Buenos Aires, in Parque Nacional Lago Puelo (Chubut) and ended in Parque Nacional Los Glaciares (Santa Cruz, latitude -50° S) looking for Chloraeinae orchids according to their flowering phenology. New populations of *Bipinnula* species were located in Rio Grande do Sul and Buenos Aires, and their pollinators were recorded on videos and photographs. This work allowed us to publish two taxonomic articles in prestigious botanical journals. Populations of a cryptic terrestrial orchid, which remained elusive to

science for more than 60 years, were re-found and reproductive studies were begun on them. In Lago Puelo National Park orchid diversity and reproductive studies were continued. Pollination and reproductive studies of two orchid species showed that invasive European bumblebees (*Bombus* spp.) provide effective

pollination services despite their negative impact on the single native and endangered bumblebee (*Bombus dahlbomii*). In Los Glaciares National Park orchid diversity and reproductive studies were begun focusing on *Gavilea* species and in *Codonorchis lessonii*. All the information gathered during this campaign augmented significantly the information regarding their distribution, their habitat and their reproductive strategies and their dependence or not on pollinators. This information is being processed and will be available on scientific journals and reports.

A field guide with detailed photographs and general comments about the orchid diversity dwelling in Lago Puelo National Park was elaborated and given to local authorities and conservation agents. Also, guidance and counseling about orchid diversity and their pollinators was given to local Patagonian park rangers.

Seeds from critical species were gathered and asymbiotic germination trials were executed. Also, a new collaboration was initiated with a researcher fellow with large experience on symbiotic orchid germination and propagation.



Figure 2 - Population of *Gavilea chica* on a hill close to the village El Chalten (Parque Nacional Los Glaciares).



Figure 3 - Myself waiting for visits of pollinators on Bipinnula flowers. (Rio Grande do Sul).

Presentations for high school students and teachers about native orchids were offered in Buenos Aires city and Tucuman. An interview for a national science popularization journal was given.

There is still information to be processed, reports to be written, more Pampean populations to be found and better film records of pollinators to be obtained. This will be pursued in the following months.