

The importance of historical biodiversity data transcribed from botanical garden archives: results from the citizen science project 'Plant Letters' on Zooniverse

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Many botanic gardens are historical institutions holding centuries of invaluable records of their scientific and daily activity in the form of archival material. To make readily available part of the historical information (1870-1928) produced by the Institute, Herbarium and Botanic Garden of the University of Coimbra, we launched the participatory science project "Plant Letters" on Zooniverse. Voluntary citizens from all over the world, were asked to transcribe documentation associated with the production of botanical knowledge at the University of Coimbra. From these handwritten records, it was possible to extract an important set of natural historical data, which highlights the value of these documents. In the first phase of the project, ca. 1200 documents were made available in the platform, mostly in Portuguese, English and French. For over a year, ca. 1250 volunteers participated in the project transcribing a total of 3,809,000 characters, or over 641,000 words, more than one King James Bible. Data obtained with citizens' collaboration is now accessible at the database "Plant Letters" (cartasdanatureza.uc.pt), and the searchable content of letters allows us to obtain historical records on: plant species distribution; plant material circulation; scientific processes of plant classification; reconstructing the contexts of living collections in the botanical garden, herbarium specimens, and museum objects in the university natural history holdings; international networks of botanical knowledge production. These biodiversity records pertain not only to Portuguese flora but also to the vegetation of former ex-colonies, who as independent countries require this valuable data. We will analyze the advantages and challenges of collaborative transcription approaches in archives, crucial aspects on engaging citizens in active participation, and strategies for open-access dissemination of data produced by the community, valuable for present and future conservation of biodiversity.

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