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A new species of *Minuria* (Asteraceae: Astereae) from New South Wales

P.S. Short and J.R. Hosking

Abstract

Short, P.S.¹ and Hosking, J.R.² (¹Northern Territory Herbarium, Parks & Wildlife Commission of the Northern Territory, P.O. Box 496, Palmerston, NT 0831, Australia; ²NSW Agriculture, RMB 944, Tamworth, NSW 2340, Australia). A new species of *Minuria* (Asteraceae: Astereae) from New South Wales. *Telopea* 8(4): 407–411. ***Minuria scoparia***, a species restricted to serpentinite-derived soils from northern New South Wales, is described and illustrated. It has affinities with *M. cunninghamii* and *M. leptophylla* but is broom-like in habit and the pappus bristles of the disc florets are not manifestly dimorphic.

Introduction

At least six species of plant are apparently endemic to the serpentinite-derived soils which occur between areas east of Bingara and east of Chaffey Dam, northern New South Wales (Hosking & James 1998). One of these, a species of *Minuria*, is described herein.

The circumscription of *Minuria* is problematic and unpublished results of cladistic analyses (by PSS) of the Australasian Astereae indicate that, as currently delimited (Lander & Barry 1980), the genus is not monophyletic. The species described here appears to belong to *Minuria* s. str., its affinities seemingly being with *M. leptophylla* DC., the type species of the genus, and *M. cunninghamii* (DC.) Benth.

Taxonomy

Minuria scoparia P.S.Short & J.R.Hosking, **sp. nov.**

M. cunninghamii et *M. leptophyllae* similis sed ab eis habitu scopulato et flosculis discis pappum manifeste dimorphum deficiens differt.

Holotype: slopes of Blackfellows Knob, east of Chaffey Dam, 31°23'14"S, 151°09'02"E, Altitude 670 m, J.R. Hosking 1532, 23 Nov 1997 (DNA 134923). Isotypes: CANB, MEL, NE, NSW.

Perennial, stiff, broom-like, sprawling to erect herb with branches to c. 60 cm long; major axes mainly glabrous but with whitish, somewhat curled and apically tapering, eglandular, uniseriate, septate hairs present, especially immediately below the capitula, a few short, glandular hairs also present. Leaves alternate, sessile although somewhat constricted and paler at base, entire, linear, (1.5–)12–28 mm long, (0.3–)0.5–1.2 mm wide, glabrous or with scattered glandular and eglandular hairs, mucronate. Capitula solitary, heterogamous, radiate. Involucre 4.5–6 mm diam., multiseriate. Bracts c. 30–40, lanceolate, 1–3.2 mm long, 0.2–0.4 mm wide, with the herbaceous stereome divided, the upper margins and apex of the bracts usually hyaline, mostly green but apex purple. Receptacle flat, glabrous, pitted. Ray florets female, 29–37, uniseriate, corolla 4.4–5 mm long, the ray 3-veined and apically

minutely bilobed, almost white to pale pink or purple; style branches pink. Cypselas laterally flattened, symmetrical or almost so, apically barely to manifestly constricted and sometimes forming a short beak to c. 0.3 mm long; fruit body oblanceolate in outline, 2–2.4 mm long, 0.5–0.8 mm wide and more or less uniformly brown except for the carpopodium, with scattered hairs mainly on the margins and at and near the apex, the hairs eglandular, rigid, biseriate, minutely and slightly unevenly bilobed; carpopodium distinct, annular, white, of more or less quadrate cells and 4–6 cells wide; pedicel usually evident emerging from carpopodium. Pappus commonly appearing monomorphic, consisting of 21–31 uniseriate bristles of about equal length, the bristles 2–3.1 mm long and uniformly barbellate along their length, united at the base, sometimes with several minute, few-celled outgrowths at the bases of the main bristles. Disc florets male, 23–27; corolla actinomorphic, tubular, the tube 2–3.1 mm long, 5- or rarely 4-lobed, mainly yellow throughout but at least when dry the lobes pinkish. Anthers 5, 0.9–1.1 mm long, microsporangia 0.7–0.9 mm long, terminal appendage 0.2–0.25 mm long; pollen grains c. 1500 per floret; style barely divided, arms more or less oblong, dorsal surface pubescent below the point of bifurcation, the hairs apically obtuse. Cypselas non-functional, glabrous or with scattered hairs as in ray cypselas. Pappus generally appearing monomorphic, consisting of 9–22 uniseriate bristles uniformly barbellate along their length and c. the length of the corolla tube and united at their bases, sometimes minute few-celled outgrowths present between or perhaps at the bases of the main bristles. (Fig. 1).

