

ASTERACEAE

ARCTOTIS DECURRENS (ARCTOTIDEAE), THE CORRECT NAME FOR *A. MERXMUELLERI* AND *A. SCULLYI*

The genus *Arctotis* L. comprises an estimated 50–60 species and belongs to the tribe Arctotideae. The representatives of this genus are indigenous to the *Flora of southern Africa* (FSA) region, with the highest concentration of taxa in Western Cape. One species, *A. venusta* Norl., has the widest distribution, extending to Angola and southern Zimbabwe. Some species are in cultivation and have been introduced into other countries, e.g. *A. stoechadifolia* P.J.Bergius (Pope 1992).

The taxonomy of *Arctotis* is extremely chaotic, owing largely to a great duplicity of published names and confusion over the correct application of many names. The last revision of the genus was undertaken by Lewin (1922), who used mainly fruit, involucre and pappus characters to distinguish between species. Unfortunately, he failed to resolve many of the nomenclatural problems and added to the confusion by misinterpreting some species and publishing additional superfluous names. Furthermore, recent morphological and molecular studies (McKenzie *et al.* 2005, 2006) indicate that the circumscription of the genus also requires reappraisal.

A monographic revision of *Arctotis* is being undertaken by the first author at Rhodes University, to resolve the taxonomic disarray within the genus. In preparation for the *Conspectus of the Trans-Cape Succulent Karoo Flora of South Africa* (Snijman in prep.), two species, *A. merxmuellerei* Friedrich and *A. scullyi* Dümmer, from Northern Cape, and a third species, *A. decurrens* Jacq., of uncertain provenance, were studied.

In a series of lavishly illustrated works published around the turn of the nineteenth century, N.J. von Jacquin and his son J.F. von Jacquin described 29 *Arctotis* species (excluding those names now known to apply to species in other genera). Of relevance to the present investigation, Jacquin (1797) described *A. decurrens* from cultivated material 'Ex Promontorio bonae Spei' grown in the Royal Schönbrunn garden, Vienna. The source, provenance and date of the original collection in

South Africa are unknown. The name *A. decurrens* Jacq. has not been typified and application of the name by previous workers has varied, resulting in uncertainty as to what species the name applies to and, indeed, whether it is a valid species. A search of authentic Jacquin material in the Naturhistorisches Museum Herbarium, Vienna (W) revealed two specimens (*W0006629* and *0006630*) determined as *A. decurrens* with labels bearing 'Hort. Schönbr.' (i.e. Hortus Schönbrunnensis) in the lower left corner. A third specimen (*W0006628*) bore a label with 'Hort. Bot. Vindob.' (i.e. Hortus Botanicus Vindobonensis) in the lower left corner. The Hortus Schönbrunnensis specimens are likely to have been prepared prior to publication of the name *A. decurrens* by Jacquin (1797) and can be considered as possible type material. They are consistent in all important details (particularly involucral bract and leaf morphology) with the illustration and description of *A. decurrens* in Jacquin (1797). Therefore in all likelihood Jacquin based his concept of *A. decurrens* on material represented by the sheets *W0006629* and *0006630*. Herein the sheet *W0006630* is designated as the lectotype, as it contains the most complete material (three capitula, two also with upper stem leaves, and six individual lower stem leaves). The sheet *W0006629*, comprising a single flowering shoot without lower stem leaves, is designated an isotype.

The Hortus Botanicus Vindobonensis specimen differs from the Hortus Schönbrunnensis specimens in possessing leaves with a dense lanate tomentum on the abaxial surface, and the outer involucral bracts have shorter apical appendages with lanate trichomes on the abaxial surface. Given its origin from different cultivated material from the Hortus Schönbrunnensis specimens, it cannot be considered as type material.

Arctotis scullyi was described by Dümmer (1914) prior to publication of Lewin's (1922) revision of *Arctotis*, but Lewin stated that he did not see the publication until after the end of the First World War. He therefore did not include *A. scullyi* within his revision, but referred to the

species in a postscript and commented that the information on the involucre and cypselae was incomplete. The precise locality of the holotype of *A. scullyi* (W.C. Scully 221) is unknown, as the label only states 'Nama'land Minor' (i.e. Little Namaqualand). For a long time, no specimens of this species were lodged in the National Herbarium, Pretoria (PRE). Only recently, a few specimens collected between 1983 and 1998 were submitted, identified and lodged as *A. scullyi* in PRE.

Friedrich (1980) described *A. merxmuelleri* from material (H.-C. Friedrich 498) collected from 'sukkulentenreiches Strandveld östlich Port Nolloth bei 5 Miles' in Little Namaqualand and cultivated in the Botanischer Garten München. In his description, he added beautiful illustrations of *inter alia* the involucral bracts and cypselae. The holotype of *A. merxmuelleri* is lodged in M, and isotypes are lodged in BOL, K and PRE. No subsequent collections have been lodged in PRE.

After close examination of the Jacquin specimens in W, the illustrations by Friedrich (1980), concentrating especially on the involucral bracts, and isotypes of *A. merxmuelleri* and *A. scullyi* lodged in BOL and PRE, we concluded that the names *A. decurrens*, *A. merxmuelleri* and *A. scullyi* apply to the same species. The earliest legitimate name is *A. decurrens*, to which *A. merxmuelleri* and *A. scullyi* are placed in synonymy herein.

