2. The Amsterdam Declaration on fungal nomenclature

Hawksworth, David L.; Crous, Pedro W.; Redhead, Scott A.; Reynolds, Don R.; Samson, Robert A.; Seifert, Keith A.; Taylor, John W.; Wingfield, Michael J.; Thrane, Ulf; Frisvad, Jens Christian

Total number of authors: 11

Published in: Mycotaxon

Link to article, DOI: 10.5248/116.491

Publication date: 2011

Document Version
Publisher's PDF, also known as Version of record

Link back to DTU Orbit

Citation (APA):
2. The Amsterdam Declaration on fungal nomenclature


*Correspondence to: d.hawksworth@nhm.ac.uk

Abstract — The Amsterdam Declaration on Fungal Nomenclature was agreed at an international symposium convened in Amsterdam on 19–20 April 2011 under the auspices of the International Commission on the Taxonomy of Fungi (ICTF). The purpose of the symposium was to address the issue of whether or how the current system of naming pleomorphic fungi should be maintained or changed now that molecular data are routinely available. The issue is urgent as mycologists currently follow different practices, and no consensus was achieved by a Special Committee appointed in 2005 by the International Botanical Congress to advise on the problem. The Declaration recognizes the need for an orderly transition to a single-name nomenclatural system for all fungi, and to provide mechanisms to protect names that otherwise then become endangered. That is, meaning that priority should be given to the first described name, except where there is a younger name in general use when the first author to select a name of a pleomorphic monophyletic genus is to be followed, and suggests controversial cases are referred to a body, such as the ICTF, which will report to the Committee for Fungi. If appropriate, the ICTF could be mandated to promote the implementation of the Declaration.

Key words — anamorph, candidate species, MycoCode, pleomorphic fungi, teleomorph

Background

The International Code of Botanical Nomenclature (ICBN) and its predecessors have regulated the nomenclature of fungi since 1867. The ICBN is now revised at each six-yearly International Botanical Congress.

1 Note from the Mycotaxon Editor-in-Chief: Only the Declaration text is published here as a courtesy to Mycotaxon readers. For the full document addressing additional suggestions and other items of interest, please refer to Hawksworth & al. (IMA Fungus 2(1): 105–112, 2011).

2 The first eight authors undertook the finalization of this text, taking into account comments and suggestions from others among the signatories listed at the end of the Declaration.

3 The International Rules of Nomenclature ([1905]–1935), the American Code of Botanical Nomenclature (1907), and the Lois de la Nomenclature Botanique (1867).
The ICBN currently in force is that adopted at the Vienna Congress in 2005 (McNeill & al. 2006), and published proposals to further modify the ICBN will be voted on at the XVIIIth Congress in Melbourne in July 2011 (McNeill & Turland 2011). The ICBN includes several special provisions for aspects of the nomenclature of fungi. Amongst those provisions, that permitting the separate naming of different morphs of the same species in non-lichenized ascomycetes (Ascomycota) and basidiomycetes (Basidiomycota), has been a cause of ongoing controversy and passionate debates between mycologists — and also of nomenclatural instability — for over 80 years. Aspects of the early history of the problem are summarized by Weresub & Pirozynski (1979).

The instability in fungal names as a consequence of these provisions has arisen because of the periodic major changes in the ICBN and dissatisfied mycologists who do not follow the prescribed rules. With authors implementing the rules in different ways, the situation had become so unsatisfactory by the 1970s that a committee to investigate the matter was appointed under the auspices of the Nomenclatural Secretariat of the International Mycological Association (IMA). The resultant proposals, endorsed by the 2nd International Mycological Congress (IMC2) in Tampa (FL) in 1977 (Van Warmelo 1979) and adopted at the subsequent International Botanical Congress (IBC) in Sydney in 1981, simplified the system then in force. However, as anticipated by Hawksworth & Sutton (1974), this action led to numerous changes in names in economically important groups of fungi, some of which have never been adopted by those working with these organisms in applied fields. Many mycologists remained dissatisfied and frustrated with the changes.

