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Rebuttal to “(2786) Proposal to change the conserved type of *Ipomoea*, nom. cons. (Convolvulaceae)”

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Abstract A rebuttal to the proposal to change the conserved type of *Ipomoea* is presented. We argue the proposal is unnecessary and has no basis in evidence or precedent that justifies its approval.

Keywords classification; *Ipomoea*; taxonomy; type

A proposal to change the type of *Ipomoea* L., nom. cons., from *I. pes-tigridis* L. to *I. triloba* L. was submitted in 2020 (Eserman & al., 2020, proposal 2786) and has recently been recommended for acceptance by the Nomenclature Committee for Vascular Plants (Applequist, 2023). In this article, we argue that this proposal to change the type of *Ipomoea* is unnecessary and it has no basis in evidence that justifies the change. We also note that a requirement when submitting a nomenclatural proposal for consideration is to accompany it by “a detailed statement of the cases both for and against its rejection” (McNeill & al., 2015: 163, 165; Turland & al., 2018: Art. 14.12, Art. 56.2), but the authors do not discuss all the consequences of adopting their proposal.

The genus *Ipomoea* has traditionally been classified in the tribe Ipomoeae Hallier f. (family Convolvulaceae Juss.) alongside a variable number of smaller genera. Molecular phylogenies of the group show two big clades, one of them dominated by species of New World origin – “Astripomoeinae” sensu Eserman & al. (2020) – and the other one dominated by species of Old World origin – “Argyreinae” sensu Eserman & al. (2020) –, and a series of smaller clades forming a grade between them (Muñoz-Rodríguez & al., 2019). Eserman & al. (2020) argue that, as the current type, *I. pes-tigridis* L., belongs to the “Argyreinae” clade of *Ipomoea*, it should be replaced with a type from the clade that includes the commercially important sweet potato (*Ipomoea batatas* (L.) Lam.). They state that this unusual step is necessary to future-

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proof the generic name *Ipomoea* for sweet potato, should a hypothetical future classification choose to split the genus.

The proposal is unnecessary for several reasons. First, it is unnecessary because all previous attempts to recognise segregate genera within *Ipomoea* have been unsuccessful. As it stands, the proposal implies the continued acceptance and extension of a system of non-monophyletic and non-diagnosable genera nested within several hundred species of *Ipomoea*. All previous attempts to recognise segregate genera consistently failed to reconcile monophyly and diagnosability, and always left a large number of *Ipomoea* species unaccounted for (Wood & al., 2020; Muñoz-Rodríguez & al., 2022, 2023). We are therefore sceptical of the assertion by this group of signatories – the majority of whom have little to no experience of taxonomic or systematic research on *Ipomoea* – that a satisfactory natural reclassification of these plants can be produced when this has not previously been possible, and they provide no such classification or basis for one. If such a classification is produced in the future, that would be the appropriate time to deal with nomenclatural matters. Concerns with the nomenclature in the absence of any new evidence or basis for such a drastic change in classification are therefore an unhelpful and unnecessary distraction from the taxonomy itself.

