

The ICZN amendment of Articles 8, 9, 10, 21 and 78 of the *International Code of Zoological Nomenclature*

Following four years of highly charged debate the rules for publication of scientific names of animals have been changed to allow electronic publications to meet the requirements of the stringent *International Code of Zoological Nomenclature*. In a landmark decision, the *International Commission on Zoological Nomenclature* (ICZN) has passed an amendment to its rules that will accept an electronic-only publication as 'legitimate' if it meets criteria of archiving and the publication is registered on the ICZN's official online registry, ZooBank.

A brief discussion of the amendment is available from:

Zootaxa : <http://www.mapress.com/zootaxa/list/2012/3450.html>

Zookeys: <http://www.pensoft.net/journals/zookeys/article/3944/>

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Amendment

[Under Article 8 (what constitutes published work), Article 8.1 is modified to accommodate electronic publishing and an example is added. Former Article 8.4 is reformulated as the new 9.2, former Articles 8.5 and 8.6 are simplified and merged under the new Article 8.4, and new Articles 8.5 and 8.6 are introduced. The associated recommendations are revised.]

8.1. Criteria to be met. A work must satisfy the following criteria:

8.1.1. it must be issued for the purpose of providing a public and permanent scientific record,

8.1.2. it must be obtainable, when first issued, free of charge or by purchase, and

8.1.3. it must have been produced in an edition containing simultaneously obtainable copies by a method that assures

8.1.3.1. numerous identical and durable copies (see Article 8.4), or

8.1.3.2. widely accessible electronic copies with fixed content and layout.

Example: 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.

[Articles 8.2 and 8.3 are unchanged.]

8.4. Works issued as physical copies. Printing on paper and optical disc are the only recognized formats for works issued as physical copies. In addition to fulfilling the requirements of Article 8.1 while not being excluded by Article 9, works issued as physical copies are subject to the following criteria:

8.4.1. Works printed on paper. Before 1986 and after 2012, the only acceptable means of producing physical copies is by printing on paper using ink or toner.

8.4.2. Works on optical disc. To be considered published, a work on optical disc must be issued, in read-only memory form, after 1985 and before 2013, and

8.4.2.1. if issued before 2000, must contain a statement that any new name or nomenclatural act within it is intended for public and permanent scientific record and that the work is produced in an edition containing simultaneously obtainable copies, or

8.4.2.2. if issued after 1999, must contain a statement naming at least five major publicly accessible libraries in which copies of the optical disc were to have been deposited.

8.5. Works issued and distributed electronically. To be considered published, a work issued and distributed electronically must

8.5.1. have been issued after 2011,

8.5.2. state the date of publication in the work itself, and

8.5.3. be registered in the *Official Register of Zoological Nomenclature* (ZooBank) (see Article 78.2.4) and contain evidence in the work itself that such registration has occurred.

Examples. Evidence of registration is given by 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. A work issued as a PDF may contain the registration number as an embedded hyperlink. Even if the registration number is not visible in the normal viewing mode of the file or when the work is printed from the file, it is deemed to be cited in the work itself because the text of the hyperlink can easily be revealed using standard software for viewing PDFs.

8.5.3.1. The entry in the *Official Register of Zoological Nomenclature* must give the name and Internet address of an organization other than the publisher that is intended to permanently archive the work in a manner that preserves the content and layout, and is capable of doing so. This information is not required to appear in the work itself.

8.5.3.2. The entry in the *Official Register of Zoological Nomenclature* must give an ISBN for the work or an ISSN for the journal containing the work. The number is not required to appear in the work itself.

8.5.3.3. An error in stating the evidence of registration does not make a work unavailable, provided that the work can be unambiguously associated with a record created in the *Official Register of Zoological Nomenclature* before the work was published.

Examples. The following are examples of admissible errors: In preparing a manuscript an author accidentally deletes the final digit of the registration number. An author states the wrong date of registration forgetting that ZooBank uses Coordinated Universal Time rather than local time. An author registers two works that are in review for publication and accidentally uses the same ZooBank number in both published versions.

The following are examples of inadmissible errors: An author, in preparing a manuscript for publication, states that day's date for the registration date, intending to register it later that day but forgetting to do so. The author discovers the omission after the work is published and immediately registers it; because registration occurred after publication, the work is not available. A publisher discovers errors in a work and reissues it to correct those errors, but instead of registering the new edition, uses the original ZooBank number; the revised edition is not available because it was not separately registered.

8.6. New methods of publication and archiving. The Commission may issue Declarations to clarify whether new or unconventional methods of production, distribution, formatting or archiving can produce works that are published in the meaning of the Code.

[Article 8.7 is unchanged. Recommendation 8A is modified, and new Recommendations 8B, 8C, 8D and 8H are added. The former 8B is deleted, the former 8C is modified and renumbered as 8E and the former 8D and 8E becomes the new 8F and 8G but are otherwise unchanged.]

Recommendation 8A. Wide dissemination. Authors have a responsibility to ensure that new scientific names, nomenclatural acts, and information likely to affect nomenclature are made widely known. Authors can accomplish this by publishing in appropriate scientific journals or well-known monographic series, by entering new names and nomenclatural acts into the *Official Register of Zoological Nomenclature* (ZooBank), and by sending copies of their works to the *Zoological Record*.

Recommendation 8B. Minimum edition of printed works. A work on paper should be issued in a minimum edition of 25 copies, printed before any is distributed.

Recommendation 8C. Electronic works. Electronic works should be structured to allow automated indexing and data extraction and should include actionable links to external resources (such as embedded hyperlinks to records in the *Official Register of Zoological Nomenclature*), where appropriate.