As molecular data became available in the early 1990s (Ozerskaya & al. 2010), the need for reinterpreting Art. 59 of the ICBN, which permits the dual nomenclature of pleomorphic fungi, became apparent. At that time even the option of deleting the special provisions allowing for alternate names for fungi was floated (Reynolds & Taylor 1991, 1992). However, an international symposium convened in Newport (OR) in August 1992 to consider the matter further remained conservative and failed to reach a consensus on the substantive issues (Reynolds & Taylor 1993). The matter was revisited at a symposium during the XVIth IBC in St Louis (MO) in 1999 and a workshop at the IXth IUMS Congress of Mycology in Sydney the same year (Seifert & al. 2000), leading to a well-attended debate at IMC7 in Oslo in 2002 where 84 voted for a one name for one fungus system and 121 against (Seifert 2003). As molecular data accumulation accelerated, so did the desire for change. Rossman & Samuels (2005) went so far as to propose deletion of the pertinent Article, Art. 59, a suggestion strongly opposed by Gams (2005), while Hawksworth (2005) suggested limitation and future prohibition. The 2005 Vienna IBC introduced the concept of a special kind of typification using teleomorphs
and established a Special Committee to report on the matter. In the meantime the desire for change was increasing; 84% of those voting at three different mycological meetings in Baton Rouge (USA), St Petersburg (Russia), and Léon (Spain) favoured having only one name for each fungus (Hawksworth 2007).

The results of a questionnaire circulated at IMC9 in Edinburgh in 2010 revealed 73% favouring a progressive movement to one name for each fungus, and 58% favouring deletion of Art. 59, provided that retroactive invalidation of existing names was avoided (Norvell & al. 2010). The Special Committee appointed in 2005, however, failed to reach consensus, with 21% supporting deletion of the Article in its entirety, 16.5% for returning to the St Louis Code of 1999, and 62.5% for continuing work on modifications of the Article (Redhead 2010a). The Secretary of that Committee independently published proposals (primarily based on those of Hawksworth 2005) for modification to move the situation forward (Redhead 2010b), while alternative formal proposals were made (Gams & al. 2010). Although ultimately the Committee for Fungi (Norvell 2011) and the Special Committee (cf. McNeill & Turland 2011) supported the complicated patches to Art. 59 (Redhead 2010b), few mycologists are expected to understand fully the intricacies of a further modified Art. 59 following decades of repeated change.

This lack of consensus leaves the issue in an unacceptable state, which is urgently in need of resolution. Impatient with the current situation, different mycologists are increasingly operating as they consider most appropriate, with many ignoring the current ICBN. Indeed, contributors to one recent single multi-authored work followed five different practices in the various chapters (Rossman & Seifert 2011). The situation needs to be addressed now to give guidance to mycologists as how to proceed over the short term. However, while the nomenclature of fungi continues to be covered under the ICBN, if changes are not made at the up-coming XVIIIth IBC in Melbourne in July 2011, there will be no opportunity to make any formal change until the XIXth IBC in Beijing in 2017 – and possibly those would not become effective until 2019. Furthermore, even if changes are made, more could be expected in the following cycle. Increasing numbers of mycologists will continue to ignore, or personally interpret, the current rules. If this matter allowed merely to drift, uncertainty and confusion will inevitably increase and be compounded. This will be to the detriment not only of mycologists but of all users of fungal names.

Recognizing the imperative for action at the 2011 Congress, the International Commission on the Taxonomy of Fungi (ICTF) encouraged the CBS-KNAW Fungal Biodiversity Centre to select the topic for a special symposium they were planning. The result was the international symposium on “One Fungus = One Name (IF = IN)” held in the rooms of the Royal Netherlands Academy of Arts and Sciences (Koninklijke Nederlandse Akademie van Wetenschappen)
on 19–20 April 2011. The symposium was attended by 90 mycologists from 23 countries.

Following presentations on the problems in naming a wide range of fungi of economic and medical importance under the current rules and after open discussion, the following Declaration was made, with only three dissenting. This Declaration is presented here also with the support of several mycologists who though unable to attend the Amsterdam meeting learned of its development from colleagues, and whose names are now included amongst the list of authors.

