

AMENDMENTS TO THE PARIS CODE OF BOTANICAL NOMENCLATURE.

Suggested for the consideration of the Vienna Congress of 1905 by the botanists of the Gray Herbarium, the Cryptogamic Herbarium, and the Botanical Museum of Harvard University.

INTRODUCTORY.

The Paris Code of 1867, notwithstanding its high scholarship and general excellence, has proved an unsatisfactory nomenclatorial guide. This has been due to its vagueness in dealing with several matters of fundamental importance. Among the points which it failed to determine with sufficient definiteness the following, as well as some others, are still controversial.

1. The date or dates from which priority should be reckoned.
2. The relation of the specific name to the binomial combination.
3. The relation of subspecific, varietal, or formal names to those of specific rank.
4. Homonyms.
5. Priority of position.

Usage upon these points has unfortunately become so diverse and some of the differing practices are already so firmly fixed at the various centres of botanical activity, that compromise will be difficult, and a unification of customs can be effected only at the expense of great effort and much inconvenience. It would be difficult, however, to overstate the importance of an agreement upon these subjects, and certainly no code will be satisfactory which does not deal clearly with each of them.

I. INITIAL DATES.

In nearly all recent attempts to remodel botanical nomenclature it has been the practice to establish a single starting point from which

to reckon priority, or in case two or three dates have been mentioned one has been taken for genera, another for species, and perhaps a third for families and higher groups. The lack of practical success of the proposed reforms has, it is believed, been in part due to a failure to perceive that the historical development of botanical classification has been such that no single date can be taken for all groups of plants without causing much needless change and uncertainty in the resulting nomenclature. For example, although the year 1753 seems eminently desirable as the starting point for the nomenclature of the spermatophytes, the use of this date among the lower groups, as for instance the Algae, appears not only highly inexpedient but well-nigh farcical. Among the flowering plants both genera and species had by 1753 been interpreted with a tolerable degree of definiteness, and their descriptions were at that time drawn with sufficient understanding of morphology and diagnostic features to make them in general intelligible to future generations. On the other hand, at the date of Linnaeus's *Species Plantarum* the knowledge of the Algae was far too crude to form a satisfactory basis for their classification or nomenclature. Even the optical appliances necessary for the intelligent examination of this group had not been invented. What is here said of the Algae is quite as true of the fungi and applies in lesser degree even to the bryophytes and pteridophytes. Furthermore, the great difficulty or impossibility of preserving specimens in several of the lower groups, and the consequent fact that no type specimens are now extant for a large proportion of the species of the lower orders, render it all the more imperative that the beginning of nomenclature in these groups should not be carried back to a time of brief, vague and unintelligent descriptions.

In consideration of these facts it seems desirable that in the nomenclature of the spermatophytes priority should be reckoned from the publication of Linnaeus's *Species Plantarum* in 1753, but in the case of all other groups, from a date near 1800, to be more exactly determined by a committee of specialists in cryptogamic botany, appointed by the International Congress in whatever manner it may seem best.

As the nomenclature of cryptogamic botany involves other difficulties which are largely peculiar to itself, such as the confusion caused by the different naming of alternating generations, the important question of publication by issue in exsiccatae, the vague

status of degenerate or vegetative forms such as the fungi imperfecti, etc., it is believed that the whole subject should be treated separately, as has been wisely suggested by our honored Swiss and Belgian colleagues.

