

## **EDITORIAL: THE GOVERNANCE OF THE INTERNATIONAL CODE OF NOMENCLATURE—MY SLOW LEARNING EXPERIENCE.**

The Code of Nomenclature for Algae, Fungi, and Plants (formerly the International Code of Botanical Nomenclature) is an important document of international law (<http://www.iapt-taxon.org/nomen/main.php>). It tells us how the scientific names of plants, new and old, should be applied—what the correct name of a plant is given a particular taxonomy. One might think that the Code is governed by some international institution or organization such as the United Nations or the International Association for Plant Taxonomy (IAPT), but it is not. It is loosely associated with International Botanical Congresses, a tradition over 100 years old. In between congresses, a series of committees makes decisions about nomenclature and these are then nearly always approved at the next International Botanical Congress (IBC). I did not clearly realize how the governance of nomenclature functioned until recently, about 48 years after I was first introduced to the concept of botanical nomenclature.

My education in botanical nomenclature began in 1968 when I took "Plant Taxonomy" from my revered Professor John L. Morrison at the New York State College of Forestry in Syracuse, New York, USA. One lesson I was supposed to learn about botanical nomenclature in Morrison's class (but didn't really learn until after the final exam) was that in practice it is a peaceful form of international cooperation in which all the participants agree that they will follow certain rules about how plants are named, but there is no one imposing those rules. It is a kind of peer-enforced utopia for botanists in which everyone cooperates towards a common goal. I would later learn that while the concept was a wonderful idea, it was not quite true.

In 1974, I was a graduate student at the University of Michigan and took "Advanced Plant Taxonomy" from an equally esteemed professor, Rogers McVaugh. One thing that I should have learned in McVaugh's class but I did not, maybe because I just didn't listen, is that the Code has Principles. I did not learn that fact until taking a "qualifying examination" for graduate students. Now I think "the Principles" represent the most important part of the Code.

The Code has three **Divisions: I, II, and III. Division I** states the Principles, which are brief but very enlightening. They can also be a guide for most nomenclatural problems. I reproduce them here:

### **DIVISION I. PRINCIPLES**

#### Principle I

The nomenclature of algae, fungi, and plants is independent of zoological and bacteriological nomenclature. This *Code* applies equally to names of taxonomic groups treated as algae, fungi, or plants, whether or not these groups were originally so treated.

#### Principle II

The application of names of taxonomic groups is determined by means of nomenclatural types.

### Principle III

The nomenclature of a taxonomic group is based upon priority of publication.

### Principle IV

Each taxonomic group with a particular circumscription, position, and rank can bear only one correct name, the earliest that is in accordance with the rules, except in specified cases.

### Principle V

Scientific names of taxonomic groups are treated as Latin regardless of their derivation.

### Principle VI

The rules of nomenclature are retroactive unless expressly limited.

**Division II**, the meat of the Code, is a collection of rules telling people how plants are named and can be quite complicated and difficult to understand. The rules often contradict the Principles, for instance, by allowing for the "conservation" of a name that does not have priority over one that does. In this sense conservation means overriding the principles of Priority or Types when another name or type may be more desirable for "nomenclatural stability." Originally, conservation was restricted to generic names but it has grown to include species names.

**Division III** consists of the rules for changing the Code. At present, changing the Code happens at an International Botanical Congress (IBC), gatherings that occur every six years at different locations around the globe. In order to participate, one must physically be present at the Nomenclature Section, a week long meeting before the rest of the IBC, at which taxonomists from around the world consider proposals to change the Code.

Division II, the rules for naming plants, have changed a lot over the years, but Divisions I and III have changed very little, if at all, since they were first written in the 1950s.

Here is an example of how Division II has changed. Before January 1, 1935 it was possible to describe new taxa in any language. Between January 1, 1935 and December 31, 2011 it was necessary to describe new taxa in Latin. From January 1, 2012 onward it is possible to describe new taxa in Latin or English.

There have been many other changes and some changes are logical with the changes in technology—it is now possible to publish new taxa electronically in PDF files, for instance. Other changes seem to reflect changes in the general opinion among taxonomists, for example, the ability to conserve species names.

The next stage in my nomenclature education came from attending International Botanical Congresses. In 1999 I went to my first in Saint Louis, Missouri, USA. The Nomenclature Section was held at the Missouri Botanical Garden. Some very contentious issues were discussed and voted upon, namely whether or not there would be lists of names that could be used and other names that would be excluded and whether or not names would have to be registered with some world authority in order to be validly published. Both those ideas failed. If they had

passed, many people thought it would have been a disaster, while others thought they were wonderful ideas that would increase the stability of botanical nomenclature.

Then in 2005 I went to another International Botanical Congress in Vienna, Austria. Again there were some contentious issues, but this time the most important was whether we would approve the action of a committee that had changed the type species of *Acacia*. The majority of the committee's 15 members believed that because phylogenetic studies had shown that the genus *Acacia* was polyphyletic, and should be divided into a few separate genera, then the name *Acacia* should go with the clade with the most species, a clade that mainly grows in Australia. The type species would be changed to an Australian species. The principles II and III of the Code would have indicated that the name *Acacia* should stay with the type species in Africa and the name *Acacia* would have continued to be used mainly in Africa, North and South America, and Asia (as it had been), and numerous Australian species of *Acacia* would have been changed to *Rhacosperma*. There was a lot of discussion and people were adamant on both sides. Finally, on the last day in the last hours of the Nomenclature Section, we voted. Those who wanted to keep the type with the African species, in accordance with the Principles of the Code, were in the majority (about 54%), but the people in charge of the meeting told us we needed 60% to overturn the committee's decision. This was a great disappointment and surprise to many of us. It seemed to some of us that rules were being made up as they were needed. There is nothing in the Code about this 60% rule to overturn a committee decision.