In addition to the Declaration, there was considerable discussion and some proposals made on aspects of fungal nomenclature other than those concerned with the naming of pleomorphic fungi. These included the governance of fungal nomenclature and the need to develop a method of recognizing fungi only known from environmental nucleic acid sequences. The key points and suggestions made on these and some additional minor matters are summarized following the Declaration. However, there were considerable differences of opinion on these two matters. We stress that they are independent from the Declaration, do not reflect the views of all of us, and [were presented in Hawksworth & al. (IMA Fungus 52(1): 109–112, 2011)] only as a record and to provide material to be considered in future arenas.

The Amsterdam Declaration on Fungal Nomenclature
Enacted in Amsterdam, 20 April 2011

One Fungus = One Name

Recognizing the desire of mycologists to progress to a system of adopting one name for each fungal species expressed at the 9th International Mycological Congress in 2010,

Noting the proposals so far made to that end, and

Considering the urgent need for mycologists to have immediate guidance on this matter, as articulated following the “One Fungus = One Name” symposium held in Amsterdam, The Netherlands, on 19-20 April 2011, which was convened under the auspices of the International Committee on the Taxonomy of Fungi (ICTF), we, authors of this paper:

Recommend the following steps for the orderly transition towards a single-name nomenclatural system for all fungi:

1. Follow, except when it is contrary to the items listed below, the rules of the International Code of Botanical Nomenclature (ICBN) until such time as mycological nomenclature is governed by a unified BioCode, or by a code specifically implemented for fungi.
2. **Remember** that following the ICBN (2006): (a) legitimately and validly published names of monomorphic fungi, whether anamorphic or teleomorphic, can be transferred to any other validly published legitimate generic name and remain nomenclaturally legitimate (if not contrary to other provisions); and (b) that it is possible under the ICBN to epitypify (teleotypify) names with an anamorphic type by material exhibiting the teleomorph.

3. **Refrain** from proposing new names for newly discovered morphs of validly published and legitimately named species, and where necessary refer to the newly discovered morphs by an informal cross reference name in lower case Roman type, e.g. *Niesslia exilis* (monocillium-morph), *Aspergillus fumigatus* (neosartorya-morph).

4. **Follow** the Principle of Priority of publication of the ICBN when selecting the generic name to adopt. This means that authors should choose the oldest generic name, irrespective of whether it is typified by a species name with a teleomorphic or an anamorphic type, except where the younger generic name is far better known (in cases of doubt the appropriately mandated body should be consulted).

5. **Follow** the author(s), or working groups of mycologists, who first choose the generic name to be adopted. Authors should consider it mandatory to register the choice in a recognized repository, as proposed for scientific names of fungi (e.g. Index Fungorum, MycoBank)\(^4\), and then be followed. However, in cases where the first selection appears not to be in the interests of most users of fungal names, a case to overturn the choice may be submitted to the appropriately mandated international body.

6. **Encourage** individuals, or working groups of mycologists, to prepare lists of names to be preferentially used for any groups of fungi to be published (e.g. in Mycotaxon, IMA Fungus, or monographs), for endorsement by the ICTF or one of its Subcommissions.

In addition we **encourage** the enactment of appropriate changes in the ICBN, or any future code governing the nomenclature of fungi, to accommodate these practices. We also **endorse** the proposal already made to declare simultaneously published anamorph-typified and teleomorph-typified names for a species illegitimate after 1 January 2013\(^5\).

**Note:** The meeting felt that the ICTF (and its Subcommissions where established) was probably the most “appropriately mandated body” for this task. It could then report its decisions to the Committee for Fungi for formal adoption under the ICBN.

---

\(^4\) See Hawksworth & al. (2010) for further information on the proposals to be voted on at the IBC in Melbourne in July 2011.