Etymology: the specific epithet reflects the distinctive broom-like habit.

Distribution: confined to the North Western Slopes botanical region of New South Wales. It is known from four populations, i.e. from the type locality east of Chaffey Dam, from the site of an old magnesite mine north east of Attunga, from near Woodsreef asbestos mine and from near Upper Bingara (Fig. 2).

Habitat: apparently restricted to serpentinite-derived, skeletal soils. The type collection is from an *Angophora floribunda*–*Eucalyptus* sp. aff. *macrorhyncha* woodland where *Acacia paradoxa* is the dominant shrub and *Triodia scariosa* the dominant grass. The Attunga and Upper Bingara localities are similar. The Woodsreef locality is also in *Eucalyptus* sp. aff. *macrorhyncha* woodland and plants grow with grasses and herbs such as *Aristida ramosa* var. *ramosa*, *Themeda triandra*, *Lepidosperma laterale*, *Senecio lautus* subsp. *dissectifolius* and *Cheilanthes distans*. More details of the vegetation of this region are outlined by Hosking and James (1998).

Conservation status: the populations of *M. scoparia* fall within a stretch of approximately 160 km. The population east of Chaffey Dam is on government land vested in the Department of Land and Water Conservation, that at Woodsreef is on Crown Land, and those near Attunga and Upper Bingara are privately owned. All four are in areas that, due to steep slopes, are not often grazed by cattle or sheep. At the type locality and at Attunga and Upper Bingara the presence of *Triodia scariosa* also deters grazing. More than 50 plants were observed at the type locality and more than 100 at Woodsreef. Tens of thousands were observed at the locality near Attunga (30°52'02"S, 150°54'37"E, altitude 550 m). Only four plants were observed at the Upper Bingara locality (30°01'23"S, 150°37'17"E, altitude 590 m). The species is also likely to be found at other serpentinite localities between Bingara and Chaffey Dam.

Although it is restricted in distribution the species is in no way endangered and given the size of the population near Attunga it should not be considered rare.

Flowering period and breeding system: the species appears to flower for most of the year, flowering being recorded for April, June, August and November.

