



Zoological Nomenclature and Electronic Publication—a reply to Dubois *et al.* (2013)

International Commission on Zoological Nomenclature (ICZN)¹

c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. E-mail: iczn@nhm.ac.uk

c/o Raffles Museum of Biodiversity Research, Department of Biological Sciences, Faculty of Science, National University of Singapore, 6 Science Drive 2, Singapore 117546, Republic of Singapore. E-mail: iczn@nus.edu.sg

A group of 19 authors (Dubois *et al.* 2013) recently raised concerns about the latest Amendment to the *International Code of Zoological Nomenclature* (ICZN 2012a,b,c), that allows new names and other nomenclatural acts to gain legislative acceptance (become “available”) from publications issued and distributed electronically. Two editorials by publishers have already responded to some of the concerns (Anonymous 2013, Harold *et al.* 2013); some others will be dealt with here. Technological advances in electronic scientific communication have had a dramatic effect on scientific research and publication in recent years. Addressing this, and following a four-year period of public discussion, the International Commission on Zoological Nomenclature (ICZN) voted to accept an Amendment to the 4th edition of the *Code*, thereby adapting the rules of zoological nomenclature to new realities of publication media and methods (ICZN 2012a,b,c). The Amendment dealt with the most important issues of publishing in an electronic world, but in all transitional times new regulatory guidelines may have difficulties keeping up with the rate of change. As mentioned by Harold *et al.* 2013, the “devil may be in the detail”, but it is a process that must nevertheless be started. The ICZN encourages all interested individuals and groups to participate in the discussion leading up to the 5th edition of the *International Code of Zoological Nomenclature*, whether by the ICZN e-mail discussion list, the 5th edition Wiki, *Bulletin of Zoological Nomenclature* or through other media, to help make the next edition satisfy the needs of the community.

Nomenclature goes electronic

Dubois *et al.* rightly commented that the recent changes to the *Code* that allow new names to become available through electronic publication, have profound implications. We see these changes as both necessary and constructive for serving the zoological community by better aligning the *Code* with current research practices, whereby results are increasingly published and disseminated by electronic means. The Amendment that allows electronic works to publish *Code*-compliant names and other nomenclatural acts is one of the most radical changes in the *Code* since the emergence of the *Règles Internationales de la Nomenclature Zoologique* (ICZN 1905). Reactions that identify any unforeseen consequences or logical inconsistencies that arise from these changes are welcome and strongly encouraged. Unfortunately, the undoubtedly noble intentions of Dubois *et al.* are partly lost, sometimes conflated or obscured, because they address many issues that are outside the scope indicated by their title. Given the excessive attention devoted to issues peripheral to electronic publication of new names in zoology, it is difficult to understand what Dubois *et al.* consider to be essential issues, and what issues they find to be “of little practical importance” (p. 17).

1. The International Commission on Zoological Nomenclature currently comprises the following 26 members from 18 countries: M.A. Alonso-Zarazaga; A. Ballerio; N.G. Bogutskaya; P. Bouchet; D.J. Brothers; D.G. Fautin; M.J. Grygier; R.B. Halliday; M.S. Harvey; J.-i. Kojima; M. Kottelat; F.-T. Krell; S.O. Kullander; G. Lamas; L.H.S. Lim; P.K.L. Ng; T. Pape; D.J. Patterson; R.L. Pyle; G. Rosenberg; P. Štys; J. van Tol; J.E. Winston; D. Yanega; Z.-Q. Zhang; H.-z. Zhou.

Electronic publications before 2012

As correctly stated by Dubois *et al.*, no names and nomenclatural acts issued and distributed only electronically before 2012 are available. However, such names can be made available through the plenary power of the ICZN (Article 78). Dubois *et al.* (p. 38) argue that the ICZN should not use its plenary power to ‘validate’ names introduced in pre-2012 electronic works, giving as one reason that “such an action would be an encouragement to publishers, editors and authors for bad quality taxonomic and nomenclatural work”. While the ICZN wants to encourage good work, its mandate is to promote nomenclatural stability. Names that are unavailable according to the *Code* and its Amendment may still enter the scientific literature and end up being widely used (see Krell 2009). The ICZN can overrule any provisions of the *Code* and its Amendments through its plenary power, and so, for sufficient reason, may deem such names to take availability from a work published electronically before 2012, that is, ‘validate’ them. The same holds for names published at any time after 2011, which for any reason have only retroactively fulfilled relevant requirements of the Amendment. This process is initiated by submitting a Case to the ICZN giving details of first appearance and any subsequent usage of specified names originally published electronically, as well as their ZooBank registry. The ICZN will consider such Cases and, in determining its options, must consider the impact on nomenclatural stability—one of the objectives of the *Code* as stated in its Preamble.

