not available to the systematists of 50 years ago. The implication was all too
clear that today’s museum systematists could not use these tools (even if they knew
about them). Some of these biosystematists (i.e. systematists without museum jobs)
became authorities on all aspects of evolution and biogeography, and they were not
slow to inform the museum systematists that they had been superseded in such fields,
and that henceforth they should stick to identifying, fumigating cases, stuffing birds,
and otherwise doing the best they could with their inferior intellects.

It is distressing to an ex-administrator of a systematic collection to note that some
of his fellows have been a little gullible. This doesn’t refer to any of the present com-
pany, of course, but there are some such administrators who have permitted the real
scientists on their staffs to be seduced into other disciplines — even to become ad-
ministrators themselves — and who now find that they administer fine collections
staffed entirely by caretakers and servants. To summarize, my advice is that you take
back the basic fields that belong to you — the fields of taxonomy, morphology, ana-
tomy, phylogeny, evolution, and biogeography. But at the same time, don’t try to
spread into fields that are not really closely dependent upon extensive systematic
collections — the fields of ecology, ethology, physiology, horticulture, agriculture,
and public service.

Advice is much easier to give than to take. When I was a museum director I used
to give myself advice of this sort continually, but I never took it. Now, however, I can
give it to my successor for what it is worth, knowing that he can’t use it either. But I
hope that others of you will follow my gratuitous advice. Of course, if you do, you
may not attend the next conference in this series as a director, but perhaps then you
will be invited as an observer.

STUDIES IN THE CAPPARIDACEAE X
ORTOGRAPHY AND CONSERVATION: CAPPARIDACEAE VS. CAPPARACEAE

Frank S. Crosswhite and Hugh H. Iltis (Madison) *

PROLOGUE: MEANINGS OF THE GREEK WORD ORCHIS

1) Fide Petrus Steele (1825) in the Cornelii Schrevelii Lexicon Manuale Graeco-
Latinum et Latino-Graecum (Omnia Graecaes linguae primitiva comprehenduntur):
"testis, testiculus item nomen herbeae, et piscis".

2) Fide Pickering (1846) in A Comprehensive Lexicon of the Greek Language:
[non verbatim]: a) a plant, the orchid, b) a kind of olive, 3) a species of fish, 4) a
testicle.

3) Fide Harris and Allen (1929) in Webster’s International Dictionary of the
English Language, Orchido- is a “combining form from the Greek orchis, gen. orchios
or orceus (not orchidos), testicle”. The derivation of orchid is given as “L., orchis,
wrongly inflected orchidis, etc. see ORCHIS”. For orchis as a plant, the following is
given: “L. fr. Gr. orchis, a testicle . . .”.

INTRODUCTION

All of the books cited above are non-botanical in character and unquestionably
treat Orchis as one word with various meanings (rather than as four separate homo-
nymic names), and as a word which in Greek takes the genitive case-ending-eos. These

* Herbarium, University of Wisconsin. Notes assembled while the authors’ studies were sup-
ported by a grant from the Research Committee of the University of Wisconsin, on funds
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works ignore or call incorrect the specialized botanical usage where the Greek genitive ending -idos is employed. These works also treat this word as masculine, whereas "a kind of olive", being a tree or shrub, must have been feminine to the ancients. Recommendation 75A in the Montreal Code of Botanical Nomenclature summarily dismissed Orchis as masculine in Greek but feminine in Latin, a simple but only partially correct solution. Although the word for testicle was undoubtedly masculine to the ancient Greeks, one might question this gender for a "kind of olive" or for the orchid plant, since gender was derived from attribute (adjective) rather than merely from spelling. Although it is true that all of the homonymic Greek names spelled identically "orchis" must have ultimately been derived from some similarity among their virtues, we are not entirely satisfied that the original meaning was testicle and that the other names are derived from that. The similar word "orchos", meaning an enclosure or row of trees, is certainly derived from "orchis" the olive tree, and indeed, the tree itself was more commonly spelled "orchos". "Orchos" is such an old word that even the Greek word for dancing (in rows) is derived from it, as are very many other words. If we compare an olive with the tubers of the genus Orchis, we can imagine a gross similarity in morphology and sympathize with the Greeks in their search for descriptive words.