A second reason to reject this proposal is, in fact, nomenclatural stability. Changing the type of *Ipomoea* to *I. triloba* as proposed by Eserman and colleagues does not offer any more nomenclatural stability than the currently accepted type, *I. pes-tigridis*, already proposed by Manitz (1976) and accepted on the grounds of nomenclatural stability decades ago. In brief, most Ipomoeae species traditionally classified in segregate genera (e.g., *Argyreia*, *Rivea*, *Stictocardia*) are in the “Argyreinae” clade (Old World clade sensu Muñoz-Rodríguez & al., 2019), which may give the false impression of a straightforward split between *Ipomoea* and the rest as hinted at by Eserman & al. (2020). However, this is not the case: the authors do not mention that the Old World clade includes more species of *Ipomoea* than species of all segregate genera combined, c. 230 vs c. 170 respectively, nor do they mention that all but one of the segregate genera are not monophyletic but intermingle with *Ipomoea* species (Muñoz-Rodríguez & al., 2019, 2023). Only by using a poorly sampled and cherry-picked phylogeny of *Ipomoea* in the broad sense, not including any “Argyreinae” *Ipomoea* species (as by Simões & al., 2022), can an artificial split between *Ipomoea* and the current non-monophyletic segregate genera be misleadingly portrayed. We note that the two clades “Astripomoeinae” and “Argyreinae” referred to by Eserman & al. (2020) are based on an earlier phylogenetic analysis (Eserman & al., 2014) that included only 27 species to represent more than 800 species. It is thus important to note that any re-arrangements other than recognising an expanded, monophyletic *Ipomoea* as advocated by several authors for more than 20 years (e.g., Wilkin, 1999; Manos & al., 2001; Muñoz-Rodríguez & al., 2019, 2022, 2023) would require more nomenclatural changes than those carried out by Muñoz-Rodríguez & al. (2019). What is more, the suggestion that sweet potato is in danger of “losing its name” creates the unedifying illusion of taxonomic instability, thereby perpetuating long-standing negative perception of the field as one pre-occupied with unnecessary and unpopular nomenclatural changes.

We were not consulted about the proposal to change the type of *Ipomoea*, and Eserman & al. (2020) misquote our work when they write [emphasis added]: “As shown above (Wilkin, l.c.; **Muñoz-Rodríguez & al.**, l.c.), some authors regard the presence of the type of *Ipomoea* in the ‘Argyreinae’ clade as an obstacle towards a most useful renewal of the re-circumscription of the genera in tribe *Ipomoeae* [...]” In fact, we have never advocated a re-circumscription of Ipomoeae into smaller genera. In all our publications we have argued that such re-circumscription is unnecessary and doomed to failure, as it is not possible to identify monophyletic and diagnosable taxa (genera, subgenera, sections) that include all species in Ipomoeae (Muñoz-Rodríguez & al., 2019, 2022, 2023; Wood & al., 2020). An expanded monophyletic *Ipomoea* is therefore the most appropriate solution for a large (c. 800–850 species) but not *enormous* genus compared to others such as *Begonia*, *Carex*, or *Solanum*.

The signatories of the proposal continue: “We think nomenclature should not block the development of a more stable and logical [*sic*] classification and here propose to replace the conserved type of the genus with a species included in the ‘Astripomoeinae’ clade.” The authors provide no evidence or arguments to support their assertion that a more stable and logical classification is achievable by rejecting an expanded *Ipomoea* when the existing classification includes non-monophyletic genera nested within several hundred species of *Ipomoea*. Such a situation is neither stable nor logical. A change of type should only be considered following on from a period of detailed, intensive study of the taxonomy and phylogeny of *Ipomoea* demonstrating that the biology, evolution, and morphology of these plants are somehow different. Changing the type prior to conducting this work is not only putting the cart before the horse but divorcing type and nomenclatural matters from the basic task of improving the taxonomy of these plants.

In conclusion, the supposed “fear of destabilising the nomenclature of the group, in particular the species with greatest

economic importance” does not justify the change of the type, since the nomenclature of the genus would only be destabilised if *Ipomoea* was split into smaller genera. As we have shown, no such viable classification has yet been proposed as an alternative to the expansion of *Ipomoea* to include all species in Ipomoeae, a solution that accurately reflects evolutionary history, requires the fewest nomenclatural changes (many species were originally described in *Ipomoea*), and entirely avoids the need to change the type of the genus.

We, therefore, consider the case for changing the type has no basis in evidence or precedent and should not be endorsed by those interested in nomenclatural stability, accurate taxonomy, or *Ipomoea*.

AUTHOR CONTRIBUTIONS

All authors participated in the work that supports this article and in the discussion and writing of its content. — PMR, <https://orcid.org/0000-0002-3580-8136>; JRIW, <https://orcid.org/0000-0001-5102-3729>; TW, <https://orcid.org/0000-0002-4664-7868>; TC, <https://orcid.org/0000-0003-1586-3557>; AS, <https://orcid.org/0000-0002-0360-3806>; RWS, <https://orcid.org/0000-0002-6371-2238>

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