Optical discs and the end to confusion

Dubois *et al.* express their opinion that “The incursion of the Code into optical discs thus appears to have been a premature, unedifying and confusing adventure, perhaps motivated by requests from publishers and by the tendency of the Commission “to be eager to stick to ‘modern techniques’ and to follow the emergence of new processes of publication and archiving of data and documents” ...” (p. 13). Changes to the *Code* may appear to some as adventurous, but most recommendations directed at the ICZN ask for more ‘eagerness’ rather than less. In this case, the changes were made in response to the needs voiced by zoologists—certainly not from “publishers”. The 2012 Amendment ruled that from 2013 publication of optical discs would no longer be a medium for proposing available nomenclatural acts. Only a small fraction of the scientific names of animals have been made available this way.

Dubois *et al.* claim that the “new Rules are much more complex than those that have been in force so far” (p. 35), and that “the new Rules will not be apparent to many “Sunday taxonomists” who simply “understood” that electronic publication of nomenclatural novelties has suddenly become easy and straightforward” (p. 35). The “new Rules” do not add substantially to the complexity of the *Code*. In fact, by removing the entire text of Article 8.6, which allowed for new names published on optical discs under what Dubois *et al.* refer to as the “famous five copies” provision, the Amendment provides a significant simplification. Further developments may curtail the excesses of those “Sunday taxonomists” because the ICZN is committed to the *Official Register of Zoological Nomenclature* (ZooBank, <http://zoobank.org>) as the primary data entry portal. Furthermore, the registration process is simpler to accomplish electronically than by using the classical model of print on paper.

Facsimiles and the “famous five”

Dubois *et al.* are correct that Article 8.6 of the 4th edition of the Code has been misapplied in situations where authors and publishers deposited paper copies of a work in five libraries, intending to give availability to an electronic edition. There is not, nor has there ever been a requirement to deposit five printed copies in libraries (or elsewhere) in order to make an electronic work available. The number of five copies applied *only* to works issued as physical copies produced “by a method that does not employ printing on paper” (e.g., on optical discs). One requirement of using such a medium was that the work “must contain a statement that copies (in the form in which it is published) have been deposited in at least 5 major publicly accessible libraries which are identified by name in the work itself” (ICZN 1999: 7; Article 8.6). Unfortunately, “in the form in which it is published” has repeatedly been ignored or misinterpreted to mean paper-based copies. This issue has been confused further with electronic works published before or along with printed copies of the same work. The production of paper copies does not

give availability to an electronic work or any names and other nomenclatural acts contained in it. Paper copies conforming to Article 8 may form a separate edition that on its own makes names and acts available—independent of whether an electronic version exists. The paper copies in this situation are not facsimiles and are not “reproductions obtained on demand of an unpublished work” (Article 9.12), and they cannot be deemed unavailable on this basis. Dubois *et al.* appear to miss or ignore this when stating that “printed copies of works originally published electronically and subsequently reproduced, under the same ISSN/ISBN (or without ISSN/ISBN), from the online PDF, are here considered to have been unpublished facsimiles or reproductions, and their nomenclatural novelties unavailable, under the 1999 Code” (p. 16).

ZooBank registration

Dubois *et al.* (p. 78) question the availability of works stated to have been registered, but for which registration numbers are not found in ZooBank. They suggest as one possibility that such works “are still pending display on the website”. This supposition is usually correct. Records can be submitted prior to publication and are embargoed when the date of publication has either not been set or is set to a date in the future. Such records treat the publication (and names contained within it) as “In Press”, and are visible only to authorized individual ZooBank users. Delays in releasing a record can cause the problem identified by Dubois *et al.* The ZooBank team is working on ways of making this situation more transparent. Another question raised (p. 25) is what happens to the availability of an electronically published name if the original ZooBank registration is incomplete. The ZooBank registration system is being refined to help ensure that users complete all the fields required by the 2012 Amendment for works published electronically to be effectively registered. Inconsistencies between ZooBank records and published works—particularly when such inconsistencies affect the availability of works and the names they contain—should be brought to the attention of the ICZN.

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