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ISONYMS AND PSEUDO-ISONYMS: IDENTICAL COMBINATIONS WITH THE SAME TYPE*

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Summary

The same combination may be given independently by different authors three ways. A later homonym is the same combination given to two different types, or, more precisely, when all elements but the final element have the same type. Isonyms exist when two authors give the same combinations to the same type, that is, all elements of two combinations have the same types. Pseudo-isonyms exist when different authors give the same combination to the same subordinate element but the inclusive (higher rank) elements have different types. Examples of all are given and it is concluded that later isonyms are nomenclatural non-entities, later homonyms are illegitimate, and later pseudo-isonyms are not illegitimate under the present Code.

A taxon was published as *Echinocereus phoeniceus* var. *inermis* by Schumann (Monatschr. Kakteenk. 6: 150. 1896). It was transferred to another species to form *E. triglochidatus* var. *inermis* (Schum.) G. K. Arp (Cactus & Succ. Journ. (US) 46: 132. 1972) and again by Rowley (Repert. Pl. Succ. 22: 8. 1973). Rowley's (1973) trinomial is a later isonym of Arp's (1972), having the same name, rank, and type. Indeed, the types of the generic name *Echinocereus*, the species *E. triglochidatus* and the variety *inermis* are the same for both Arp and Rowley.

Such a later isonym is not a later homonym (illegitimate) since a later homonym is defined (Art. 64) as the same name with a different type. It could be called a superhomonym, better hyperhomonym, but I prefer the simpler term, isonym. Later isonyms are not mentioned in the Code; in a sense a later isonym is a bibliographic artifact with nothing but bibliographic information (author, publication, date) to differentiate it from its earlier isonym. How could we accord any nomenclatural status to a second name which is identical in spelling and typification with an earlier name?

Rowley's trinomial is not illegitimate nor invalid. He would not have published it as a new combination in 1973 if he had known it had already been published in 1972. The fact that Rowley treated it as a new combination, is only a bibliographic error of citation, an understandable and inadvertent error, to be sure. However, when a later isonym is the basis of a combination it is not quite so easy to dismiss the isonym as a bibliographic error without threatening the combination with invalidity.

In 1857 Hooker (Journ. Bot. Kew Gard. Misc. 9: 334. 1857) published the binomial *Alsophila podophylla* for a new Asiatic species. In 1881 J. G. Baker (Journ. Bot. Brit. & Foreign 19: 202. 1881) used the same binomial for a new Colombian species, based on *Kalbreyer 1375*. In 1891 Baker (Ann. Bot. 5: 189. Apr. 1891) continued use of this illegitimate later

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homonym. The latter publication was part of a three part series entitled "A summary of the new ferns which have been described since 1874" (Ann. Bot. 5: 181-222. Apr. 1891; 301-332. Aug. 1891; 455-500. Nov. 1891).

In the next year (1892) Baker issued what was ostensibly a reprint of the previous year's three part paper, using the same title but continuous pagination. In this "reprint" Baker (p. 9) renamed *Alsophila podophylla* Baker (1881), non Hooker (1857) as *Alsophila kalbreyeri* Baker, based on *Kalbreyer 1375*, the type of *A. podophylla* Baker (1881), non Hooker (1857).

Unfortunately, this validly published and legitimate new name (nom. nov.) has largely been overlooked. Carl Christensen (Index Filicum p. 44. 1905) overlooked *Alsophila kalbreyeri* Baker (1892) and superfluously republished *A. kalbreyeri* C. Chr., again based on *Kalbreyer 1375*. In 1913 Christensen (Index Filicum Suppl. 1: 91. 1913) attributed *Alsophila kalbreyeri* to Baker but erroneously cited "Ann. Bot. 5: 189. 1892", an error for "Baker, Summary New Ferns. p. 9. 1892".

Subsequently, two new combinations were published, both referring solely to *Alsophila kalbreyeri* C. Chr. (1905), not to *A. kalbreyeri* Baker (1892): *Cyathea kalbreyeri* (C. Chr.) Domin (Pteridophyta p. 262. 1929) and *Trichipteris*[1] *kalbreyeri* (C. Chr.) Tryon (Contrib. Gray Herb. 200: 45. 1970).

