



NOMENCLATURAL DATABASES⁸

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Abstract

The definition of nomenclature differs from dictionary to dictionary but suffice to say a nomenclatural database will deal with the name of an organism and the specimens that bring information regarding the name. There are a number of databases that will be discussed during the session all of which supply the information about the name. These databases have a number of things in common but not all will supply the information necessary for nomenclatural decisions. I will discuss the types of databases available and indicate what type of information can be found within them.

Introduction

Nomenclature is defined with various emphases in biology. The botanical description I think comes closest to what I believe is the most accurate meaning of nomenclature, i.e., 'A system or set of terms or symbols; the system of providing taxonomic names for organisms.' (see GardenWeb Glossary of Botanical Terms at <http://www.gardenweb.com/glossary/nomenclature>). The convention of using a binomial made up of a generic name and species epithet, although developed in the 18th century by Linnaeus, is still an extremely useful tool for querying databases and for information retrieval. Biologists have rules for providing an entity with a name. The rules vary with the discipline (table 1).

Table 1. Home pages of the five internationally recognised 'codes of nomenclature'.

Biological Discipline	WWW Address
Zoology	http://www.iczn.org/code.htm
Botany	http://www.bgbm.fu-berlin.de/iapt/nomenclature/code/default.htm
Cultivated Plants	http://www.york.biosis.org/zrdocs/codes/icncp.htm
Bacteriology	http://www.york.biosis.org/zrdocs/codes/icnb.htm
Virology	http://www.york.biosis.org/zrdocs/codes/icvcn.htm

There are inherent problems associated with having so many codes and so steps are being taken to produce a nomenclatural code for all organisms (see 'Draft Biocode' at <http://www.york.biosis.org/zrdocs/codes/biocode.htm>).

Nomenclatural Databases

All the databases which are available on the WWW contain more information than the nomenclature of an entity and they display this information in different ways, but all can be queried using the binomial or 'scientific name'. Table 2 shows the WWW sites of a number of the databases available and lists their various data types.

⁸ For those wishing to use this abstract interactively it is held at <http://possum.murdoch.edu.au/~cowan/nomencl.html>.



Database Name & Address	Custodian	Comment
Plants National Database http://plants.usda.gov/plants/plntmenu.html	USDA	When entering this database there is little information as to its scope. There is no help file provided that is easily accessible if at all. This database does not provide full referencing although some references are offered as digital images. The database includes plants other than algae.

This database provides a basic query page that allows the user to query at:

1. a species level using a binomial, common name
2. the generic level
3. the family level

The query can be limited by 'which state of the union?' information is to be gathered. The result of a query produces a "Plant Report" which lists:

1. the scientific name with Authority
2. the 'symbol' (it is annoying that there is no obvious help file/ glossary which allows the user to define terms such as symbol.
3. the family level classification of the species
4. the economic importance of the plant
5. the growth habit
6. the life length
7. whether the plant is introduced or native.
8. synonyms with authority
9. distribution throughout USA
10. reference information regarding the species, but not necessarily the references concerning the nomenclature.

Database Name & Address	Custodian	Comment
W³ TROPICOS http://mobot.mobot.org/Pick/Search/pick.html	Missouri Botanical Garden	When entering this database there is little information as to its scope. There is no help file provided that is easily accessible if at all. This database does include few algae although the classification scheme used at present leaves a lot to be desired with Fucus placed in the Family: Algae. Other plant groups are not included.



This database only allows a query at the scientific name level (entire or partial binomial). Upon entering a query that can be a genus name, but not a species epithet the following is displayed.

On the first screen:

1. binomial plus authority
2. familial classification
3. full bibliographic citation
4. basionym (if name is in the form of a combination) plus authority with full bibliographic citation
5. type information such as the type statement

Further information can be gathered by using hotlinks and various buttons

Database Name & Address	Custodian	Comment
FLORIN http://www.florin.ru/florin/db/	DataX/FLORIN, Inc.	This database is not only European in scope. There is no clear indication of the extent of the data included in the databases. There are tips associated with some of the databases presented on the first page.

This site has a number of small databases to search mostly at the genus level. All the databases use a standard application named 'Florin Taxonomy Web' (at http://www.florin.ru/florin/brief/b_tax.htm). This application allows querying from familial to 'subform' rank and can be limited to nomenclatural or taxonomic or distributional information. There is a large amount of data stored on the plant families of the world.

