

Neotypification of *Bowiea myriacantha*, basionym of *Aloe myriacantha* (Asphodelaceae: Alooideae)

G. F. Smith

Department of Plant Sciences, Potchefstroom University for Christian Higher Education,
Potchefstroom 2520, Republic of South Africa

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Abstract. *Aloe myriacantha* (Haw.) Schult. & J. H. Schult. is a taxonomically little known species. A detailed taxonomic and biosystematic study of the smaller genera of the Asphodelaceae, subfamily Alooideae, which includes the genus *Bowiea* Haworth *non* W. H. Harvey *ex* J. D. Hooker in which *A. myriacantha* was originally described, has revealed that this species name has never been typified. *Bowiea myriacantha*, the basionym of *A. myriacantha*, is here neotypified by an unpublished Thomas Duncanson painting which is kept in the herbarium of the Royal Botanic Gardens, Kew.

Key words: *Aloe myriacantha* (Haw.) Schult. & J. H. Schult.; Asphodelaceae; Typification.

Introduction

While conducting biosystematic investigations toward a revision of the smaller genera of the subfamily Alooideae of the Asphodelaceae (Dahlgren *et al.*, 1985) in southern Africa, I became aware that Haworth (1827) did not cite any specimens or drawings when he described *Bowiea myriacantha*, the second species name to be published in the genus *Bowiea* Haw. *non* W. H. Harvey *ex* J. D. Hooker (Haworth, 1824; Hooker, 1867). This species was transferred to *Aloe* by Schultes & Schultes (1829), whereas Stapf (1933) referred it to a segregate genus, *Leptaloe*. The species is currently treated as *A. myriacantha* (Reynolds, 1950, 1954). *Aloe bowiea*, the only other species of *Bowiea* Haw. has been dealt with in more detail elsewhere (Smith, 1983).

Aloe myriacantha is acaulescent and of slender growth with its narrow, linear, unkeeled leaves being borne in a flaccid rosette. The margins of the dull-green leaves are armed with minute white teeth. The inflorescence, produced during the summer months, is a densely capitate raceme with small, cylindrical-trigonous flowers. The mouth of the perigone is

bilabiate (Obermeyer, 1973).

A. myriacantha has a very wide geographic distribution. It ranges from Grahamstown and Port Alfred in the eastern Cape Province, South Africa, northwards to Kenya and Uganda, including Zimbabwe, Malawi and Tanzania, a distance of *ca.* 5,000 km (Bornman and Hardy, 1971). *A. myriacantha* was originally described by Haworth (1827) from material received at Kew from Mr. James Bowie from the then Cape of Good Hope. Bowie contributed much to our knowledge of aloes and succulents in general. During his initial residence at the Cape he visited the eastern parts of the Cape Colony during his third and fourth collecting trips into the southern African interior. These journeys lasted from early 1820 to 29 January 1821 and 24 May 1821 to 4 December 1822, respectively (Hutchinson, 1946; Smith & Van Wyk, 1989). The furthest westerly locality in southern Africa where *A. myriacantha* grows is in the eastern Cape, Grahamstown and surroundings (Albany district). It was most probably here that Bowie collected living material of *A. myriacantha* for the first time. Since this species was discovered some time between 26 February 1822 and 29 March 1822 it could only have been collected on Bowie's fourth journey

(West, 1974). Bowie left the Cape early in 1823 and arrived back in England on 23 May 1823. Since living specimens of *A. myriacantha* were introduced to Kew in the same year (1823) it is likely that he took these specimens back with him aboard the "Earl of Egremont".

Previous monographs and synoptic works including revisions by Kunth (1843), Baker (1880, 1896), Berger (1905, 1908) Groenewald (1941) and Reynolds (1947, 1966) have avoided precise type designation for the name *B. myriacantha*. Nowhere in the literature could any reference to the typification of this species name be traced, from which I have concluded that it had never been typified. In this paper I present the results of my attempt to establish a type of *A. myriacantha*.

