

excellent practice. It tends to take the science out of the realm of theory and place it in that of reality and give it "a local habitation and a name."

Fortunate is the man who in spite of other pressing duties, finds time to read this book through and in this manner adds to the pleasure of former or coming trips in this region.

If further editions are brought out it would be well to name the formations shown in pictures and sections. For example in Plate XXI is Lyons sandstone of the Pennsylvania System seen at the gateway of the Garden of the Gods. In Figure 10, p. 37, why should "N" indicate Morrison, "B" Fox Hill, "T" Pennsylvanian, etc.? Why use one series of signs to indicate another series? Why not write down directly the name of the formation indicated and so all through this and the majority of works on geology? This old custom of using one sign to represent another sign is the geologist's way of whipping the devil around the stump. The direct action plan will help to drive away ignorance in geological matters.

A sketch map of Corona and the Denver and Salt Lake Railroad might well replace one of the two illustrations of Castle Rock (p. 21 and 26).

The present writer may be excused in inquiring why the state museum was not mentioned on p. 6.

Suggestions such as the above are mere incidents. As a whole the book is delightful and valuable and people who discover it will be indeed fortunate.

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## SUGGESTIONS FOR A WORLD-CODE OF PLANT NOMENCLATURE

THE trend of a recent discussion in *The Journal of Botany* (London, 1921, 153, 289; 1922, 111, 129, 199, 256, 313) suggests that the time is ripe for an attempt to secure world-wide agreement on plant-nomenclature. It has been shown that the divergence between the Type-basis Code and the International Rules leads to dual nomenclature in one out of every nine species of Phanerogams, apart from any differences in generic concept (op. cit. 1922, 129-131). Few will deny that such a state of

affairs seriously handicaps the progress of systematic botany, since it necessarily results in much time, which might otherwise have been devoted to taxonomic work, being occupied with questions of nomenclature.

Is it not possible to combine the best features of both codes? An excellent summary of the chief differences between them has been given by Mr. A. S. Hitchcock (op. cit. 1922, 316). These concern (1) the type-concept; (2) the starting-point or points of nomenclature for certain groups of non-vascular plants; (3) nomina conservata; (4) publication of genera; (5) priority of position; (6) validity of homonyms; (7) duplicate binomials; (8) Latin diagnosis.

To deal with the less controversial points first: No. 7 is surely of little moment. Personally, after considering the arguments for and against, I am now in favor of accepting duplicate binomials, on the ground that the advantage of preserving the earliest specific name outweighs all other considerations. Duplicate binomials are less open to objection than many names which are treated as valid under the International Rules. No. 2 is a matter for the cryptogamists concerned: if they can arrive at an agreement, so much the better; but, if not, why should this stand in the way of agreement on other points? As to No. 8, many Internationalists now consider that Art. 36, which made a Latin diagnosis obligatory, should be revoked.

In regard to No. 4, publication of genera, the Rules treat a generic diagnosis (or reference to a former diagnosis of the group) as obligatory: otherwise it would be open to any name-monger to establish an unlimited number of new genera, without the slightest indication of their generic characters, by merely mentioning the names of species included in them. Surely no group should be recognized unless its diagnostic characters have been given. On the other hand, the Code requires that a generic name should be associable with a binomial specific name, this being essential under the type-system. Are not both requirements reasonable? For the complete definition of a genus, both its diagnostic characters and the species included in it should be stated.

There remain for consideration (1), the type-concept; (3) nomina conservata; (5)

priority of position; and (6) validity of homonyms. These questions are closely connected.

As has been pointed out, the type-concept is not contrary to the International Rules. One obstacle to its adoption by Internationalists, however, is the rigid manner in which it has been applied. Provided that wholesale changes in generic nomenclature are avoided by the recognition of "substitute types," as suggested by Mr. Hitchcock, there seems no reason why the type-concept should not be explicitly incorporated in the International Rules.

The chief difficulties are connected with "nomina conservata" and homonyms. It seems certain that "nomina conservata" will retain a place in any International Rules of the future. But the present list admittedly contains some generic names which should not have been included. And the Type-basis Code recognizes that the strict application of the law of priority may cause inconvenience by displacing well-known names, and provides for exceptions through Art. 6. Hence there is no difference of principle involved, and it is merely a question of deciding what names should be included in the list. This task might be entrusted to a joint committee, as suggested by Mr. Hitchcock (op. cit. 1922, 318). Among names which might be deleted from the list are cases of wrong application of generic names such as *Allionia* Linn. emend. Choisy (op. cit. 1922, 314) and those of unimportant genera with few species.

The present provisions of the International Rules in regard to homonyms are admittedly unsatisfactory, as they make the validity of a homonym dependent on the non-validity of the first use of the name, which may be a matter of opinion (op. cit. 1922, 133). Under the Type-basis Code, on the other hand, many well-known generic names are replaced on the ground of their being homonyms, which is equally unsatisfactory. It is therefore suggested (1), that all specific homonyms should be treated as non-valid; (2) that such well-known generic names as are homonyms should in the discretion of the proposed committee be placed on the list of nomina conservata; (3) that all other generic homonyms should be treated as non-valid.

Priority of position is an extreme extension

of the principle of priority and might well be abandoned in the interests of general agreement. My suggestions for harmonizing the International Rules and the Type-basis Code may now be summarized as follows:

1. Acceptance of the type-concept, with provision for the recognition of "substitute types."

2. Acceptance of a list of generic "nomina conservata" to be prepared by a joint committee, the present list being taken as a general basis.

3. Treatment of generic homonyms as non-valid, with the exception of such as may be placed on the list of "nomina conservata."

4. Treatment of all specific homonyms as non-valid.

5. Abandonment of priority of position.

6. Abandonment of an obligatory Latin diagnosis of new groups; recommendation, however, that a Latin diagnosis should be supplied especially in cases where descriptions are published in languages which do not employ Roman characters.

7. Treatment of generic names as non-valid unless they are accompanied by a generic description or a reference to a former description (generic or sectional).

8. Treatment of generic names as non-valid unless they are associable with a simultaneously or previously published binomial specific name. Provision, however, to be made for the typification of important genera which would otherwise be invalidated under this rule.

9. Acceptance of duplicate binomials.

It should be mentioned that the above suggestions embody only my personal views, and are offered as a possible basis on which the Type-basis Code and International Rules might be harmonized. They differ in some respects from suggestions previously made by me (op. cit. 1921, 153; 1922, 129, 313), which were put forward entirely on their own merits, as a logical development of the present International Rules.

The acceptance of any basis of agreement will call for sacrifices on both sides. Is it too much to hope that they will be cheerfully offered in the common cause of the advancement of Systematic Botany?

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