Taplinia, a new genus of Asteraceae (Inuleae) from Western Australia

N.S. Lander

Western Australian Herbarium, Department of Conservation and Land Management,
P.O. Box 104, Como, Western Australia, 6152

Abstract

Lander, N.S. *Taplinia*, a new genus of Asteraceae (Inuleae) from Australia. Nuytsia 7 (1): 37-42 (1989). *Taplinia* Lander, a new genus, is described with a single species, *T. saxatilis* Lander, from Western Australia. It appears to belong to the tribe Inuleae subtribe Gnaphaliineae, although its affinities there are obscure.

Introduction

Taplinia saxatilis Lander, the composite described here, was first collected at localities near Wiluna and Agnew by Mr T.E.H. Aplin of the Western Australian Herbarium in August 1963. Subsequently, further specimens were gathered by Mr Paul G. Wilson and Dr R.J. Chinnock. Due to a superficial resemblance to *Helipterum battii* F. Muell. these specimens had been tentatively assigned to the genus *Helipterum*.

In the course of his ongoing revisionary studies of Australian species hitherto placed in *Helipterum*, Paul G. Wilson (pers. comm.) has excluded *Taplinia* from that group on the basis of its anther morphology. It certainly represents a distinct new genus, one readily circumscribed and not impinging on investigations in Australian Inuleae being carried out elsewhere.

Descriptions

Taplinia Lander, gen. nov.

Herbae lignosae foliis alternis sessilibus. Capitula discoidea homogama in paniculam terminalem disposita. Receptacula plana laevia glabra. Involucra anguste turbinata in alabastro, obconica sub anthesi; bracteae multiseriales chartaceae. Flosculi numerosi tubuliformes hermaphroditi; bases antherarum breviter sagitattae absque caudiculis et collo fila menti breviores;

brachia styli ligulata stigmatibus ventralibusque dilatatis apices versus semiverticillum formantia papillarum extendentium et appendicem subulatem ferentia. Achenia ellipsoidea sericea pilis adpressis duplicibus; carpopodia conspicua, angusta, centralia. Pappi constati ex setis multis plus minusve aeqalibus discretis minute barbellatis, subaequantibus flosculos. Pollen spheroideum tricolporatum spinosum.

Typus: Taplinia saxatilis Lander

Woody herbs. Vestiture of vegetative parts comprising eglandular and glandular hairs. Leaves alternate, sessile; laminae membranous; venation pinnate. Heads discoid, homogamous, in terminal, leafy panicles, subsessile, subtended by leaf-like bracts. Receptacles flat, smooth, glabrous. Involucres narrowly turbinate in bud, obconic at anthesis; bracts multiseriate, chartaceous, with central, pale green stereome and broad, translucent margins. Florets many, tubular, bisexual; anthers with bases shortly sagittate, without tails and shorter than their filament collars, with narrowly ovate, sterile, terminal appendage; stylar arms ligulate, ventro-marginally stigmatic, dilated apically into a half-whorl of spreading papillae and bearing a subulate appendage. Achenes ellipsoid, sericeous with appressed duplex hairs; carpopodia conspicuous, narrow, central. Pappi of many, more or less equal, free, minutely barbellate bristles subequal to the florets. Pollen spheroid, tricolporate, spinous.

Etymology. The name honours Theodore Ernest Holmes Aplin (1927), for many years botanist at the Western Australian Herbarium, who made the first collection of this new genus.

Taplinia saxatilis Lander, sp. nov. (Figures 1 & 2)

Herba ad 30 cm alta foliis ellipticis ovatis, obovatis velspathulatis, 2-16 x 8-50 mm, membranaceis, peranguste cuneatis vel basi amplectentibus. Involucrum 3-6 x 4-7 mm bracteis ovatis vel anguste ovatis 3.8-6.0 x 1.5-2.5 mm. Flosculi 13-14 tubo 4.2-4.5 mm longo infra flavido, supra aliquantum purpureo; antherae 1.06-1.27 mm longae collo filamenti 0.37-0.40 mm longo et appendice terminali 0.40 mm longa; brachia styli 1.2-1.3 mm longa. Achenium c. 0.3-1.0 mm. Pappus constatus ex 18-20 setis, 2.5-3.8 mm longis.

