

Conference Abstract

eHerbarium: A Global Platform for Exploring and Sharing Herbarium and Live Plant Images to Enhance Biodiversity Preservation

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Abstract

Historically, herbaria have been instrumental in preserving and studying plant biodiversity. The widespread use of smartphones has led to a surge in the digital documentation of plants. Over the last decade, herbarium digitizing projects are also underway. Many of the digitized herbarium images are available online through different portals. The examples of these portals include [Kew Gardens](#) and [New York Botanic Garden Herbarium](#).

Combining the latest mobile, cloud and AI technologies as well as plant taxonomy and herbarium artifacts, the mission of [eHerbarium](#)*¹ is to provide an accessible digital platform for plant enthusiasts, including botanists, researchers, students, as well as the general public around the world, to collect, identify and share live plant and herbarium images. It promotes data collection and data sharing around the globe for biodiversity preservation. It further provides educational benefits about plants and the plant biodiversity around us and the world.

eHerbarium offers access to an extensive collection of herbarium images from Kew's Herbarium at the Royal Botanic Gardens, Kew. The platform is also extensible, allowing it to host images from other herbaria. In addition, this platform provides high-quality botanical visuals, enabling users to capture and share live plant photos or herbarium

images, or upload from existing collections. Customizable licensing options facilitate community use and enhance collaborative botanical research. The platform's AI-powered tools streamline plant identification, offering autocomplete suggestions for taxonomy details such as scientific name, family name or common names. Our proprietary technology ensures seamless and accurate botanical data entry by automatically retrieving corresponding scientific or common names. Additionally, eHerbarium enriches botanical records by automatically associating image locations with [Biodiversity Information Standards \(TDWG\) Level 2 regions](#). TDWG Level 2 regions are specific geographical areas defined by TDWG to standardize the recording and reporting of biodiversity data. These regions, which typically correspond to large countries or significant subnational areas, help ensure consistent and accurate geographical referencing in botanical studies and herbarium records, while also respecting image owners' location privacy.

eHerbarium has more than 40,000 worldwide downloads since its debut less than six months ago on March 18, 2024. We encourage further collaborations to expand our repositories for herbarium and live plant images. We also welcome partnerships to tailor the application to specific needs for natural history and biodiversity data collection.

Keywords

plant biodiversity, digital documentation, herbarium digitizing projects, AI technology, plant taxonomy, herbarium artifacts, plant identification, data collection, data sharing, digital platform, Biodiversity Information Standards (TDWG), Kew Herbarium, Royal Botanical Garden, botany education

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Herbarium images and their detailed information including scientific names, family names and distribution data are queried from backend services supported by [Plants of the World Online](#) (POWO), licensed under Creative Commons Attribution 4.0 International ([CC BY 4.0](#)).

Common name information is obtained through [Integrated Taxonomic Information System](#) (ITIS), licensed under [CCO](#).

The design and technology described in this abstract are the subject of a pending US patent application. International patent protection pending under a PCT (Patent Cooperation Treaty) application. This abstract is provided under [CC BY 4.0](#) license. The license applies only to the text of the abstract. This does not extend to any patents that cover the devices, systems, processes, or technologies described in the abstract. All proprietary rights such as patent rights are reserved by the patent holder(s).

Author contributions

Author owns the original idea, design and development of the eHerbarium app

Conflicts of interest

The authors have declared that no competing interests exist.

Endnotes

*1 Link to eHerbarium app: <https://play.google.com/store/apps/details?id=com.ptr.herbaria>