The Neotypification of *Bowiea myriacantha*

According to the ICBN (Chapter II, Section 2, Articles 7.1 and 7.2) all taxa of the rank of family or below must have a nomenclatural type. Furthermore, Article 7.4 of the same section clearly specifies that if no holotype was indicated by the author who described a taxon, or if the type has been lost or destroyed, a lectotype or, if permissible (Articles 7.9 and 7.10) a neotype, must be designated as a substitute for it (Greuter *et al.*, 1988). A lectotype is a specimen or illustration selected from the original material to serve as a nomenclatural type (Article 7.5). However, the protologue of *B. myriacantha* does not include any citation of specimens or reference to published or unpublished illustrations or descriptions. In addition, Haworth did not supply his description with illustrations nor did he mention any plant material which he used in establishing this taxon. Since no "original material" thus exists, *A. myriacantha* (= *B. myriacantha*) is here neotypified. Since a type must be a specimen or illustration, Haworth's (1827) description of *B. myriacantha* cannot serve as a lectotype (Greuter *et al.*, 1988).

Haworth assembled a herbarium which, after his death, was sold to Henry Barron Fielding (1805-1851) of Oxford. Fielding used it for study, but not realizing its immense value threw away most of the specimens (Stafleu and Cowan, 1979). Although some of Haworth's specimens are still in the Fielding-Druce Herbarium at the University of Oxford (Holmgren *et al.*, 1981), none of *A. myriacantha* (= *B. myriacantha*) which could be designated as type of this name have survived (S. K.

Marnier, personal communication). It is also likely that Haworth did not always make herbarium material of the novelties he described. Haworth also cultivated at his home in Chelsea many of the succulents that he described (Rowley, 1951, 1985; Roan, 1948). However, it is unlikely that any of these specimens have survived to the present day (Roberts, 1983).

Haworth was a friend of W. T. Aiton (1766-1849) of Kew and many of the new species which he described originated from this institution. Through this friendship he no doubt received many of the novelties sent to Kew from the then Cape of Good Hope by James Bowie. One of these, a small aloecoid specimen collected in the eastern Cape Province was described as *Bowiea myriacantha* (Haworth, 1827).

In 1822, a year before specimens of *A. myriacantha* (= *B. myriacantha*) were received at Kew, Thomas Duncanson, a young gardener from the Royal Botanic Garden Edinburgh was appointed as the first artist with the objective of drawing the new and unfigured plants in the garden at Kew (Hunt, 1988). Duncanson had a special talent for drawing plants and from 1822 to 1826 he executed more than 700 drawings, 350 of which are of succulent plants. A mental illness put an end to his drawing in the summer of 1826 (Daniels, 1974). Duncanson's drawings were indexed and numbered in systematic order and the catalogue numbers inscribed on the drawings by Richard Cunningham in 1826-1827 (Hunt, 1988).

Of Duncanson's drawings of succulent plants over 70 are of Alooideae species, one of them *Bowiea myriacantha* (G. Ll. Lucas, personal communication) (Fig. 1). This unsigned drawing of a flowering specimen bears the number "296" in its right upper corner, the number "181" in the left upper corner and a capital letter "B" in the bottom left corner, but appears to be uncatalogued. The name "*Bowiea myriacantha*", without author citation, is written at the bottom of the drawing and, in what appears to be the same handwriting (possibly that of Duncanson) a note reading "Imported in 1823 from the Cape of Good Hope by Mr. Bowie" has been added. Since Haworth usually wrote "A. H." or "Nob." and not "Haw." after his name on index cards of the *nomina nova* that he published (Haworth, 1965), it is unlikely that he added the latter name and inscription to the drawing. This handwriting also differs from that of James Bowie, the discovered of *A. myriacantha*. Good examples of Bowie's hand-

