
Abstract

Widespread mistaken identity in tropical plant collections

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Specimens of plants and animals preserved in museums are the primary source of verifiable data on the geographical and temporal distribution of organisms. Museum datasets are increasingly being uploaded to aggregated regional and global databases (e.g. the Global Biodiversity Information Facility; GBIF) for use in a wide range of analyses. Thus, digitisation of natural history collections is providing unprecedented information to facilitate the study of the natural world on a global scale. The digitisation of this information utilises information provided on specimen labels, and assumes they are correctly identified. Here we evaluate the accuracy of names associated with 4,500 specimens of African gingers from 40 herbaria in 21 countries. Our data show that at least 58% of the specimens had the wrong name prior to a recent taxonomic study. A similar pattern of wrongly named specimens is also shown for Dipterocarps and Ipomoea (morning glory). We also examine the number of available plant specimens worldwide. Our data demonstrate that, while the world's collections have more than doubled since 1970, more than 50% of tropical specimens, on average, are likely to be incorrectly named. This finding has serious implications for the uncritical use of specimen data from natural history collections.

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