***Arctotis decurrens* Jacq.**, *Plantarum rariorum horti caesarei Schoenbrunnensis descriptiones et icons* II. 20. t. 165 (1797). Type: 'Hort. Schönbr.' [Hortus Schönbrunnensis], ex Hb. Jacq. (W, lecto & iso!), here designated by R.J. McKenzie.

A. scullyi Dummer: 152 (1914), syn. nov. Type: Northern Cape, 'Nama'land Minor' [Little Namaqualand], W.C. Scully 221 (BOL!, holo; K (scanned image: <http://www.kew.org/herbcat/>), PRE!).

A. merxmuelleri Friedrich: 13 (1980), syn. nov. Type: Northern Cape, 2916BD Little Namaqualand, Port Nolloth, 8-12-1974, H.-C. Friedrich 498 (M, holo; BOL!, K (scanned image: <http://www.kew.org/herbcat/>), PRE!).

The leaf tomentum appears to vary significantly. They are most commonly sparsely to densely brownish or

whitish scabrous on both sides and/or glandular-pilose, but sometimes densely tomentose on both surfaces with no glands.

This species is seemingly endemic to the Strandveld of the West Coast (Namaqualand Sandveld) (Figure 8) where it grows near the coast and further inland on sand dunes in well-drained, sandy soil in full sun. It seems to be quite frequent to abundant in this area but is not often collected. At present it does not seem to be threatened but its habitat is becoming increasingly under threat of open mining activities, whereas overgrazing, land use changes, informal housing and urban development appear to be of a lesser threat.

Additional specimens examined

NORTHERN CAPE.—2916 (Port Nolloth): about 10 km east from Port Nolloth on road to Steinkopf, (–BD), 23-08-1998, *Koekemoer 1175* (PRE); 16 km east of Port Nolloth, (–BD), 21-08-1980, *A. le Roux 2703* (BOL); 11 km east of Port Nolloth, (–BD), 14-09-1976, *E. J. van Jaarsveld 1423* (NBG). 2917 (Springbok): *Oograbies*, (–AC), 27-07-1993, *L. van der Walt 274* (PRE); Kleinsee, Schulpfonteinpunt, (–CA), 30-11-1983, *G.K. Theron 3871* (PRE, PRU); Brazil, southeast of Kleinsee, beside road to Swartlinterivier, (–CC), 5-09-2005, *R. J. McKenzie 1302* (GRA). 3017 (Hondeklipbaai): Swartlinterivier mouth, (–AD), 16-10-1980, *A. le Roux & Parsons 34* (PRE); Hondeklip Bay, at *Aristea* shipwreck, (–AD), 17-09-2003, *L. Mucina 170903/20* (GRA); coast 4 miles south of Hondeklip Bay, (–AD), 10-1924, *N.S. Pillans 18133* (BOL); sandy hills round Hondeklip Bay, (–AD), 10-1924, *N.S. Pillans 18136* (BOL); ± 103 km from Springbok on sand road to Hondeklipbaai (near coast), (–AD), 28-09-1986, *D. Strydom 10* (PRE). 3117 (Lepelfontein): Brandsebaai, (–BD), 29-09-1992, *M.W. van Rooyen 2140* (PRE, PRU), 1-10-1992, *M.W. van Rooyen 2248* (PRE, PRU). Without precise locality: 'Hort. Bot. Vindob.' [Hortus Botanicus Vindobonensis], ex Hb. Jacq., *Jacquin s.n.* (W); cultivated in National Botanic Gardens, 09-1920, *Anon.* (BOL); cultivated at Kirstenbosch National Botanic Garden, no. 407/18, 04-1922, *Phillimore s.n.* (BOL); cultivated at Kirstenbosch National Botanic Garden, no. 407/18, 07-1922, *Phillimore s.n.* (BOL).

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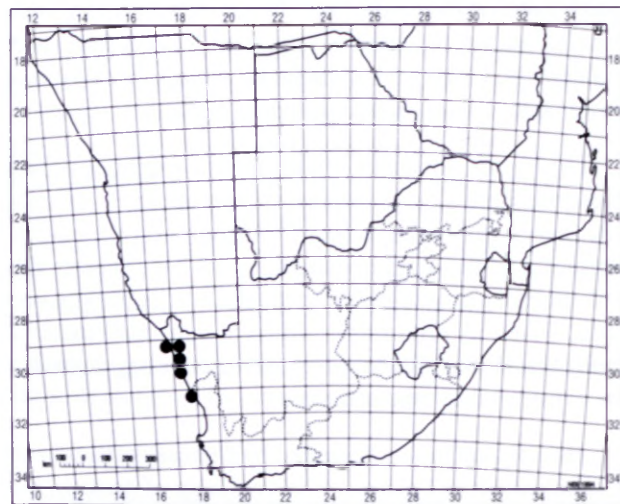


FIGURE 8.—Known distribution of *Arctotis decurrens* in southern Africa.

delimitation in subtribe Arctotidinae (Asteraceae: Arctotideae) inferred by DNA sequence data from ITS and five chloroplast regions. *American Journal of Botany* 93. In press.

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