\(^5\) See Redhead (2010b) for the detailed proposal made.
Authors (listed alphabetically)

Özlem Abaci, Department of Biology, Basic and Industrial Microbiology Section, Faculty of Science, Ege University, Izmir, Turkey
Catherine Aime, Department of Plant Pathology and Crop Physiology, Louisiana State University, Agricultural Center, 302 Life Sciences Building, Baton Rouge, LA 70803, USA
Ahmet Asan, Department of Biology, Trakya University, 22030 Edirne, Turkey
Feng-Yan Bai, State Key Laboratory of Mycology, Institute of Microbiology, Chinese Academy of Sciences, No.3, 1st Beichen West Road, Chaoyang District, Beijing 100101, China
Z. Wilhelm de Beer, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, Private bag X20, Hatfield 0028, Pretoria 0002, South Africa
Dominik Begerow AG Geobotanik, Ruhr-Universität Bochum, Universitätsstraße 150, D-44780 Bochum, Germany
Derya Berikten, Department of Biology, Anadolu University, TR-26470 Eskisehir, Turkey
Teun Boekhout, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands
Peter K. Buchanan, Landcare Research, Private Bag 92170, Auckland 1142, New Zealand
Treena Burgess, School of Biological Sciences and Biotechnology, Murdoch University, South St, Perth, 6150, Australia
Walter Buzina, Institute of Hygiene, Microbiology and Environmental Medicine, Medical University Graz, Universitätspazt 4, A 8010 Graz, Austria
Lei Cai, Key Laboratory of Systematic Mycology & Lichenology, Institute of Microbiology, Chinese Academy of Sciences, No.10, North 4th Ring Road West (BeiSiHuanXiLu), HaiDian District, Beijing 100190, China
Paul F. Cannon, CABI Europe – UK and Royal Botanic Gardens Kew, Jodrell Laboratory, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, UK
J. Leland Crane, Illinois Natural History Survey University of Illinois, 1816 South Oak Street, Champaign IL 61820-6970, USA
Pedro W. Crous, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands
Ulrike Damm, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands
Heide-Marie Daniel, BCCM/MUCL, Earth and Life Institute, Applied Microbiology, Mycology, Université catholique de Louvain, Croix du Sud 3, bte 6, B-1348 Louvain-la-Neuve, Belgium
Anne D. van Diepeningen, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands
Irina Druzhinina, Area Gene Technology and Applied Biochemistry, Institute of Chemical Engineering, Vienna University of Technology, 1060 Vienna, Austria
Paul S. Dyer, School of Biology, University of Nottingham, University Park, Nottingham NG7 2RD, UK
Ursula Eberhardt, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands
Jack W. Fell, RSMAS/University of Miami, 4600 Rickenbacker Causeway, Key Biscayne, Fl 33149, USA
Jens C. Frisvad, Center for Microbial Biotechnology, Department of Systems Biology, Technical University of Denmark, Soltofts Plads B. 221, DK-2800 Kgs. Lyngby, Denmark
David M. Geiser, Fusarium Research Center, Department of Plant Pathology, The Pennsylvania State University, University Park, Pennsylvania, PA 16802, USA
Microbiology, ICPMR, Level 3, Room 3114A, Darcy Road, Westmead Hospital, Westmead, NSW 2145, Australia.

Andrew Miller, Illinois Natural History Survey, University of Illinois, 1816 South Oak Street, Champaign, IL 61820-6970, USA

David W. Minter, Cybertruffle, 4 Esk Terrace, Whitby, North Yorkshire YO21 1PA, UK; CAB International, Bakeham Lane, Egham, Surrey, TW20 9TY, UK

Mohammad Javad Najafzadeh, Mashhad University of Medical Sciences, Mashhad, Iran

Lorelei L. Norvell, Pacific Northwest Mycology Service, 6720 NW Skyline Blvd, Portland, OR 97229 USA

Svetlana M. Ozerskaya, All-Russian Collection of Microorganisms, G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Prospect Nauki 5, Pushchino, Russia 142290

Rasim Öziç, Department of Biology, Faculty of Science, Anadolu University, TR-26470 Eskişehir, Turkey.

