

## The International Code for Nomenclature for algae, fungi and plants – a significant rewrite of the International Code of Botanical Nomenclature

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The beginnings of botanical nomenclature date back to the 18th century with the publication of the first edition of *Species Plantarum* by Carl Linnaeus (1753), one of the most important publications in the history of biology. Since then, developments in botanical nomenclature have been transformed under the influence of many individuals (e.g. Alphonse Pyramus de Candolle) and organizations (e.g. British Association of Advancement of Science and International Association for Plant Taxonomy (IAPT)).

Codes or sets of rules governing biological nomenclature were first written in the 19th century and applied to both plants and animals. The Botanical Club of the American Association for the Advancement of Science produced a 'Code of Botanical Nomenclature' in 1904 (ref. 1), which was subsequently adopted by the 1905 Vienna Botanical Congress as the first International Code of Botanical Nomenclature (ICBN) (*Règles internationales de la Nomenclature botanique-adoptées par le Congrès International de Botanique de Vienne 1905*). Since then, nine Congresses have been held across the globe, which have made many modifications and amendments to the ICBN.

The code is developed and modified by voluntary participation of plant taxonomists from any country. Proposals to amend the code can be made by any individual by submitting the amendment to the house journal of IAPT, i.e. *Taxon*. Each proposed amendment is discussed at the Nomenclature Committee session held before each Congress and a decision made based on a voting system. During the ballot, each member has four voting options: a straightforward 'yes' or 'no', which either offers acceptance or rejection of each proposal, along with two further options: 'ed.c.' and 'sp.c.'. The vote 'ed.c.' refers the proposal to the Editorial Committee which will consider its inclusion in the code, but does not necessarily require it to do so. Finally, the vote 'sp.c.' refers the proposal to a Special

Committee to review the contents, either during the Nomenclature Section meetings or, more likely, prior to the next Congress. All accepted amendments are compiled and published by the Editorial Committee<sup>2</sup>.

The most recent International Botanical Congress was held in Melbourne, Australia during July 2011 and brought about some major changes. Details of the Melbourne code will be published by mid-2012. Hence this report is a synthesis of the significant changes that should be brought to the attention of the Indian audience. This summary is based on studies by McNeill and Turland<sup>2</sup>, Knapp *et al.*<sup>3</sup> and Miller *et al.*<sup>4</sup>. In order to disseminate these significant changes as widely as possible, the paper entitled 'Changes to publication requirements made at the XVIII International Botanical Congress in Melbourne – what does e-publication mean for you?', has been published in a wide range of journals (*BMC Evolutionary Biology*, *Botanical Journal of the Linnean Society*, *Brittonia*, *Cladistics*, *MycKeys*, *Mycotaxon*, *New Phytologist*, *North American Fungi*, *Novon*, *Opuscula Philolichenum*, *PhytoKeys*, *Phytoneuron*, *Phytotaxa*, *Plant Diversity and Resources*, *Systematic Botany and Taxon*) and a number of languages (Knapp *et al.*<sup>3</sup> is available in Chinese, Portuguese, Russian and Spanish in the same issue).

For the first time since its formulation, the name of the code is to be changed from the *International Code of Botanical Nomenclature* (ICBN) to the *International Code of Nomenclature for Algae, Fungi and Plants* (ICN), taking effect from 1 January 2012. The name change is attributed to the expanding scope of code, specifically to include fungi and algae, which are still studied as part of botany. The Melbourne Congress also brought amendments to the code to allow electronic publication as a means of validly publishing species names (Article 29). Proposals for considering electronic publication as validly published material have been long-pending,

discussed at length in previous meetings where preference has always been given to hard-copy printed materials. However, the Melbourne meeting approved electronic publications as sources of validly published material, effective almost immediately from 1 January 2012. Accepting electronic publication as a valid publication will enable greater accessibility, particularly for taxonomists in developing nations. Furthermore, the new code adds that electronic publication should be distributed only as Portable Document Format (PDF) with archival standard (ISO 19005), or as a book with International Standard Serial Number (ISSN) or an International Standard Book Number (ISBN). In cases where electronic publications appear on-line first, this will be considered as an accepted publication, with preliminary and final versions of the same electronic publication clearly indicated as such when issued. It is also stated in the new code that 'publication on websites or in ephemeral documents available over the Internet; publication in journals without a registered ISSN or e-ISSN and publication in books without a registered ISBN or e-ISBN will *not* result in effective publication of novelties'. Thus, there is an important distinction between items simply appearing on websites as opposed to publications that receive proper attention via peer-review. The distinction is simply the form in which the final document appears: as an electronic version first, rather than on paper.

A second important amendment made during the Melbourne meeting concerns the language used for the description of new taxa. Until now all new taxa had to be accompanied with a Latin description or diagnosis. The new code now states that 'the description required for valid publication of the name of a new taxon of all organisms falling under the *Code* may be in either English or Latin'. This will also be effective from 1 January 2012. However, the scientific name of any taxon – its binomial name – will continue to be in Latin (or 'Latinised').

## RESEARCH NEWS

The third notable change affects mycology, where current practice may offer different names for the sexual and vegetative forms of pleomorphic fungi<sup>5</sup>. The new code states that one name must be used for a fungus, with all new names of fungi accompanied by a unique identifier and registered with a recognized repository such as Mycobank (<http://www.mycobank.org/>). This will come into effect on 1 January 2013.

In summary apart from the new name, three important changes to the code have

been made: electronic publication is now a valid form of publication; new taxon descriptions can be in English or Latin, and mycologists can refer to the principle of 'one fungus, one name' and can exploit the concept of name registration.

1. Arthur, J. C. *et al.*, *Bull. Torrey Bot. Club*, 1904, **31**, 249–261.
2. McNeill, J. and Turland, N., *Taxon*, 2011, **60**, 243–286.
3. Knapp, S. *et al.*, *PhytoKeys*, 2011, **6**, 5–11.

4. Miller, J. S. *et al.*, *PhytoKeys*, 2011, **5**, 1–3.
5. Hawksworth, D. L., *MycKeys*, 2011, **1**, 7–20.

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