2. THE RELATION OF THE SPECIFIC NAME TO THE BINOMIAL COMBINATION.

During the last fifteen years several efforts have been made to unify botanical nomenclature and render it consistent with itself. In the course of these as yet unsuccessful reforms it has become evident to those botanists to whom nomenclature is a means to an end rather than an independent science, that a strict and consistent application of priority from 1753 would bring about an amount of change quite beyond that which would be convenient or practical in a science which must always rest largely upon the works of the past century. The inconvenience of the reforms has come chiefly from the enormous number of new binomial and trinomial combinations¹ which have been created. A very considerable part of these state no new classificatory facts. They have been framed to replace existing names on the ground that the latter had not been formed in accordance with certain laws. In order that the resulting nomenclature might have greater definiteness many new rules have been proposed, several of these being of an arbitrary character and introducing practices wholly unknown to even the most critical among the writers of past generations. With each alteration of old rules or addition of new ones, the reformers have felt justified in making the new combinations required. These changes have become very annoying to the investigating botanist, and it is more and more apparent that the rules, notwithstanding the conscientious intent of their authors, have proved an excuse for change rather than a means of stability; for even a slight alteration of rules will often necessitate hundreds of changes of binomial and trinomial combinations, adding greatly to an already enormous and burdensome synonymy.

¹ By trinomial is here meant any combination of a binomial with a name indicating a subdivision of a species, however the latter may be written. E. g. *Gerardia pedicularia*, var. *pectinata*, or *Rumex obtusifolius* β *divaricatus*, or the, as we believe, less desirable form *Ilex monticola mollis*.

In great part these changes result from a theory that a combination as such has no validity. The undersigned believe that this is a mistaken view and that no principle would conduce more to stability and convenience in the nomenclature of the spermatophytes than the recognition of the inviolability of a combination when once made. The isolated specific or varietal name is relatively meaningless. It is only when combined with its proper generic name that it becomes suitable for use as a plant-designation in floristic or monographic work. The combination, being therefore the only really adequate and expressive form of plant name for species, varieties, etc., should be carefully guarded from needless change.

The arguments usually advanced *in opposition* to the validity of the earliest generically correct binomial in relation to the first specific name, are:—(1) Such a ruling would permit a sort of "piracy" by enabling an author either through carelessness or intention to rename species whenever transferring them from genus to genus, thereby causing great confusion. (2) The original author of a species has in describing it performed a service superior to that of any subsequent writer in transferring it to another genus; therefore the original specific name should be maintained as a matter of justice. (3) In cases of differing opinion as to the proper genus, it is a matter of great convenience to have the specific names the same under whatever genus the plant is placed. (4) The custom of reestablishing a neglected specific name, even if it necessitates the formation of a new combination, is a practice so general and so fixed in cryptogamic botany and zoölogy that any departure from that rule by phanerogamists is undesirable as destroying uniformity of biological usage.

In reply to these objections, the importance of which is at once admitted, it may nevertheless be said:—(1) In general, it has been the *intention* of authors to perpetuate the first specific name when forming the first binomial under the correct genus. This has been accomplished in the majority of cases. When it has not happened, the fault has quite as often been with the author of the original specific name, which through incomplete characterization or inaccurate classification has been overlooked, as on the part of the more scholarly writer who has first placed the species in its proper genus. Even in the case of such authors as Salisbury, who have freely

changed the names employed by their predecessors, the intention has rarely, if ever, been that of piracy, but rather a conscientious, even if ill-judged, wish to improve upon faulty or inappropriate designations given by earlier writers. (2) The description of a supposed new species is by no means a difficult matter, but the proper generic affinities of the plant in question are often to be determined only by the most critical and discriminating investigation. It thus happens in many cases that the service of the original describer, far from being greater, is decidedly less, than that of the author of the first correct combination. At all events, it would be unwise to sacrifice to a sense of justice so sentimental any provision which is likely to conduce to stability and simplicity. (3) In a comparatively small number of cases a diverse interpretation of generic names and limits would doubtless lead to the simultaneous use of different specific names for the same plant. It is believed, however, that this danger has been considerably over-estimated by those who have advanced the objection. *Maianthemum Convallaria* and its synonyms have been several times used as a drastic example of the baleful effects of the rule under consideration, but a very obvious answer to objections of this kind, is that under a properly drawn code it should be impossible for four or five different generic names to be simultaneously current for the same genus, and that, as the possibilities of the present widely different use of generic names are diminished by the more detailed codification of nomenclature, any annoyance from differing specific names for the same plant under different genera will of necessity be much decreased. (4) As already mentioned the historical development of classificatory nomenclature in phanerogamic botany has differed considerably from that of cryptogamic botany; and both have long had a wholly independent development from the nomenclature of zoölogy, habits convenient to the particular subject having been formed by investigators in each of these fields. Under these circumstances it seems highly inexpedient to make in any one of these subjects any important sacrifice to secure a superficial and relatively unimportant agreement of method. Surely any investigator with a capacity so great as to work successfully in more than one of these wide disciplines, should be able to grasp and apply without particular difficulty two or three slightly different systems of nomenclature.