Shaun R. Pennycook, Landcare Research, Private Bag 92170, Auckland 1142, New Zealand

Stephen W. Peterson, National Center for Agricultural Utilization Research, ARS, USDA, 1815 North University Street, Peoria, IL 61604-3999 USA

Olga V. Pettersson, Department of Microbiology, Uppsala Biocenter, Swedish University of Agricultural Sciences, P.O. Box 7025, SE-750 07, Uppsala, Sweden

William Quaedvlieg, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Scott A. Redhead, National Mycological Herbarium, Agriculture and Agri-Food Canada, 960 Carling Avenue Neatby Building, Ottawa, Ontario K1A 0C6, Canada

Don R. Reynolds, Herbarium, University of California Berkeley, 1001 Valley Life Sciences Building 2465, Berkeley, CA 94720-2465, USA

Vincent A. Robert, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Constantino Ruibal, Departamento de Biología Vegetal II, Facultad de Farmacia, Universidad Complutense de Madrid, Plaza Ramón y Cajal, E-28040 Madrid, Spain

Robert A. Samson, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Johan Schnürer, Department of Microbiology, Uppsala Biocenter, Swedish University of Agricultural Sciences, P.O. Box 7025, SE-750 07, Uppsala, Sweden

Hans-Josef Schoer, Agricultural Institute of Slovenia, Hacquetova 17, 1000 Ljubljana, Slovenia.

Keith A. Seifert, National Mycological Herbarium, Agriculture and Agri-Food Canada, 960 Carling Avenue Neatby Building, Ottawa, Ontario K1A 0C6, Canada

Roger Shivas, Plant Pathology Herbarium (BRIP), Ecosciences Precinct, Department of Employment, Economic Development and Innovation, 41 Boggo Road, Dutton Park, Qld 4102, Australia

Bernard Slippers Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, Private bag X20, Hatfield 0028, Pretoria 0002, South Africa

Henk Spierenburg, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Masako Takashima, Japan Collection of Microorganisms, RIKEN BioResource Center, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan

Evrim Taşkın, Biology Department, Faculty of Arts and Sciences, Celal Bayar University, 45140 Muradiye/Manisa, Turkey
John W. Taylor, Department of Plant and Microbial Biology, University of California, Berkeley, CA 94720-3102, USA

Marco Thines, Biodiversity and Climate Research Centre (BiK-F), Senckenberganlage 25, D-60325 Frankfurt (Main), Germany; and Institute of Ecology, Evolution and Diversity, Goethe University, Siesmayerstrasse 70, D-60323 Frankfurt (Main), Germany

Ulf Thrane, Center for Microbial Biotechnology, Department of Systems Biology, Technical University of Denmark, Søltofs Plads B. 221, DK-2800 Kgs. Lyngby, Denmark

Alev Haliki Uztan, Basic and Industrial Microbiology Section, Biology Department, Ege University, Bornova/Izmir, Turkey

Marco van Raak, Plant Protection Service, P.O. Box 9102, 6700 HC Wageningen, The Netherlands

János Varga, Department of Microbiology, Faculty of Science and Informatics, University of Szeged, H-6726 Szeged, Közép fasor 52, Hungary

Aida Vasco, Laboratorio de Taxonomía y Ecología de Hongos, Instituto de Biología, Facultad de Ciencias Exactas y Naturales, Universidad de Antioquia, A.A.1226 Medellín Colombia

Gerard Verkley, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Sandra I.R. Videira, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Ronald P. de Vries, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Bevan S. Weir, Landcare Research, Private Bag 92170, Auckland 1142, New Zealand

Michael J. Wingfield, Forestry and Agricultural Biotechnology Institute (FABI), University of Pretoria, Private bag X20, Hatfield 0028, Pretoria 0002, South Africa

Neriman Yılmaz, CBS-KNAW Fungal Biodiversity Centre, 8 Uppsalalaan, 3584CT Utrecht, The Netherlands

Andrey Yurkov, AG Geobotanik, Ruhr-Universität Bochum, Universitätsstraße 150, 44780 Bochum, Germany

Ning Zhang, Department of Plant Biology and Pathology, Rutgers University, 59 Dudley Road, New Brunswick, NJ 08901, USA

Acknowledgements
The mycological community is indebted to Keith A. Seifert and Robert A. Samson for conceiving and organizing the One Fungus = One Name symposium, and to Pedro W. Crous and his staff for their roles in making it such a success. The CBS-KNAW Fungal Biodiversity Centre kindly provided financial support towards the organization of the symposium.

References


Redhead SA. 2010b. Proposals to define the new term ‘teleotype’, to rename Chapter VI, and to modify Article 59 to limit dual nomenclature and to remove conflicting examples and recommendations. *Taxon* 59: 1927–1929.