The next International Botanical Congress was in Melbourne, Australia in 2011. I did not attend that meeting, but I made some proposals that I thought would have made the process of changing the Code more transparent and democratic (Landrum 2011). None of those proposals passed but two special committees, one on bylaws (Division III) and one on Institutional Votes, have been set up and are making new proposals that will be discussed at the next International Botanical Congress in China in 2017 (Knapp et al. 2016a, 2016b). I have had the honor of participating on the first committee.

One problem is that these meetings on nomenclature at an IBC are by necessity held in one city of one country and that locality changes every six years. As they say in the real estate business, "location, location, location." Where a meeting is held matters because of the difficulty or ease of attending a meeting. If the St. Louis congress had been held in Europe, it is likely that the result would have been different. And if the Vienna congress had been in Africa or Latin America, the result would surely have been different. So far, no International Botanical Congress has ever been held in Africa or Latin America.

Botanical nomenclature is part of International Law. Plants must have names to be part of international commerce, agriculture, horticulture, medicine, conservation, etc. Governments generally accept the names we botanists tell them are correct. But who decides how those names should be applied? Is it a democratic process? Should nomenclature be left to experts? Who should participate and how should they participate? At present the process is rather complicated and not especially democratic. I explain the three ways of voting below: **Mail Votes**, **Institutional Votes**, and **Personal Votes**.

First, anyone can make a proposal to change the Code by sending a proposal to the editors of TAXON ([http://www.iapt-taxon.org/index\\_layer.php?page=s\\_taxon](http://www.iapt-taxon.org/index_layer.php?page=s_taxon)), the journal of the International Association for Plant Taxonomy (IAPT). Generally the proposal will be published and people around the world can read it and consider if it is a good idea or not.

**Mail Votes.** Then before an IBC a ballot on all the proposals is sent to all the members of IAPT (as well as members of the nomenclatural committees and to persons who propose changes in the Code, even if they are not members of IAPT). Recipients of the ballot can express their opinion in a "Mail Vote." The "Mail Vote" or "Guide Vote" has not been given much weight in the past. When 75% or more of the ballots are against a proposal it is generally rejected before an IBC. But even then it may be considered if there are a few supporters present at the IBC. On the other hand, if the mail vote is strongly against a proposal, for instance 60% against, that fact may influence the outcome at an IBC.

**Institutional Votes.** Herbaria around the world are given "Institutional Votes" that can be taken to an IBC by someone attending the Nomenclature Section. One proposed justification for Institutional Votes has been to diminish the importance of the location of a meeting (Demissew & Funk 2013). If no one from your institution can go, you can send your vote with a person who is able to go or you can send it to the "Bureau of Nomenclature" (i.e., the rapporteur-général mentioned below and others officiating the Nomenclature Section) saying your institution wants to vote a certain way on a certain proposal. Any individual can carry up to 14 Institutional Votes and will have a personal vote as well. A committee assigns the Institutional Votes, with larger institutions getting more. Presently the committee assigning these votes is the "Bureau of Nomenclature of the International Botanical Congress," but that is expected to change to a special committee in charge of Institutional Votes.

Allocation of Institutional Votes can vary widely. The country of Chile, for example, has two Institutional Votes: one for SGO (Museo Nacional de Historia Natural) and one for CONC (Herbario de la Universidad de Concepción). The large herbaria of Europe and North America have as many as 7 votes each!

Luckily, if your institution has no vote you can request an Institutional Vote from the leading officer of Nomenclature, the rapporteur-général (at present Dr. Nicholas J. Turland, [n.turland@bgbm.org](mailto:n.turland@bgbm.org)) or you may request a vote from the Special Committee on Institutional Votes that was established at the last IBC in Melbourne ([http://www.iapt-taxon.org/index\\_layer.php?page=s\\_institutional\\_votes](http://www.iapt-taxon.org/index_layer.php?page=s_institutional_votes)). Smaller herbaria around the world should be asking for votes. The first step is registering your herbarium in Index Herbariorum (<http://sweetgum.nybg.org/science/ih/>), which lists all the active herbaria of the world. By being part of Index Herbariorum you demonstrate that your institution is part of the world community of plant taxonomists. It is important to demonstrate also the level of taxonomic activity (e.g. number of active staff, size of collections, visitors, recent taxonomic publications by staff) at your institution. The Special Committee on Institutional Votes is already busy with many requests so it would be best to make a request soon.

**Personal Votes.** The most direct way to participate is to attend the IBC, pay registration for at least one day, and participate in the week-long Nomenclature Section using your Personal Vote. The next IBC will be in Shenzhen, China and the nomenclature Section will take place from July 23 to 29, 2017. Unfortunately it is an expensive proposition to attend and that makes the process of participating in this form of international government difficult. It is left to a few dedicated people who can afford to go. Sometimes a few people, no matter how well meaning, may have ideas that differ widely from people who are unable to attend.

Some of us believe that in this day of the internet it should be possible for people to attend the IBC Nomenclature Section virtually. It might not be possible to discuss an issue easily but one could follow the discussion and make an informed choice of how to vote. It is my hope that this will happen by 2023 or 2029 at least!

“Demokratia” from Greek: *demos*, the people; and *kratia*, power or rule. Democracy only works if people (in this case botanists) understand the process and participate. I hope some of you will try to participate in one way or another in the governance of the International Code of Nomenclature, either by casting a **Mail Vote**, obtaining an **Institutional Vote** for your institution to be sent to Shenzhen, China, or perhaps even attending the Nomenclature Section yourself and casting your own **Personal Vote**.

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Editor

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