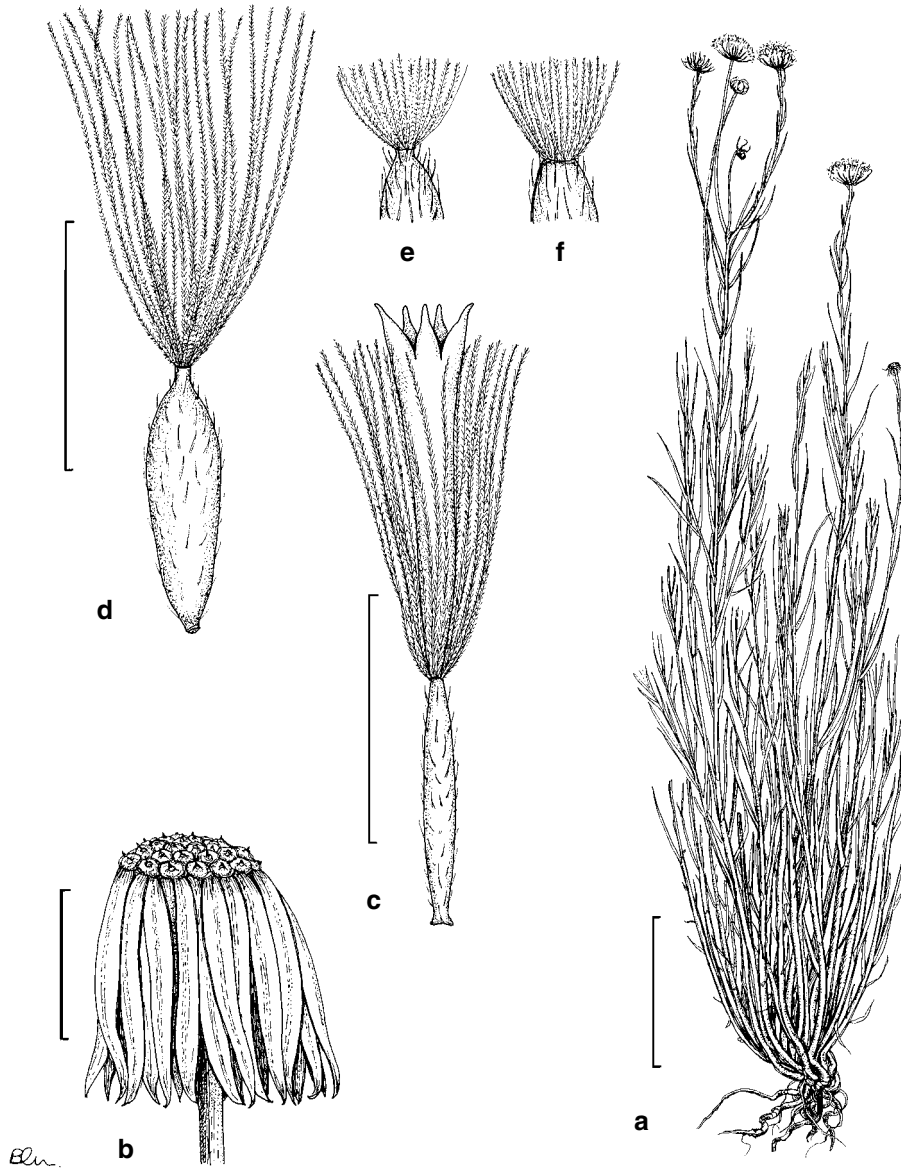


Fig. 1. *Minuria scoparia*. **a**, habit; **b**, mature receptacle; **c**, disc floret; **d**, mature cypselus showing prominent beak and pappus; **e**, apex of mature cypselus with short beak; **f**, apex of mature cypselus with unformed beak. (a, b from Hosking 1532; c–f, from Hosking 1578). Scale bars: a = 3 cm; b–f = 2 mm.

