

A note on four historical names recorded in *Aloe* L. (Asphodelaceae: Alooideae)

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Summary: We show that of four previously unrecorded, but recently unearthed names in *Aloe* L. (Asphodelaceae: Alooideae), none has an impact on the species-rank nomenclature of the genus as currently accepted. Although nomenclatural stability is not here impacted, we argue that such long-hidden names that are now visible as part of the nomenclature applicable to *Aloe* have the potential to unnecessarily or inappropriately disrupt the status quo. The same will apply to other taxa for which the existence of historical names has been recorded. A formal mechanism must be introduced through the Code to lessen or, ideally, entirely prevent such names displacing ones long in use.

Zusammenfassung: Wir zeigen, dass vier bisher vergessene Namen von *Aloe* L. (Asphodelaceae: Alooideae), die kürzlich ausgegraben wurden, keinen Einfluss auf die Nomenklatur der Gattung in ihrer gegenwärtigen Umschreibung haben. Obwohl in diesen Fällen die nomenklatorische Stabilität nicht beeinträchtigt wird, sind wir der Meinung, dass solche lange vergessenen Namen, die nun im Rahmen der auf *Aloe* anzuwendenden Nomenklatur ans Tageslicht kommen, das Potential haben, den Status Quo unnötigerweise oder ungehörigerweise in Frage zu stellen. Dasselbe gilt für andere Taxa, für welche die Existenz von

historischen Namen etabliert wurde. Im Nomenclaturcode muss ein formaler Mechanismus eingeführt werden, um möglichst ganz zu vermeiden, dass solche Namen die seit langem gängigerweise verwendeten Namen ersetzen.

Introduction

As part of the ongoing Aloes of the World project on the genus *Aloe* L. (Smith *et al.*, 2008a, b; Klopper *et al.*, 2010; Smith, 2013; Klopper & Smith, 2013), a comprehensive database of known names and other nomenclatural information is kept up-to-date. Thus far, 958 epithets published in *Aloe* (sensu Grace *et al.*, 2011) since 1753 have been recorded in this database (Figueiredo & Smith, 2010; Grace *et al.*, 2011; Smith *et al.*, 2011).

In a recent examination by Reveal (2012) of two horticultural works (*Gardeners' Chronicle* and *Revue Horticole*) appearing in just two successive years (1874 and 1875), he recorded 4,600, in his view, validly published names that were either not included in the International Plant Names Index (IPNI, <http://www.ipni.org>), or were incorrectly listed in that widely used e-resource. One of the conclusions reached by Reveal (2012) is that 'a major effort should be made to review these long ignored [horticultural] works', as part of efforts to uncover overlooked names and determine

their validity. In acknowledging that resolution of emerging taxonomic problems will require the expertise of monographers and a review of the extant type material, he also suggested the possibility of limiting the introduction of long-overlooked names to ensure that the discovery of such names does not lead to nomenclatural instability.

We agree that horticultural literature is becoming increasingly available online (see e.g. the Biodiversity Heritage Library website, <http://www.biodiversitylibrary.org/>; or the Royal Horticultural Society Lindley Library website, <http://www.rhs.org.uk/About-Us/RHS-Lindley-Library>). However, as electronic copies of publications such as historically obscure seed catalogues and horticultural exhibition reports are currently far from readily available, engaging with this largely inaccessible dataset will prove exasperating for taxonomists, who may now be expected to scrutinise these resources as part of any taxonomic revision or review. The burden of doing so will undoubtedly fall on the shoulders of a decreasing plant systematics expertise base (Godfray, 2002), which leads us to express our concern at the demands that such unproductive and potentially disruptive work will place on taxonomists. 'Taxonomic description no longer belongs to those who do nothing else; species description [of new taxa] is much more widely practised' (Joppa *et al.*, 2011) and scientific names are used by people in fields other than taxonomy. However, we are unaware that plant nomenclature is practised extensively beyond narrow disciplinary and professional bounds.

