

NOMENCLATURE

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Combining an ancient tradition with modern developments: Latin and open access

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Abstract In publishing names of new taxa of algae, fungi, and plants, it is argued that it is advantageous to retain the ancient tradition of Latin diagnoses in combination with the modern trend of publication in openly accessible electronic journals. Leading up to the XIX International Botanical Congress in 2017 in Shenzhen, China, we encourage that, even in the absence of a requirement, Latin continues to be used for diagnoses and consideration be given to making it a requirement that all valid publications of new taxa be freely accessible electronically. Retention of Latin diagnoses retains the discipline's link to the past and buffers against the rapid evolution modern languages are subject to, and Open access allows the discipline's results to be available to the widest possible audience.

Keywords electronic publication; International Botanical Congress, *International Code of Nomenclature for algae, fungi, and plants*; Latin diagnoses; open access

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■ INTRODUCTION

It is unusual to read articles about botanical nomenclature in *Naturenews* (Cressey, 2011) or the *Washington Post* (Higgins, 2012). However, the Nomenclature Section of the XVIII International Botanical Congress in Melbourne in 2011 managed to make it into these publications as well as others (e.g., Lasky, 2012; Miller, 2012). Of course, botanical nomenclature “made the news” due to changes to the *Code* allowing diagnoses of new taxa to be in Latin or English (Smith & al., 2011) and effective publication to include electronic publication (must be published online in Portable Document Format in a publication with an International Standard Serial Number or International Standard Book Number; McNeill & Turland, 2011). Below we review our concerns about the abandonment of the Latin requirement and acceptance of electronic publication without a requirement that such publications have unrestricted (open) access. We also propose a way forward that addresses these concerns.

■ LATIN OR (AND?) ENGLISH

In permitting English as an alternative to Latin for diagnoses and online electronic publication as a form of effective publication (see Knapp & al., 2011, McNeill & Turland, 2011; Smith & al., 2011), the Nomenclature Section at the XVIII International Botanical Congress in Melbourne addressed serious obstacles that were preventing the discipline from rapidly naming and describing the world's algae, fungi and plants. However,

there is a fine line between keeping control and losing control. It is understandable that the time period of publishing a new name with an English description will often be shorter, especially when combined with electronic publication. However, will it be easier for future botanists to understand it? Does it matter how many living things we collect and describe if it will not be understood by the future scientist? Or could a veterinarian (Sırrı Kar, pers. comm.), who is willing to study some plants, understand a description or diagnosis? Latin links and aids scientific disciplines by having terms that are less subject to shifts in definition over time. It is also feared that terms in English will change from author to author even today, especially in countries that do not have English as the official language.

A recent letter to the editor in the *New York Times* by Edward Lasky (2012) nicely summed up the cultural problems of allowing English as an alternative to Latin. It is reproduced here in part:

“What if a Chinese botanist described a new species in his own language? Would that suit English-speaking scientists?”

Language is one of the means by which a civilization asserts its dominance over others. If a case could be made for using English as the new lingua franca, the time for that seems to have passed because the Chinese can perhaps make an equal claim on behalf of their language.

In short, I think that it's a mistake to substitute modern languages for an ancient universal one that does not bear the stamp of cultural hegemony. By the way, I am also a Latin teacher (fair disclosure, you know).”

The *Code* does (should) not exist to make it easy to publish new plant names, but to set rules for protecting new names by securing their accessibility and application, thus providing a safe journey for them into the future. Otherwise, there would not be any language requirement for the names or diagnoses and all would be free to decide which language to use. Especially different alphabets restrict the new name into local papers, which can be very hard to find and to translate.

Besides the writing-system requirement of the Latin alphabet for forming new names, it also seems reasonable to have a language requirement for diagnoses of new taxa. However, we question why English is allowed as an alternative to Latin. Researchers from English-speaking countries can now prepare plant diagnoses with no trouble. However, for most taxonomists little has changed, because English (like Latin) is not their mother tongue. Besides, even some defenders of the English alternative (McNeill, 1997) admit that we might abandon English someday in the future (evolution of English, replacement as the dominant language). This leads to open questions like: How many times will we have to change the language? How will future generations manage to understand past dominant languages? How much time will future generations spend to translate descriptions instead of collecting and describing living things?

