A second species of the Namibian genus Dauresia (Asteraceae–Senecioneae)

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A second species of the Namibian genus *Dauresia* (Asteraceae-Senecioneae)

By **Bertil Nordenstam**

With 1 figure

Abstract

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Dauresia flava B. Nord. is described from southern Namibia as new to science. The two species of *Dauresia* are allopatric, *D. alliariifolia* being distributed in northern and central Namibia, whereas *D. flava* is restricted to the southernmost area close to the Orange River and belongs to the Gariep floristic element. The new species differs *inter alia* by the yellow floret colour, smaller few-dentate leaves, and lack of woolly indumentum in the leaf-axils.

Keywords: *Dauresia flava*, new species, Asteraceae, Senecioneae, Gariep Centre.

Introduction

The remarkable genus *Dauresia* B. Nord. & Pelser (Asteraceae-Senecioneae) was recently described (Nordenstam & Pelser 2005) with a single species, *D. alliariifolia* (O. Hoffm.) B. Nord. & Pelser. In its morphology the genus combines senecioid and tussilaginoid characteristics in an unsual way and no closely related genera can be identified. The genus has a basal position in the subtribe Senecioninae revealed by a phylogenetic analysis of the tribe (Pelser et al. 2007). In a nuclear DNA (ITS) phylogeny *Dauresia* appears as sister to a large clade containing members of the synotoid group such as *Synotis* (C.B. Clarke) C. Jeffrey & Y.L. Chen and *Cissampelopsis* (DC.) Miq., but also *Senecio* L. s. str. and some distinct genera such as *Dendrocacalia* (Nakai) Nakai ex Tuyama, *Arrhenechthites* Mattf., *Erechtites* Raf. and *Crassocephalum* Moench. In an alternative topology *Dauresia* is sister to a clade of odd African genera like *Dendrosenecio* (Haum. ex Hedb.) B. Nord., *Phaneroglossa* B. Nord., *Lamprocephalus* B. Nord. and *Oresbia* Cron & B. Nord., with the latter clade in turn relating to the synotoids (Pelser et al. 2007). Phylogenies based on plastid data (Pelser et al. 2010) likewise suggest affinity to the synotoid group. *Dauresia* is no doubt an ances-

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tral element of the Senecioninae, a subtribe which probably originated in southern Africa with *Dauresia* as one of its earliest lineages (Nordenstam et al. 2009).

The new species here described shares the important morphological characteristics of the generic type, differing mainly in floret colour, indumentum of leaf-axils and morphology of involucral and subinvolucral bracts.

Description and discussion

Dauresia flava B. Nord., **sp. nova —** Type: Namibia, Warmbad Distr., 2817AB: Driekop, SW section, 29.VI.1986, *E. van Jaarsveld 8832*, holotype PRE, isotype NBG. — Fig. 1.

D. alliariifoliae B. Nord. & Pelser proxima, sed statura minore, axillis foliorum glabris (non albo-lanatis), foliorum lamina minore marginis dentibus minoribus et pauciori-bus, involucri bracteis minoribus, et floribus flavis distinguenda.