No matter how the different homonyms spelled "orchis" or "orchos" are related, we seriously question the habit of lexicographers to grant only one gender or one genitive ending to different homonymic names. Although many Greek lexicons can be cited to show that -eos is the correct genitive ending in all of its meanings, it is now known that -idos, was used for the genitive of Orchis the kind of olive (Taxon 5: 46-53, 1956). There is no evidence that the -idos ending was ever used in Classical times for the orchid plant. We have been generously supplied with data which clearly shows the stem Orchid- to have become established in botany at about the beginning of the 17th Century. It is well-known that ancient Greek or Latin dialects did not always agree in matters of inflection of plant names (cf. Cannabis, -eos, -ios, -idos, Boisacq, 1938; Iris, -eos, -ios, -idos, Steele, 1825).

Many examples can be cited where classical usage was thought to be restricted to one genitive ending, but where another ending was subsequently discovered which supported traditional botanical usage. It has been pointed out by Rickett (Taxon 2: 211-213, 1953) that the fathers of botany such as Tournefort, Linnaeus and Jussieu "naturally used the stems of words to which to add the artificial endings by which they designated orders, families, etc". We might further add that these 18th Century "fathers of botany" were much more familiar with old and ancient literature in botany than are we. If they introduced the genitive ending -idos for Orchis, they had a reason for doing so. In this case, perhaps, they wished to distinguish between orchid plants and testicles. Being taxonomists they had every right to do so.

According to the Code, the name Orchis came into existence in 1753. Therefore, no one should care how some word spelled Orchis might or might not have been declined by one or another ancient Greek or Roman. The Code realizes this fact when it prescribes that the original orthography of names is to be preserved (i.e. the orthography used in valid publication) unless this is contrary to the Code. Since Article 18 requires family names to end in -aceae or to be corrected to end in -aceae, the starting-point and original spelling by A.L. de Jussieu of "Orchideae" must be changed to Orchidaceae. The requirement that family names end in -aceae does not authorize wholesale revision of the name to "Orchlaceae".

If valid publication does not fix the stem of a name, then we are faced with the problem of individual interpretation. For example, the learned Committee on Orthography of the Paris Congress proclaimed that "Agrostis" and not "Agrostidis" is the correct genitive of Agrostis (Taxon 4: 169-170. 1955). More recently, Airy Shaw and
Deighton (Taxon 12: 291. 1963) have found that “Agrostis, genitive Agrostidis” is supported by known classical usage. This difference of opinion is undoubtedly due to consulting different lexicons. It does not seem reasonable to carry an investigation into spelling past the point of valid publication and into the realm of dusty shelves of old lexicons.

It is now appropriate to question attempts to overthrow the traditionally used orthographies of families based on the genera Batis, Cannabis, Capparis, and Halorhagis. More specifically, we are concerned with the advisability of using the never before used orthography “Capparaceae” in place of the correct, more widely-used and well-established “Capparidaceae”.

**Discussion**

The report of the Special Committee on Orthography at the Paris Congress (Taxon 4: 167-172. 1955) considered proposals to illuminate the statement in the then current Code that the name of a family is “taken from that of the type genus”. The result of the committee’s recommendations is the present provision that family names are formed by adding -aceae to the stem of an included genus. The Committee made it quite clear that the object of the proposals was to legalize the orthographies Melastomataceae and Haloragidae over the spellings Melastomaceae and Haloragaceae. F. A. Stafleu summarized the decisions on nomenclature at the Paris Congress (Taxon 3: 217-225. 1954). In discussing the acceptance by the Congress of the report by the Orthography Committee, he concluded that “this means that names like Melastomataceae and Haloragidae will be accepted”.