The question has been raised, can *Trichipteris kalbreyeri* (C. Chr.) Tryon be corrected to *T. kalbreyeri* (Baker) Tryon? Note 2 of Art. 33, concerning bibliographic errors, strongly suggests that this correction can be made. In the example, cited in the Code, *Echinochloa muricata* (Michaux) Fern. (1915) is to be corrected to *E. muricata* (Beauv.) Fern., even though Fernald never referred to *Setaria muricata* Beauv. (1812). The important facts are: first, Fernald based his binomial on *Panicum muricatum* Michx. (1803), non Retzius (1776); second, *Setaria muricata* Beauv. (1812) is also based on *Panicum muricatum* Michx. (1803), non Retz. (1776); third, *Setaria muricata* Beauv. (1812) is a legitimate new name under Art. 72, Note; four, *Panicum muricatum* Michx. (1803), *Setaria muricata* Beauv. (1812) and *Echinochloa muricata* Fern. (1915) are all based on the same type and are obligate nomenclatural synonyms.

The fourth point is particularly significant, viz. that the type of all the names is the same. Exactly the same situation obtains in the problem under discussion, i.e., the type is the same for *Alsophila kalbreyeri* Baker (1892), *Alsophila kalbreyeri* C. Chr. (1905) and *Trichipteris kalbreyeri* Tryon (1970). I conclude that, just as one may correct *Echinochloa muricata* (Michx.) Fern. to *E. muricata* (Beauv.) Fern., one can correct *Trichipteris kalbreyeri* (C. Chr.) Tryon to *T. kalbreyeri* (Baker) Tryon.

One problem remains with respect to Tryon's combination: evaluating the punitive provisions of the second paragraph of Article 33. This paragraph says that a new combination published *after 1953* is not validly published unless its basionym is clearly indicated and a full and direct

[1] The generic name *Trichipteris* Presl should be corrected to *Trichopteris*, changing the connection vowel *-i-*, appropriate to uniting Latin elements, to *-o-*, appropriate to uniting these Greek elements. This is justified specifically under Art. 73, paragraph 8. However, others feel that Art. 20 justifies retention of any original spelling. I proposed (Taxon 23: 175. 1974) to finesse this issue by removing "names" (of genera and families) from Art. 73, paragraph 8, allowing original spelling in those ranks to stand unless conserved otherwise.

reference given to its author and original publication with page reference and date. The corrected citation, *Trichipteris kalbreyeri* (Baker) Tryon (1970) is published after 1953 and does not give a full and direct reference to its basionym (*Alsophila kalbreyeri* Baker, Summary New Ferns p. 9. 1892).

I am inclined to consider Note 2 of Art. 33, on correction of bibliographic errors, to be a specific exception to the provisions of the preceding paragraph 2, which requires direct citation of basionym after 1953. In short, I interpret Note 2 as allowing correction of bibliographic errors, even errors committed after 1953. If this interpretation is not accepted, I suppose the present publication satisfies the final requirement for valid publication of *Trichipteris kalbreyeri,* direct citation of the basionym, *Alsophila kalbreyeri* Baker (Summary New Ferns p. 9. 1892).

This particular problem seems relatively easy to solve because the two isonyms, *Alsophila kalbreyeri* Baker (1892) and *A. kalbreyeri* C. Chr. (1905), are obligate nomenclatural synonyms with the same type. Note that these cannot be called homonyms because Article 64 defines homonyms as names of the same rank which are spelled the same *and* based on different types.

Consider the same names under different assumptions. Let us suppose that Christensen (1905) published a new species, *Alsophila kalbreyeri,* with a diferent type than that of *Alsophila kalbreyeri* Baker (1892). Let us further suppose that we consider *A. kalbreyeri* C. Chr. (1905) as a different species from *A. kalbreyeri* Baker (1892). Under these assumptions we would have to accept *Trichipteris kalbreyeri* Tryon (1970) as a validly published new name (under Art. 72, Note) based on *A. kalbreyeri* C. Chr. (1905), non Baker (1892). We would have to provide a new name in *Trichipteris* for *A. kalbreyeri* Baker (1892). There would be no question of "correcting" Tryon's bibliographic citation.

However, the picture is a little less clear if we assume different types for *Alsophila kalbreyeri* Baker (1892) and *A. kalbreyeri* C. Chr. (1905) and regard them as taxonomic synonyms belonging to the same species. Under these assumptions there could be a desire to "correct" Tryon's bibliographic citation and base *Trichipteris kalbreyeri* Tryon (1970) on the oldest available epithet, *Alsophila kalbreyeri* Baker (1892) rather than on the basionym cited by Tryon, *A. kalbreyeri* C. Chr. (1905). I believe most taxonomists would resist this temptation and conclude that, under the assumptions stated in this paragraph, *Trichipteris kalbreyeri* Tryon (1970) is still a new name (under Art. 72, Note), based on *Alsophila kalbreyeri* C. Chr. (1905), non Baker (1892), and treat Baker's taxon as a synonym of *Trichipteris kalbreyeri* Tryon (1970).

