

BOTANICAL NOMENCLATURE¹

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It is highly desirable that the rules of nomenclature should apply uniformly to all classes of plants, so far as feasible. When for some special reason a rule needs to be set aside or modified, a resort to *nomina conservanda* would appear more desirable unless the number of names involved is very large. In the case of the Uredinales there seems to be no sufficient reason why any exception should be made to rules based primarily on those for flowering plants, that is, to the general rules of botanical nomenclature.

In both the American and International rules the fungi have been given only secondary consideration. In the several forms of the American rules they are understood to be included, but in the International rules they are singled out together with other groups of the lower plants for separate treatment in certain regards. The rusts are specifically restricted in two ways: (1) the starting point for nomenclature, and (2) the validity of names.

The International rules state that the starting point for the Uredinales, Ustilaginales, and Gasteromycetes begins with Persoon's "Synopsis Fungorum" of 1801. As to the Uredinales, this restriction appears to be nullified by the general principle on which all the rules are presumably founded, namely, that they "should neither be arbitrary nor imposed by authority." It must be that those who voted for this restriction were uninformed about the nomenclatorial history of the rusts. Did they know that only three genera, *Puccinia*, *Aecidium* and *Uredo*, had been established before 1801, and that only about a dozen species had been assigned to them, all of which appeared in Persoon's "Synopsis," practically without change? There would be no difference in the application of these names, whether the starting point chosen is 1753 or 1801. In view of these facts it seems that the exception made for the nomenclatorial starting point for the Uredinales is not required, whatever may be true for the Ustilaginales and Gasteromycetes, for which the writer, for lack of sufficient accurate knowledge, does not choose to speak.

As to the second restriction, the International rules state that among pleomorphic fungi only those generic and specific names are valid which are applied "to the state containing the form which it has been agreed to call the perfect form." They further specify that for the Uredinales this "perfect state is that which ends in the teleutospore or its equivalent." The writer is curious to know what those who framed this exception had in mind by an "equivalent" of the

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teleutospore, and also who are the persons included in the coterie indicated by the phrase "it has been agreed."

In the taxonomic history of the rusts it has occurred many times that what was named and described as an *Aecidium* or *Uredo* has proved upon later and more careful examination to be really the teleutosporic condition, and quite as often the spores that were described as teleutospores have turned out to be uredospores. This lack of discernment and correct interpretation occurred among the earlier taxonomists, as would naturally be expected, but just as frequently it has occurred and still does occur among the most prominent of present day systematists. The application of the rule in such cases would seem somewhat puzzling, but more than that, it should arouse the suspicion that possibly in many cases the so-called "perfect state" is not readily distinguished from the other states. As a matter of general information it may be well to set forth explicitly that so far as the gross appearance of the sorus or of its constituents is concerned, there is no set of characters by which the "state which ends in the teleutospore" can be determined. Aecia, uredinia and telia may have the same general structure, and their spores may closely resemble one another. The fundamental distinctions lie in large part with other characters.

If the rule was framed to simplify and stabilize the use of names among the rusts, it is a failure, according to the writer's taxonomic experience of nearly half a century. It is noticeable that the most conscientious supporters of the rule not infrequently transgress, presumably unintentionally, but nevertheless consistently in the interests of good practice. It may be surmized that the rule reflects an impression that the situation regarding the *fungi imperfecti* among the Ascomycetes is paralleled among the Uredinales. This is a persistent, but erroneous, notion. Whatever may be expedient for the taxonomic treatment of the Ascomycetes should not be permitted to be carried over or influence that of the Uredinales. The writer believes that there are no sufficient grounds to restrict the application of names among the rusts beyond those imposed by the general rules of botanical nomenclature.

As the purpose of rules for nomenclature is to secure uniformity and stability in the application of names, in so far as that is possible, and to have such names acceptable to taxonomists especially interested in the various groups, some means should be devised to permit the expression of opinion before any arbitrary exceptions to general rules become binding. The establishment of a list of *nomina conservanda*, which is undoubtedly a necessity, should be handled in the same way. Revision from time to time, both of the rules and of the list of conserved names, will undoubtedly be required as botanical knowledge increases. These matters could well be placed in the hands of a permanent validating committee empowered to investigate questions brought before them. After the publication of their results and a sufficient interval had elapsed to permit others to reply, their decision could be accepted as binding. In some such way the rules of nomenclature could be made a part of the advancement of botanical knowledge.