According to Article 18 of the Montreal Code, family names are formed by adding -aceae to the stem of an included genus-name. Proper Latin stems can scarcely be achieved by merely dropping the final vowel or by retaining the final consonant of a word in the nominative case (although such proposals have indeed been submitted by botanists wishing to clarify the language used in the Code). The Code recognizes this in the examples cited under Article 18 — Rosaceae from Rosa, Salicaceae from Salix, Plumbaginaceae from Plumbago, Caryophyllaceae from Caryophyllus, and Winteraceae from Wintera. As understood in zoological nomenclature, the term “stem” refers to the genitive singular without its case-ending. Traditionally, this appears to have also been the understanding in botanical nomenclature. Since few early authors used the ending -aceae (it is, after all, a purely arbitrary ending), Article 18, Note 2 specifically provides that when a family name has been published with “an improper latin termination”, the ending must be changed to conform with the rule without changing the name of the author. Thus, Article 18 Note 2 provides that an orthographic variant does not constitute a different name, i.e., the original and corrected spellings are merely different orthographies of the same name. Some family names such as Labiatae and Gramineae are specifically exempted from the requirement of ending in -aceae, but this is beside the point.

The concepts of names, homonyms, and different orthographies of the same name seem to be well-understood by most botanists, but it is becoming more and more apparent that some botanists are thoroughly confusing the concepts. Thus, in listing different kinds of names, such as “homonym, basionym”, etc., J. Paclt (Taxon 1: 110-111. 1952) used “paronym” in a potentially dangerous manner, and it is feared that other botanists are taking up his erroneous usage. His definition “A name related etymologically to another but spelled differently” seems correct, but the example he then gives is not of two separate names related etymologically, but rather of two orthographic forms of the same name. In all actuality, a name such as Cryptantha in the Boraginaceae is a paronym of Cryptanthus in the Bromeliaceae. On the other hand, Cryptanthe is merely an orthographically incorrect form of Cryptantha in the Borra-
ginaceae. Cryptanth and Cryptantha refer to exactly the same plants and types, since one is merely a corrected form of the other. They should never be considered paronyms, since they are not separate names, but rather two orthographic forms of the same name.

In the list of Nomina Familiarum Conservanda of the Montreal Code, a large number of family names were conserved, and as a matter of course many had to be corrected so that they would end in -aceae. The name “Capparides” was thus conserved under the orthography “Capparaceae” rather than the preferable “Capparidaceae” which has enjoyed long botanical usage.

Generic names ending in -is in the nominative case are practically all Greek and feminine in gender. Through either a knowledge of usage by the ancients or through long botanical tradition, the Greek genitive ending -idos has been given to most of these names, although -eos, -ios, -inos, itos, and -ithos, also permissible Greek genitive endings, were occasionally used. Berberis is more nearly Latin than Greek and takes the genitive ending -idis in Latin, which for purposes of coining family names is but inconsequentially different from -idos. On the other hand, Vitis is unknown in Greek (since the word for this was Ampelos in that language) and takes the Latin genitive -is, hence “Vitaceae” rather than Vitidaceae. Hydrocharis is Greek in the sense that it is derived from two Greek words, the term for “water” and that for “grace” or “love”. Charis is known to have taken the genitive ending -itos in Greek (Pickering, 1846), hence “Hydrocharitaceae” in place of “Hydrocharidaceae” or “Hydrocharaceae”.

