

# Community Curation of Nomenclatural and Taxonomic Information in the Context of the Collection Management System JACQ

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## Abstract

Nomenclatural and taxonomic information are crucial for curating botanical collections. In the course of changing methods for systematic and taxonomic studies, classification systems changed considerably over time (Dalla Torre and Harms 1900, Durand and Bentham 1888, Endlicher 1836, Angiosperm Phylogeny Group et al. 2016). Various approaches to store preserved material have been implemented, most of them based on scientific names (e.g., families, genera, species) often in combination with other criteria such as geographic provenance or collectors.

The collection management system, [JACQ](#), was established in the early 2000s then developed to support multiple institutions. It features a centralised data storage (with mirror sites) and access via the Internet. Participating collections can download their data at any time in a comma-separated values (CSV) format. From the beginning, JACQ was conceived as a collaboration platform for objects housed in botanical collections, i.e., plant, fungal and algal groups. For these groups, various sources of taxonomic reference exist, nowadays online resources are preferred, e.g., [Catalogue of Life](#), [AlgaeBase](#), [Index Fungorum](#), [Mycobank](#), [Tropicos](#), [Plants of the World Online](#), International Plant Names

Index ([IPNI](#)), [World Flora Online](#), [Euro+Med](#), [Anthos](#), [Flora of Northamerica](#), [REFLORA](#), [Flora of China](#), [Flora of Cuba](#), Australian Virtual Herbarium ([AVH](#)).

### **Implementation and (re)use of PIDs**

Persistent identifiers (PIDs) for names (at any taxonomic rank) apart from PIDs for taxa, are essential to allow and support reliable referencing across institutions and thematic research networks (Agosti et al. 2022). For this purpose we have integrated referencing to several of the above mentioned resources and populate the names used inside JACQ with those external PIDs. For example, *Salix rosmarinifolia* is accepted in [Plants of the World Online](#) while [Euro+Med Plantbase](#) considers it a synonym of *Salix repens* subsp. *rosmarinifolia*. Either one can be an identification of a specimen in the JACQ database.

### **Retrieval of collection material**

One strong use case is the curation of material in historic collections. On the basis of outdated taxon concepts that were applied to the material in history, "old" synonyms are omnipresent in historical collections. In order to retrieve all material of a given taxon, it is necessary to know all relevant names.

### **Future outlook**

In combination with the capability of Linked Data and the [IIIF](#) (International Image Interoperability Framework) technology, these PIDs serve as crucial elements for the integration of decentralized information systems and reuse of (global) taxonomic backbones in combination with collection management systems (Gamer and Kreyenbühl 2022, Hyam 2022, Loh 2017).

### **Keywords**

nomenclature, floras, taxonomy, PID, linked data, IIIF

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### **Presented at**

TDWG 2023

### **Conflicts of interest**

The authors have declared that no competing interests exist.

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