In this regard, further limits placed on using the priority rule (Articles 13–15, McNeill *et al.*, 2012) or suppressing such horticultural works (Article 34 and Appendix VI, McNeill *et al.*, 2012) will likely be discussed at the Nomenclature Section of the 2017 International Botanical Congress scheduled for Shenzhen in China. At present, names of families, genera, species, and some infraspecific taxa can be conserved (Article 14 and Appendices II–IV, McNeill *et al.*, 2012), but it has to be demonstrated that doing so will lead to stability.

This paper deals with the validity of the four *Aloe* names (*Aloe fraskii* Croucher, *A. greenii* Green, *A. macchiata* Da Pare, *A. quadrangularis* Da Pare) that Reveal (2012) found in the horticultural literature. We show that only one of these four names (*A. quadrangularis* De Pare) is accepted [as a valid heterotypic synonym of *Gasteria obliqua* (Aiton) Duval]. For the other three names the description is not sufficient for validation and these are considered to be *nomina subnuda* [sub-

naked names; meaning a name with descriptive information in its protologue that is inadequate for determining its meaning or application and its valid publication is thus doubtful (Hawksworth, 2010). This is an informal concept that is not permitted in the International Code of Nomenclature for Algae, Fungi and Plants (ICN) (McNeill *et al.*, 2012; Reveal, 2007), but such names have the potential to cause serious nomenclatural problems especially related to the application of the priority rule (Brummitt, 2002)].

Names not currently in IPNI

Aloe fraskii Croucher, *J. Hort. Cottage Gard.* 27: 163. 20 Aug 1874.

Mention of this name is made in an article about the Royal Horticultural Society exhibition held on 19 August 1874. Mr J. Croucher, gardener to J. Peacock of Hammersmith, had 'sent *Aloe fraskii*, a South African species' to the exhibition. According to Reveal (2012) it was validated by a brief diagnosis in English ('the base of the leaves clasping the stem like a cup'). Reveal (2012) quotes also a slightly later citation (Garden 6: 188. 22 Aug 1874) for the same name which he said was validated by a brief diagnosis in English ('thick amplexicaulent leaves'). This article is about the same Royal Horticultural Society exhibition held on 19 August 1874 whereto 'Mr Croucher brought *Aloe fraskii*, having thick amplexicaulent leaves'. Neither 'description' is sufficiently informative to validate the name, since numerous species of *Aloe* have such leaf bases (see Articles 38.1 and 38.2, McNeill *et al.*, 2012). *Aloe fraskii* Croucher has been cited as an unplaced *nomen subnudum* in the World Checklist of Selected Plant Families (Govaerts, 2013). It is possible that *Aloe fraskii* is a corruption of *Aloe thraskii* (or vice-versa) (Figure 1), which was described by Baker (1880) from material that was in cultivation in Europe since 1860. It is not known who Frask/Thrask was.

Aloe macchiata Da Pare in F.A. Gera, *Nouv. Diz. Univ. Ragion. Agric.* 4: 547. 1835.

According to Reveal (2012) the name was validated by a diagnosis in Italian. Reveal (2012) comments that 'The name could also be considered a new name for *A. maculata* Ker. Gawl., Bot. Mag. 20: t.765. 1804, non Forssk. (Fl. Aegypt.-Arab.: 73, 1775)'. This statement appears to be based on the citation of '*A. maculata*, Curtis' as a synonym by Da Pare.

