

NOMENCLATURE

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A clarification of effective electronic publication

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Abstract Within the community of taxonomists studying algae, fungi, and plants, we have recently encountered divergent interpretations of the *ICN* with regard to certain crucial aspects of effective electronic publication. In an attempt to provide clarification, we dissect the relevant articles and examples, concluding with a set of additional examples and recommendations.

Keywords DOI; e-publication; effective publication; online publication; version of record

■ INTRODUCTION

The Nomenclature Section of the XVIII International Botanical Congress met in Melbourne, Australia in July of 2011 to debate and ultimately vote on proposed changes to the *International Code of Botanical Nomenclature* (now the *International Code of Nomenclature for algae, fungi, and plants*). As readers of *Taxon* are no doubt aware, one of the significant accomplishments of this meeting was the passage of sweeping changes to allow the effective publication of nomenclatural acts in an electronic format. These progressive changes brought the *Code* into the 21st century by recognizing the ubiquity of electronic media and the strong potential for these resources to aid in assessing global biodiversity in the face of the current extinction crisis.

The new rules allowing effective publication in an electronic format, beginning 1 January 2012, were discussed in detail in a widely disseminated publication (Knapp & al., 2011). Within the first six months of 2012 an electronic publication with new nomenclatural acts appeared (Kirk, 2012). This was followed by many additional publications as serials began to publish their first issues for the year.

One of us (B.P.H.) currently manages the *Recent Literature on Lichens* (Culberson & al., 2011), or RLL, a long-term project that has indexed all publications pertaining to the field of lichenology for more than half a century. While attempting to determine the dates of publication for new electronic works to be included in RLL, we encountered difficulties in applying the rules passed in Melbourne. Discussions with mycological and botanical colleagues led to the discovery of additional perplexing cases that remained ambiguous to users under the new rules. These discussions also led to the recognition that

there was not a consensus in the community as to what constitutes effective publication of new nomenclatural acts in an electronic-only format. Thus we decided to formulate the present work providing detailed guidelines and clarification in the form of examples and recommendations. The specific areas where we assert clarification is needed are discussed below.

■ WHAT IS THE “VERSION OF RECORD” AND HOW SHOULD WE CITE IT?

The issues that we encountered stem primarily from the determination of what constitutes effective electronic publication, which is discussed in Art. 29 and 30 of the *ICN* (McNeill & al., 2012). The process of determining whether a work is effectively published must be governed by a set of discrete criteria. However, the statement in Art. 30.1 that “an electronic publication is not effectively published if there is evidence within or associated with the publication that it is merely a preliminary version that was, or is to be, replaced by a version that the publisher considers final” is sufficiently vague as to leave open to interpretation whether certain online versions published before being assigned to a volume or issue (e.g., “Early View” and “Online-First”) are effectively published.

Multiple interpretations have arisen from ambiguities in what constitutes an “alteration”, what is considered to be a “preliminary version”, what it means to be “replaced”, and what is defined as a “final version”. Although all of these terms are superficially clear cut, they are difficult to apply in many real world publishing scenarios. For instance, when an article is posted online and stated to be published and citable, is this a “preliminary version” and is it truly “replaced” when

subsequently additional bibliographic data (e.g., page numbers, volume number, issue number) are provided, but the content and DOI remain identical?

Despite the vague wording of the articles (29 and 30), the given examples clearly indicate that the standard “Early View”, “Online-First”, or equivalent type of publication is to be treated as effectively published in the absence of evidence to the contrary (see Art. 30 Ex. 6–8). These publications are nearly universally considered to be final versions (i.e., “versions of record”) by the publisher, even though additional bibliographic data are typically provided (and often stamped on the PDF itself) at a later date. This scenario is conceptually concordant with the case of a preprint establishing the date of effective publication, as outlined in Art. 31 Ex. 2.

In the event that the publisher includes information within or associated with the publication indicating that it is not the “version of record”, then it is not to be considered effectively published. Publication is also not effective if a PDF is posted with an indication that the formatting and/or content have not been finalized because such publications are clearly “preliminary” under Art. 30.2 (see Art. 30 Ex. 2–5). Such “preliminary” documents are similarly not to be treated as effectively published even if they are considered to be the “versions of record” by the publisher and DOIs are provided.