Cannabis is Greek and has traditionally as a plant name taken the genitive ending -inos, which has resulted in “Cannabinaceae”. Indeed, “Cannabinaceae” is one of the recently disputed family name orthographies, being listed as “Cannabinaceae” in the list of Nomina Familiarum Conservanda. The ancients were not at all agreed in how “Cannabis” should be treated in the genitive case. According to Boisacq (1938), while the genitive ending -eos was indeed used by the Greeks, the ending -ios was used in the Ionic dialect, and the ending -idos was used in the Thessalonic dialect. Though it is true that no one has yet attempted to prove that the ending -inos was definitely used, it is an acceptable type of Greek genitive termination for such a word. The Romans were known to use the orthography “Cannabinus” for items pertaining to hemp (Harris and Allen, 1929). Thus we see that “Cannabaceae” is not necessarily the correct or even a preferable familial orthography. Considering well-established usage as well as the original “Cannabinae” it should seem that “Cannabinaceae” should be the preferred orthography. In Chapter VI of the Montreal Code, which is concerned with orthography and gender of names, it is stated (Recommendation 75A (1) under Section 2) that IN DOUBTFUL CASES OF GENDER, GENERAL USAGE SHOULD BE FOLLOWED. Since the purpose here is evidently stabilization of orthography (as it is affected by gender), the same concept should undoubtedly also apply to stabilization of orthographies based on doubtful cases of inflection. No one can demonstrate that -inos is an improper genitive ending for Cannabis. In any event, botanical custom should be followed in inflecting Cannabis, since the word as it stands in lexicons is not a plant name but rather a name for materials obtained from the plant. Cannabis as shown in lexicons meant “hempen-cloth”, this eventually to evolve into the English “Canvas”. Should the word for hemp-cloth determine the inflection for hemp itself? Many great botanists who qualify as fathers of our science, realized the distinction, else why did they coin and use “Cannabinae” or “Cannabinaceae”?

Long before Cannabinae was validly published by Jussieu, John Ray had written “ex semine Cannabino” in 1688. It does not matter whether Jussieu derived the spelling of Cannabinae from Ray or an earlier writer or whether he made it up himself. Although it has been argued to us that Cannabinaceae has a dual adjectival ending,
there appears to be no reason why it should not. If Orchideae is corrected to Orchidaceae, then Cannabinaceae should certainly be changed to Cannabinaceae.

Capparis, as present in most Greek lexicons, is the name for the edible portions of the caper bush, just as elaios was the ancient Greek name for useful portions of the olive tree. The sharp taxonomist will immediately notice that the English words “caper” and “oil” are derived from these two words, just as “canvas” is derived from the word for hempen-cloth, cannabis. The genitive ending -eos was indeed used for capparis, but the different dialectical inflections it may have had are not yet determined and may never be. What seems to be important, however, is not whether some ancient Greek writer ever wrote “capparidos”, but whether -idos is a possible genitive ending for such a word. As a botanically valid name, Capparis has consistently been given the genitive ending -idos.

The ending -idos seems to be by far the most common genitive ending for Greek plant names which end in -is, while -eos was also occasionally used, especially for names referring to plant products, etc. The fact that Iris is variously inflected might indeed be due at least in part to its many meanings — 1) the rainbow, 2) the goddess of the rainbow, and 3) a plant. Although those who favor “Bataceae” in place of the customary “Batidaceae” must claim -eos to be the genitive ending, the present authors’ searching has revealed this inflection thus far only for Batis, a kind of fish. The frequency at which -idos has been used in family names based upon -is genera can be appreciated when the family names based upon Amaryllis, Berberis, Hamamelis, Iris, Orchis, and Oxalis are considered.

One modern school of opinion in England takes the position that Botanical Latin is a modern Romance Language developed since the Renaissance and largely formed by 1753. This school, which is bound to attract sympathy from practically all botanists, dismisses classical usage as irrelevant. Such scholars point out that the long stem “Orchid-” replaced the classical short stem “Orch-” as early as 1600, but that the long stem “Capparid-” was not generally used before the next century. Both of these inflections are part of a trend of Botanical Latin away from Classical Latin and are justifiable on the basis of the taxonomist’s right to distinguish names of plant genera from testicles or edible capers, etc. Linnaeus himself recommended using Greek names for genera, so that they would stand out in Latin sentences. It is clear that valid publication determines correctness and that Linnaeus had as much right to write “Capparidis” as he had the right to decide to use Capparis as the name of a genus.