Aloe maculata was cited by Ker-Gawler as attributed to Thunberg, not as a new name. The correct author citation for *A. maculata* is in fact All., not Forssk., whose name is illegitimate (Gugliel-

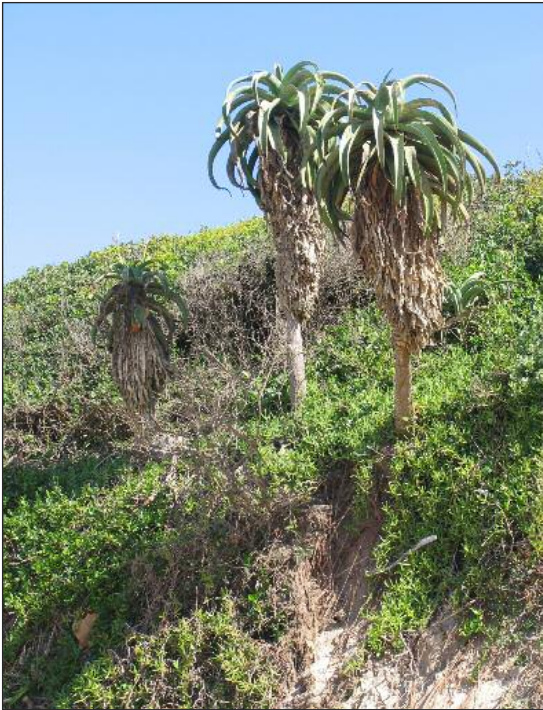


Figure 1. *Aloe thraskii* Baker is endemic to the coastal areas of southern KwaZulu-Natal and northern Eastern Cape, South Africa, where it grows on beach dunes in almost pure sand. It is not known after whom the plant was named. *Aloe fraskii* Croucher may be a corruption of the same name. Photo: Neil R. Crouch.

mone *et al.*, 2009). Reveal (2012) further comments that the name could also be a new name for '*A. obliqua* Haw., Trans. Linn. Soc. London 7: 14, 1804, *nom. illeg.*, non DC. (Pl. Hist. Succ.: t.91, 1802)'. This statement was imported into the World Checklist of Selected Plant Families (Govaerts, 2013) where *Aloe macchiata* Da Pare is now cited as a homotypic synonym of *Gasteria obliqua* (Aiton) Duval, together with *Aloe obliqua* (Aiton) Haw. and *Aloe maculata* var. *obliqua* Aiton.

Da Pare described *A. macchiata* as 'leaves dagger-shaped, glabrous, maculate; flowers in a 2 feet long spike'. This description is not sufficient to validate the name since it can be applied to several species of *Gasteria* that were known at that time (see Articles 38.1 and 38.2, McNeill *et al.*, 2012). Furthermore, it is not clear if Da Pare was describing a new species as he did not indicate it as new (as he did for *A. quadrangularis*). It is possible that there was an error in the order of the citation of the two names (common name and



Figure 2. *Aloe greenii* Baker is only known with certainty from northeastern KwaZulu-Natal, South Africa, where it is fairly uncommon, but is reported to possibly also occur in southern Mozambique. It is a member of the maculate aloe group, which is notoriously difficult to identify. This species is characterised by a suite of characters, which includes pronounced markings on the lower leaf surface. Photo: Neil R. Crouch.

scientific name) with the commonly used 'macchiata' (meaning maculate in Italian) cited as the scientific name, while *A. maculata* was cited as a common name. *Aloe maculata* was already a well-known name by 1835, and it is unlikely that it was not accepted by Da Pare. Furthermore, he included two 'varieties': *Aloe pulchra* and *Aloe obliqua* (citing *A. maculata* Curtis as a synonym for the latter). This reflects the treatment of *Aloe maculata* (with the same two varieties) by Aiton in *Hortus Kewensis* (1789: 469). Reference to 'Curtis' probably refers to the corresponding plate in *Curtis's Botanical Magazine* (1804: t.765) where *Aloe maculata* (*pulchra*) and *Aloe obliqua* are also listed (this plate has been identified as representing *Gasteria pulchra* Haw.). These two 'varietal' names are now recognised as two separate species of *Gasteria*: *A. pulchra* (= *A. maculata* var. *pulchra* Aiton) is a homotypic synonym of *Gasteria pulchra* (Aiton) Haw.; while *A. obliqua* (= *A. maculata* var. *obliqua* Aiton) is a homotypic synonym of

Gasteria obliqua (Aiton) Duval (Govaerts, 2013). The latter was previously treated under the name *Gasteria bicolor* Haw. (Van Jaarsveld, 2007). Therefore, the placement of *Aloe macchiata* as a synonym of *Gasteria obliqua* would be incorrect, even if the diagnosis were accepted as adequate, because only one of the ‘varieties’ listed under it applies to that taxon.