Typus: near James Pool, 'Windidda' [26° 23' S, 122° 13' E], Western Australia, 6 September 1973, *R.J. Chinnock* 836 (holo: PERTH; iso: AD).

Woody herb, erect, to 30 cm high, monopodial but branching basally, viscid. *Vestiture* of stems, leaves and subtending involucral bracts comprising scattered patent, simple, conic hairs, spreading, flagellate, filiform hairs and short, patent, biseriate, capitate, glandular hairs. *Stems* light brown when young, dark purple when older. *Leaves* alternate, sessile; lamina elliptic, ovate, obovate or spathulate, 8-50 x 2-16 mm, membranous, dark green or purplish; venation pinnate with prominent midvein; base very narrowly cuneate or clasping; margin entire, undulate; apex acute to acuminate. *Heads* discoid, homogamous, bisexual, in terminal, leafy panicles, subsessile, subtended by several small, narrowly ovate, reddish, leaf-like bracts. *Receptacle* flat, c. 1 mm in diameter, smooth, glabrous. *Involucre* narrowly turbinate in bud, obconic at anthesis, 4-7 x 3-6 mm; bracts elliptic to narrowly ovate, 3.8-6.0 x 1.5-2.5 mm, chartaceous, with central pale green stereome (much reduced in inner bracts), broad, translucent, entire margin and obtuse or acute apex. *Florets* 13-14, tubular, bisexual; tube narrowly infundibular, 4.2-4.5 mm, yellow below, purplish above, with scattered, spreading, simple, biseriate hairs; lobes 5, narrowly triangular, c. 1 mm long; anthers shortly sagittate basally, 1.06-1.27 mm long, with filament collar 0.37-0.40 mm long and narrowly ovate, sterile, terminal appendage 0.40 mm long; stylar arms ligulate, 1.2-1.3 mm long, dilated apically into a half-whorl of papillae, with a subulate appendage of fused epidermal cells. *Achene* ellipsoid,