The framers or editors of the list of Nomina Famililarum Conservanda had the right and duty (as has any botanist) to correct the validly published and conserved family name “Capparides” to an orthographic form ending in -aceae. Since “Capparaceae” actually appeared in the International Code, many persons thought that this unique version of “Capparidaceae” was the required spelling, especially since it appeared in a list of conserved names. Several recent papers now bear the strange orthography “Capparaceae” in their titles although “Capparidaceae” bears more relevancy to the bulk of the existing literature. A very recent discussion of the families of flowering plants (Ann. Mo. Bot. Gard. 52:291. 1965) uses the traditional spelling Capparidaceae, but it is obvious that the new spelling “Capparaceae” has led to great confusion among botanists, as it is not uncommon today to read of Capparidales and Capparaceae in the same sentence. It is obvious that when Capparaceae is used then the ordinal name must be spelled Capparales. Attempts have now been made by editors to force authors to use “Capparaceae”, and it is due to the desire of one of us (H.H.I.) to continue the publication of his Studies in the Capparidaceae under the same title, that we have bothered to write this paper.

It is naked fact that if a beginning student were given the task of looking-up references to Capparaceae he would find nothing published before 1960. The average
plant physiologist, having little training in the idiosyncrasies of plant nomenclature might automatically suppose that Cannaceae, Cannabaceae, and Cannabinaceae were three separate families. It is safe to assume that an index might list all three of the above names, perhaps even on different pages or on different cards. Even a skilled taxonomist when using an index and finding Cannabinaceae would hardly glance above or turn a page to see if Cannabaceae might be present also. Thus, it is apparent that the trivial matter of spelling may have dire and serious consequences. The introduction of entirely new spellings such as “Capparaceae” is purely repugnant to science and can only serve to foster errors and to bring botany into disrepute among the sciences, or rather to bring taxonomy into disrepute among the other disciplines of botany.

Although it is not certain how the spelling “Capparaceae” actually found its way into the Montreal Code, it may be of interest that in the same Code the orthography “Capparidaceae” was used in the list of Nomina Generica Conservanda. It would appear that under the rules in effect at the time of conservation, only names were conserved, not orthographies, since by unmistakable inference in Article 18 Note 2, the Code distinguishes between family names and family name orthographies in its provision that a corrected orthography is not to be considered a separate name. Capparides, Capparaceae, and Capparidaceae are different orthographies of the same name, only the name being conserved.

The present authors were sorry to see that Airy Shaw and Deighton (Taxon 12: 291. 1963) proposed to arbitrarily treat all generic names ending in -is (with the specified exceptions of those ending in -charis, -basis, and -caulis) as if they took the genitive ending -idis. This course would have resulted in Vitaceae being changed to Vitidaceae, an unnecessary change. As we have tried to show, no special legislation is needed to defend orthographies such as Batidaceae, Cannabinaceae, Capparidaceae, Haloragidaceae, Hydrocharitaceae, Orchidaceae, and Vitaceae.

Two proposals to conserve “Capparidaceae” were published in Taxon. We are entirely in favor of these published proposals and we stand firmly against the right of a committee to adopt unpublished proposals in direct conflict with published proposals.

Suggestions

A perusal through the pages of Taxon shows that several attempts have been made to change the Code so as to make it an instrument not only for determining the application of names, but for determining the correctness of orthographies of the same name. These attempts have customarily been defeated, although the questions are perennially brought-up at Congresses. Orthographic provinces are customarily the domain of an editor and are hardly subject to legislation.

