

## AN EXTENSION OF THE GENUS MACOWANIA (COMPOSITAE)

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**ABSTRACT.** The history of *Aster ericifolius* Forsk. and its synonyms is traced. It is shown to be the same as *Antithrixia angustifolia* Oliv. & Hiern. This plant, and the allied *A. abyssinica* (Sch. Bip.) Vatke, are now transferred to the genus *Macowania* Benth. as *Macowania ericifolia* (Forsk.) Burt & Grau and *M. abyssinica* (Sch. Bip.) B. L. Burt respectively.

In working on a revision of *Felicia* one author (J.G.) came to the conclusion that Forskal's name *Aster ericifolius* belonged to a plant that was to be classified with the Ethiopian-Arabian species of *Antithrixia*. The other author (B.L.B.) discovered about the same time that these do not really belong to *Antithrixia* at all: they should be transferred to another South African genus *Macowania*. The fortunate circumstances of personal contact during the A.E.T.F.A.T. meeting at Munich in September 1970 enabled us to co-ordinate our independent findings and organise this single taxonomic operation.

### THE HISTORY OF ASTER ERICIFOLIUS

Forskål's manuscripts were edited after his death by C. Niebuhr and published as "Flora Aegyptiaco-Arabica" in 1775. In this work we find (p. 150) the description of the new species *Aster ericifolius*. Actually at the head of the description the name is written *Aster ericae-folius* and in the catalogue (p. cxix) it appears as *A. ericaefolius*. Throughout this paper we use the corrected spelling, *ericifolius*, enjoined by the International Code of Botanical Nomenclature (Art. 73). *Aster ericifolius* was found by Forskal in the upper region of Mt Kurma in the Yemen in March 1763. Kurma is described, under the general heading Montes Hadienses (p. xc) "Kurma superior reliquis, calcareus, arboribus fere destitutis sed plantationum herbarum et cerealium occupatus, Holco excepto, cujus maturatati obstore temperiem nimis frigidam credunt rustici. *Acanthus arbor.* et *Hypericum Kalm.* plantae procerioris staturae dum in planitie crescut, hic in fundo brevi pygmae stant". Mt Kurma lies about 14°41'N, 43°40'E and is the type locality for a number of Forskal's new species, including the well-known *Primula verticillata*. In the above extract *Acanthus arbor.* refers to *A. arboreus* Forsk., an accepted species, and *Hypericum kalm.* to *H. kalmii* Forsk. (nomen, p. cxviii—non *H. kalmianum* L.), which we now know as *H. revolutum* Vahl (*H. lanceolatum* Lam.), widespread on the mountains of tropical Africa. *Holcus*, on the absence of which Forskal remarks, refers to *Sorghum*.

No additional material seems to have been added to *Aster ericifolius* until Hiern (1898, p. 545) identified with it some plants collected by Welwitsch in Angola. He made the combination *Detris ericifolia* (Forsk.) Hiern and gave as a synonym *Felicia abyssinica* Schultz Bip. ex A. Richard, a plant which occurs in the highlands of Abyssinia as well as in Arabia. The application of the epithet "ericifolia" to this Ethiopian-Arabian (and allegedly Angolan)

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*Felicia* still rests on Hiern's authority. The transfer into *Felicia* was made by Mendonça (1943, p. 44) and has been accepted by Cufodontis (1966, p. 1082).

In the beginning of the 19th century Schrank in Munich found, when rearranging the herbarium of Schreber, two untreated bundles, which, as shown by some notes, had been sent from Copenhagen by Vahl to Schreber some time previously. There is now no possibility of finding out the reasons for this transmission. One of the bundles contained collections made by Vahl (?) in southern France, Spain, Northern Africa and the Antilles, the other included parts of collections made by Forskal. Schrank decided to make a publication on the more interesting species and to give some comments to focus attention on them (Schrank, 1817). Under No. 44 he provided *Aster ericifolius* with a new diagnosis and also created a new species epithet, *Aster ansif* Schrank, going back to the arabian vernacular name of this species quoted by Forskal. But the publication by Schrank did not apparently make this taxon better known. *Aster ansif* appears in De Candolle's Prodrômus (1836, p. 246) under "species non satis notae" with the authorship "Martius", but with the correct citation. Obviously De Candolle did not see the original publication and supposed that in Munich the more famous Martius would be the author. Certainly the wrong citation in the "Index Kewensis" comes from the same error.