Database Name & Address	Custodian	Comment
GRIN TAXONOMY http://www.ars-grin.gov/npgs/tax/index.html	Germplasm Resources Information Network (GRIN).	When entering this database there is some information as to its scope. It is a database involved in the germplasm work of the USDA and so its emphasis is on plants of economic importance. There is no help file provided that is easily accessible if at all.

All the databases linked to the first page of this site are queried using the same format. Search terms are submitted at the familial to species rank, common names can also be used and distributional information may be used to limit the query or as the main query option. The submission of a query returns a full citation of the following information:

1. the name with abbreviated authority
2. the genus and family citation of the name
3. information of germplasm interest
4. abbreviated citation of reference to the protologue.

This information is followed by a listing of common names with their country of origin, uses for the taxon, the range of the taxon (both its native and naturalised range) and a bibliography.



Searching on the WWW for animal databases revealed some interesting results. The Zoological Division of the Chinese Biodiversity Center has a taxonomic database but it is only available in Chinese. At the site of the biodiversity, systematics and collections page (<http://www.nbio.gov/biodiversity/systematics.html>) of the National Biological Information Infrastructure an electronic web site for the US government, two animal databases are listed.

Database Name & Address	Custodian	Comment
ANIMAL DIVERSITY WEB http://www.oit.itd.umich.edu/projects/ADW/	Museum of Zoology University of Michigan	When entering this database there is some information as to its scope. It is a "collection of pictures and information about animals. Accounts of individual species include information on distributions, natural history, conservation, and economic importance, along with pictures and sounds if available. Synopses of some higher taxonomic groups are also provided." As they say on the front page nomenclatural information does not exist

Database Name & Address	Custodian	Comment
CROCODILIAN, TUATARA, AND TURTLE SPECIES OF THE WORLD AN ONLINE TAXONOMIC AND GEOGRAPHIC REFERENCE http://www.flmnh.ufl.edu/natsci/herpetology/turcroclis/	Association of Systematic Collections	This database is an on-line monograph. The title clearly states what the database contains. There is no on-line help.

Using the on-line 'checklist facility' taxonomic, nomenclatural and distributional information is displayed in similar format to that found in a checklist.

Bacterial Nomenclature is covered by a database held in Brazil but compiled in Germany.

Database Name & Address	Custodian	Comment
BACTERIAL NOMENCLATURE http://www.bdt.org.br/bdt/bacterianame/	DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH & BDT, Base de Dados Tropical	This web site contains links to pages that explain bacterial nomenclature. There is no help file provided that is easily accessible if at all. Querying in on a simple string.

The result of a search provides a series of hotlinked items that can be followed. Nomenclatural information and hazard warnings are provided for binomials. There is no information on typification or type statements; culture collection data etc is available at this site.



Australia has a number of databases that deal with nomenclatural information. These can be accessed through the Australian Biological Resources Study (ABRS) site (at <http://www.anbg.gov.au/abrs/index.html>).

Database Name & Address	Custodian	Comment
PLATYPUS http://www.ento.csiro.au/platypus/platypus.html	ABRS	Before using the database the software must be down-loaded or purchased. The database is not available interactively on the WWW.

The database provides full details of the taxonomy, nomenclature and distribution of the terrestrial aquatic and marine fauna.

Database Name & Address	Custodian
AUSTRALIAN PLANT NAME INDEX (APNI) http://environment.gov.au/life/species/flora/apni_intro.html	Australian National Botanic Gardens

The database is not yet accessible from this site but will be in the future. APNI is available in hard copy (Chapman 1991). It contains all the nomenclatural information for Australian vascular plants.

Database Name & Address	Custodian
AUSTRALIAN MARINE ALGAL NAME INDEX (AMANI)	Roberta Cowan

This database is not yet available on the WWW. Its projected release onto the WWW is January 2000. The database provides information regarding the distribution, taxonomy and nomenclature of Australian marine macro-algae. With respect to nomenclature it provides information on the type specimen, herbarium locality and accession number of the type specimen, protologue information with a type statement as per APNI. It is meant to provide parallel information to that of APNI.

References

Chapman, A.D (1991) *Australian Plant Name Index* vols 1-4 AGPS: Canberra