

## Notes on African plants

VARIOUS AUTHORS

### ASPHODELACEAE/ALOACEAE

#### TYPIFICATION OF *ALOE* SPECIES DESCRIBED BY B.H. GROENEWALD

In the mid- to late 1930's, B.H. Groenewald (1935, 1936a–e, 1937a–c, 1938a–c, 1939, 1940) published a number of descriptions of new species and one new variety of *Aloe* L. Some of these were not accompanied by any indication of specimens examined, whereas others had specimen citations of the form 'Herbarium No. \*\*\*'. Localities and flowering times were given only in the discussion, and the name of the collector of cited specimens was uniformly omitted, as was any indication of where the 'type' might be found. It should be noted that only on or after 1 January 1958 did the indication of a holotype become compulsory in order to effect the valid publication of the name of a new taxon of the rank of genus or below (Greuter *et al.* 1988), thus about 20 years after Groenewald's major written contributions to alooid taxonomy. Furthermore, typification of extant yet untypified names is not compulsory (Greuter *et al.* 1988, Art. 7.4 '.... a lectotype or, .... a neotype may be designated ...', but see Art. 53.1), but in a taxonomically difficult genus such as *Aloe* it is essential in order to establish the correct application of the plethora of available names. In this paper we present the results of our attempts to formally establish types for the *Aloe* species published by Groenewald. Unfortunately very little is known about Groenewald in general and his taxonomic and cytogenetic research activities in particular, and he has been omitted from Gunn & Codd (1981). Coincidentally another southern African student of alooid taxonomy and cytogenetics, at about the same time, Dr Franz Sebastian Müller (1945), has also not been taken up in Gunn & Codd's (1981) benchmark biographical publication, the reason probably being that neither of them collected a sufficient number of specimens to warrant their inclusion. This situation will be rectified in the second edition of this book which is currently in preparation. One logical deduction from the way in which Groenewald cited specimens in his papers is that his 'types' were housed in a personal herbarium. However, evidence presented below indicates that such an herbarium never existed.

An extensive and detailed search for a personal herbarium belonging to Groenewald among his associates and descendants failed to produce any results. This search included the PRE and BLFU herbaria, the former as being the most likely institute to have inherited any private herbarium he made, and the latter as being closest to the place of publication of his new species and of his book on *Aloe* (Groenewald 1941). Not only were no specimens forthcoming, but no source questioned had any recollection of there ever having been a Groenewald private herbarium.

Positive evidence for the non-existence of a Groenewald private herbarium is largely indirect, and rests on four points: 1, for each name published by Groenewald except four, there is one (and usually only one) specimen in PRE, collected by Dr Frederick Ziervogel van der Merwe from the precise locality at the appropriate time indicated by Groenewald in the protologue, some of which are marked 'TIPE' in Van der Merwe's handwriting. As indicated below, most of these specimens are cited by Reynolds (1950) as 'Types'; 2, about half of these specimens have collector's numbers. Where a collector's number has been assigned it corresponds with the number (if any) given by Groenewald; 3, Groenewald and Van der Merwe worked closely together; all the illustrations published with Groenewald's papers are initialled by Van der Merwe, who is acknowledged first as having 'encouraged me in this work and greatly assisted' in Groenewald's (1941) book on aloes, and who is often credited with having found the plants Groenewald described. The  $\pm 2\ 500$  specimens that Van der Merwe collected are all housed in PRE, and not in a private herbarium (Gunn & Codd 1981); 4, Gunn & Codd (1981) assert positively that Van der Merwe gave Groenewald 'several new species of *Aloe* ... for description'. This is supported by Dr R.A. Dyer (pers. comm.), who supplied much background information. The crux of this information is that, for whatever reason, Van der Merwe, as a medical inspector of schools, did not want to be seen to be describing new species of *Aloe*. He therefore passed his specimens on to Groenewald, who published the new species under his own name. Van der Merwe did, however, after his retirement describe a number of new species in the bulbous genera *Scilla* L. and *Resnova* Van der Merwe. All his *Scilla* species have since been transferred to *Ledebouria* Roth and *Resnova* is currently included in the synonymy of *Drimiopsis* Lindl. (Reid 1993).

Among Reynolds's notes used in the preparation of his book on South African aloes (Reynolds 1950) is the statement '*A. nubigena* v.d. Merwe or Groenewald m/s', indicating that these two worked so closely together that there is some doubt as to who contributed which part to any publication signed by either of them. It seems from correspondence preserved in these notes that Van der Merwe was on good terms with both Reynolds and Groenewald. A letter in Van der Merwe's handwriting records the gift of some plants of '*A. labiaflava* Groenewald' (= *A. greatheadii* Schönland var. *davyana* (Schönland) Glen & D.S. Hardy) to Reynolds shortly after the name was published by Groenewald. In his notes on *A. branddraaiensis*, Reynolds records 'Mr Groenewald has this species in hand, these notes are merely for my own records, and from the plant Dr Van der Merwe gave me'.