Assuming for the moment that Schrank really had a specimen of *Aster ericifolius* Forskal (this will be discussed below), there is the question whether this plant was really identical with *Felicia abyssinica*, as stated by Hiern. In the Staatsherbarium München there is one single sheet bearing the name "*Aster Ansif*". This sheet bears, written by Schultes, the inscriptions "scripsit Schrank" and "e plantis Forskahlianis ex Arabia a Vahllo Schrebero communicatis, ut videtur". This suggestion of Schultes seems to be the truth for two reasons. Firstly this is the only specimen of this species in Munich, and moreover the name is written in the hand of Schrank himself. Secondly this plant agrees exactly with the detailed description of Schrank. Without any doubt this must be the type of *Aster ansif* Schrank.

An exact examination shows that this plant is not an *Aster* or *Felicia*: it is identical with *Antithrixia angustifolia* Oliv. & Hiern (*A. abyssinica* auctt.). the distribution of which is also in Ethiopia and south west Arabia. This is now to be transferred to *Macowania* (see below).

The only question which remains is, whether the plant in Munich really is identical with the type of Forskal. The Compositae of the herbarium of Forskal were for a long time included in the general herbarium in Copenhagen (see Christensen, 1922). In 1916 Christensen took out as many as possible of the Forskal plants and integrated them into the Forskal herbarium, which is now kept separate. In many cases it was possible to trace out the types of species named by Forskal. In our case there is no certainty that the one specimen which is named *Aster ericifolius* is really the one which Forskal collected. Christensen wrote "specimen doubtful". We have, as it seems, no undoubted type in Copenhagen. Comparing the short description in the Flora Aegyptiaco-Arabica (calyce cylindrico imbricato, squamis membranaceis; floribus albis radiatis; receptaculo nudo papposo) we can state the following facts. The description of the involucre speaks of membranous bracts, which do not occur in *Felicia* nor in *Aster*, but which are very typical for the above mentioned *Macowania*. The white-rayed heads are also to be

found in this *Macowania*, as recorded in a recent collection (Sebald 2076). The diagnosis of Forskal thus supports our opinion concerning the identity of the taxon and shows that it could not be an *Aster* or *Felicia*. An important hint may be that Lessing (1832) includes *Aster ericifolius* in *Athrixia* saying "facies Athr. Capensis, involucrum Relhaniae trinervis". Possibly Lessing had seen one specimen from Forskal's collection and got the right idea about its relationship. This taxon thus occurs twice in De Candolle's *Prodromus* (1836, 1837), under *Aster* and under *Athrixia*, in both places under "species non satis notae"! Amongst the species described by Forskal there is none except *Aster ericifolius* which shows any similarity with *Aster ansif*.

Finally the determination is confirmed by a Forskal specimen of *Aster ericifolius* in the British Museum herbarium. This is the same plant as that named *Aster ansif* at Munich.

In 1889 Schweinfurth made an expedition to Arabia "In memoriam divi Forskalii" in order to re-collect the species Forskal had described. He succeeded in finding *Aster ericifolius* on Gebel Schibam near Menacha, and thus not far from Mt Kurma. He did not, however, identify this plant and the enumeration of these collections never reached *Compositae*. Schweinfurth's specimen (no. 1643) was distributed quite incorrectly as *Euryops arabicus* Steud. In his work on Arabian plant names Schweinfurth (1912, p. 88) gave the spelling 'antssif' for *ansif* and equated *Aster ericifolius* with *Felicia schimperi*.

#### THE POSITION OF THE ETHIOPIAN-ARABIAN SPECIES OF *ANTITHRIXIA*

The genus *Antithrixia* DC. is based on a single species, *A. fulva* DC., from Namaqualand, and was referred to the subtribe *Athrixieae* by Benth (1873, p. 187). The material available for examination has been scanty, but it appears to be more properly placed in the *Relhaniaeae*, with which it agrees in the curious and characteristic feature of having the leaves convex on the underside but concave and tomentose above.

