57, the lengend should give the elevation of the station. ALEXANDER MCADIE

REPORT OF THE COMMITTEE ON NOMENCLATURE OF THE BOTANICAL SOCIETY OF AMERICA

AT the Baltimore meeting of the Botanical Society of America (1918), the Committee on Generic Types presented a set of rules for fixing the types of genera. The report was published in SCIENCE (49: 333–336. 1919). At the same meeting the committee was enlarged to nine members and made a standing committee on botanical nomenclature, with authority to prepare a code of nomenclature. The standing committee consists of LeRoy Abrams, N. L. Britton, E. A. Burtt, A. W. Evans, J. M. Greenman, A. S. Hitchcock, M. A. Howe, C. L. Shear and Witmer Stone. The actual work of elaborating a code was done chiefly by a subcommittee consisting of J. C. Arthur, J. H. Barnhart, R. S. Breed, N. L. Britton, O. F. Cook, F. V. Coville, A. W. Evans, B. Fink, A. S. Hitchcock, M. A. Howe, F. H. Knowlton, P. L. Ricker, C. L. Shear and H. C. Skeels. The following code was presented by the committee:

A TYPE-BASIS CODE OF BOTANICAL NOMENCLATURE

PRINCIPLES

1. The primary object of formal nomenclature in systematic biology is to secure stability, uniformity, and convenience in the designation of plants and animals.

2. Botanical nomenclature is treated as beginning with the general application of binomial names to plants (Linnæus' "Species Plantarum," 1753).

3. Priority of publication is a fundamental principle of botanical nomenclature. Two groups of the same category can not bear the same name.

Note a.—This principle applies primarily to genera and species.

Note b.—Previous use of a name in zoology does not preclude its use in botany; but the proposal of such a name should be avoided.

4. The application of names is determined by means of nomenclatural types.

Note.—A generic name is always so applied as to include its type species; a specific name is always so applied as to include its type specimen.

Rules and Recommendations

Section 1. Publication of Names

Article 1. A specific name is published when it has been printed and distributed with a description, or with a reference to a previously published description.

Note.—A recognizable figure may be the equivalent of a description in the literature of paleobotany and diatoms.

(*a*) In the transfer of a species from one genus to another, the original specific name is retained, unless the resulting binomial has been previously published.

Recommendations: Botanists will do well, in publishing:

1. In describing parasitic fungi to indicate the host and to designate the name of the host by its scientific Latin name.

2. To give the etymology of all new generic names.

Article 2. A generic name is published when it has been printed and distributed

(*a*) With a generic or specific description (or a recognizable figure, see Art. 1, note) and a binomial specific name,

(*b*) With a generic and specific name and the citation of a previously published description,

(*c*) With a definite reference to at least one previously published binomial.

Note a.—A name is not published by its citation in synonymy, nor by incidental mention. Such a name may be taken up but not to replace one already properly published.

Note b.—Of names published in the same work and at the same time, those having precedence of position are to be regarded as having priority.

Recommendation: Botanists will do well, in publishing, to give the etymology of specific names when their meaning is not obvious.

Section 2. Application of Names

Article 3. The nomenclatural type of a species is the specimen or the most important of the specimens upon which its original published description was based.

(*a*) If only one specimen is cited, that is the type.

(*b*) If one specimen is designated as the type, that specimen shall be so accepted, unless an error can be demonstrated.

(*c*) A species transferred without change of name from one genus to another retains the original type even though the description under the new genus was drawn from a different species.

(*d*) The publication of a new specific name as an avowed substitute for an earlier one does not change the type of the species.

(*e*) When more than one specimen was originally cited and no type was designated the type should be selected in accordance with the following :

1. The type specimen interprets the description and fixes the application of the name, hence, primarily the description controls the selection of the type.

2. The type may be indicated by the specific name, this being sometimes derived from the collector, locality, or host.

3. If one specimen is figured in connection with the original description this may usually be regarded as the type.

4. Specimens that are mentioned by the author as being exceptional or unusual, or those which definitely disagree with the description (provided others agree) may usually be excluded from consideration in selecting the type.

5. An examination of the actual sheets of specimens studied by the author may aid in determining or selecting the type. He may have written the name or left notes or drawings upon one of the sheets.

Note.—Specimens known to have been received by the author subsequent to the study resulting in the original publication should be excluded from consideration.

