The Compositae collection of LP Herbarium: past and present

Gisela Sancho[1] & Laura Ilharlegui[1]

[1] División Plantas Vasculares, Museo de La Plata, Facultad de Ciencias Naturales y Museo, Universidad de La Plata, La Plata, Buenos Aires, Argentina; *sancho@fcnym.unlp.edu.ar*.

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ABSTRACT

The Herbarium LP (Museum of La Plata, National University of La Plata) holds nearly 300,000 specimens representing a rich history of challenging collecting journeys to uncharted lands and a deep love for plants. Specifically, for Compositae, the LP herbarium holds about 50000 non-type specimens and 2415 type specimens. From these types, the tribes Senecioneae, Astereae, Nassauvieae, and Mutisieae are, in decreasing order, the best represented. The legacy of Angel Lulio Cabrera is especially noteworthy by representing nearly 44% of the total type specimens. This essential collection makes the LP herbarium a reference institution for South American Compositae knowledge.

Keywords: Asteraceae, type specimens

INTRODUCTION

The Herbarium LP belongs to the Division of Vascular Plants, Museum of La Plata, Faculty of Natural Sciences, National University of La Plata (UNLP), Argentina.

The Museum of La Plata is a symbol of the city of La Plata and has been declared a national monument since 1997. This Museum was founded during a period with a complicated social, political, and economic context. Despite this, the enthusiasm of its founder, Francisco Pascasio Moreno (1852-1919), an explorer, collector, and politician, managed in 1884 to get the government of that time to decree its foundation and construction, thus fulfilling one of his old dreams (Editorial Board Revista Museo, 1997). The indelible mark that F. P. Moreno left on Argentine science at the time was not limited to his management as director of the Museum of La Plata. The explorations that he carried out in his early youth, as well as those that he carried out as Expert ("Perito") on behalf of Argentina (1896-1903) commanding commissions of topographical engineers and traveling naturalists, made it possible to explore and resolve the regions in dispute with Chile that extended along of the Andes Mountains (Editorial Board Revista Museo, 1998). It is in this context of scientific effervescence and exploration at the end of the 19th and beginning of the 20th centuries that two enthusiastic naturalists, Carlo Luigi Spegazzini (1858-1926), born in Italy, and Nikolai Mikhailovich Alboff (1866-1897), born in Russia carried out collection expeditions that would forever change the destiny of the collections of the Museum of La Plata.

Shortly after the museum was founded and by indication of F. P. Moreno, C. L. Spegazzini was appointed head of the botanical section (Crisci et al. 1997). Spegazzini had a great enthusiasm to learn about the flora of the New World and his

Figure 1. Angel Lulio Cabrera collecting in Paso del Agua Negra, San Juan province, Argentina. *Photo by Roberto Kiesling.*

collections in remote lands were the cornerstone of the LP herbarium. Although he carried out several field campaigns to gather botanical specimens in Argentina and Chile between the years 1880 and 1926 (Katinas et al., 2000), the most remarkable trips were carried out in the lost land, Patagonia, at that time almost unexplored. Spegazzini, as well as Alboff, were pioneers in the explorations, for example, of Tierra del Fuego and Isla de los Estados, being among the first botanists in Argentina to collect vascular plants from those confines (Sancho and Ilharlegui, 2017). Their specimens, together with those of other important contemporaneous collectors like C. Ameghino (Argentinian paleontologist), C. Berg (German naturalist), C. Burmeister (German naturalist), J. Molfino (Argentinian collector), C. Moyano (Argentinian botanist), T. Stuckert (Swedish collector), F. Tonini del Furia (Italian collector), among others, shaped the historical collection held nowadays at LP.

The Herbarium LP also houses other important historical specimens gathered by, for instance, C. E. O. Kuntze, in the 1890s, G. H. E. M. Hieronymus in the 1870s and 1880s, and R. A. Philippi in Chile in the second half of the nineteenth century.