Recommendation 8D. Content immutable. The content of a work is immutable once it is published. Corrections should be made through notices of errata or other separate publications. Second or other additional printings of a work should be clearly labeled as such, with date of publication stated in the work, even if no changes have been introduced.

Recommendation 8E. Public accessibility of published works. Copies of published works that contain new scientific names or nomenclatural acts, or information likely to affect nomenclature, should be permanently conserved in or by libraries that make their holdings publicly accessible.

Recommendation 8H. Archiving encouraged. Authors are encouraged to ensure that their electronic works are archived with more than one archiving organization. Archiving organizations utilized for registered works should have permanent or irrevocable license to make a work accessible should the publisher no longer do so.

[Under Article 9, new Articles 9.2, 9.3 and 9.9 are added. Former Articles 9.2 through 9.6 are renumbered as 9.4 to 9.8. The former 9.7, 9.8 and 9.8 are reformulated as the new 9.12, 9.11 and 9.10, respectively. An example is added for 9.12 and Recommendation 9A is rephrased.]

Article 9. What does not constitute published work. Notwithstanding the provisions of Article 8, none of the following constitutes published work within the meaning of the Code:

- 9.1. after 1930, handwriting reproduced in facsimile by any process;
- 9.2. after 1985, works produced by hectographing or mimeographing;
- 9.3. before 1986 and after 2012, works issued on optical discs;
- 9.4. photographs as such;
- 9.5. proof sheets;
- 9.6. microfilms;
- 9.7. acoustic records made by any method;
- 9.8. labels of specimens;
- 9.9. preliminary versions of works accessible electronically in advance of publication (see Article 21.8.3);
- 9.10. materials issued primarily to participants at meetings (e.g. symposia, colloquia, congresses, or workshops), including abstracts and texts of presentations or posters;
- 9.11. text or illustrations distributed by means of electronic signals (e.g. via the Internet), except those fulfilling the requirements of Articles 8.1 and 8.5.
- 9.12. facsimiles or reproductions obtained on demand of an unpublished work [Art. 8], even if previously deposited in a library or other archive.

Example: A Ph.D. thesis that was distributed only to members of the student's thesis committee is listed for sale in the catalogue of a print-on-demand publisher. The print-on-

demand work is a reproduction of the thesis. Because the thesis was an unpublished work in its original form, it remains unpublished. If an editorial process was evident in converting the work to print-on-demand form (e.g., change to single spacing, repagination, addition of running headers), it might be considered published.

Recommendation 9A. Avoidance of new names and acts in meeting abstracts. Authors should not include new names and nomenclatural acts in abstracts of papers or posters to be presented at meetings. This avoids the appearance that they are published and prevents inadvertent publication if the abstracts are widely distributed. (For disclaimer of abstracts volumes, see Recommendation 8G.)

[Changes to Article 10 (Criteria of Availability) proposed in the original draft of the Amendment have been removed, except that Recommendation 10B is modified and placed after Article 10.7.]

Recommendation 10B. Registration of names encouraged. Authors are encouraged to include registration numbers from the *Official Register of Zoological Nomenclature* for new names and nomenclatural acts introduced in their publications, and to register names and acts that have been previously published.

[Under Article 21 (determination of date), Articles 21.7 and 21.8 are modified and Article 21.9 is added.]

21.7. Date not specified. If the date of publication is not specified in a work the earliest day on which the work, or a part of it, is demonstrated to be in existence as a published work is to be adopted as the date of publication of the work or of that part.

21.7.1. In the absence of evidence as to day, the provisions of Article 21.3 apply.

21.7.2. Works issued as electronic copies are required to state a date of publication (Article 8.5.2), even if incompletely specified (Article 21.3).

21.8. Advance distribution of separates and preprints. Advance distribution of separates or preprints affects date of publication as specified by the following criteria:

21.8.1. Before 2000, an author who distributed separates in advance of the specified date of publication of the work in which the material was published thereby advanced the date of publication.

21.8.2. The advance issue of separates after 1999 does not advance the date of publication, whereas preprints on paper, unambiguously imprinted with their own date of publication, are published works from the date of their issue, if they fulfil the criteria for publication in Article 8 and are not excluded by Article 9 (see Glossary: “separate”, “preprint”).

21.8.3. 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 (Article 9.9).

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.

[Under Article 78 (powers and duties of the Commission), Article 78.2.4 is added to allow establishment of the *Official Register*.]

78.2.4. The Commission may establish and maintain an *Official Register of Zoological Nomenclature* (ZooBank), to record essential information about works, names and nomenclatural acts. The *Official Register of Zoological Nomenclature* may be maintained in electronic or paper form. The *Official Lists* and *Official Indexes* may be maintained in the *Official Register*.

[The following terms are added to the Glossary.]

archive, n. A depository for works (q.v.); v. to place a work in an archive with the intent that it be permanently preserved there.

Official Register, n. An abbreviated title for the *Official Register of Zoological Nomenclature* [Article 78.2.4], maintained by the Commission to record information about works, names and nomenclatural acts (see ZooBank).

optical disc, n. a laser-readable data storage medium. Compact disc read-only memory (CD-ROM) and digital video disc read-only memory (DVD-ROM) are optical disc formats that could be used to produce available works after 1985 and before 2013 (Article 8.4.2).

publication, electronic, n. A publication issued and distributed by means of electronic signals.

register, v. To enter into the *Official Register* information about a work, name, author, nomenclatural act, or other item tracked for purposes of zoological nomenclature.

registration number, n. A unique identifying number or alpha-numeric code assigned in the *Official Register* to a particular item.

ZooBank, n. The online version of the *Official Register of Zoological Nomenclature*.