6. If an author, in publishing a new species, gives a description of his own, this takes precedence over synonymy or cited descriptions, in determining the type specimen.

Article 4. The nomenclatural type species of a genus is the species or one of the species included when the genus was originally published.

(*a*) If a genus includes but one species when originally published this species is the type.

(*b*) When more than one species is included in the original publication of the genus, the type is determined by the following rules: (These rules are Articles 3 to 6 of the Report of the Committee on Generic Types published in SCIENCE, N. S., 49: 334–336, 1919.)

Recommendations: In the future it is recommended that authors of generic names definitely designate type species; and that in the selection of types of genera previously published, but of which the type would not be indicated by the preceding rules, the following points be taken into consideration. (This includes Article 7, *a* to *g*, of the Report on Generic Types published in SCIENCE, *loc. cit.*).

Section 3. Rejection of Names

Article 5. A name is rejected

(*a*) When preoccupied (homonym),

1. A specific name is a homonym when it has been published for another species under the same generic name.

2. A generic name is a homonym when previously published for another genus.

3. Similar names are to be treated as homonyms only when they are mere variations in the spelling of the same word; or in the case of specific names, when they differ only in adjective or genitive termination.

(*b*) When there is an older valid name based on another member of the same group (metonym).

(*c*) When there is an older valid name based on the same type (typonym).

(*d*) When it has not been effectively pub-

lished according to the provisions of Section 1 of these rules (hyponym).

Article 6. There may be exceptions to the application of the principles and rules of this code in cases where a rigid application would lead to great confusion. Such exceptions become valid when approved by the Nomenclature Commission.

Nomenclature Commission

A code of nomenclature should secure uniformity, definiteness and stability in the application of names. If proposed rules result in the change of well-established names of economic plants botanists will hesitate to apply them uniformly. All contingencies can not be foreseen and experience has shown that the rigid application of any set of rules results in a few cases of greatly confused nomenclature. The committee has recognized this and hence has introduced an article permitting exceptions. The committee also recognized that to secure uniformity and definiteness the exceptions should in some way be validated. The most convenient and practical validation would be through a permanent judicial body created for the purpose. As the proposed code invites international support, the judicial body should be an international commission. The committee felt that much could be done to pave the way for future international action by appointing a national commission and therefore tentatively submitted a plan for the creation of such a body. This temporary Nomenclature Commission was to consist of nine members, one nominated by the Society of American Bacteriologists, one nominated by the American Phytopathological Society, three elected by the Botanical Society of America, and four elected by the Committee on Nomenclature of the Botanical Society. The details concerning elections and reappointments are here omitted.

The chairman will add that since a subsequent international commission would feel restricted by the decisions of a national body, it might be well to have these decisions take the form of recommendations, the commission meantime perfecting rules and formulating methods of procedure. International rules of nomenclature, including rules for the retroactive fixation of generic types and including a provision for exceptions, together with an International Commission to validate names (generic types and nomina conservanda) would go far toward giving to botany a stable and uniform nomenclature.

A. S. Hitchcock,
Chairman

Bureau of Plant Industry,
Washington, D. C.

SPECIAL ARTICLES

A FISH, WITH A LUMINOUS ORGAN, DESIGNED FOR THE GROWTH OF LUMINOUS BACTERIA

It has been known for many years that luminous bacteria are abundant in the sea and will grow readily upon dead fish or other marine organisms. It has been reported that at times luminous bacteria may infect living forms, such as sand fleas. A malady is produced, which is finally fatal but which, during its course, causes the animal to luminesce like a true luminous form.[1] Pierantoni[2] has suggested that the light of many luminous organisms is due to symbiotic bacteria living in the cells of the luminous organisms. He claims to have grown the bacteria artificially in the case of certain squid.

While I feel convinced that this is not the case in all luminous animals I have recently had an opportunity[3] of studying two forms which do appear to utilize bacterial light. These are the marine fishes, *Photoplepharon* and *Anomalops,* found in the Banda Islands of the Dutch East Indian Archipelago. They have been known to be luminous since 1897, but the organ was first studied histologically by Steche[4] and found to be made up of a series of columnar gland tubes, a number of which

1 Giard and Billet, *C. R. Soc. Biol.,* I., 593, 1889.

2 Scientia, XXIII., 43, 1918.

3 A study made under the auspices of the Department of Marine Biology, Carnegie Institution of Washington.

4 *Zeit. Wiss. Zool.,* XCII., 349, 1909.