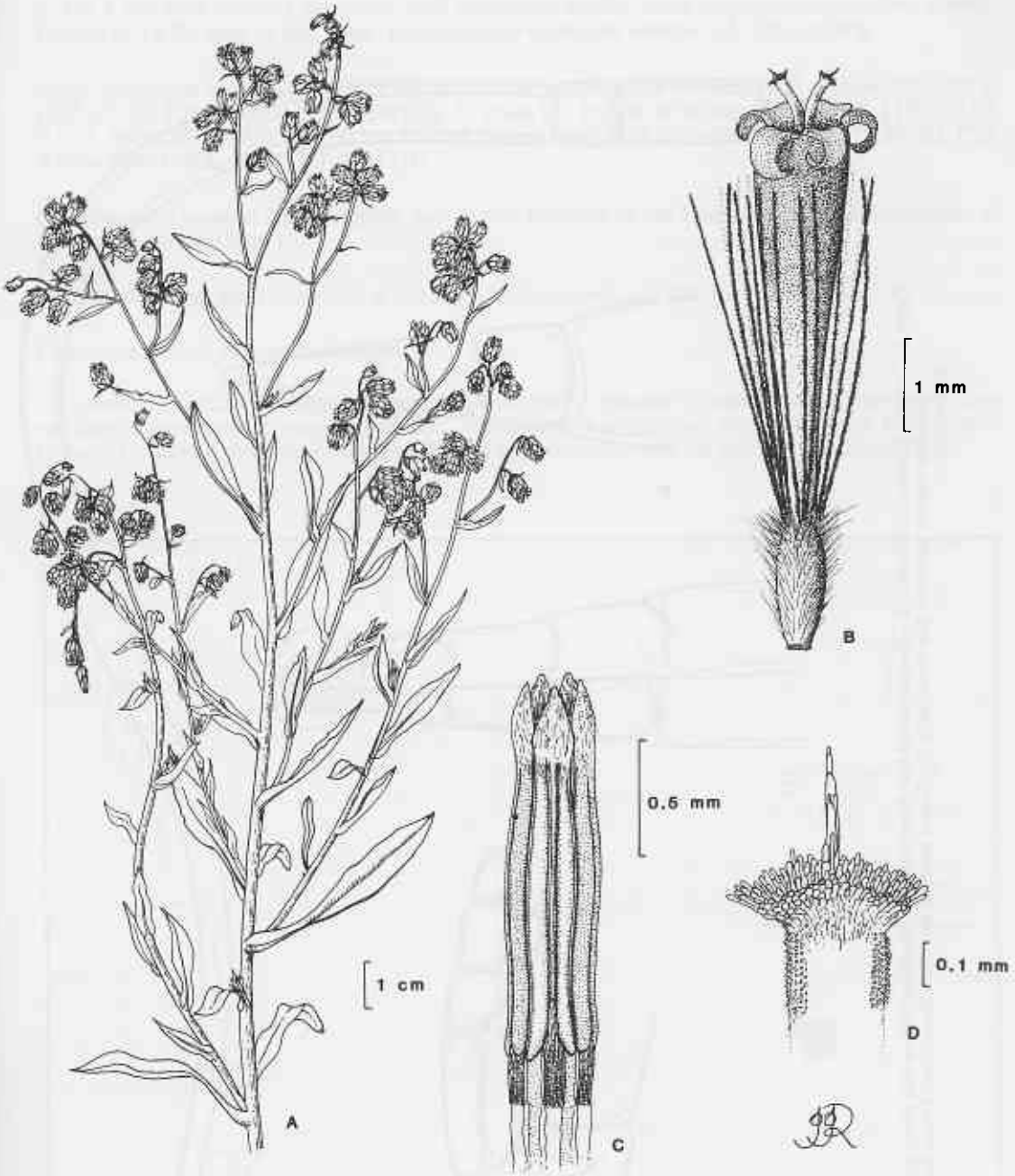


Figure 1. *Taplinia saxatilis*. A - Habit. B - Floret. C - Anthers. D - Apex of stylar arm. Drawn from the holotype.

