

## (2469–2472) Proposals to reject the names *Aloe perfoliata*, *A. obscura*, *A. picta*, and *A. perfoliata* var. *saponaria* (*A. saponaria*) (*Asphodelaceae*: *Aloioideae*)

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Wijnands (Bot. Commelins: 125. 1983) recognised the fact that Plate 15 (“*Aloe africana maculata spinosa minor*”) of Dillenius (Hort. Eltham. 1: 18, t. 15, fig. 16. 1732) could potentially destabilise aloe nomenclature if it were to be applied to any of the names with which it was historically associated. The identity of the aloe depicted in the plate is controversial and cannot be assigned with confidence to any known member of the group. Wijnands (l.c.) thus recommended that the interpretation of Plate 15 of Dillenius not be decided upon. His suggestion was not followed by subsequent workers and this plate has been indicated (in one case erroneously) as the type for four aloe names; i.e., *Aloe perfoliata* L. (Sp. Pl.: 319. 1753), *A. picta* Thunb. (Aloë: 6. 1785), *A. obscura* Mill. (Gard. Dict., ed. 8: *Aloe* No. 6. 1768) and *A. perfoliata* var. *saponaria* Aiton (“t”) (Hort. Kew. 1: 467. 1789) (≡ *A. saponaria* (Aiton) Haw. in Trans. Linn. Soc. London 7: 17. 1804). Mottram (in The Cactician 1: 11. 2013) regards Plate 15 of Dillenius as representing what is widely known as *A. microstigma* Salm-Dyck (Monogr. Mesembr. 6: 26, t. 4. 1854). Therefore, all four names typified by Plate 15 of Dillenius now compete with *A. microstigma* in terms of priority, if the interpretation of Mottram (l.c.) on the identity of the illustration is accepted. Significantly, none of these four names have ever been applied to *A. microstigma*.

*Aloe microstigma* is widespread in the Eastern and Western Cape, and enters the southwestern parts of the Northern Cape, South Africa. It has a disjunct distribution in the far northwest of the Northern Cape, South Africa, and adjacent southern Namibia. This well-known aloe is widely cultivated globally. *Aloe microstigma* is one of the more widespread taxa in *Aloe* sect. *Purpurascetes* and is considered to be the core species of this infrageneric complex.

Furthermore, it is not only the name *A. microstigma* that is threatened, as some of the four names (e.g., *A. perfoliata*) have been applied to other well-known aloes in the past (see more details below). The proposals to reject the names *A. perfoliata*, *A. obscura*, *A. picta* and *A. perfoliata* var. *saponaria* (≡ *A. saponaria*) will promote nomenclatural stability in a globally recognised group with horticultural appeal.

(2469) *Aloe perfoliata* L., Sp. Pl.: 319. 1 Mai 1753 [*Angiosp.*: *Lil./Asphodel.*], nom. utique rej. prop.

Lectotypus (vide Reynolds, Aloes S. Africa: 89, fig. 69. 1950): Herb. Linnaeus No. 442.1 (LINN).

*Aloe perfoliata* is the first name under *Aloe* L. that is listed by Linnaeus (l.c.: 319–320), who included 16 mostly unnamed varieties

under this species. The illustrations cited by Linnaeus (l.c.) for many of these varieties have since been designated as the types (mostly by Wijnands, l.c.) of currently accepted species names. *Aloe perfoliata* was also designated as the type of the generic name *Aloe* (Britton & Millspaugh, Bahama Fl: 69. 1920; confirmed by Hitchcock & Green in Sprague, Nom. Prop. Brit. Bot.: 146–147. 1929; see Index Nom. Gen. at <http://botany.si.edu/ing/>).

Reynolds (Aloes S. Africa: 89, fig. 69. 1950) by specifically referring to LINN 442.1 as “type material” unambiguously typified *A. perfoliata* on this specimen, because it was annotated “1 *perfoliata*” by Linnaeus. This was accepted as the first effective lectotypification by Jarvis (Order out of Chaos: 279. 2007) and should be followed (Art. 10.5, McNeill & al. in Regnum Veg. 154. 2012). This specimen consists only of a rather poor, lax raceme with very short pedicels and cannot be assigned with confidence to any known species of aloe. Reynolds (l.c.) demonstrated clearly that the name *A. perfoliata* applies to an imperfectly known taxon. Contrary to the view of Wijnands (l.c.) and Jarvis (l.c.), Mottram (l.c.: 2–15) regards the earlier citation by Scopoli (Fund. Bot.: 127–128. 1783) of Plate 15 of Dillenius (l.c.: 18, t. 15, fig. 16) as the earliest type designation for *A. perfoliata*. However, Scopoli’s citation of illustrations in the margins of his publication was not associated with the use of the term “type” or an equivalent. These are merely seen as suitable illustrations of the medicinal plants that are enumerated. Citation of Plate 15 by Scopoli can therefore not be regarded as an effective lectotypification (Art. 7.10).