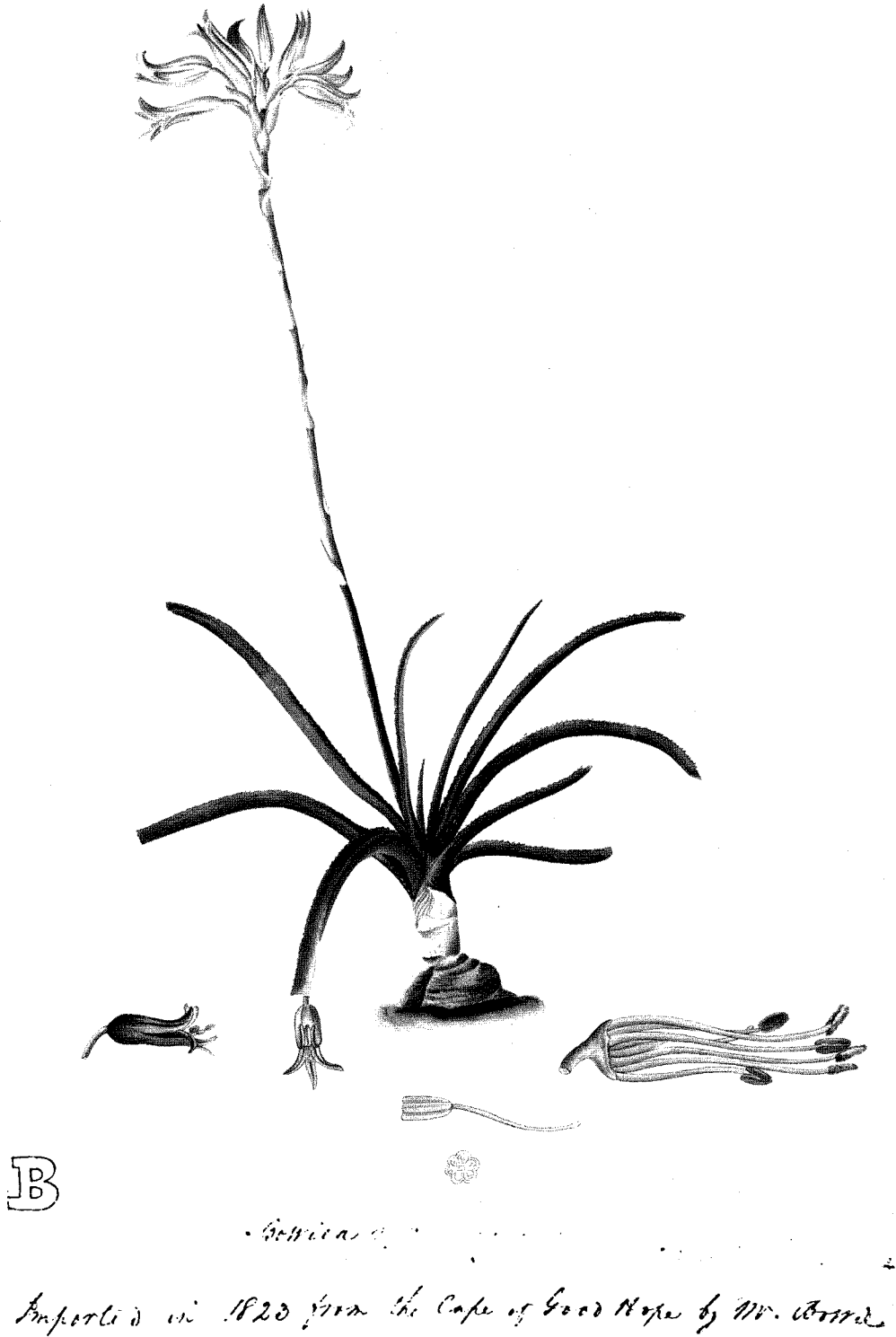


Fig. 1. *Bowiea myriacantha* Haw. at present included in the synonymy of *Aloe myriacantha* (Haw.) Schult. & J. H. Schult.: Iconotype. [Reduced photograph of an unpublished painting by Thomas Duncanson at Kew, of James Bowie's material. The inscription reads "Imported in 1823 from the Cape of Good Hope by Mr. Bowie"]. Copyright of the Trustees of the Royal Botanic Gardens, Kew (C) 1990. Reproduced with permission.

