



## How to ensure that new taxonomic names are properly published in electronic publication

**A. For a new taxon name to be validly published ("available"), the publication ("work") must meet certain criteria specific to electronic publishing as outlined by the International Code of Zoological Nomenclature (including the 2012 amendments).**

1. Fixed content and format.
2. Date of publication.
3. Registration in ZooBank.
4. Archiving.
5. ISBN/ISSN number.

These are discussed below.

1. Fixed content and format. The publication ("work") must have been produced as "widely accessible electronic copies with fixed content and layout." (Art. 8.1.3.2).

Interpretation: Online files in .docx, .txt, .html, etc. formats do not meet the criteria because the layout/content are not fixed. Even a standard pdf does not meet the standard, because the content can be edited. However, the "PDF/A (Portable Document Format Archive), described by ISO Standard 19005-1:2005, is a file format that allows content and layout to be preserved unchanged." (Art. 8.1.3.2).

2. Date of publication. The date of publication must be stated in the work itself (Art. 8.5.1).

3. Registration in ZooBank. The publication must be registered in the online ZooBank database (zoobank.org). A registration number, which must be included in the work, will be assigned.

Example:

<http://zoobank.org/urn:lsid:zoobank.org:pub:A9E81D14-85B7-41FE-8180-9C3770DB8FEB>

New names and nomenclatural acts (e.g. designation of neotype) can also be registered in ZooBank, but this is not required. The work itself must contain evidence that registration has occurred. As an example of "evidence" the Code states that "stating information that would be known only if the registration has occurred, such as the exact date of registration or the registration number assigned to the work or to a new name or nomenclatural act introduced in the work." would provide evidence of registration. The LSID (Life Science Identifier) for the work (i.e., urn:lsid:zoobank.org:pub:...) should be clearly stated in the published work.

4. Archiving. The archiving organization, with internet address, must be specified in the ZooBank registration record, but is not required to appear in the work.

5. ISBN/ISSN number. This must be stated in the ZooBank registration record but is not required to appear in the work. ISSN numbers identify serial publications (newspapers, journals). ISBN numbers identify books. ISSN and ISBN numbers for print and on-line versions are distinct. These are not equivalent to a DOI (digital object identifier).

### **B. What does not count as publication**

1. "Preliminary versions of works accessible electronically in advance of publication" do not count as a published work (Art. 9.9), and "Some works are accessible online in preliminary versions before the publication date of the final version. Such advance electronic access does not advance the date of publication of a work, as preliminary versions are not published" (Art. 21.8.3).

Interpretation:

- a. "Accepted manuscripts" available online are not published because the content/format is not fixed.
- b. "Uncorrected proofs" available online are not published because the content is not fixed, and typically no date of publication is included.
- c. "Preprints" on preprint servers (e.g., bioRxiv) are not published because they are unlikely to have an ISSN/ISBN number, which is required. Also, preprints are usually formatted as a pdf (rather than pdf/a), so the content/format is not fixed.
- d. Corrected proofs available online are not published because the content and in many cases the date are not yet fixed. For example, the Elsevier Press website states: "Corrected proofs: articles that contain the authors' corrections. Final citation details, e.g. volume and/or issue number, publication year and page numbers, still need to be added and the text might change before final publication."

### C. How to fix errors in electronic publication

1. Do nothing. If the work does not satisfy the criteria for electronic publication and appears online before the printed version, then the names will not be available until it is printed (if there is also a printed version). However, this will likely create confusion about which version confers availability on the names.

"[Article] 21.9. Works issued on paper and electronically. A name or nomenclatural act published in a work issued in both print and electronic editions takes its date of publication from the edition that first fulfilled the criteria of publication of Article 8 and is not excluded by Article 9."

2. Ask the journal to publish a revised on-line version, because ZooBank registration subsequent to electronic publication does not make the name available. This revised version should have all of the original content as well as the missing information (e.g., date of publication) (Art. 8.5.3.3).

Publication of a "Correction" or "Addendum" to the first publication that simply adds only the missing information does not fulfill the requirement for publication. All required information must be present (repeated if necessary) in a single publication.

### D. How to generally avoid problems with electronic publication

1. Do not publish new names or other nomenclatural acts as supplementary information; include these in the main body of the publication, even if the editor prefers otherwise. For some journals it is not clear whether supplementary files constitute part of the publication of record. In addition, supplementary documents are often not made available in an accepted archival file format (e.g., PDF/A) required for electronic publication.

2. Encourage editors and editorial staff to make sure that electronic publications (including works that appear on-line before the print version) contain the required information (such as publication date).

3. Follow the suggestions above.

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## **Literature**

International Commission on Zoological Nomenclature. 2012. Amendment of Articles 8, 9, 10, 21 and 78 of the *International Code of Zoological Nomenclature* to expand and refine methods of publication. *Zootaxa* 3450:1–7.

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