

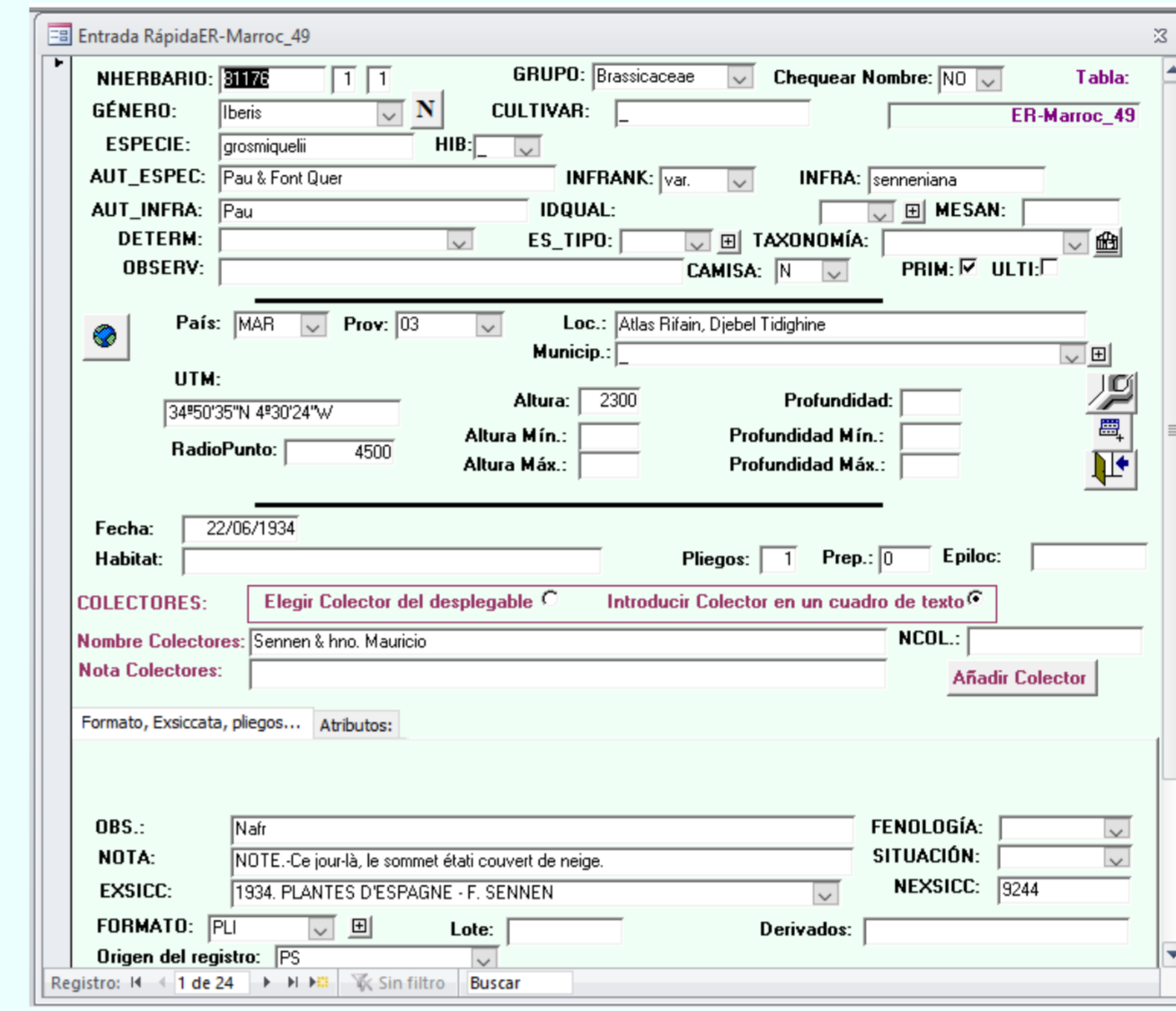
INTRODUCTION

- The BC herbarium houses the second largest botanical collection of plants in Spain including about 800,000 specimens and 10,000 types. It also conserves one of the most important collections of North African vascular plants, particularly from the Maghreb floristic area (i.e. Morocco, Algeria and Tunisia).
- The North African plants collection started to be built over a century ago by the eminent botanist Pius Font Quer (1888–1964), a distinguished Catalan botanist and scientific disseminator who did an important research work about the Moroccan flora. Font Quer carried out several floristic expeditions across North Africa and distributed the exsiccatae *Iter Maroccanum* (1927–1930) and *Iter Ifniense* (1935), from which he collected more than 2,000 numbers.
- Another botanist who made important contributions was Frère Sennen (Étienne Marcellin Granier-Blanc, 1861–1937), who published numerous new nomenclatural proposals for Moroccan taxa. His main work was the exsiccata *Plantes d'Espagne* with 10,309 numbers (1907–1937). Sennen and his collaborator, Frère Mauricio, completed large floristic explorations between 1930 and 1935.
- The North African collection was initially included within the BC general collection. The initial North African collection included the materials collected by Font Quer, Sennen, Maire, Jahandiez, Emberger and other botanists between early 19th century – middle 20th century.
- The North African collection as a separate scientific item was established in 1990s during the floristic revisions of the specimens that were carried out for the elaboration of *Catalogue des Plantes Vasculaires du Nord du Maroc* (Valdés et al. 2002).
- Specimens are ordered following the taxonomic criteria of *Flora iberica* and African Plants Database, although *Catalogue des Plantes Vasculaires du Nord du Maroc* (Valdés et al. 2002) and *Flore pratique du Maroc* (Fennane et al. 1998–2014) were also consulted.
- In this study, we provide a summary of taxonomic and temporal data as well as geographical information in order to improve the accessibility of these records to the scientific community.