Glabrous branching shrublet to 70 cm tall and wide. Stems striate or furrowed, with light brown to whitish cortex. Leaves alternate, erecto-patent, petiolate; petiole slender, 10–30 mm long; leaf-blade deltoid to broadly ovate or subreniform, 10–25 mm long, 10–30 mm wide, subcarnose, palmately 5–9-veined, grossly to shallowly dentate with 8–12 acute mucronate teeth; leaf-base truncate to subcordate. Peduncle branching, slender, with minute linear-lanceolate to filiform bracts 1–2 mm long. Capitula numer-ous, densely corymbose, homogamous, discoid. Receptacle slightly convex, glabrous, minutely alveolate. Involucre cupshaped, 4–5 mm long, 3–5 mm wide, ecalyculate; involucral bracts 5, uniseriate, narrowly oblong-ovate, 4–5 mm long, 1–2 mm wide, obtuse–subacute, with 3–5(–7) resiniferous veins; apex minutely fimbrillate. Subinvo-lucral bracts small, linear-subulate, sparsely glandular. Florets ca. 8–20, hermaphro-ditic; corolla 6 mm long, tubular, gradually widening above, yellow, deeply 5-lobed; lobes lanceolate, 2–2.5 mm long, 0.5 mm wide, midlined and with lateral veins, apex acute and somewhat cucullate. Anthers 2–2.5 mm long, distinctly caudate, but tails shorter than filament collar; endothecial tissue polarized; apical appendage narrowly ovate-lanceolate, acute; filament collar subcylindric, slightly widening basally but without enlarged basal cells. Style branches 1 mm long, with divided stigmatic surface inside, apically obtuse-subtruncate with short sweeping-hairs; style base thickened. Cypselas oblong, terete, 2.5 mm long, 1 mm wide, grey to blackish, longitudinally 5-ribbed and with 5 veins; hairy on the ribs with white mucilaginous papilliform twin hairs; carpopodium thin, of a single cell row. Ovary wall crystals mostly elongate hex-agonal plates. Pappus bristles numerous, pluriseriate, 5–7 mm long, slender, minutely barbellate but apically subplumose, white to somewhat fulvous, persistent.

Other collections: Namibia: 2717CD, Farm Mara: Between Suidewind and As-bosvlakte, 27°52’30’’S, 17°22’30’’E, in gulley, 29.VI.1987, *P. Craven 2819* (WIND); 2717CD, Farm Mara: Spielberg in kloof leading to Chumberg from Asbosvlakte, 24. VI.1991, *P. Craven 3894* (PRE not seen); 2717CB: Aiais reserve, NW of camp, 30. VI.1986, *E. van Jaarsveld 8715* (NBG, PRE).