The above indicates that the Code is quite specific about handling homonyms, identical names with different types: the later homonym is illegitimate.

A possible problem of isonymy in a trinomial exists in the species *Alisma*[2]

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[2] The generic name Alisma L. was treated as feminine by Linnaeus and a few subsequent authors, implying that it belongs to First Declension (gen. *alismae,* stem *alisma-*). However, *Alisma* was consistently neuter in classical Greek and Latin, belonging to Third Declension (gen. *alismatis,* stem *alismat-*). This fact, coupled with the fact that the conserved family name is *Alismat-aceae,* obliges us to correct the misattribution of gender by Linnaeus. The same facts pertain to the generic name *Melastoma.*

gramineum. This binomial was first published by A. Lejeune (Flore des environs de Spa 1: 175. 1811), based on a Lejeune collection from southeastern Belgium (BR). Unfortunately this valid publication of a legitimate name was overlooked for about 150 years. In the meantime, *Alisma gramineum* C. C. Gmelin (Fl. Badensis 4: 256. 1826) was validly published as a new species based on a specimen from Dachsland (France) (KR). Several infraspecific taxa were subsequently published in *Alisma gramineum* Gmelin (1826), non Lej. (1811), including *A. gramineum* (subsp. *geyeri* Samuelsson (Ark. Bot. 24A (7): 43. 1932).

PROBLEM: What is the correct name and citation for *Alisma gramineum* Gmelin subsp. *geyeri* Samuels. when it is treated as a subspecies in *Alisma gramineum* Lej. (1811)?

I wish to establish the invalid nature of all *nomina novi* and *combinationes novae* used in the following discussions. All are hypothetical and not accepted, therefore invalidly published under Article 34. Ordinal epithets are used; these are not to be regarded as specific epithets under Article 23.

One expects to create a new combination when transferring a taxon (subspecies) from one taxon (species with one type specimen) to another taxon (species with a different type specimen). In this case one would immediately consider forming *Alisma gramineum* Lej. subsp. *geyeri* (Samuels.) hypoth. comb. nov. in transferring subsp. *geyeri* Samuels. from the species *Alisma gramineum* Gmelin (type from France) to *Alisma gramineum* Lej. (type from Belgium). Note that *Alisma gramineum* Gmelin (1826), nom. illegit., is nomenclaturally a different species from *Alisma gramineum* Lej. (1811), even if they are considered to be taxonomically the same species. Gmelin's species is a later homonym, not an isonym, of Lejeune's species.

However, the new combination, *A. gramineum* Lej. subsp. *geyeri* (Samuels.) hypoth. comb. nov., is an apparent isonym of *A. gramineum* Gmelin subsp. *geyeri* Samuels. (1932). This might suggest that one should form a new name for the taxon, *A. gramineum* Lej. subsp. *secundum* hypoth. nom. nov. However, the fact remains that the logical new combination, whether an isonym or not, is not illegitimate (not a later homonym). There is no justification for renaming the taxon.

If one considers that the taxon cannot be renamed and that the logical new combination creates bibliographic artifact (isonym) the only option is to consider changing the author of the species so that the trinomial is changed from *Alisma gramineum* Gmelin subsp. *geyeri* Samuels. (1932) to *A. gramineum* Lej. subsp. *geyeri* Samuels (1932). This is exactly what one would do if *A. gramineum* Gmelin (1826) were an isonym of *A. gramineum* Lej. (1811) and the two species were nomenclaturally identical (had the same type). But they are not nomenclaturally identical. Even though we may regard them as belonging to the same species, they are nomenclaturally different.

A fourth possibility is to flag the nomenclatural change by accepting *A. gramineum* Lej. subsp. *geyeri* Samuels. emend. mihi, but that implies a change in the circumscription of the subspecies that really is not involved.

In short, none of the four possible solutions is completely satisfactory. Renaming the taxon (subsp. *secundum*) is not possible because the earliest available epithet (subsp. *geyeri*) is not illegitimate. Attributing *A. gramineum* Lej. subsp. *geyeri* directly to Samuelsson (1932) is not satisfactory because that would be appropriate only if *A. gramineum* Gmelin (1826) were nomenclaturally the same species as *A. gramineum* Lej. (1811). Attrib-

uting *A. gramineum* Lej. subsp. *geyeri* to Samuels. emend. mihi is not satisfactory because that implies a change in circumscription of the subspecies, not in the species. Forming a new combination seems unsatisfactory because *A. gramineum* Lej. subsp. *geyeri* (Samuels.) hypoth. comb. nov. would apparently be a later isonym of *A. gramineum* Gmelin subsp. *geyeri* Samuels. (1932).