A. L. CABRERA'S LEGACY

By 1946, the Spanish botanist Angel Lulio Cabrera (1908-1999) (Figure 1) would start, as the new Director of the LP herbarium, the most important transformation of the institution. His scientific work would begin many years before, after falling in love with the Patagonian Compositae while helping his zoologist father in the field. His work continued until he turned 90 years old. Cabrera, during his life, produced an impressive amount of 250 articles mostly on Compositae and phytogeography of Argentina. Cabrera deeply knew the plants and the ecological characteristics in which they lived. This allowed him to establish the phytogeographic limits of the vegetation units in Argentina (e.g., Cabrera 1971; Cabrera and Willink, 1973), a scheme that remains solid and valid despite the years and the new biogeographic perspectives.

Figure 2. Type specimen designated by A. L. Cabrera to describe his first new species, *Grindelia aegialitis* (Cabrera, 1931, pp. 234). Image courtesy of LP herbarium.

Figure 3. *Grindelia aegialitis* Cabrera, the first species described by this author.
Photo by Cintia Celsi, Proyecto Costas Bonaerenses, Fundación Azara.

With his work, Cabrera, together with other South American synantherologists such as J. Cuatrecasas (1903-1993) and G. Barroso (1912-2003), among others, changed, forever, the knowledge about the South American Compositae.

For the LP herbarium, Cabrera's contribution had the same overwhelming effect as for the knowledge of South American Compositae. Under his direction, the herbarium increased the number of its specimens to more or less its present number. His collections, about 36000 specimens, together with those obtained during the copletion of several of the INTA Projects on regional floras, and a regular exchange of specimens with other South American herbaria, highly increased the value of the collection at LP. Cabrera also left 957 type specimens of Compositae that gave rise to 508 new taxa, mainly in the Eupatorieae, Gochnatieae, Mutisieae, Nassauvieae, Senecioneae, and Vernonieae (Freire and Iharlegui, 2000) (Figs. 2 and 3). Most synantherologists working with South American species have surely come across or relied on Cabrera's publications while conducting their research or have consulted his collections. Cabrera's contributions transcends time, and the words of this article humbly attempt to honor his work.

THE HERBARIUM LP TODAY

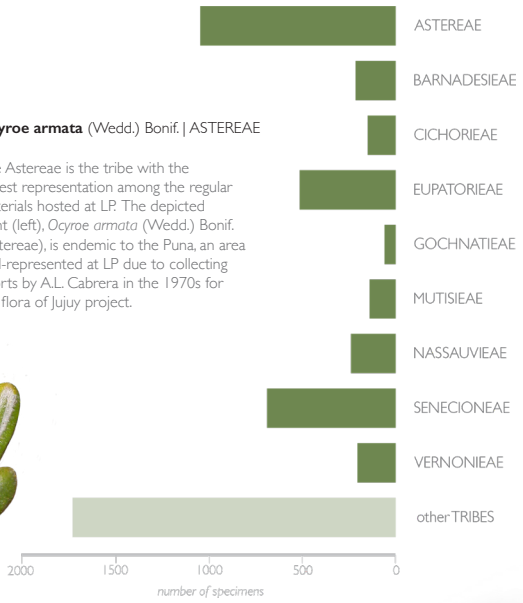
The collection at LP now numbers about 300,000 specimens (Figure 4). The type collection is also important by including 4818 type specimens. Specifically, for Compositae, the LP herbarium holds about 50000 non-type specimens (Figure 5) and 2415 type specimens (Figure 6) from which nearly 44% are Cabrera's types (Figure 7). This essential collection makes the LP herbarium a reference institution for the South American Compositae knowledge.

As for most similar institutions, one of the current main challenges in Herbarium LP is to compile the specimen information in a database and make

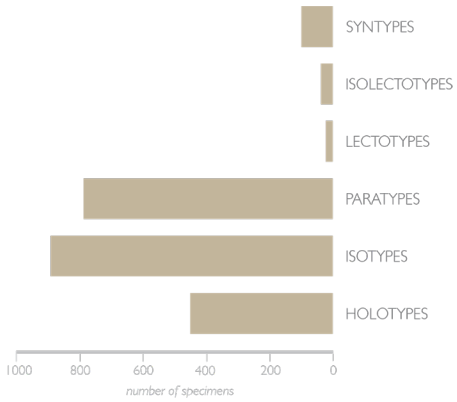
COMPOSITAE in **LP**

Ocyroe armata (Wedd.) Bonif. | ASTEREAE

The Astereae is the tribe with the largest representation among the regular materials hosted at LP. The depicted plant (left), *Ocyroe armata* (Wedd.) Bonif. (Astereae), is endemic to the Puna, an area well-represented at LP due to collecting efforts by A.L. Cabrera in the 1970s for the flora of Jujuy project.