The name *A. perfoliata* was applied by early botanists to what is today known as *A. ferox* Mill. (l.c.: *Aloe* No. 22) or to a species called *A. saponaria* (now known as *A. maculata* All., Auct. Syn. Meth. Stirp. Hort. Regii Taur.: 13. 1773) (Reynolds, l.c.: 44, 45, 53, 87; Carter & al., *Aloe*: 602. 2011). Contrary to this, Webb (in Tutin & al., Fl. Europ. 5: 20. 1980) subsumed *A. mitriformis* Mill. (l.c.: *Aloe* No. 1), the mitre aloe, under the synonymy of *A. perfoliata* without explanation. The nomenclature of Webb (l.c.) was followed by Glen & Hardy (in Germishuizen, Fl. S. Africa 5(1,1): 100–101. 2000), who further included *A. distans* Haw. (Syn. Pl. Succ.: 78. 1812) and *A. comptonii* Reynolds (l.c.: 382) in the synonymy of *A. perfoliata*, without elaboration. Neither the synonymising of *A. mitriformis* with *A. perfoliata* (Van Wyk & Smith, Guide Aloes S. Africa: 122, 134–135. 2014), nor the broad concept of *A. mitriformis* (Van Wyk & Smith, l.c.: 126–127, 130–131; Smith & Van Wyk, Aloes S. Africa: 65. 2008) has been widely accepted in the aloe fraternity. Some websites do cite the mitre aloe (*A. mitriformis*) as *A. perfoliata*, but recent literature has retained the use of *A. mitriformis*, with *A. distans* and *A. comptonii* as separate taxa, either at species level (e.g., Klopper & Smith in Strelitzia 29: 66. 2012) or as subspecies of *A. mitriformis* (e.g., Carter & al., l.c.: 601–602) as was suggested by Zonneveld (in Bradleya 20: 10. 2002). Although some websites mention the names *A. perfoliata* var. *distans* and *A. perfoliata* var. *comptonii*, these combinations were never validly published and merely add to the confusion.

Importantly, the original description of *A. perfoliata* and the type specimen chosen for this name differ markedly from *A. ferox* and *A. maculata*, as well as from *A. mitriformis* and its relatives. In this regard Wijnands (l.c.: 124) pointed out that the name *A. perfoliata* will still be “available to replace another well-known name of long standing in *Aloe*. Some restraints among authors treating the taxonomy of the species of *Aloe* would avoid confusion”.

The controversial treatment of *A. perfoliata* as the correct name for *A. mitriformis* by Webb (l.c.) and Glen & Hardy (l.c.) has placed the spotlight on the status of the name *A. perfoliata*, which has been treated as insufficiently known for a long time. This name and its

application was thus investigated by Mottram (l.c.), who concluded that it is conspecific with *A. microstigma* (the Worcester aloe). We find the arguments supporting the proposed conspecificity of *A. perfoliata* and *A. microstigma* presented by Mottram not entirely convincing.

Since Mottram (l.c.) erroneously regarded Plate 15 of Dillenius (l.c.) as the type of *A. perfoliata*, he used the description of “*Aloe africana maculata spinosa minor*” accompanying this plate to illustrate why he regards *A. perfoliata* as conspecific with *A. microstigma*. While there could be some resemblances between the illustration (t. 15) and the translated (Latin to English) description of Dillenius as given by Mottram, and the modern concept of *A. microstigma*, the description of “*Aloe africana maculata spinosa minor*” by Dillenius could also be applied to other aloes that have spots or maculations on their leaves. In any case, as Plate 15 is not the type of *A. perfoliata* (as demonstrated above) it should not be used to establish its application.

Because of the ambiguity of the type specimen (LINN 442.1) and the differing applications of the name *A. perfoliata* by various authors, and the ensuing nomenclatural confusion and uncertainty among end-users, it would be preferable to reject this troublesome name altogether. Since a rejected name remains validly published, the status of *A. perfoliata* as the type of the generic name *Aloe* will be unaffected by its rejection.