It seems that the latter option is the least unsatisfactory solution. The logical new combination is not illegitimate under the present Code. A new combination is the usual method of handling the transfer of a subordinate taxon (subspecies) from one nomenclaturally different taxon (species) to another. This maintains the existing epithet and makes it possible to associate a discussion of the problem with a new combination that will be picked up by indices. Such a new combination is neither an isonym nor a homonym. I would call it a pseudo-isonym and again point out that it is not illegitimate.

The following is a hypothetical problem involving a putative binomial, instead of a trinomial, pseudo-isonym. Let us assume two homonymous genera have been established:

Una Presl (1829) [Dipsacaceae]	*Una* G. Don (1834) [Compositae], non Presl (1829), nom. illegit.
T.: *U. prima* Presl	T.: *U. altera* G. Don ≡ *Dua* Boissier (1875)

Let us also assume that two species were described under *Una* G. Don, the second being *Una tertia* G. Don.

Finally, assume that you have seen the type of *Una tertia* G. Don and found that it actually is not a member of the Compositae but of the Dipsacaceae and is a distinct species of *Una* Presl!

PROBLEM: What is the correct name and citation for *Una tertia* G. Don in the genus *Una* Presl?

Again, you could call it *Una tertia* (G. Don) hypoth. comb. nov. This would not be an illegitimate later homonym of *Una tertia* G. Don, since the two names have the same type. You might call it *Una quarta* hypoth. nom. nov., but this is hardly justifiable since the logical new combination is not illegitimate. It might be called *Una tertia* G. Don but that obscures the fact you are treating it in a different family than did G. Don and that *Una* G. Don is nomenclaturally independant from *Una* Presl. You could call it *Una tertia* G. Don, emend. mihi, but that implies change in the circumscription of the species when, in fact, it is the circumscription of the genus *Una* G. Don (1834) that was changed.

It seems best to form the logical new combination, *Una tertia* (G. Don) hypoth. comb. nov. This is a later pseudo-isonym of *Una tertia* G. Don (1834) and is neither illegitimate (a later homonym) nor an isonym (the generic type of *Una tertia* (G. Don) hypoth. comb. nov. is different from the generic type of *Una tertia* G. Don).

CONCLUSIONS. First, a true isonym is created when all elements of two combinations are spelled the same and have the same type, for example, the two generic names and the two specific epithets have the same types in the two combinations *Alsophila kalbreyeri* C. Chr. (1905) and *Alsophila kalbreyeri* Baker (1892). Even the varietal epithets have the same types in *Echinocereus triglochidatus* var. *inermis* (Schum.) Rowley (1973) and *E. triglochidatus* var. *inermis* (Schum.) G. K. Arp (1972). In both these cases

the later isonym has no nomenclatural status and is to be regarded as a bibliographic error of citation to be corrected to cite the earlier isonym, even if used as the basis of a new combination; thus, *Trichipteris kalbreyeri* (C. Chr.) Tryon (1970) is to be corrected to *T. kalbreyeri* (Baker) Tryon (1970).

Second, homonyms are created when all elements of two combinations are spelled the same and all but the final elements (lowest rank) have same types, for example, the generic names have the same type but the specific epithets have different types in *Alisma gramineum* Lej. (1811) and *A. gramineum* Gmelin (1826). The later homonym is illegitimate and must be handled accordingly.

Third, a pseudo-isonym (neither a homonym nor an isonym) is created when two combinations are spelled the same and the inclusive elements (higher rank) have different types but the subordinate elements (lowest rank) have the same type, for example, *Una tertia* G. Don (1834) and *Una tertia* (G. Don) hypoth. comb. nov. are pseudo-isonyms, the specific epithets have the same type but the generic names have different types, the former being *Una altera* G. Don (Compositae) and the latter being *Una prima* Presl (Dipsacaceae). *Alisma gramineum* Lej. subsp. *geyeri* (Samuels.) hypoth. comb. nov. and *A. gramineum* Gmelin subsp. *geyeri* Samuels. (1932) are also pseudo-isonyms, the infra-specific epithets having the same type but the specific epithets having different types.

Fourth, true isonyms are nomenclatural non-entities (bibliographic artifacts) and a later isonym is to be corrected bibliographically to the earlier isonym. Homonyms are nomenclatural entities and the later homonym is illegitimate. Pseudo-isonyms are nomenclatural entities and a later pseudo-isonym is required in the unusual case that a subordinate epithet is transferred from an inclusive later homonym to the earlier homonym.

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