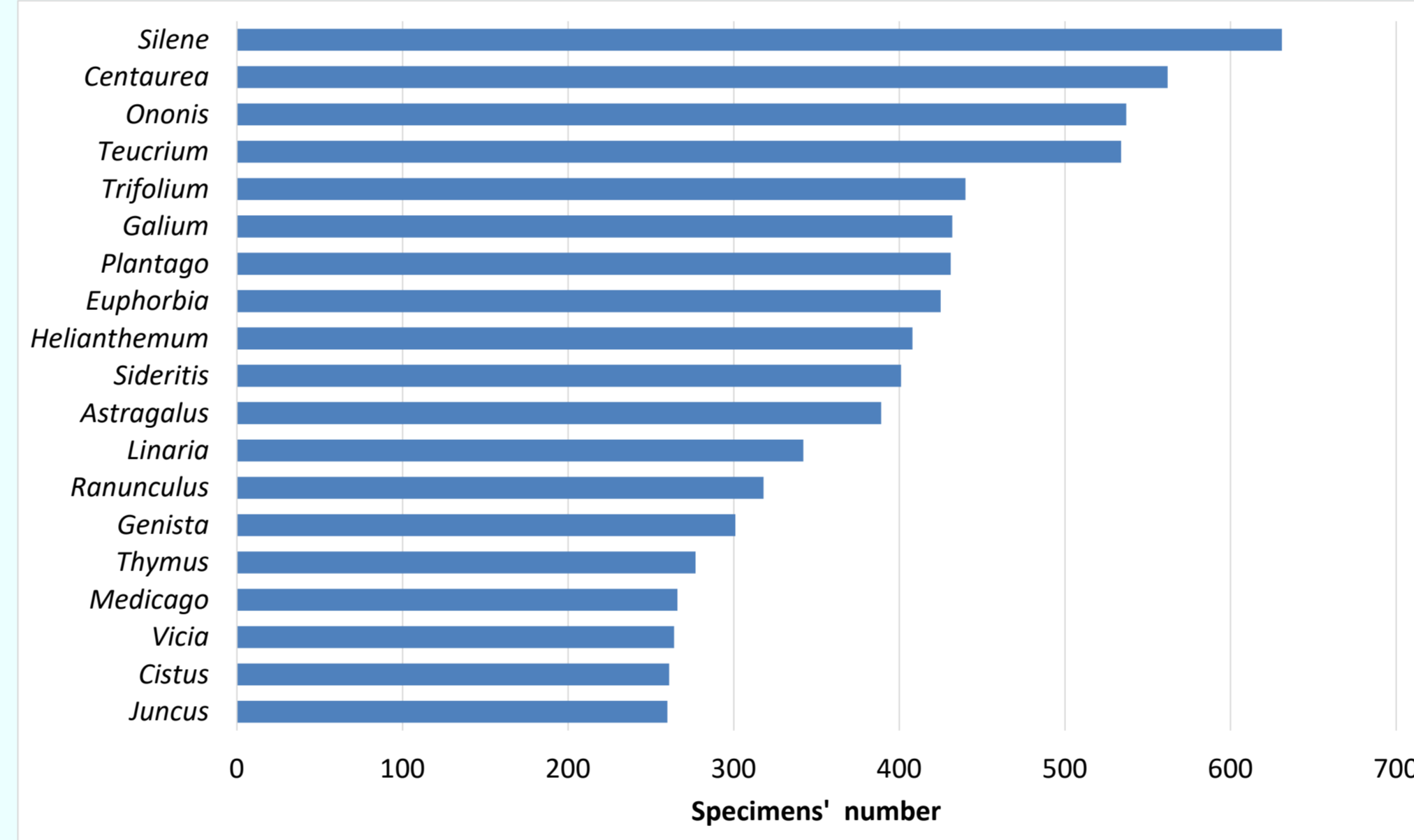