The chief reasons for maintaining the first binomial in dealing with

the nomenclature of the spermatophytes are: (1) The earliest binomial for a given species under its proper genus is in reality its first usable name. (2) As soon as such a designation has been created, showing at once the specific status and the correct generic affinity of the plant in question, there seems no adequate reason for making other binomial combinations for the same plant. Indeed, such later combinations, even if framed with the purpose of reinstating a neglected specific name, are of no practical importance and do far more to encumber than to clarify nomenclature. (3) The legalization of the first generically correct binomial has the great advantage that *it founds nomenclature primarily upon the works of authors who have rightly understood the affinities of the plants with which they have been dealing*. It at once cuts out from competition a vast quantity of species which have been ill-defined and wrongly placed. It thus acts as a useful check upon the vague tendencies of any more unlimited form of priority. In this connection it may be pointed out that any such provision as the fifty year limit, proposed by the distinguished Berlin botanists to simplify nomenclature by eliminating certain vague and obsolete generic names, becomes an expedient of doubtful value if at the same time all the numerous specific names published under these genera must still be maintained as valid. It is believed that this problem, however, can be logically and effectively settled by supplementing a generic restriction by the rule of *priority under the genus*. (4) The legalization of the first binomial obviates particular legislation regarding such tasteless and objectionable names as *Catalpa Catalpa*, *Opuntia Opuntia*, *Cerastium cerastioides*, etc., these having arisen, almost without exception, as later combinations. (5) The rule of priority under the genus is easy to apply. In general it is a relatively simple matter to determine the earliest name applied to a given species under its proper genus. On the other hand, it is often a matter of extreme difficulty to be certain that no earlier specific name has been used for the same plant under some remote genus. (6) Priority under the genus is not an untried theory. It has been amply tested by application in works of great importance and exceptional lucidity by such masters of botanical taxonomy as Bentham, Hooker, f., and Asa Gray.

NOTE.—The rigid enforcement of any rule of priority is sure to cause, at least during the transition period, a certain inconvenience. Should it be thought that a consistent application of priority under the genus would bring

into use too many obsolete combinations, the undersigned would approve the appointment of a committee by the International Botanical Congress to draw up a list to include not over 400 to 500 well known and widely distributed species, such as *Ipomoea Pes-caprae*, *Abutilon Avicennae*, *Alnus incana*, etc., the current names of which, although not in accord with priority under the genus, might by special agreement be allowed to stand.

3. SUBSPECIFIC, VARIETAL, AND FORMAL NAMES.

Subspecies, variety, and form are not sharply definable or mutually exclusive categories. It is therefore better that, although their separate rank is maintained for classificatory purposes, their names should be regarded as forming a single nomenclatorial class. In determining which of several subspecific, varietal, or formal names is to be used in a particular case two courses are open; namely, (1) To choose the first name employed for the plant in question in whatever rank and under whatever genus published, or (2) To select the first name which was applied to the given plant as a subspecies, variety, or form *under the correct generic and specific name*. The second of these practices is by far the simplest and therefore the best. If, as is believed by the undersigned, the name of a species should be the first generically correct binomial, it is a natural and logical corollary that the name of a subspecies, variety, or form should be the first generically and specifically correct tri- (or quadri-) nomial. The great practicality and convenience of this rule will scarcely be appreciated by those who have not tried it.

