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Source: *Taxon*, Vol. 11, No. 3 (Mar. - Apr., 1962), pp. 70-71
Published by: International Association for Plant Taxonomy (IAPT)
Stable URL: http://www.jstor.org/stable/1216019
Accessed: 27/03/2014 09:57

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FORMAE SPECIALES AND THE CODE

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We recommend, for consideration, the following proposals:

(1) Recommendation 4A should be changed to a Note to Art. 4, and should read: In classifying parasites, especially parasitic fungi, authors who do not give specific, subspecific or varietal value to taxa characterized from a physiological standpoint but scarcely or not at all from a morphological standpoint may distinguish within a species special forms (*formae speciales*) characterized by their adaptations to different hosts, but the nomenclature of *formae speciales* shall not be governed by the provisions of this Code.

(2) Delete Recommendation 24B.

There is a great deal of uncertainty about the status of *formae speciales* under the Code. They are mentioned only in Recommendation 4A and 24B. They are not included in Art. 4, in the list of ranks of taxa subordinate to species and, though provision is made in this Article for further supplementary ranks to be intercalated or added if considered necessary, it hardly seems desirable to add *formae speciales* to the list. In view of this, the word "should" in the original wording of Recommendation 4A ("... authors ... should distinguish within a species special forms ...") seems too strong and is better replaced by "may".

If the nomenclature of *formae speciales* is to be subject to the provision of the Code, a Latin diagnosis (from 1 Jan. 1935) and the indication of a type (from 1 Jan. 1956) are necessary for valid publication of their names. Furthermore, the name of the *forma specialis* which includes the type of the next higher ranking taxon should repeat the epithet of this higher taxon unaltered but without citation of an author's name (Art. 26).

Some authors in recent years have, in fact, supplied a Latin diagnosis when publishing the name of a new *forma specialis*, and have indicated a type: others have not done so. Rarely has Art. 26 been followed: an example is *Spongospora subterranea* (Wallr.) Lagerh. f. sp. *nasturtii* Tomlinson (Trans. Brit. mycol. Soc. 41: 498. 1958) published with a Latin (and English) diagnosis saying merely that the *forma specialis* differs from the type in parasitizing *Nasturtium*, causing root distortion and swelling. A type is designated, and an appended note reads "the above proposal automatically creates a *forma specialis* based on the type. Thus the powdery scab fungus becomes *S. subterranea* f. sp. *subterranea*".

It may well be contended that it is impossible in all cases to apply the provisions of Art. 26 to *formae speciales*, particularly in the case of species described in the early days of mycology, since the type of the species is usually an exsiccatum and details of host relationship are probably quite inadequately known even if they are known at all.

The term *forma specialis* has been, and will doubtless continue to be, of convenience to plant pathologists; but it is perforce often likely to be of limited and only local and/or temporary significance. In the case of certain widespread and important plant pathogens (e.g., cereal rust-fungi) the classification by numbered "races" within a species or variety, or within a *forma specialis*, has become established in recent years and offers a convenient means of distinction, of world-wide application, between the very numerous strains of fungi which are morphologically indistinguishable. Bearing no name. but only a number, races of fungi are outside the scope of the Code of Botanical Nomenclature. Plant Pathologists also use the terms physiologic (or biologic) form or race. and biotype: terms which are likewise not considered

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by the Code. The degree of fixity in all these entities, including *formae speciales*, is not yet established, and it is therefore preferable to exempt them all from the provisions of the Code. Plant Pathologists will no doubt continue to use them for as long as they find them convenient.

If this proposal is accepted, it follows that:

(1) the name of a *forma specialis* does not require an author citation, though it may be convenient to retain the name of the author who first proposed the name;

(2) should the name of the species be changed, there is no need for the formal publication of a "new combination" when a subsidiary *forma specialis* is transferred from the old to the new name of the species;

(3) since it is not a taxon recognised by the Code, a *forma specialis* may not be raised to the status of a taxon by merely publishing a recombination (based on the name of the *forma specialis*) in accordance with Art. 32, etc., of the Code. If an author considers it desirable that a *forma specialis* should be regarded as a distinct species, variety or form, he must publish its name as a new name of a new taxon, with a diagnosis, etc., as required by the Code, and the name will date from such publication and must be ascribed to him alone.

SECTIONS AND GENERA IN THE PRIMULACEAE

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An important series of papers on the genera of the Primulaceae, recently published by Wendelbo (1961a, b, c) raises some points of general interest, on which I should like to comment, as they have a bearing on taxonomic problems in other genera.

The first paper (1961b) gives a revision of *Primula* sub-genus *Sphondylia*, and concludes with a conspectus of the genus, in which a number of changes, both taxonomic and nomenclatural, are proposed. The treatment of the sections of the genus does not differ greatly from that of Wright Smith and Fletcher (in their series of revisions published in the Transactions and Proceedings of the Botanical Society of Edinburgh between 1941 and 1950), but the sections are grouped, for the first time, into sub-genera, a procedure which has much to recommend it. Of the seven sub-genera, one is the sub-genus *Primula*, which comprises three sections, the Section *Primula* (formerly *Vernales* Pax), the section *Megaseifolia* Balfour and the section *Julia* Fed. and A. Los. Previous authors had pointed out that this group was isolated from the rest of *Primula* both morphologically and cytologically, and Wendelbo adds the information that the sub-genus is also uniform from the pollen morphological point of view. To this, I should like to add that evidence from hybridization experiments also supports the grouping.

The extent to which evidence from hybrids, either natural or artificial, should be used in taxonomy, has not often been discussed. The general view seems to be that, in taxonomy, judgments should primarily be made on the basis of morphological characters, and there are good reasons for adhering to this view. Nevertheless, in recent years, other criteria have increasingly been applied. The uses of chromosome cytology in taxonomy were strikingly illustrated in *Primula* itself by the work of Bruun (1932); and several authors have discussed the application of comparative biochemistry to taxonomy. The use of information about hybridization is complicated by the fact that, in many cases, there is clear evidence that closely similar or almost identical plants may be unable to hybridize; the most striking examples are provided

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