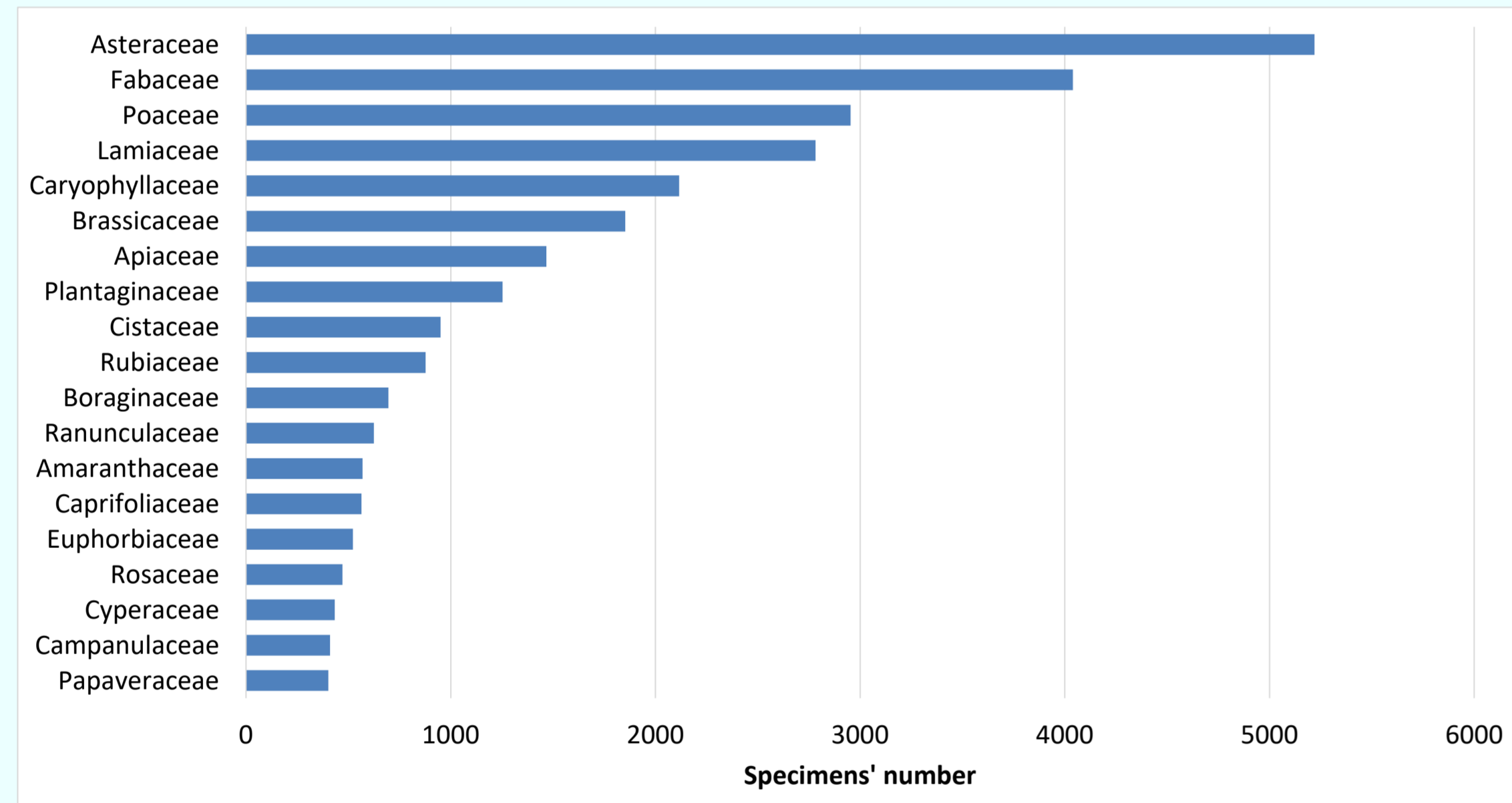
METHODOLOGY