Chapter VI of the Montreal Code deals with the orthography and gender of names and consists mostly of “Recommendations”. These recommendations are always meant to be non-retroactive. Article 73, which is the bulk of material in Chapter VI that is not recommendation, deals more with not correcting orthographies rather than with doing so, and Note 4 specifically provides that “the liberty of correcting a name must be used with reserve...” Otherwise, the function of Article 73 seems to be the defining of “orthography”, but it also entails a few statements dealing purely with transliteration, these only seeming to confirm Principle V. Nowhere has the Code provided legislation for determining the correctness of orthographies, nor would philologists passively allow botanists to encroach on their special field of study. Just as we would not want foresters or others to encroach on the proper delineation of rules of nomenclature, we should not ourselves presume to legislate on the correctness of grammar and spelling, a concept embodied in the Preamble of the Code.
Nothing prevents a person from taking up the study of botanical philology. Such a person should remember that usage is the primary consideration of correctness, and that rules are customarily formed to harden the unwritten justification-of-practice into concrete written Law. Thus, the English “Common Law” has been written-down to form the basis of the laws of many English-speaking countries, and the practices of determining the application and correctness of names has been hardened into the written “International Code of Botanical Nomenclature”.

Why should not persons interested in matters of correctness of spelling, orthography, transliteration, or typography, who might happen also to be competent botanical nomenclators, meet together to study these matters. These persons should not consider themselves a committee to suggest changes in the International Code of Botanical Nomenclature, but rather a group to write their own document on Botanical Grammar and Orthography, this document being outside of the Code and not even required or recommended by the Code. Just as botanists are not required to follow the International Code, so would nomenclaturists and nomenclators not be required to follow the rules of grammar and orthography.

The International Code has been so widely accepted by taxonomic botanists mainly because its provisions have been based on wise thought and deep research by many sensible and “non-dabbling” persons who have usually made proposals designed to preserve the unwritten law rather than to create law a-fresh or to make special provision for non-existent (“extra-terrestrial”) taxa. “Law”, consisting of rules and regulations, seems hardly ever to be justified in anticipation of something, but rather as a result of something.

We may certainly hope some day to see a document prepared by botanical philologists. Such a document would undoubtedly be accepted by people concerned with plant names (nomenclators and nomenclaturists) as well as by general botanists, if it encompassed proposals suggested by persons as wise and sensible as those who have contributed to the writing-down of rules for determining the application and correctness of plant names.

It should be pointed out that rules formed by botanical philologasters* probably would not and should not gain the acceptance of botanists.

**Proposals**

**Proposal A.** We propose that the next International Botanical Congress correct the (“corrected”) orthographic variants “Bataceae”, “Cannabaceae”, “Capparaceae”, and “Haloragaceae” everywhere that they may occur in the International Code of Botanical Nomenclature (including the list of conserved family names) back to the preferable and more widely used “Batidaceae”, “Cannabinaceae”, “Capparidaceae”, and “Haloragidaceae”.

*Argument* — The use of the questionably correct orthographies “Capparaceae” etc. in place of the justifiable and long-used “Capparidaceae” etc. is contrary to the Code insofar as the Code requires the original orthography of the validly publishing author to be retained, except in cases where changes are necessary so that the names of families will end in -aceae. The change to -aceae does not allow for any fundamental reconstruction of the original name. Capparidaceae is the form of the family name “Capparides” that is derived from the genus name Capparis and retains best the original family-name orthography but yet ends in -aceae. The genitive form “Capparidos” was intentionally used and is proper Greek. The fact that ancient Greek writers gave the genitive ending -eos to the edible portions of the caper is immaterial, espe-

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* i.e., Dabblers or blunderers in botanical philology; cf. definition of “philologaster” in Harris and Allen, 1929.
cially when it is known that the ancient Greek dialects differed in the manner in which *Cannabis*, *Iris*, etc. were inflected.

The use of the questionably correct orthographic variants “Capparaceae” etc. in the International Code of Botanical Nomenclature sets a dangerous precedent and would encourage botanists to make other clearly unjustified changes in orthography of plant names as suits their fancy.

**Proposal B.** We propose that the next International Botanical Congress affirms that the International Code of Botanical Nomenclature is an instrument for determining the application and status of names (correctness, legitimacy, validity, etc.) and that it does not concern itself with matters of grammar or with the correctness of different orthographies of the same name, except insofar as it has the authority to prescribe the manner in which names are to be formed, and insofar as it should commend to its users the practice of not changing established orthographies unless this is clearly necessary in applying an Article (but not a recommendation) of the Code.