If *A. perfoliata* is not rejected it will continue to be available for use as an older name for either *A. mitriformis* (following Glen & Hardy, l.c.) or *A. microstigma* (following Mottram, l.c.). In the future it might even be shown to represent yet another taxon. Both *A. mitriformis* (Zonneveld, l.c.) and *A. microstigma* (Klopper, unpub. results) contain several infraspecific taxa and if *A. perfoliata* replaces either of these names, it will require more than one new combination to be made to represent them. Allowing *A. perfoliata* with its confused history to become the correct name for either of these aloes (or any other aloe for that matter) would be undesirable and would lead to considerable nomenclatural confusion in a very well-known and popular group of plants. In the interest of nomenclatural stability we thus propose to reject the name *A. perfoliata* according to Art. 56.

(2470) *Aloe obscura* Mill., Gard. Dict., ed. 8: *Aloe* No. 6. 16 Apr 1768 [*Angiosp.*: *Lil./Asphodel.*], nom. utique rej. prop.

**Lectotypus (hic designatus):** [icon in] Dillenius, Hort. Eltham.: t. 15, fig. 16. 1732.

In the protologue of *Aloe obscura*, Miller (l.c.) did not mention any specimen or illustration, but cited as synonym “*Aloe Africana caulescens foliis spinosis maculis ab utraque parte albicantibus obscurioribus magis glaucis quam praecedens*” of Boerhaave (Ind. Alter Hort. Lugd.-Bat. 2: 130, no. 20. 1720). Boerhaave merely mentioned that he received the material on which this polynomial was based as a gift from Mr. Beaumont, and that it is an inhabitant of fields/grassland/plains. Reynolds (l.c.: 289) gives as a pre-Linnaean citation for *A. obscura* the name “*Aloe africana maculata spinosa minor*” of Dillenius (l.c.). Reynolds also stated that Plate 15 of “*Aloe africana maculata spinosa minor*” is representative of *A. obscura*, but did not designate it as a type. This statement was motivated by the fact that Boerhaave’s polynomial was cited by Dillenius as a synonym of his “*Aloe africana maculata spinosa minor*”. Reynolds was of the opinion that *A. obscura* is either an unnatural modified form of *A. saponaria* that developed unusually long conical racemes under greenhouse conditions in Europe, or that it is a hybrid segregate with *A. saponaria* as one of the parents. He thus considered *A. obscura* a doubtful species allied to *A. saponaria*, as it could not be matched

to any South African taxon at the time. We concur with the view of Reynolds and regard *A. obscura* as an insufficiently known taxon. However, Mottram (l.c.: 11) cites *A. obscura* as a heterotypic synonym of his *A. perfoliata* (= "*A. microstigma*").

If *A. obscura* is treated as a doubtful taxon, it will pose no threat to any aloe name. However, if Plate 15 (Dillenius, l.c.) is to be regarded as the type of *A. obscura*, as suggested by Reynolds (l.c.), and here designated as such by us, it takes priority over *A. microstigma* according to the view of Mottram (l.c.) on the identity of Plate 15. Should *A. perfoliata* be considered synonymous with *A. microstigma* and be rejected as proposed above, *A. obscura* would then become the correct name of *A. microstigma*. It will not benefit nomenclatural stability if we allow a name long considered to be of doubtful application, lectotypified by an illustration of a doubtful taxon, and that has furthermore never been applied to any extant aloe, but that is associated with the maculate aloes (*Aloe* sect. *Pictae*), to become the name for a well-known and widespread aloe in another group (*Aloe* sect. *Purpurascens*). We therefore propose that *A. obscura* be rejected according to Art. 56.

(2471) *Aloe picta* Thunb., Aloë: 6. 1 Jun 1785 [*Angiosp.*: *Lil./Asphodel.*], nom. utique rej. prop.

Lectotypus (vide Mottram in *The Cactician* 1: 11. 2013): [icon in] Dillenius, Hort. Eltham. t. 15, fig. 16. 1732.

Following Schultes & Schultes (*Syst. Veg.* 7: 700–701. 1829) and several subsequent workers, Reynolds (l.c.: 289–290) considered *Aloe picta* as a synonym of *A. obscura* and allied to a species he called *A. saponaria* (now widely treated as *A. maculata*). Consequently *A. picta* has long been regarded as a synonym of *A. maculata*, the most widespread species in *Aloe* sect. *Pictae* (maculate aloes). However, Mottram (l.c.) retains *A. maculata* as a separate entity (i.e., excluding *A. picta* from its synonymy).