- Information about taxon, collector, collection date, ecology and altitude was obtained from herbarium labels and included in the database using Herbar, a software based in MS-Access and especially designed to manage botanical collections, modified with Elysia functionalities (<https://www.gbif.es/software/elysia/>).
- Google Earth was used to georeference the specimens and toponymic information was traced using different online resources: Geographic names database (<https://www.geonames.nga.mil/gns/html/>); GeoNames geographical database (<http://www.geonames.org/>) and maps on Lexilogos webpage (<https://www.lexilogos.com/maroc.htm>) as well as Google Earth.
- The locality has been completed by indicating, wherever possible, the province and country following the International Standard ISO 3166-2.
- All type specimens were scanned using a HerbScan® according to international standards: 600 dpi, including a barcode, 24-colour scale, and spatial scale bar (JSTOR 2020). The resulting images were hosted at JSTOR (<https://plants.jstor.org/>) and GBIF (<https://www.gbif.org/>).
- Some data of our specimens (taxonomic and location details) were validated by comparing them with data from the G herbarium included in African Plants Database (<http://www.ville-ge.ch/musinfo/bd/cjb/africa/recherche.php>) and Flora of Maghreb on line project (<https://efloramaghreb.org/>).
- The North African vascular plants dataset was published in the GBIF within the BC-Plantae dataset and all the data were adapted to the Darwin Core Standard (<https://www.gbif.org/dataset/838475f4-f762-11e1-a439-00145eb45e9a>).