4. HOMONYMS.

It is obvious that the later of two homonyms should be promptly abandoned in case the earlier one is a valid name. If on the other hand the earlier of two homonyms is universally regarded as invalid, its existence in synonymy forms no adequate reason for disturbing the second. When, however, in the course of investigation the earlier homonym is revived as a valid name, the later one must give place and the second plant or group of plants must be renamed. A valid name is one in use. It is a mistake to regard as valid a vague or poorly characterized name merely because it cannot be definitely entered in synonymy. For instance, there is no reason to abandon *Setaria* of Beauvois because of *Setaria* of Acharius, the latter being a name

never now employed by lichenologists, although not with much definiteness placed in synonymy. On the other hand, the serious revival of the earlier of two homonyms in any monograph or flora is, it is believed, a sufficient ground for changing the other.

5. PRIORITY OF POSITION.

When it is necessary to select for use one of two or more names published for the same plant or group of plants simultaneously in the same work, it is by all means the simplest and most logical course to take the first (in position) as the valid name, reducing to synonymy the one or more which follow. This rule affects such a small number of names that it can be put into practice without serious inconvenience especially if generic nomenclature is safe-guarded by some such excellent restrictions as those proposed by the staff of the Royal Botanical Museum of Berlin.

For the reasons above stated, the undersigned, having complied with the requisitions of circulars of the Permanent Bureau, respectfully recommend to the International Commission of Botanical Nomenclature and the Congress to be convened at Vienna in June, 1905, the following

CHANGES IN THE LAWS OF BOTANICAL NOMENCLATURE OF 1867.¹

Art. 3. *The chief aims of nomenclature are (1) to determine names with definiteness and to provide for their stability, whether they are simple (as those of genera, families, etc.) or composite (as in the case of species, subspecies, varieties, and forms), (2) to avoid or reject the use of names or modes in the application of names, that may create error or ambiguity or introduce confusion.*

Next in importance is the avoidance of any useless introduction of new names or combinations of names.

Other considerations, such as absolute grammatical correctness, regularity or euphony of names, a more or less prevailing custom,

¹The English here employed follows as far as possible the translation of Weddell. Portions changed or added are printed in italics.

respect for persons, etc., notwithstanding their undeniable importance, are relatively accessory.

Art. 5. The principles and forms of nomenclature should be as similar as practicable in botany and zoölogy, but special usages, long established or found expedient in one of these sciences, need not be rejected because not practiced in the other.

Art. 17 bis. The nomenclature of spermatophytes shall be regarded as beginning at the date of publication of the 1st edition of Linnaeus's *Species Plantarum* in 1753. The nomenclature of other groups of plants shall begin at . . .¹

Art. 55 bis. When two or more names have been proposed for the same plant or group of plants by simultaneous publication in the same work, the first (in position) must be regarded as valid and those which follow must be treated as synonyms. An exception should be made when it is found that the first name was based upon a teratological or pathological state.

Art. 57. When a section or a species is moved into another genus, when a variety or some other division of a species is given as such to another species, the name of the section, the specific name or that of the division of the species, should be maintained, unless there arise one of the obstacles mentioned in Articles 62 and 63. If, however, in the case of a spermatophyte, this rule has not been observed, no new combination should be later substituted for the one already created, even if the purpose of such later combination be the reinstatement of an earlier specific, subspecific, varietal, or formal name.

Art. 59. Nobody is authorized to change a name or combination because it is badly chosen or disagreeable, or another is preferable or better known, or because of the existence of an earlier homonym which is universally regarded as invalid, or from any other motive, either contestable or of little import.

¹ NOTE.— This date to be at or near 1800, and to be determined more exactly by a committee of specialists in cryptogamic botany appointed by the International Congress.

Signed by

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CAMBRIDGE, MASSACHUSETTS, U. S. A.

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ENDORSEMENT OF THE NEW ENGLAND BOTANICAL CLUB.

The foregoing recommendations have been endorsed by the NEW ENGLAND BOTANICAL CLUB, the vote being 90 in favor and 5 opposed.

FRANK SHIPLEY COLLINS, President.
 EMILE FRANCIS WILLIAMS, }
 EDWARD LOTHROP RAND, } Secretaries.

BOSTON, 9 June, 1904.