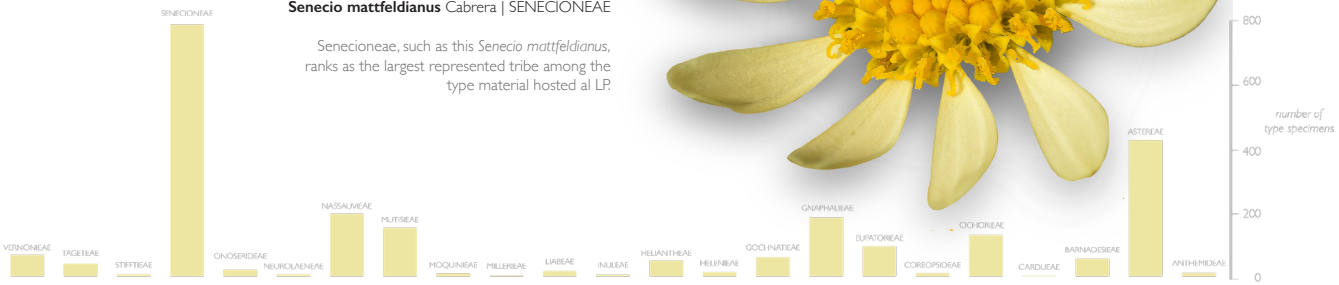
TYPES of **TYPES**



TYPE SPECIMENS by **TRIBE**

Senecio mattfeldianus Cabrera | SENECIONEAE

Senecioneae, such as this *Senecio mattfeldianus*, ranks as the largest represented tribe among the type material hosted al LP.



Angel Lulio Cabrera (1908-1999)

A leading figure of Compositae research, Cabrera not only broke ground studying this family across the whole phylogentic spectrum, but also contributed significantly to biogeography and formed a school of taxonomists in southern South America.

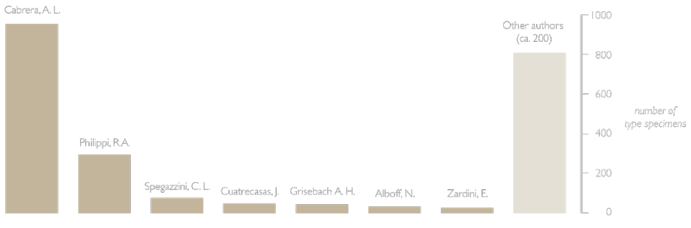


Figure 4. Specimen cabinets of the Herbarium LP.

it available to the scientific community. The first efforts to digitize the specimen data began about 2007. Not without quite a few rocks in the way, the database operation is being progressively carried out. Nowadays, the platform Specify 7 is used to hold the LP specimen data.

In addition to providing information about the specimens, the database also has created a network where university students forge their first tools with the botanical collections and, at the same time, develop their love for plants. This has resulted in the training of about 70 interns who have been a fundamental link in the development of the database.

Up to the present, we have digitized 85,000 specimens including all of the type collection. Some of the LP records are available at Global Plants on JSTOR (https://plants.jstor.org), Portal de Datos del Sistema Nacional de Datos Biológicos (https://datos.sndb.mincyt.gob.ar), GBIF (https://www.gbif.org) and, soon, they will be at the Museum of La Plata webpage (https://www.museo.fcnym.unlp.edu.ar). Indeed, the main objective is to include in the institutional database all the Compositae of the LP herbarium to make available to the botanical world the treasures that our predecessors bequeathed to us. Slowly but surely, and with the help of our students, we are on that path.

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