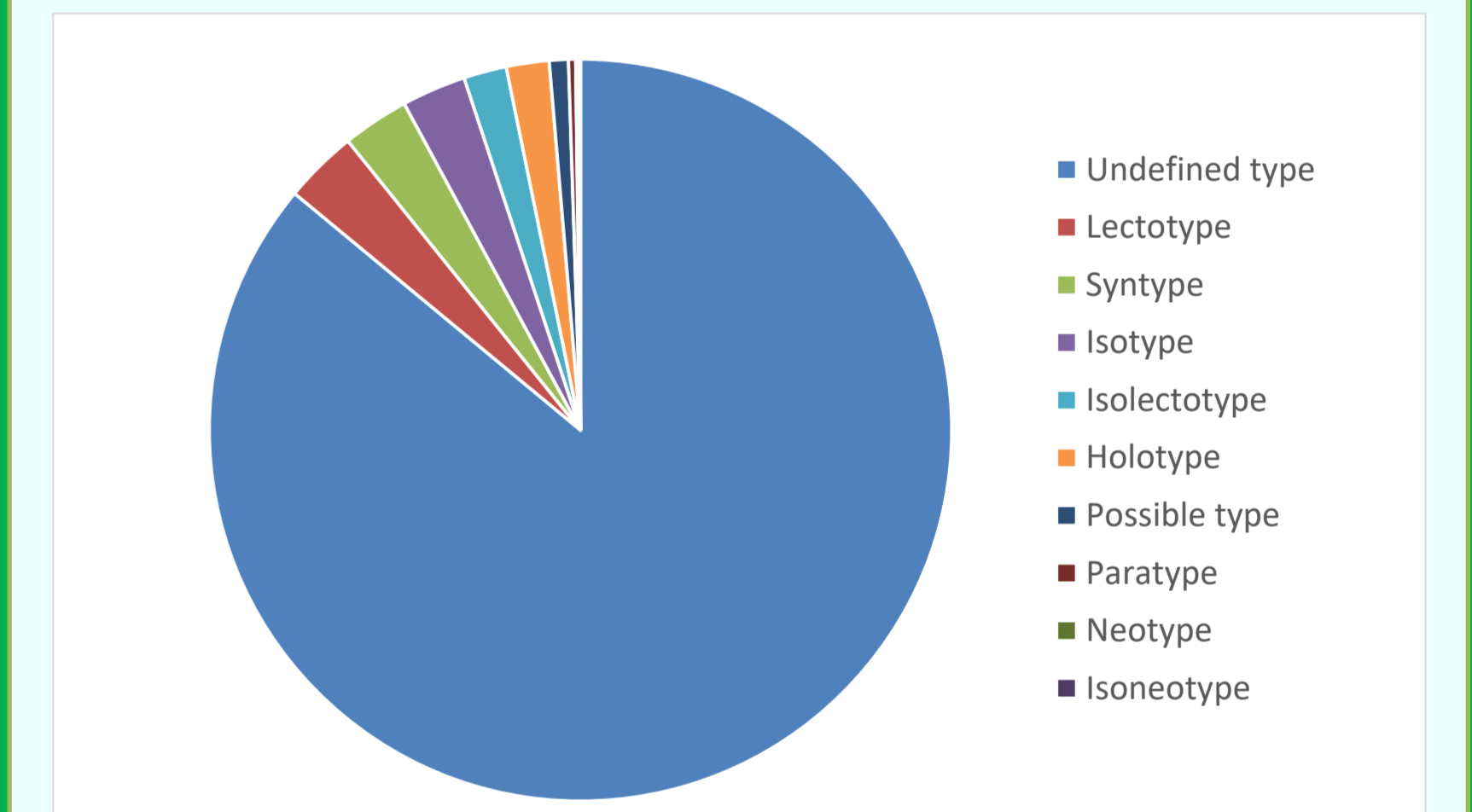

RESULTS: Taxonomic coverage

- The collection includes 36,991 records of vascular plants (135 families, 1,034 genera, 3,693 species, and 824 subspecies).
- The richest families in specimens (>2,000 sheets) are Asteraceae, Fabaceae, Poaceae, Lamiaceae and Caryophyllaceae. 69.20% of the specimens are identified at the species level.
- The most represented genera (>500 sheets) are *Silene*, *Centaurea*, *Ononis* and *Teucrium*.