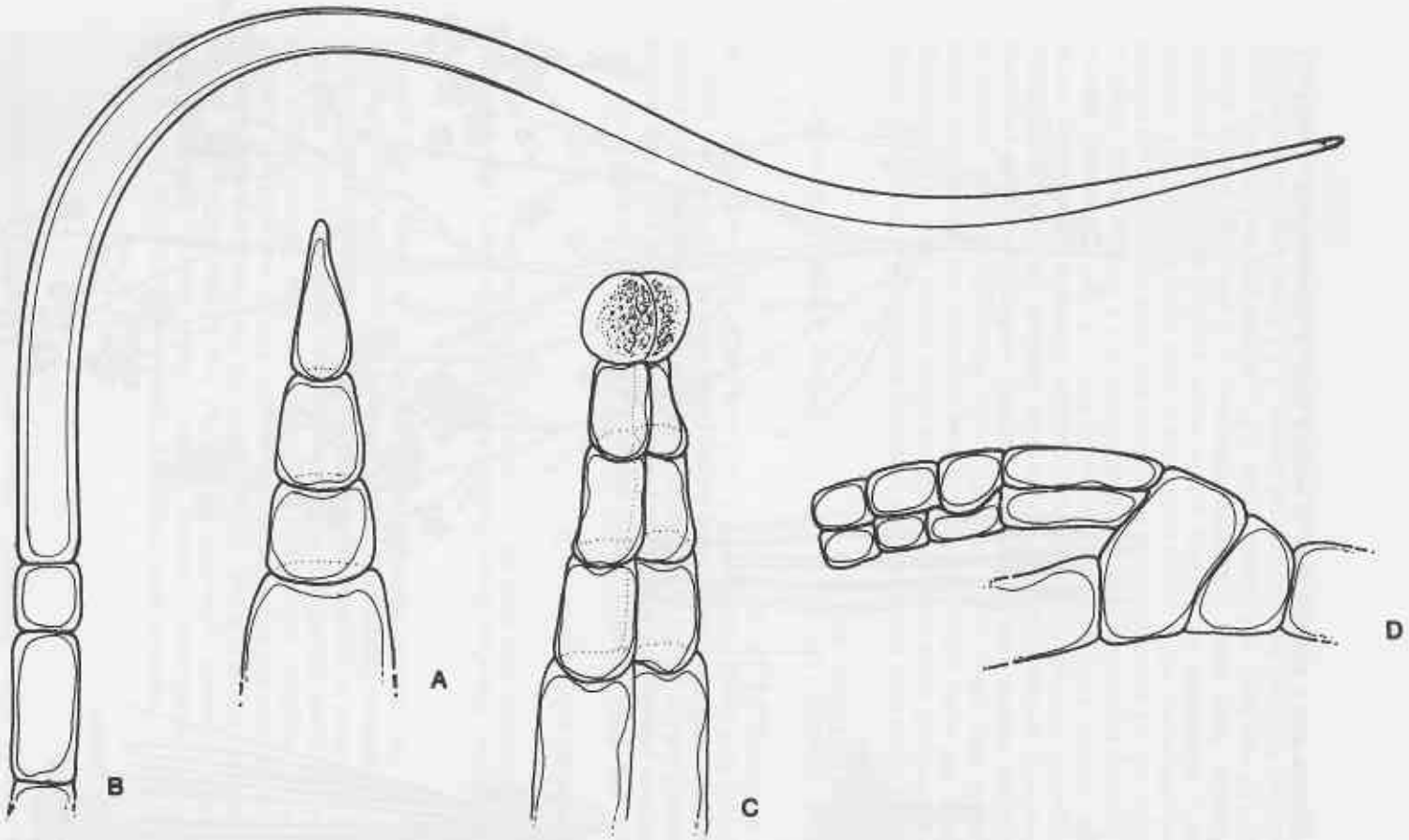


Figure 2. *Taplinia saxatilis*, Trichomes. A - Simple conical hair (from leaf). B - Flagellate filiform hair (from leaf). C - Biseriate capitate glandular hair (from leaf). D - Simple biseriate hair (from floral tube). Drawn from the holotype.

c. 1.0 x 0.3 mm, densely sericeous with appressed duplex hairs; carpopodium narrow, central. *Pappus* of 18-20 more or less equal, free, minutely barbellate bristles, 2.5-3.8 mm long.