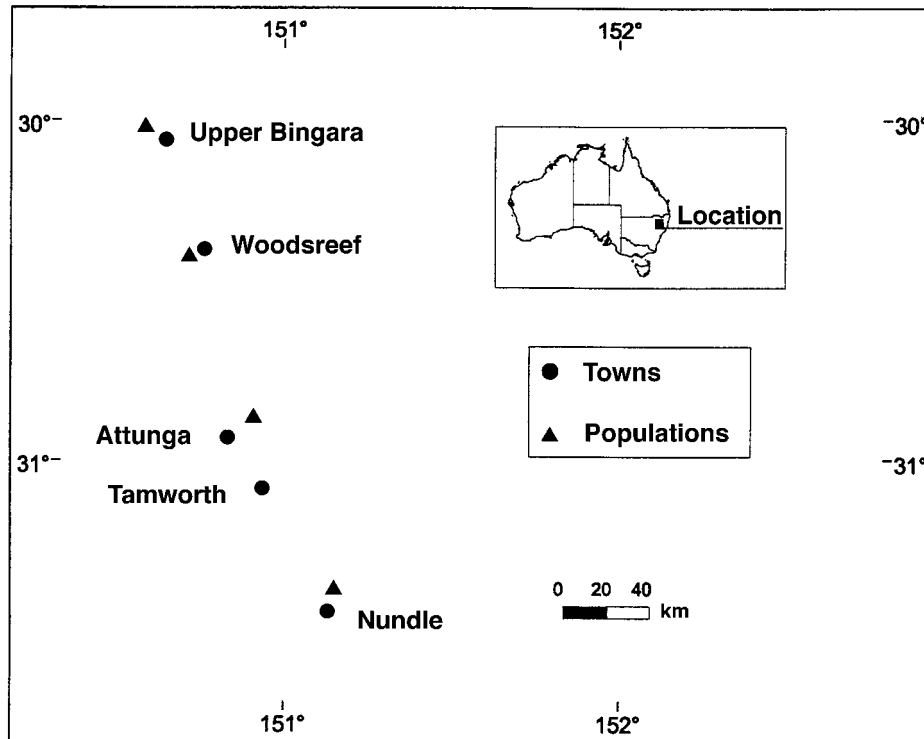


Fig. 2. Distribution of *Minuria scoparia*.

A pollen:ovule ratio of 849 was determined from a single capitulum containing 37 female and 24 male florets. This value and the relatively inconspicuous ray florets (compared to other Astereae with ray florets) suggests that the species commonly self-pollinates and is self-compatible (e.g. Short 1981, Watanabe et al. 1991).

Notes: apart from recent collections (by JRH in 1992, 1997 & 1998), the only other specimens known to us were gathered by the Reverend H.M.R. Rupp from Woodsreef in April and August 1913. His collections are housed in NSW. The most distinctive feature of the species, its habit, is not evident from Rupp's specimens and they were at one stage incorporated under the name *Vittadinia australis* A.Rich. var. *tenuissima* Benth. and subsequently under the name *Minuria cunninghamii*. It is with the latter species and *M. leptophylla* that *M. scoparia* is most likely to be confused. It is readily differentiated from both, not only by its broom-like habit but also by differences in pappus morphology. In *M. scoparia* the pappus in both ray and disc florets generally appears to be monomorphic, with occasionally in both types of floret few-celled outgrowths occurring at the base of the large bristles. In both *M. cunninghamii* and *M. leptophylla* the pappus of the disc florets is manifestly dimorphic as illustrated in Lander (1992).

The above description is based on the holotype specimen from Blackfellows Knob, duplicates of *Hosking 1578* from Woodsreef that are held at AD and DNA, and notes supplied by JRH to the senior author. The limited sample suggests that both populations can be differentiated from each other by several morphological characteristics. At the Woodsreef populations the ray cypselas may be shortly beaked, the pappus bristles of the ray florets are c. 3 mm long, there are 14–22 pappus bristles per disc floret and the corolla tube of the disc florets is c. 3 mm long. In the holotype specimen manifestly beaked cypselas are absent, the pappus bristles of the ray florets are 2–2.2 mm long, there may be fewer pappus bristles in the disc floret and the corolla tube in disc florets is c. 2–2.4 mm long. The colour of the ray corollas also differs between populations. At the type locality the rays are almost white or pale pink, at Woodsreef they are pale purple, drying to dark purple.

Specimens examined (excluding type): New South Wales: North Western Slopes: steep slope above Ironbark Creek, west of Woodsreef asbestos mine, 30°24'11"S, 150°43'24"E, altitude 500 m, *Hosking 1578 & Watts*, 19 June 1998 (AD, BRI, CANB, DNA, MEL, NSW, NE); same location, *Hosking 635*, 25 Nov 1992 (CBG, MEL, NE, NSW); Woodsreef, Barraba, *Rupp s.n.*, Apr 1913 (NSW 122362); same location, *Rupp s.n.*, Aug 1913 (NSW 122361).

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Note added in proof

After this paper had been accepted for publication an additional population (*Hosking 1846*, CANB, DNA, MEL, NE, NSW) of *M. scoparia*, also growing on serpentinite soil, was found alongside Carters Road east of 'Boonara', 31°47'36"S, 151°36'33"E, altitude 580 m. This is in the North Coast botanical region of New South Wales, approximately 60 km southeast of the type locality at Blackfellows Knob.