writing are included in six unpublished volumes which were his personal diaries and sketch and note books now in the Mary Gunn Library, National Botanical Institute, Pretoria (Smith and Van Wyk, 1989). After Stapf (1933) transferred *B. myriacantha* to *Leptaloe*, the name "*Leptaloë myriacantha* Stapf" was attached to the drawing by means of a Determinavit label initialed by Stapf ("O. S.") and dated "6-10-32". There is no indication that any of the names attached to the painting is in Haworth's hand and none of the handwritings compare favourably with his handwriting as reproduced in Clokie (1964). Although J. A. Schultes, one of the authors who transferred *B. myriacantha* to *Aloe* as *A. myriacantha*, knew Haworth and visited him at Chelsea (Stearn, 1971), there is thus no evidence that Haworth supported the latter taxonomic reclassification. The third and final annotation attached to the drawing is "*A. myriacantha* (Haw.) R & S", made by G. W. Reynolds on 11 September 1960. The name *A. myriacantha* reflects the current classification of this taxon in the genus *Aloe*.

In many cases drawings of the novelties received at Kew were made before their descriptions were published (for example: *A. gracilis* Haw. : drawn 1824, described 1825; *A. pluridens* Haw. : drawn 1823, described 1824; *A. striatula* Haw. : drawn 1824, described 1825 and *Haworthia altilinea* Haw. : drawn July 1824, described October 1824). It is thus likely that Haworth had seen Duncanson's drawing of *B. myriacantha* before the description of this species was published.

Since the protologue of *B. myriacantha* does not contain any cited specimens, descriptions or illustrations, a type should be chosen with other factual evidence (in this case the description only) as basis. After considering the description and associated circumstantial evidence I have concluded that Duncanson's undated drawing should be chosen to serve as neotype of the name *B. myriacantha* for the following reasons:

1. Duncanson's drawing is conspecific with the species nowadays known as *A. myriacantha* (= *B. myriacantha*) and clearly identifiable with field populations of this species.
2. This drawing is in accordance with the protologue of *B. myriacantha* (Haworth, 1827).
3. Through Haworth's friendship with W. T. Aiton of Kew and because drawings of novelties received at Kew were in many cases made before they were formally described, it is likely that Haworth had seen

the drawing prior to the name *B. myriacantha* appearing in print.

4. In the case of succulents, a drawing is often more "diagnostic" than a dried specimen, hence the selection of a drawing rather than a specimen as neotype. Furthermore, the typification of species names in the Aloioideae with iconotypes is not uncommon (Wijnands, 1983, 1985).

By implication the Duncanson drawing of *B. myriacantha* also typifies sect. *Graminialoe* Reynolds subsect. *Graminialoe* for which it is the type species.

The type of *Bowiea myriacantha* therefore is:

SOUTH AFRICA.—Cape of Good Hope without precise locality, unpublished drawing by Thomas Duncanson, neotype (iconotype), here chosen (K)!

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Aloe myriacantha (Asphodelaceae: Alooideae) 之基本名,
Bowiea myriacantha 新模式之指定

G. F. Smith

Department of Plant Sciences,
Potchefstroom University for Christian Higher Education,
Potchefstroom 2520, Republic of South Africa

Aloe myriacantha (Haw.) Schult. & J. H. Schult. 的分類稀為人知，它的原始記載是發表在 *Bowiea* 屬，但並未指定模式標本。本文據英國皇家植物園標本館典藏之 Thomas Duncanson 所繪圖幅，指定為 *Bowiea myriacantha* 之新模式。