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Data Article

Integrated dataset of anatomical, morphological, and architectural traits for plant species in Madagascar

Amira Azizan [a], Emma Guillon [a], Yves Caraglio [c], Patrick Langbour [b], Sébastien Paradis [b], Pierre Bonnet [c], Yannick Brohard [c], Christine Heinz [c], Nabila Boutahar [b], Loïc Brancheriau [b,*]

[a] University of Montpellier, Dept. of Biodiversity, Ecology and Evolution, Montpellier, France
[b] CIRAD, UR BioWooEB, 34398, Montpellier, France
[c] CIRAD, UMR AMAP, 34398, Montpellier, France

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ABSTRACT

In this work, we present a dataset, which provides information on the structural diversity of some endemic tropical species in Madagascar. The data were from CIRAD xylotheque (since 1937), and were also collected during various fieldworks (since 1964). The field notes and photographs were provided by French botanists; particularly by Francis Hallé. The dataset covers 250 plant species with anatomical, morphological, and architectural traits indexed from digitized wood slides and fieldwork documents. The digitized wood slides were constituted by the transverse, tangential, and radial sections with three optical magnifications. The main specific anatomical traits can be found within the digitized area. Information on morphological and architectural traits were indexed from digitized field drawings including notes and photographs. The data are hosted in the website ArchiWood (http://archiwood.cirad.fr).

* Corresponding author.
E-mail address: loic.brancheriau@cirad.fr (L. Brancheriau).

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Specifications Table

Subject area	*Botany*
More specific subject area	*Anatomy, morphology and architecture of plant species*
Type of data	*Tables of anatomical traits and morpho-architectural traits* *Images of microscope slides for wood anatomy* *Field drawings with notes* *Photographs*
How data was acquired	*Microscope* *Field observations*
Data format	*Tables in MSExcel format *.xlsx* *Images of microscope slides in 24-bit RGB TIFF (1600×1200 pixels)* *Digitized field drawings and notes in 24-bit RGB JPG (300 dpi)* *Scanned photographs of 24×36 mm format in 24-bit RGB JPG (600 dpi)*
Experimental factors	–
Experimental features	–
Data source location	*Madagascar*
Data accessibility	*Data package title: ArchiWood dataset* *Resource link:* http://archiwood.cirad.fr *Identifier: doi*:10.18167/archiwood/1 *Usage rights: Creative Commons Attribution – NonCommercial – ShareAlike 4.0 International (CC BY-SA-NC 4.0)*

Value of the data

- The dataset consolidates anatomical, morphological, and architectural traits of plant species from different sources (xylotheque, field notes, and photographs).
- The described traits of tropical plant species can be useful to understand the biogeographical variation within species and genera in plant anatomy regarding the ontogeny and structure of sampled plants.
- To understand the diversity of wood characteristics and technological behaviors that directly governed the choice of tropical timber use.
- To understand the relationship between tropical wood structure and certain physical, mechanical, chemical, and biological properties of the material.

1. Data

Madagascar is an important insular hotspot for biodiversity conservation [11]. More than 80% of the currently known flora species are endemic to the island [4]. Endemic tropical species in Madagascar are well known for its important value in ecology and economy but are predicted to face mass extinction in the near future because of global warming and deforestation [2,3]. Identification of Malagasy vascular plant species was documented and can be accessed via the website Tropicos (Madagascar catalogue, http://www.tropicos.org/Project/Madagascar).

The architectural analysis on tropical species as described by [1,7,8] emphasize on the dynamics of growth and structure of a plant species in the competitive nature of the forest, thereby conforming to its architectural model. Recent studies of plant architecture may not only provide complimentary information for species-level identification purposes, but also for understanding plant structure