We further propose that this be implemented by moving the statement concerning grammar, etc. from its present position in the Preamble to a position on the next page, to become one of the Principles, preferably the last, so that the others will not have to be re-numbered.

Yea further, we propose that the statement be editorially modified so as to have a form similar to the other Principles without changing the original meaning, unless changes in meaning are proposed and accepted by the Congress.

**Postscript**

At Edinburgh, the following addition to Article 73 (proposed by A. A. Bullock in *Taxon* 11 : 126, 1962) met with approval and was referred to the editorial committee for revision and inclusion in the next edition of the Code: “A preferred orthography differing from the original may be retained by conservation”. Though the original purpose of conservation was stabilization of names, it now becomes that of legalizing orthographic innovations. Who will admit to being the person who changed “Capparidae” as it was published in a proposal for conservation in *Taxon* 7 : 9, 1958 and 8 : 163, 1959) to “Capparaceae”? Since the name was proposed for conservation as “Capparidae”, how do we know that “Capparaceae” is not a printer’s error? We must now consider these trivia in light of the new rule.

To our knowledge, the earliest use of “Capparaceae” is to be found in the list of *Nomina Familiarum Conservanda* (Montreal Code, 1961). How can this orthography be stabilized by conservation when it was never before used? Should not an orthography be effectively published before it is eligible for stabilization? We are afraid that the people who submit proposals for conservation (or is it the people who act upon the proposals?) are often the exact same people who delight in correcting orthographies. They naturally want their corrected orthography to be the one listed as correct in the lists of *Nomina Conservanda*. Under the new rule we may look forward to a vast deluge of proposals for conservation (i.e., official approval) of orthographic corrections. The new rule may be looked upon by some as a mechanism forcing committee sanction before a correction in spelling of a generic name can be made. Others will interpret Article 73 to authorize any botanist to correct orthographic errors, the provision for conservation applying only to the retention of “corrections” that are themselves incorrect. Still others will interpret the new provision in the sense that all orthographies which have happened to be used in the lists of *Nomina Conservanda* are to be treated as conserved. Still others will maintain that only orthographies proposed for conservation specifically to conserve orthography are to be treated as conserved. Matters are further complicated by the different meanings of conservation as applied to genera.

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and families. Generic names are conserved only when they need to be conserved. The family names in Appendix II of the Montreal Code were conserved not because they particularly required conservation, but rather to effect all-around stabilization. While a good deal of research has been expended by the Committee for Spermatophyta on the pros and cons of conservation of generic names (i.e., whether a generic name actually needs to be conserved), the Subcommittee for Family Names seem to have taken over Bullock’s list in Taxon (8: 154-181, 189-205, 1959) essentially unchanged but with a few editorial innovations such as “Capparaceae”. Now that Bullock’s proposal concerning conservation of preferred orthographies met with approval at Edinburgh, it is necessary to ask whether or not the Montreal Congress meant intentionally to conserve “Capparaceae” in that form.

The statement “A preferred orthography differing from the original may be retained by conservation” would seem to imply “A preferred orthography differing from the original, if not retained by conservation is illegitimate”.

It may be argued that conservation of orthographies will be studied by committees and usage will be preserved (i.e., stabilized). The recent invention of “Capparaceae”, etc., shows that such a simple assumption is wrong. Whereas “preferred orthography” brings to our minds “orthography preferred by long usage”, this is subject to individual interpretation. Preferred by whom? The man with the loudest voice in a committee meeting? In all likelihood, “preferred orthography” might mean “grammatically preferred orthography”.