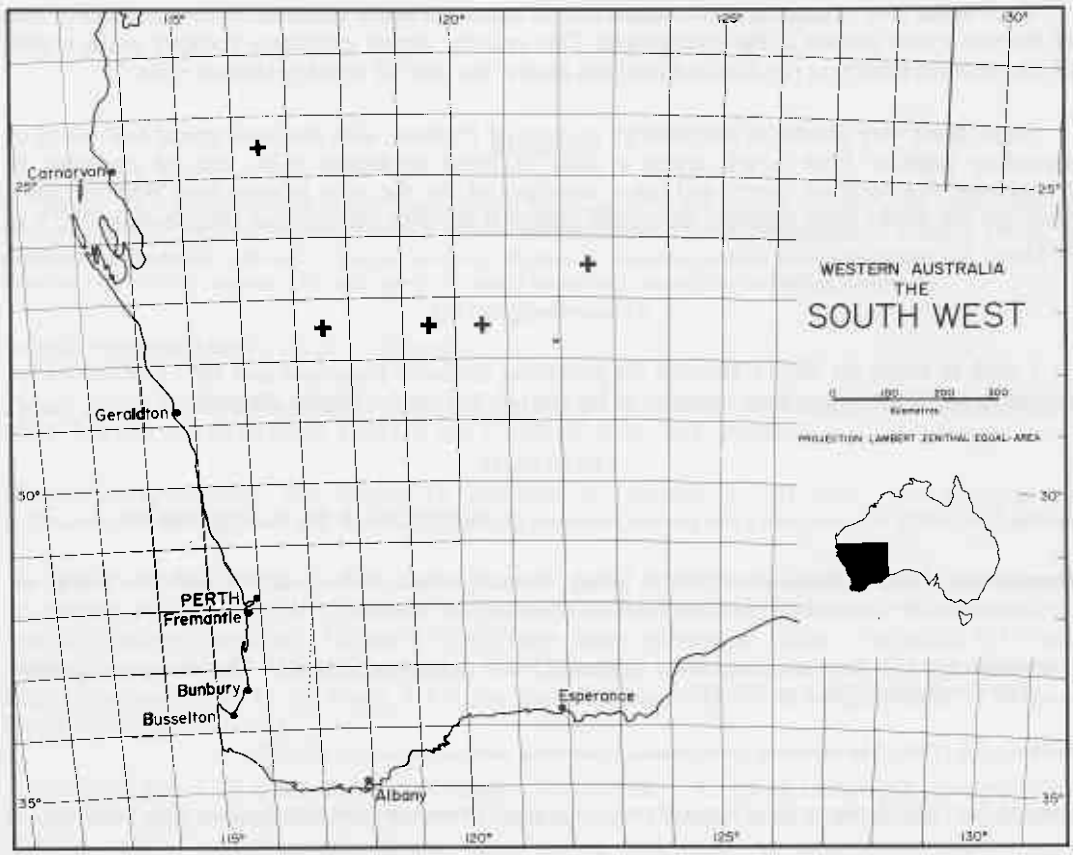
Other specimens examined. WESTERN AUSTRALIA: 51 miles [82 km] N of Agnew, [27° 18' S, 120° 31' E], *T.E.H. Aplin* 2393 (PERTH); 27 miles [43 km] W of Wiluna, [26° 34' S, 119° 59' E], *T.E.H. Aplin* 2441 (PERTH); 60 km NW of Cue on road to 'Kalli', [27° 18' S, 117° 39' E], *P.G. Wilson* 9902 (MEL, NSW, NT, PERTH).

Distribution. Found in the Ashburton and Austin Districts of the Eremaean Botanical Province of Western Australia (Map 1).

Habitat. Amongst open shrubland in red sandy soil in crevices of lateritic breakaways.

Flowering period. August to September.

Conservation status. Although infrequently collected this species is widespread, occurring in areas unlikely to experience change in land use. It is probably neither rare nor endangered, but it would be useful to have a more detailed knowledge of its distribution and the sizes of its populations.



Map 1. Distribution of *Taplinia saxatilis* indicating occurrence in 1° x 1° squares.

Etymology. The specific epithet draws attention to the rocky sites inhabited by this plant.

Note. In the above species account the descriptions of the various trichomes follow the terminology of Ramayya (1962).

Discussion

The alternate, entire leaves; the discoid heads lacking a calyculus; the multiseriate, subequal, imbricate, chartaceous involucral bracts; the naked receptacles; the anthers with basally sagittate microsporangia and with a terminal, sterile appendage; the appendiculate, "*Senecio*-type" styles; and the capillary pappus place this genus in the tribe Inuleae subtribe Gnaphaliinae sensu amplo of Merxmüller et al. (1977).

The absence of anther tails is not unknown elsewhere in the Inuleae (Dunlop 1981, Merxmüller et al. 1977, Randeria 1960).

In *Taplinia* the stylar arms are ventro-marginally stigmatic all the way to the apex, the stigmatic lines remaining discrete. The apex of each arm is dilated into a half-whorl of spreading papillae. From the centre of this whorl arises a slender shaft of fused epidermal cells. (See Figure 1D.)

Each stylar arm is ascended by a single line of spiral tracheary elements in continuation of one of the two xylem strands in the style proper. This vascular strand terminates abruptly in the region of the whorl of divergent papillae and does not ascend the shaft of fused epidermal cells.

Stylar arms very similar in morphology to those of *Taplinia*, with the same apical half-whorl of spreading papillae from which arises a shaft of fused epidermal cells, can be observed in *Helipterum heteranthum* Turcz. and other members of the the tribe Inuleae (see Wilson 1989). They are not unlike those reported for certain genera in the tribe Senecioneae (Nordenstam 1977, p. 812).

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