



## Actual usage of biological nomenclature and its implications for data integrators; a national, regional and global perspective\*

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### Abstract

Biological names play an important role in resource identification and as anchors for all sorts of associated information. This is borne out in ever-expanding online resources but the ways in which names are stored and presented give rise to challenges and pitfalls that can lead to missed or misinterpreted information. These resources must serve a variety of users and keep abreast of changes in nomenclature and systematics. Observations on the use of biological names are presented and some solutions to the challenges are offered.

**Key words:** Biodiversity, Digital data bases, Nomenclators

Accurate identification of organisms and correct use of biological names is essential in order to apply correct measures in the fields of conservation and to control pest and disease causing organisms. As has been pointed out by Grimaldi and Engel (2005) “*All accumulated information of a species is tied to a scientific name, a name that serves as a link between what has been learned in the past and what we today add to the body of knowledge*”. While the veracity of the statement holds true, the nature of taxonomy and nomenclature present significant obstacles to taking advantage of this universal link between a taxon name and the accumulated information.

Efforts to mobilise biodiversity information have now yielded significant online resources, and these are set to grow enormously in the future. The Internet is revolutionising accessibility but also creates its own set of obstacles to discovery and retrieval of information based on taxonomic names. At the time of writing, the Global Biodiversity Information Facility network (<http://www.gbif.org>) has mobilized nearly 150 million collection and observation records from nearly 3,000 individual datasets. The Biodiversity Heritage Library (<http://www.biodiversitylibrary.org>) has recently passed the 7 million page mark toward its goal of digitizing an estimated 2–3 million publications relating to species. The National Center for Biotechnology Information (<http://www.ncbi.nlm.nih.gov>) stores tens of millions of gene sequence relating to more than three hundred thousand taxa. The Biodiversity Information Standards (<http://www.tdwg.org>) website lists 592 different biodiversity informatics projects, all of which are mobilizing, serving, integrating and exchanging species information. Each of these resources shares a common dependence on taxon names to provide the species context to the associated information.

There are also numerous information resources relating to the compilation and reconciliation of taxon names. The authors have each been engaged in long-term projects that involve collating lists of taxonomic