The recognition that “Early View”, “Online-First”, or their equivalents must in many instances be treated as effectively published requires one to establish a convention to appropriately cite these publications. Presently, the *Code* requires a “full and direct” citation in many instances (e.g., Art. 9.21, 38.13, 41.5). However, many works effectively published online lack page numbers and other relevant bibliographic information at the time of effective publication. This does not impact whether the work is to be considered effectively published because such data do not represent “content” for nomenclatural purposes. Instead these data are simply supplementary annotations to the “version of record”, a view that is clearly supported by Ex. 6–8 under Art. 30. A simple method of citation in most instances would be to use the DOI in place of volume and issue number (as indicated by Ex. 7 under Art. 30), and place in brackets the page number as determined internally within the PDF (as indicated by Ex. 6 under Art. 30). If additional bibliographic data are subsequently supplied by the publisher, then traditional citation methods could alternatively be used. Such additional information would not, however, render the original DOI-based citation invalid and both methods would remain “full and direct” for the purposes of the *Code*. The addition of such information would not alter the date of effective publication, provided that the content of the publication remains identical.

While the concept of dual citation may not be ideal from a practical standpoint, it resolves the current predicament and is supported by the *Code*. If this practice were to become convention, it would require publishers to maintain continuity of all content across editions, specifically including the locations of the page breaks, the online publication date, and the DOI. Otherwise, a situation could arise in which the citation data associated with the final publication would not truly refer to the “version of record”, and the “version of record” could end up

being an ephemeral document replaced by the publisher. We have not, thus far, encountered such a case. It is our hope that no such case should arise, although it is likely that, were this to occur, it could be resolved with a sufficient amount of detective work, just as has been required for print publications in the past.

Based on the above, we assert that the current wording of the relevant articles in the *Code* does not require alteration, but rather, clarification. Some degree of clarification has been achieved by the addition of examples by the editors of the *Code* after we raised the issues discussed herein with them. Example 2 under Art. 30 was devised specifically by us and was added based on discussions that we had with the editors. The wording of Ex. 6–8 under Art. 30 were also likely influenced by our discussions with them and are aimed at addressing the issues raised in this publication. Here we present additional examples and recommendations that should provide further clarification.

■ EXAMPLES

[1] *Phylloporus pumilus* M.A.Neves & Halling was effectively published on 28 January 2012 in the “Online-First” edition of *Fungal Diversity*. The statement on the website of the serial that “this is the official first publication citable with DOI” is evidence that the publisher intended this to be the final version. The finalized formatted content of the PDF establishes that it is not a “preliminary” version. As the PDF lacked certain bibliographic data (page numbers, volume number, and issue number) the name can be cited fully and directly as having been published in “*Fungal Diversity* DOI: [10.1007/s13225-012-0154-0](https://doi.org/10.1007/s13225-012-0154-0): [8]. 2012” because the name was introduced on the eighth counted page of the PDF. A more traditional citation, such as “*Fungal Diversity* 55: 118. 2012” would be preferable, now that the publisher has provided additional bibliographic data (although this type of citation was not possible before the article appeared in print).

[2] *Lepidostroma vilgalysii* Hodkinson was effectively published on 4 January 2012 in the “Online-First” edition of *Mycological Progress*. The fact that the article was not assigned a volume number, an issue number, or page numbers, when it was published did not indicate that it was a preliminary version. These bibliographic data are not considered content and thus their subsequent addition to the PDF when it was published as part of an issue did not constitute an alteration of content.

[3] *Solanum untuma* Voronts. & S.Knapp was effectively published online on 1 January 2012 in the serial *PhytoKeys*. Acceptable full and direct citations of this name could include traditional bibliographic data (i.e., *PhytoKeys* 8: 4. 2012) or the DOI (i.e., *PhytoKeys* DOI: [10.3897/phytokeys.8.2462](https://doi.org/10.3897/phytokeys.8.2462): 4. 2012) (but see Recommendation #3 herein).

[4] *Macentina abscondita* Coppins & Vězda was effectively published in 1978 (*Lichenologist* 9: 47. 1978) in a printed serial. An electronic edition was subsequently “published online” on 28 March 2007 and a DOI assigned. The name may thus also be cited as having been published in “*Lichenologist* DOI: [10.1017/S002428297700005X](https://doi.org/10.1017/S002428297700005X): 47. 1978” (but see recommendation #3 herein).

■ RECOMMENDATIONS

[1] Publishers releasing the effective publication (i.e., “version of record”) in electronic format should provide all final citation data on the main document immediately upon release, although failure to do so does not necessarily impact the effectiveness of the publication.

[2] When citing a name published on or after 1 January 2012, workers should carefully determine the date of effective publication based on all evidence associated with and within the original publication and its subsequent editions; this can include any materials that are digitally associated with a published document in an ephemeral manner at the time of effective publication (e.g., date stamps posted on the publisher’s website but not found within the PDF of the effective publication).

[3] DOI-based citations should be used only when other bibliographic data (e.g., page numbers, volume number, or issue number) for a publication have not been supplied by the publisher.

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