A note under *A. vryheidensis* indicates that the flow of information was not only from Van der Merwe to Reynolds: 'I gave Dr Van der Merwe a complete set of photographs, and informed him that there were thousands of the species growing ...'. This species was published in April 1937, but Reynolds's first note on it is dated July 1936. However, it is noteworthy that Reynolds (1950: 67) did not separately discuss Groenewald's contribution to alooid taxonomy in the historical section of his book, but mentioned him under '1935–1940. Dr F.Z. van der Merwe' only.

There is no evidence of any direct correspondence between Reynolds and Groenewald in this archival album. As there are very few complete letters in it, this does not preclude their having been such a correspondence. The only mention of any specimens is in a note on *A. branddraaiensis*, where Reynolds records having made a specimen from his plant for PRE, with permission from Groenewald and Van der Merwe. Although some Van der Merwe registers are housed at PRE, all of these deal exclusively with *Scilla*, and none contains an entry with a number as low as those discussed below. Tölken (1971) gives no indication of the whereabouts of any register of either Groenewald or F.Z. van der Merwe.

In our opinion it is therefore reasonable to accept that Groenewald never had a private herbarium and that the original material of the *Aloe* species which he described is deposited in PRE. The F.Z. van der Merwe collections in PRE bearing the same collection number as that cited in the protologue are considered to be holotypes, if only one number was cited. In cases where more than one specimen is quoted in the protologue or where the F.Z. van der Merwe specimen from the type locality does not bear a collecting number, lectotypes are chosen. Neotypes were selected where no types are cited in the protologue.

Groenewald described new species of *Aloe* in one of two journals only. The names affected are listed alphabetically by journal title:

#### *Tydskrif vir Wetenskap en Kuns*

*A. decurvidens* Groenew. (1937a): specimen cited 'Herbarium No. 107'. A *Van der Merwe 107* specimen could not be found in PRE. Full citation: Neotype: Transvaal, Sabie River, Skukuza, *F.Z. van der Merwe s.n. in PRE 24092* (PRE!); here designated. The specimen occupies two sheets; both are needed to confirm the identity of this plant. This name is considered to be a synonym of *A. zebrina* Baker.

*A. dolomitica* Groenew. (1938a): specimen cited 'Herbarium No. 235'. Full citation: Holotype: Transvaal, Strydpoort Mountains, *F.Z. van der Merwe 235* (PRE!). The specimen occupies two sheets; both are needed to confirm the identity of this plant. This name is considered to be a synonym of *A. vryheidensis* Groenew.

*A. graciliflora* Groenew. (1936a): specimen cited 'Herbarium No. 77'. A *Van der Merwe 77* specimen could not be found in PRE. Full citation: Neotype: Transvaal, Dullstroom, *F.Z. van der Merwe s.n. in PRE 24089* (PRE!); here designated. The specimen occupies two

sheets, both of which are needed to confirm the identity of this plant. This name is considered to be a synonym of *A. greatheadii* var. *davyana*.

*A. hlanguapies* Groenew. (1936b): specimens cited 'Herbarium No. 102, 103'. Full citation: Lectotype: Transvaal, Piet Retief Dist., Langgewacht, *F.Z. van der Merwe 102* (PRE!); here designated. This name is considered to be a synonym of *A. ecklonis* Salm-Dyck. The specimen *F.Z. van der Merwe 103* is also in PRE, and both these Van der Merwe specimens are of equal quality. No. 102 is marked 'TIPE' (Eng. TYPE) in F.Z. van der Merwe's handwriting, and 103 is marked 'tweede tipe' (Eng. second type—a meaningless designation) in the same hand.

*A. labiiflora* Groenew. (1936c): no specimen cited. Neotype: Transvaal, Gembokspruit, *F.Z. van der Merwe 100* (PRE!); here designated. This sheet is marked 'TIPE' (Eng. TYPE) in F.Z. van der Merwe's handwriting. This name is considered to be a synonym of *A. greatheadii* var. *davyana*.

*A. lusitanica* Groenew. (1937b): specimen cited 'Herbarium No. 79'. Full citation: Neotype: Mozambique, Maputo, (Lourenço Marques), *F.Z. van der Merwe s.n. in PRE 24087* (PRE!). The specimen occupies two sheets, both of which are needed to identify the plant. This name has long been shown to be synonymous with *A. komatiensis* Reynolds (1950), which is itself considered to be a synonym of *A. parvibracteata* Schönland.