Mottram (l.c.: 11) also lectotypified *A. picta* with Plate 15 of Dillenius (l.c.). *Aloe picta* as described by Thunberg (l.c.) is a mixed taxon as he included in its synonymy *A. perfoliata* vars.  $\theta$ ,  $\lambda$ ,  $\mu$  and  $\nu$  of Linnaeus (l.c.). These were considered to be *A. maculata* and *A. mitriformis* by Wijnands (l.c.). Since Mottram regards Plate 15 of Dillenius, cited by Linnaeus for *A. perfoliata* var.  $\mu$ , as the type of *A. perfoliata*, the protologue of *A. picta* thus explicitly includes the type of *A. perfoliata* in the view of Mottram (l.c.). This is the main reason for Mottram's lectotypification of *A. picta*, thus causing *A. picta* to become a homotypic synonym of *A. perfoliata* in his classification. However, as shown above, Plate 15 is not the type of *A. perfoliata*.

If the above proposals to reject *A. perfoliata* and *A. obscura* are accepted, the next name in terms of priority typified with Plate 15 of Dillenius (l.c.) is *A. picta*. If *A. picta* (a name consistently applied to the maculate aloes in *Aloe* sect. *Pictae*, and to which *A. microstigma* does not belong) is not rejected, it will become the correct name for *A. microstigma*, according to the interpretation of Plate 15 as proposed by Mottram (l.c.). To prevent such a disadvantageous nomenclatural change, where the name of a well-known aloe becomes replaced by a name that has long been treated as a synonym of another, unrelated and equally well-known aloe, we propose to reject the name *A. picta* in accordance with Art. 56.

(2472) *Aloe perfoliata* var. *saponaria* Aiton, Hort. Kew. 1: 467. 7 Aug–1 Oct 1789, nom. utique rej. prop.

Holotypus: [icon in] Dillenius, Hort. Eltham.: t. 15, fig. 16. 1732.

Plate 15 of Dillenius (l.c.), the only element cited by Aiton (l.c.), is the holotype of *Aloe perfoliata* var. *saponaria* ( $\equiv$  *A. saponaria* (Aiton) Haw., l.c.) and fixes its application. The typification of *A. picta* by Mottram (l.c.) and *A. obscura* by us on Plate 15 of Dillenius renders *A. saponaria* homotypic with both of these names. In fact, Haworth's citation of the earlier *A. obscura* Mill. under his *A. saponaria* var. *obscura* (Mill.) Haw. (l.c.) makes *A. saponaria* superfluous (Art. 52). However, it is not illegitimate as it has Aiton's legitimate basionym (Art. 52.3).

Together with *A. picta*, *A. saponaria* has long been regarded as a synonym of *A. maculata*, the most widespread species in *Aloe* sect. *Pictae* (maculate aloes). *Aloe maculata*, the "soap aloe" (Grace & al., *Aloe Names Book*: 96. 2011), is one of the more distinctive maculate aloes that is usually easily recognized. It is widely used medicinally and popular in horticulture. Reynolds (l.c.: 224) treated what is today *A. maculata* under the name *A. saponaria* in his benchmark work on aloes. He listed *A. perfoliata* var. *saponaria* as a synonym, but then explicitly (and erroneously) excluded its type, namely the plate of "*Aloe africana maculata spinosa minor*" (Dillenius, l.c.: t. 15, fig. 16), and thereby unknowingly published the later homonym *A. saponaria* Reynolds (Art. 48.1). Reynolds was motivated to do so because Plate 15 of Dillenius did not fit his concept of *A. saponaria* as the raceme on this plate is elongated-conical and not corymbose (Reynolds, l.c.: 225). He did, however, mention "*Aloe africana maculata spinosa major*" (Dillenius, l.c.: 17, t. 14, fig. 15) in his list of pre-Linnaean citations for *A. saponaria*, together with "*Aloe africana caulescens foliis spinosis maculis ab utraque parte albicantibus notatis*" (Commelijn, Hort. Med. Amstelod. 2: 9, fig. 5. 1701). Both plates are representative of what is today *A. maculata*. The Commelijn plate is in fact the lectotype of *A. maculata* (Guglielmone & al. in *Bothalia* 39: 178. 2009). Mottram (l.c.), on the other hand, retains *A. maculata* as a separate entity (i.e., excluding both *A. picta* and *A. saponaria* from its synonymy).

If *A. perfoliata* var. *saponaria* (and thus *A. saponaria*) is not rejected, *A. saponaria* can become the correct name for *A. microstigma*, provided the proposals in this contribution to reject *A. perfoliata*, *A. obscura* and *A. picta* are accepted and the view of Mottram (l.c.) regarding the identity of Plate 15 of Dillenius is followed. To make *A. saponaria*, a name that is familiar to a large audience and usually associated with *A. maculata*, a synonym of an aloe in a different section would cause considerable nomenclatural confusion. We thus propose to reject *A. perfoliata* var. *saponaria* according to Art. 56.

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