If the position is maintained that all conserved names are conserved automatically in the orthography present in the lists of Nomina Conservanda, then we must take every spelling error introduced by typists and printers as determining the conserved orthography. It is often hard to determine what changes have been introduced by the printer. In Appendix II, some synonyms are alphabetized among the Nomina Familiarum Conservanda in the form “Oenotheraceae: vide Onagraceae”. These are undoubtedly introduced to make the lists more useful. The lightly printed italic type contrasts strongly with the bold-face Roman type, and it is obvious that these names are not to be considered conserved, even though it was stated that “The names in this list are to be retained in all cases...”. However, two such names are printed in bold-face type exactly like the conserved names! If it is maintained that the list of Nomina Familiarum Conservanda is free of printer’s errors or that it is to be treated as if it were free of printer’s errors, then Ilicaceae is an alternative name for Aquifoliaceae while Roxburghiaceae and Stemonaceae are conserved alternative names for families with identical circumscription. These alternative names are contrary to the Code. Bullock (Taxon 8: 197. 1959) pointed out that Roxburghia and Stemona are only taxonomic synonyms, rather than nomenclatural synonyms, so it would appear that both of these family names are eligible for conservation. If it is maintained that both family names are conserved, then it is yet the case that both names were conserved with the same type (Stemona), this changing their status from taxonomic synonyms to nomenclatural synonyms and alternative names. In the case of Aquifoliaceae, the name was proposed by Bullock for conservation with the type genus Ilex, and it appears that Ilex and Aquifolium are nomenclatural synonyms. These comments show the fallacy of conserving printer’s errors.

The phrase “A preferred orthography differing from the original” would seem to mean “A corrected orthography”. According to Article 73, Sentence 1, anyone may correct orthographic errors, and no provision is made for these corrections to be submitted to a committee and then to an International Botanical Congress for approval or rejection. It is because Bullock’s new rule is essentially an amendment to this same Article 73 that we fear for the worst.

Now that the principle of orthographic conservation appears to have been adopted,
will it be necessary in the future to add a new article to the Code to the effect that “in conserving preferred orthographies over otherwise correct and widely used orthographies, the new orthography should first be effectively published and proposed in a place other than the International Code of Botanical Nomenclature itself”. This would amount to strengthening the idea that most people have that something cannot be stabilized until it actually exists. Or should it be maintained that a committee has the privilege of inventing an entirely original orthography and the privilege of also immediately stabilizing it by conservation?

The present authors once thought that they knew what was meant by nomenclatural stabilization. Now they are not certain. Apparently stabilization is taking on an entirely new meaning. Perhaps “stabilized” names should be defined in the Code in the official language used to define other kinds of names such as “valid”, “legitimate”, “correct”, etc. Perhaps our remarks sound facetious, but it is our heartfelt belief that some botanists define stabilization not in terms of past usage but rather in terms of “how should we stabilize a name so that future use will be stabilized?”.

Perhaps foresters should be allowed to know what is meant by stabilization of plant names before it is decided to stabilize by orthographic correction the names of important forest trees for their use. Should Pseudotsuga taxifolia be stabilized to P. taxidifolia, P. taxiiifolia, P. taxifoliae, P. taxaeffolia, P. taxifolincola, P. taxifolioidea, P. taxifo-liopsia, or some yet unthought-of orthography? The orthographies above are incorrect, but no more incorrect than the stabilized “Capparaceae”. If one newly-coined orthographic invention, (i.e., Capparaceae) can be stabilized, why not others? Can only manifestly incorrect orthographies be stabilized? Conservation of correct orthographies is certainly superfluous.

The remarks in this present paper are not intended as criticism directed against any particular person. Specifically, we do not intend to criticize A. A. Bullock, for, as we have pointed out, we agree with his published proposal to conserve Capparidaceae. Though his proposal to amend Article 73 was certainly made to preserve usage, its meaning needs clarification.

References


TOWARD A MORE COLORFUL TAXONOMY

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Modern plant taxonomy is witnessing a rapid growth not unlike that characteristic of hybrid vigor. Substantial contributions have been made and are still being made by other disciplines such as genetics, palynology, chemistry, and mathematics. In many respects modern taxonomy is becoming more of a “synthesizing science” and in this regard it resembles plant ecology.

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