One of the most fundamental human characters is curiosity; humans are interested to know what happened in the past, and would like to have an idea as to what will happen in the future. We are privileged to foresee the future of Latin; specifically botanical Latin is less likely to evolve with respect to its words and definitions. On the other hand, we are almost sure that English will evolve enormously, due to the influence of different cultures. The existence of numerous dialects within the English language in the British Isles, North America and Australasia gives us a clue. Why not secure the stability of diagnoses for new plant taxa by providing them in Latin? A solution we endorse is for editors to require Latin diagnoses even though the *Code* currently allows English as an alternative and even if the anti-Latinists in the future succeed in removing from the *Code* the Latin allowance as an alternative to English (Smith & al., 2011). We are pleased that many authors publishing new taxa are continuing to use Latin for the diagnoses, including many in *Taxon* (e.g., Medina & al., 2012; Pettigrew & al., 2012).

■ OPEN ACCESS

A goal of the expanded Art. 29.1 of the *Melbourne Code* (McNeill & al., 2012) should be to make publications of new plant taxa as accessible as possible. Nonetheless, electronic publication does not guarantee broader access, and this issue is at the heart of the open access debate. Some have argued that the public should not have to pay a second time to read the results of a research that was funded by their government (Eisen, 2012). Others have boycotted some scientific publishing companies in protest over subscription costs they believe to be too high (De Vriese, 2012). Libraries of universities, including

well-funded ones, are announcing that they can no longer afford journal subscriptions (Sample, 2012).

Accessibility of information in electronic media, compared to hard-copy journals, is getting easier, but the pay-wall does not necessarily disappear in electronic publications for the reader. Moreover, electronic journals cost sometimes more than hard copy journals, and one does not receive a physical product, which can be used even after the cancellation of subscription. This situation could lead to bigger problems as libraries and individuals may be forced to continue to pay for access to issues, even if they only want to have access to past issues.

New names published in an open access (OA) journal (which is not required by the *Code*), will be reachable for readers from bibliographic databases, e-archives, indexers and aggregators. Publication fees (author pays but everyone can read at no charge) in OA journals ensure a barrier-free distribution of the publication (Penev & al., 2010) and as a result the OA articles are downloaded more than articles for which subscriptions fees must be paid (Wagner, 2010). We believe that it is enormously important to have access to every name, and OA journals provide a continuous process for readers in scientific literature. Our suggestion is that the fundamental matter concerning publishing new names in OA journals only, which was overlooked in Melbourne, should be discussed and considered leading up to the next International Botanical Congress in 2017 in Shenzhen, China.

It might be difficult for some taxonomists to switch to OA. Nevertheless, many pay-per-view journals with high impact offer options to publish OA for an additional fee. Articles published in OA journals have a greater research impact (Antelman, 2004), thus one would prefer to publish in OA journals, and furthermore, the implementation would diminish the gulf between nomenclature and evolutionary biology, by reaching every interested researcher with the supporting data all together.

■ CONCLUSION

The Nomenclature Section in Melbourne, in an attempt to modernize the *Code*, abandoned the ancient (and useful) tradition of Latin. This change will make it easier for some researchers (i.e., those fluent in English), to publish new plant names. However, other researchers (i.e., those not fluent in English) as well as the reader (especially in the future), who is at the other end of this process, do not benefit from this change.

We are in a time where increasing accessibility of information oftentimes seems more important than producing it. For example, many large herbaria have recently devoted extensive resources to digitize their collections, especially their type collections. New imaging techniques (Simpson & Barnes, 2008), including composite illustrations (Erol & al., 2009, 2011), require the reader to view the paper electronically in order to see the illustration in proper detail. In order for taxonomists and users of taxonomic data to take full advantage of these advances, results of taxonomic studies should be readily available through open access. In the absence of this, we believe that

the fundamental data associated with the publication of new taxa—i.e., taxon names, diagnoses and descriptions (preferably written in Latin), and images of type specimens—should be available through open access.

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