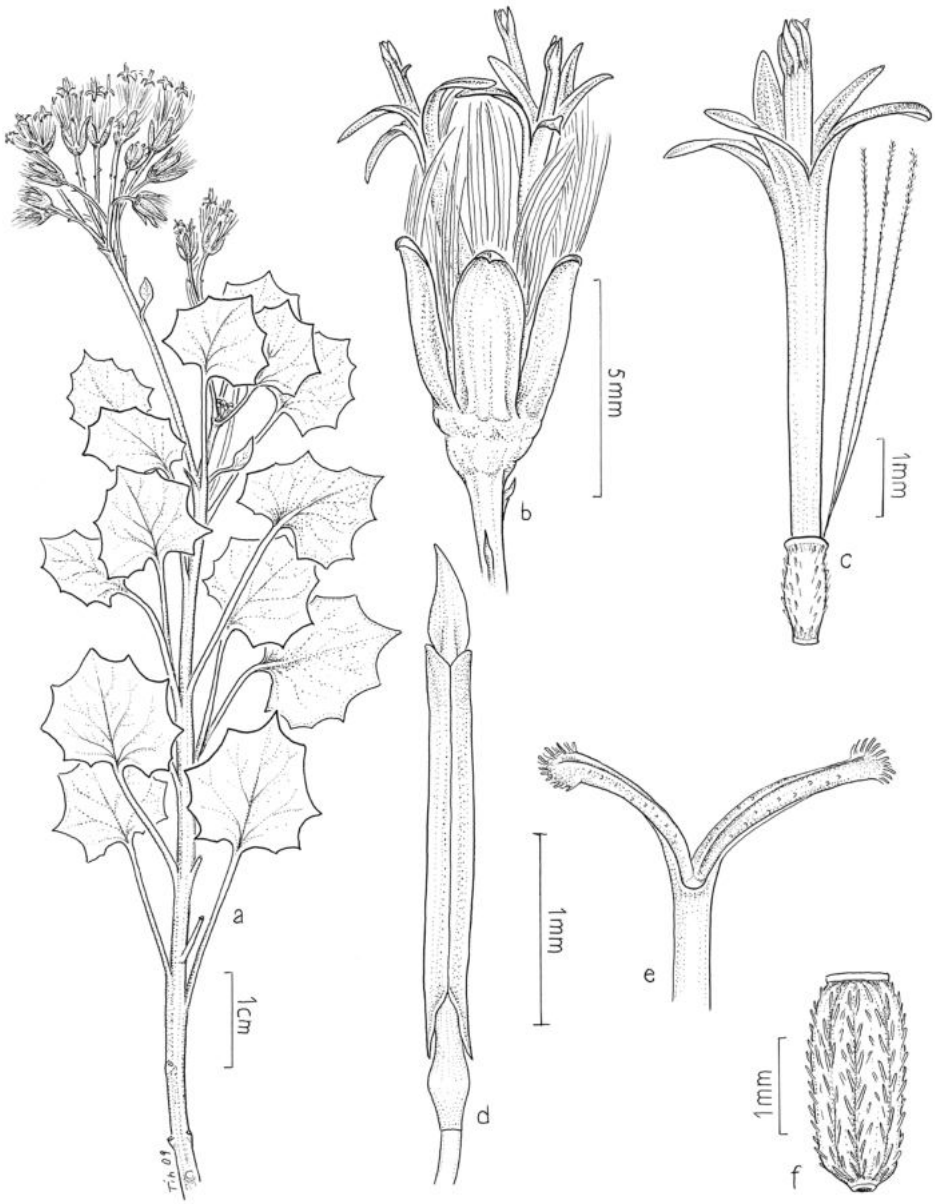

Fig. 1. *Dauresia flava* B. Nord. (E. van Jaarsveld 8715, PRE).
a Portion of plant. **b** Capitulum. **c** Floret. **d** Stamen. **e** Style branches. **f** Cypsela.-Del. Tin Sjöberg.

Phenology: All collections are from the end of June, so flowering time is at least June-July.

Discussion: *Dauresia flava* is very similar in habit to *D. alliariifolia*, being a glabrous small subshrub with erect branching stems becoming white-barked, petiolate dentate leaves with palmate venation, and corymbose discoid capitula without calyculus but with some subinvolucral bracts on the upper part of the peduncle. *D. flava* differs from *D. alliariifolia* by the lack of woolly tufts in the leaf-axils, the smaller subinvolucral bracts, and the yellow florets. One collection with old florets (*Craven 2819*) is said to have white florets, but this may be a misinterpretation. Further differences in floral morphology are obvious from the description above. The leaves of *D. flava* are smaller and less coarsely dentate than in *D. alliariifolia*. Also the subinvolucral bracts are rather small and subulate in the new species, whereas in *D. alliariifolia* they are larger, lanceolate to oblanceolate and glabrous. The cypselas are similar in both species: black and five-ribbed with short white hairs on the ribs. The hairs are of the typical duplex type ('twin hairs') and exude mucilage when moistened.

Distribution: Whereas *D. alliariifolia* is distributed in northern and central Namibia with a southern limit in Maltahöhe district (Map in Nordenstam & Pelser 2005), the new species is confined to the southernmost part of Namibia, where it has been collected four times in the Great Fish River area. The habitats are dry succulent karroo on sandstone rocks or mafic lava, preferably on exposed south slopes or occasionally in more shaded gullies. *D. flava* may be expected to be found in the Richtersveld on the South African side of the Orange River, which does not act as a phytogeographical border. On the contrary, taxa restricted to the area around the lower Orange river have been referred to a floristic element name the Gariep element (introduced by Nordenstam 1966), and the corresponding centre of endemism is referred to as the Gariep Centre (Nordenstam 1969, Hilton-Taylor 1996, Van Wyk & Smith 2001).

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