Aloe quadrangularis Da Pare in F.A. Gera, *Nouv. Diz. Univ. Ragion. Agric.* 4: 546. 1835, *nom. illeg.*, non Dum. Cours. (Bot. Cult., ed. 2. 2: 219, 1811).

The name was validated by a description in Italian (translating as: leaves narrow, linear, 1–2 feet long, distichous, thick with 4 angles edged with small white teeth, the two lateral faces much narrower, the interior faces with just a few green warts, the two superior faces have white sharp maculae). It was described as a new species. *Aloe quadrangularis* Da Pare has since been cited as a heterotypic synonym of *Gasteria obliqua* (Aiton) Duval in the World Checklist of Selected Plant Families (Govaerts, 2013).

Names with an earlier reference than currently in IPNI

Aloe greenii Green, *The Garden* (London) 8: 77. 24 Jul 1875.

Mention of this name is made in an article about the Royal Horticultural Society exhibition held on 21–22 July 1875. The plant of Mr Green under the name of *Aloe greenii* was awarded a First-class Certificate based on it being ‘one of the most striking among the variegated kinds’. According to Reveal (2012) the name was validated by a description in English. The description consists of ‘A distinct-looking *Aloe*, marked with pale green blotches on a dark glossy ground’, which we do not consider as sufficient to validate the name since it can be applied to several of the maculate aloes that were known at that time (see Articles 38.1 and 38.2, McNeill *et al.*, 2012). We therefore do not consider the name *Aloe greenii* as validly published (by Green) in the 1875 issue of *The Garden* and it thus has no status under the Code (see Article 12.1, McNeill *et al.*, 2012). For this reason, and contrary to the *World Checklist of Selected Plant Families* (Govaerts, 2013), we consider Baker only, in *J. Linn. Soc., Bot.* 18: 165 (1880), as the correct author of, and citation for, *Aloe greenii*, a species from northeastern KwaZulu-Natal in South Africa and possibly also present in southern Mozambique (Figure 2).

Conclusion

We conclude that requiring, or even suggesting, the systematic scanning of horticultural literature for previously unrecorded names of *Aloe* taxa (and other plants for that matter) is counterproductive and will place an increased burden on those engaged in taxonomic research. The extent of the potential disruption is evidenced by the work of Reveal (2012) who assessed only a small subset of the potential literature where such names can be found. He considered that further sources of botanical names are to be found in ‘general articles, letters, reports of meetings, results of horticultural shows and events, and especially the advertisements that frequent such weekly publications as the *Gardeners’ Chronicle* or *The Garden*’.

The introduction of these *nomina subnuda* (see Brummitt 2002) into the existing list of plant names with the impact that this has on nomenclatural stability is contrary to the provisions of the ICN (McNeill *et al.*, 2012). This is to be actively discouraged, and a formal mechanism must be found to prevent such names from being introduced into current usage. Placing further restrictions on the priority of names is one option. Another would be to put these publications on the suppressed works list (Appendix VI, McNeill *et al.*, 2012). However, this latter suggestion needs to be further investigated, as it might impact negatively on the validity of some names that appeared in these works, but that have long been used and accepted. Such an investigation, as well as deciding which horticultural works need to be suppressed, will be very time consuming.

Even if it is determined, as we have for the four names discussed here, that the names will have no nomenclatural consequences, the time required to investigate them will impact negatively on existing taxonomic and nomenclatural capacity. Further, they will bolster the widespread impression that taxonomists are more interested in arguing about destabilising and confusing changes in the names of often well-known species, than studying and documenting the world’s biodiversity.

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