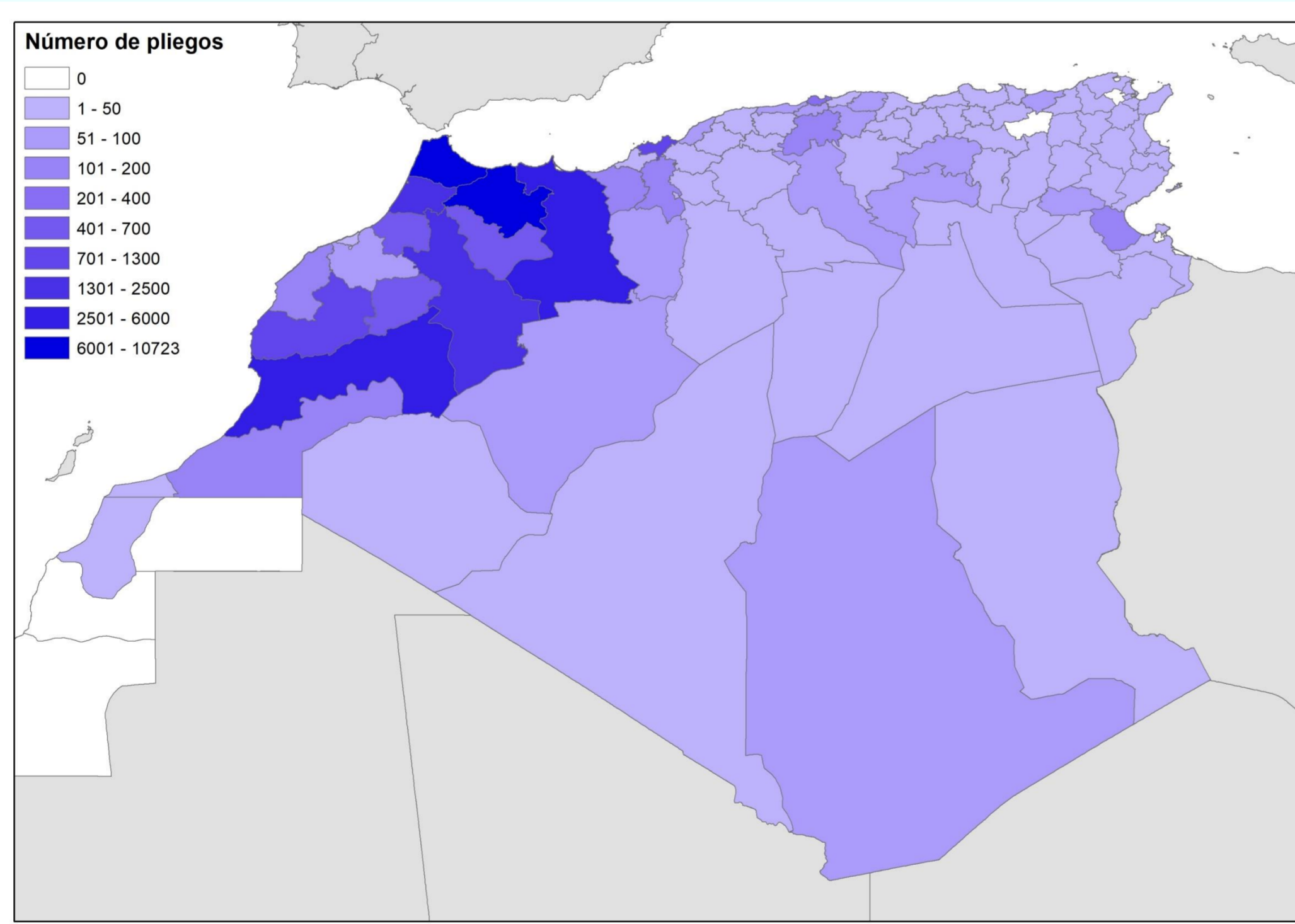
RESULTS: Type material

- The North African sub-collection comprises 965 nomenclatural types: 18 holotypes, 27 isotypes, 31 lectotypes, 18 isolectotypes, one neotype (*Phagnalon carolipaii* Font Quer), one isoneotype (*Phagnalon carolipaii* Font Quer), 28 syntypes, 3 paratypes, and 8 possible types.
- There are 830 unidentified types that still need to be classified according to literature.