*Macowania* Oliv. was established for a single species, *M. revoluta* Oliv. from the eastern Cape. Shortly afterwards Benth proposed another monotypic genus, *Homochaete* from Pondoland. This has since been merged with *Macowania* (Phillips, 1950) and the number of species in the combined genus has been increased by more recent discoveries to seven. The genus so formed shows some diversity of structure in the capitulum; however a marked community of habit and vegetative features, and the general facies of the yellow-rayed capitula, justifies its acceptance as a single group. To this genus the northern species hitherto placed in *Antithrixia* show a striking resemblance. They come closest to *M. tenuifolia* M. D. Henderson which is the species of *Macowania* that reaches from Northern Natal to the eastern Transvaal: all the other species are more southerly in distribution. Their addition to the genus does involve some further extension of its characters: white rays as well as yellow ones, and anthers with fimbriate as well as entire tails. In the context of the existing variation amongst the S African members of the genus, this widening of the generic range may be accepted, and all the species now included under *Macowania* seem more closely related to one another than to any other genus.

*Macowania* is in the course of revision and a full discussion of the inter-relationships of the species and the distribution of the genus will be given when that work is complete. Meanwhile the transfer of the two northern species of *Antithrixia* is proposed.

***Macowania abyssinica* (Sch. Bip.) B. L. Burt, comb. nov.**

Syn.: *Klenzea abyssinica* Sch. Bip. apud Walpers, Repert. 2: 973 (1843); A. Rich., Tent. Fl. Abyss. 1: 398 (1848).  
*Antithrixia abyssinica* (Sch. Bip.) Vatke in Linnaea 39: 493 (1875); Oliv. & Hiern, Fl. Trop. Afr. 3: 356 (1877).

***Macowania ericifolia* (Forsk.) Burt & Grau, comb. nov.**

Syn.: *Aster ericifolius* Forsk., Fl. Aeg.-Arab. 150 (1775).  
*Aster ansif* Schrank in Denkschr. königl. bayer. Akad. Wiss. 6: 196 (1817).  
*Athrixia* ? *ericifolia* (Forsk.) DC., Prodr. 6: 277 (1837).  
*Antithrixia angustifolia* Oliv. & Hiern, Fl. Trop. Afr. 3: 356 (1877).  
*Detris ericifolia* (Forsk.) Hiern, Cat. Welw. Afr. Pl. 1: 545 (1898), quoad basionym. tantum.  
*Felicia ericifolia* (Forsk.) Mendonça, Contr. Con. Fl. Angola, 1, Compositae 1: 44 (1943), quoad basionym. tantum.  
 [Antithrixia abyssinica auctt.; Vatke in Linnaea 39: 493 (1875), quoad spec. excl. syn.; Schwartz in Mitt. Inst. allg. Bot. Hamburg 10: 281 (1939)—non (Sch. Bip.) Vatke.]

# REFERENCES

- BENTHAM, G. (1873). Compositae, in Bentham & Hooker, *Genera Plantarum* 2. London.  
 CHRISTENSEN, C. (1922). Index to Pehr Forsskal: Flora Aegyptiaco-Arabica 1775. *Dansk Bot. Ark.* 4: 1-54 (1922).  
 CUFODONTIS, G. (1966). Enumeratio plantarum Aethiopiae. *Bull. Jard. Bot. Nat. Belg.* 36, Suppl. 1059-1114.  
 DE CANDOLLE, A. P. (1836). *Prodromus systematis naturalis regni vegetabilis*, 5. Paris.  
 —(1837). *op. cit.* 6.  
 FORSKAL, P. (1775). *Flora Aegyptiaco-Arabica*. Copenhagen.  
 HIERN, W. P. (1898). *Catalogue of the African Plants collected by Dr Friedrich Welwitsch* 3. London.  
 LESSING, C. F. (1832). *Synopsis generum Compositarum*. Berlin.  
 MENDONÇA, F. A. (1943). *Contribucoes para o Conhecimento de Flora de Angola I*, Compositae I. Lisboa.  
 PHILLIPS, E. P. (1950). Descriptions and changes of name. *Journ. South Afr. Bot.* 16: 15-22.  
 RICHARD, A. (1847). *Tentamen Florae Abyssinicae* I. Paris.  
 SCHRANK, F. P. VON. (1817). Commentatio de rarioribus quibusdam, maximam partem arabicis, plantis in amplissima Schreberi collectione repertis. *Denkschr. königl. bayer. Akad. Wiss.* 6: 161-196.  
 SCHWEINFURTH, G. (1912). *Arabische Pflanzennamen aus Aegypten, Algerien und Yemen*. Berlin.