*A. nubigena* Groenew. (1936d): specimen cited 'Herbarium No. 133'. Full citation: Holotype: Transvaal, Graskop, *F.Z. van der Merwe 133* (PRE!). This is a good species.

*A. recurvifolia* Groenew. (1935): no specimen cited. Full citation: Neotype: Transvaal, Kappiekoppie near Graskop, *F.Z. van der Merwe 73* (PRE!). Designated by Reynolds (1950). Van Druten (1956) showed conclusively that this name is a synonym of *A. alooides* (Bolus) Druten. In the protologue Groenewald's initials are incorrectly given as 'B.A.'

*A. thompsoniae* Groenew. (1936e): no specimen cited, but this is a good species. Dealt with elsewhere (Glen & Smith 1995).

*A. vryheidensis* Groenew. (1937c): specimen cited 'Herbarium No. 266'. Full citation: Holotype: Natal, Heine near Vryheid, *F.Z. van der Merwe 266* (PRE!). This is a good species.

#### *The Flowering Plants of South Africa*

It is noteworthy that no problems arose as far as specimen citation is concerned in the papers of Groenewald that were published in this botanical journal, which had a botanist as scientific editor (Dr I.B. Pole Evans for Vol. 18 and Dr E.P. Phillips for Vol. 20). Types were clearly stated and are cited below as they were included in the protologues. The following names are therefore listed here simply for completeness.

*Aloe angustifolia* Groenew.: in *The Flowering Plants of South Africa* 18: t. 708 (1938c). Holotype: Transvaal, Leydsdorp Dist., near Gravelotte, April 1936, F.Z. van der Merwe in *National Herbarium, Pretoria, No. 21,288* (PRE!). This name is invalidated by the earlier use of it by Haworth (1819: 47) and Salm-Dyck (1849). *A. angustifolia* Haw. is a synonym of *A. africana* Mill., and the same combination as used by Salm-Dyck probably belongs under *Gasteria disticha* (L.) Haw. (Stearn 1938; Van Jaarsveld 1992). This species has consequently been renamed *A. vandermerwei*, in honour of Dr F.Z. van der Merwe (Reynolds 1950). A critical taxonomic treatment of *Aloe* will show that the species should be included in the synonymy of *A. zebrina*.

*Aloe branddraaiensis* Groenew.: in *The Flowering Plants of South Africa* 20: t. 761 (1940). Holotype: Lydenburg Dist.; Branddraai, *Van der Merwe* (probably F.Z. van der Merwe) in *National Herb. 24208* (typus) (PRE!). The specimen occupies three sheets, all of which are needed to confirm the identity of this plant. In addition to the type two further PRE specimens, *Van der Merwe 138* and *Reynolds 2490* (!) are cited in the protologue. No specimen with the number *Van der Merwe 138* was found at PRE; however there are three unnumbered specimens collected by F.Z. van der Merwe in this collection, PRE 22998, 38002, 38003. The specimen PRE 38002 is marked 'figured for FPSA by B. Connell July '39'. This is a good species.

*Aloe davyana* Schönland var. *subolifera* Groenew.: in *The Flowering Plants of South Africa* 19: 732 (1939). Holotype: Pretoria Dist., near Pienaars River, Aug. 1936, *Van der Merwe* (probably F.Z. van der Merwe) in *Nat. Herb. 22816* (PRE!). This name is considered to be a synonym of *A. greatheadii* var. *davyana*.

*Aloe lutescens* Groenew.: in *The Flowering Plants of South Africa* 18: t. 707 (1938b). Holotype: Zoutpansberg Dist.; Chipese, June 1937, *Van der Merwe* (probably F.Z. van der Merwe) in *National Herbarium, Pretoria, No. 23,301* (= PRE 23005) (PRE!). The type is F.Z. van der Merwe 1377, and not F.Z. van der Merwe s.n. The specimen occupies two sheets, both of which are needed to confirm the identity of this plant. This is a good species.

*Leptaloe blyderivierensis* Groenew.: in *The Flowering Plants of South Africa* 17: t. 651 (1937). Holotype: Pilgrim's Rest Dist.; on slopes of the Drakensbergen near the Blyde River, about 30 miles north of Pilgrim's Rest, *Van der Merwe* (probably F.Z. van der Merwe) in *National Herbarium, Pretoria, No. 21361* (PRE!). Reynolds (1950) considered this species to be a synonym of *A. minima* Baker, an opinion with which we agree.

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