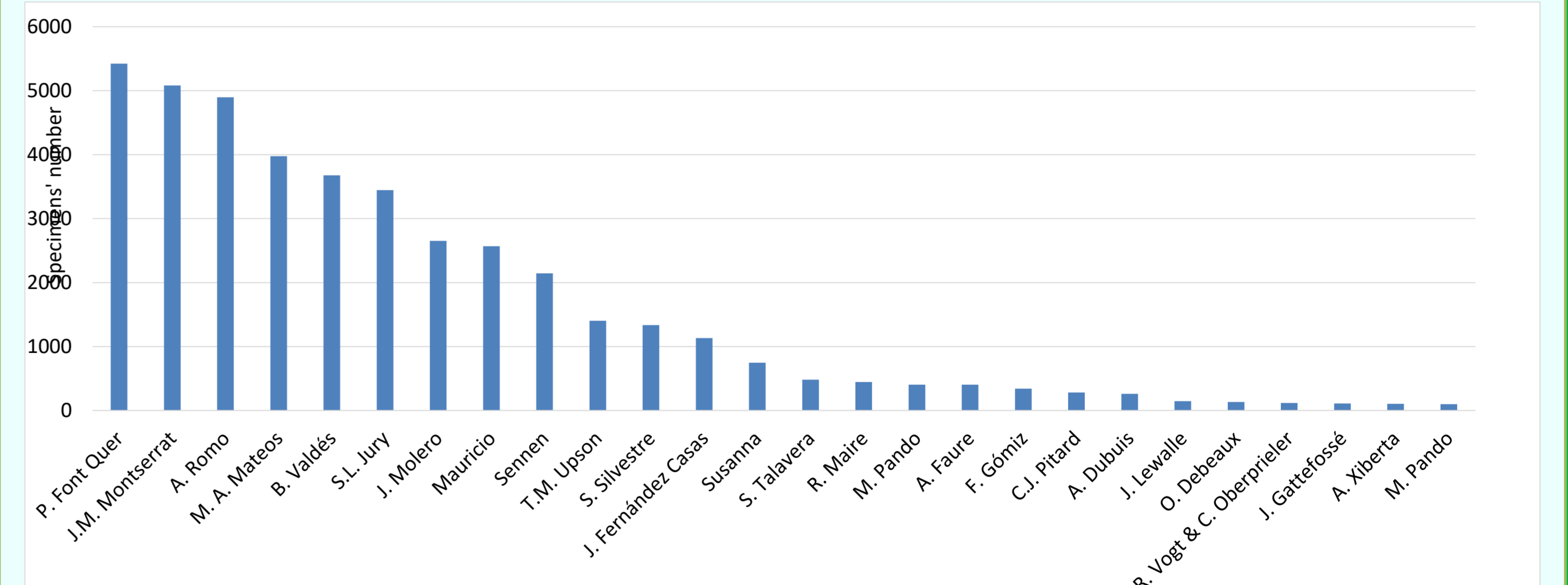
RESULTS: Geographic coverage

- Most of the specimens were collected in Morocco (ca 90%) and the most represented region corresponds to the Rif (nucleus of the BC herbarium).
- The provinces with more specimens are: Tanger-Tetouan (10,723 specimens), Taza-Al Hoceima-Taounate (7,941 specimens), Oriental (5,414 specimens) and Souss-Massa Draâ (2,509 specimens). They come from the collection campaigns carried out by Font Quer (1927–1932 and 1935) and for the projects "Catalogue of vascular plants of Northern Morocco" (1993–1996) and "Biogeo" (2003–2004).



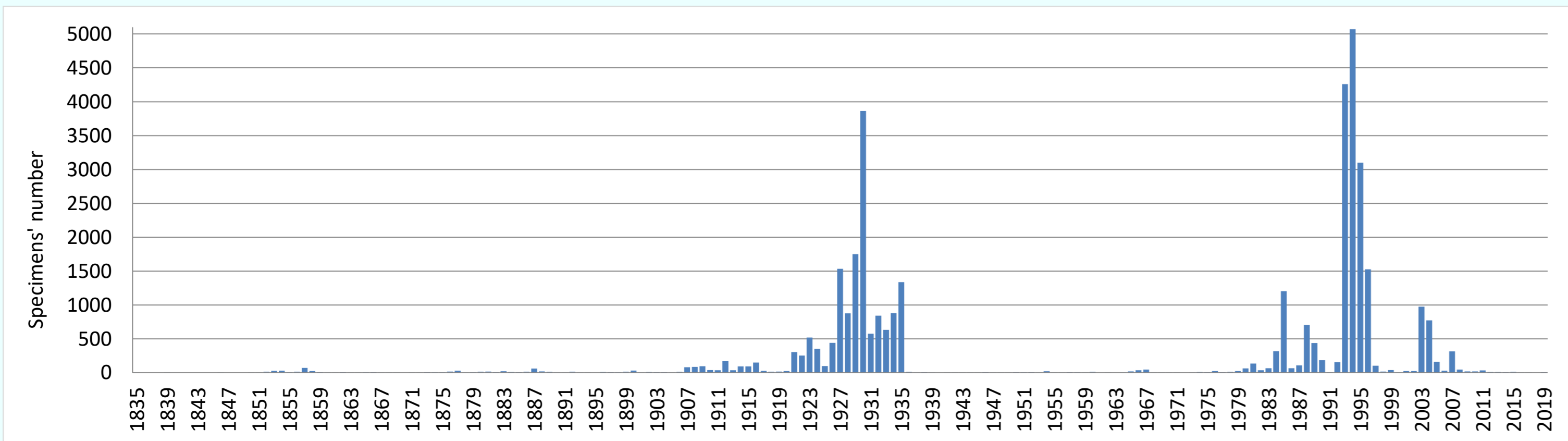
RESULTS: Principal collectors

- The most important collectors according to number of specimens (> 4,000 specimens) were: P. Font Quer (8,394 specimens), J.M. Montserrat (5,081 specimens), A. Romo (4,896 specimens) and Sennen (4,099 specimens)



RESULTS: Temporal coverage

- The collection spans the years 1835 to 2019. The most fruitful periods are:
 - Between 1927 and 1935: botanical expeditions of P. Font Quer.
 - Between 1993 and 1996: botanical expeditions for the *Catalogue of vascular plants of North Morocco*.
 - Between 2003 and 2004: botanical expeditions for the Biogeo Project.
- After 2010 the number of specimens is underestimated, since it is necessary to incorporate the material from recent collections.
- The periods of low activity (1936–1979) coincided with political conflicts such as the Spanish Civil War and the Second World War, among others.



CONCLUSIONS

- The data included in this dataset offers an important coverage of different regions of the Maghreb. These regions have an important value regarding biological conservation since the Maghreb is considered a hotspot of biodiversity (because of its high taxonomic richness and significant plant endemism).
- Geographic, taxonomic and temporal coverage of the collection is scientifically remarkable.
- The potential of this collection for improving biodiversity knowledge as a source of data has been highlighted.

