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Taxonomic revision of the *Pteronia uncinata* group (Asteraceae: Astereae) and the resurrection of *Pteronia trigona*

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Summary. *Pteronia* L. is a southern African endemic genus, mostly diversified in the Greater Cape Floristic Region. The genus was identified as one of the taxonomic priorities in South Africa. This study presents a taxonomic treatment of an informal morphological group: the *Pteronia uncinata* group. Five species are here recognised (*P. diosmifolia* Brusse, *P. fasciculata* L.f., *P. paniculata* Thunb., *P. teretifolia* (Thunb.) Fourc. and *P. uncinata* DC.). They are readily distinguished from congeners by the densely clustered terminal capitula often arranged in a compound corymb. Taxonomic descriptions, diagnostic characteristics, geographical distributions and ecological information, as well as an identification key to the five species recognised within the *P. uncinata* group are provided. *Pteronia trigona* E.Phillips had, until now, been considered a synonym of *P. teretifolia* but differs from the latter species (and the other species within the *P. uncinata* group) by the solitary, sessile capitula. As a result, *Pteronia trigona* is here resurrected for a taxon from the Eastern Cape, South Africa. Although *P. trigona* is not considered to form part of the *P. uncinata* group, a taxonomic description to clarify its identity is provided and the nomenclature, distribution and ecology for this species provided.

Key Words. Compositae, Eastern Cape, nomenclature, South Africa, taxonomy.

Introduction

The genus *Pteronia* L. belongs to the family Asteraceae, tribe Astereae, and comprises 76 species (Bello *et al.* 2017; Bello 2018; Bello *et al.* 2020). It is a genus of shrubs endemic to southern Africa, with its centre of diversity in the Greater Cape Floristic Region (GCFR), particularly the Succulent Karoo Biome (Manning & Goldblatt 2012; Snijman 2013; Bello 2018). The genus was a priority for taxonomic work in South Africa, where most of the species occur (Victor & Smith 2011; Victor *et al.* 2013; Von Staden *et al.* 2013). The morphology of the genus is diverse with regards to habit, leaf shape and florets (Shearing 1997; Viljoen *et al.* 2010). A comprehensive revision of the genus was produced more than a century ago (Hutchinson & Phillips 1917), with a recent synopsis of the Namibian species (Kolberg & Van Slageren 2014). Many of the species are poorly known (Shearing 1997) and some have been reported to have medicinal value (Shearing 1997; Hulley *et al.* 2010, 2011). Hutchinson & Phillips (1917) recognised four sections within *Pteronia* based solely on the presence or absence of a leaf indumentum, viz. sect. *Incanae* Hutch & E.Phillips, sect. *Papillatae* Hutch & E.Phillips, sect. *Ciliatae* Hutch & E.Phillips and sect. *Glabratae* Hutch & E.Phillips. This classification is largely artificial as it was based on artificial characters (Saupe 2007; Goswami 2013). In addition, it was noted that the section *Ciliatae* is invalid, and should rather be section *Pteronia* seeing as it includes the type species of the genus, *Pteronia camphorata* (L.) L. (Kolberg & Van Slageren 2014). The classification resulted in the placement of the infraspecific taxa of the polymorphic *Pteronia camphorata* in two different sections: *Pteronia camphorata* var. *armata* Harv. and *P. camphorata* var. *longifolia* Harv. in sect. *Ciliatae*, whereas *P. camphorata* var. *laevigata* Harv. was placed in sect. *Glabratae*. A taxonomic treatment of the *Pteronia camphorata* group by Bello *et al.* (2017) raised *P. camphorata* var. *laevigata* to species level as *Pteronia cederbergensis* Bello, Magee & Boatwr.

The informal morphological group, hereafter called the *Pteronia uncinata* group, includes five species (*P. diosmifolia* Brusse, *P. fasciculata* L.f., *P. paniculata* Thunb., *P. teretifolia* (Thunb.) Fourc. and *P. uncinata* DC.). This group can easily be distinguished from the rest of the genus by their closely set leaves, narrow involucres and densely clustered capitula with more than eight (8) heads (solitary, sometimes in clusters of 2 – 8 in the other species of *Pteronia*). *Pteronia teretifolia* has previously been erroneously conflated with *Pteronia trigona* E.Phillips, with the latter treated as a synonym

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(Gibbs Russell *et al.* 1987). The two species have a similar distribution and are vegetatively similar. However, the capitula of *P. teretifolia* are narrower, pedunculate and arranged into corymbs while those of *P. trigona* are broader, sessile and solitary. Also, the leaves of *P. teretifolia* are decussate while those of *P. trigona* are alternately arranged. These diagnostic features support the recognition of *P. trigona* as a distinct species from *P. teretifolia*, and unrelated to the *Pteronia uncinata* group.

All the species of the *Pteronia uncinata* group have a conservation status of Least Concern (LC), except for *P. diosmifolia* that is Vulnerable D2 (Victor 2002; Raimondo *et al.* 2009; SANBI 2020). This species is a limestone endemic with an extremely localised distribution in small colonies that are potentially threatened by encroachment from invasive species such as *Acacia* L. (e.g. *Acacia cyclops* A.Cunn. ex G.Don; Heydenrych 1994; Herman *et al.* 2006). Three members of the *P. uncinata* group (*P. diosmifolia*, *P. teretifolia* and *P. uncinata*) are recorded from limestone soil with only one endemic to this soil type (Brusse 1990). The limestone soil is alkaline and occurs within the Fynbos Biome, restricted to the soils of the Bredasdorp geological formation. About 42% of species found in this limestone habitat are local endemics with narrow distribution ranges (Heydenrych 1994). Economically, limestone habitats are important for low-intensity grazing and wild-flower harvesting, with species found in this habitat having great horticultural potential (Heydenrych 1994). On the other hand, antibacterial activities have been demonstrated for various extracts and essential oils of the non-limestone species (*P. fasciculata* and *P. paniculata*; Coovadia 2007).

The current study assessed the circumscriptions of the species within the *Pteronia uncinata* group. A taxonomic treatment of the species as well as a key to the species is presented with detailed description, diagnostic characteristics, geographical distributions, ecological information and conservation status. A description of *Pteronia trigona* is also presented to clarify its identity.

Material and Methods

Extensive examinations were carried out on herbarium collections from BOL, NBG, PRE and SAM. These collections as well as images of type material from G-DC and UPS-THUNB were studied (acronyms according to Thiers 2021, continuously updated). Descriptions of the species were based on characters observed on herbarium specimens and compared with descriptions from published literature. Specimens were observed under a stereomicroscope and measurements taken using a ruler or measureIT software with measurements taken on rehydrated material of the florets. Information on the flowering times, habitat, distribution, elevation, and soil type were obtained from the herbarium labels on the collections. Additional specimens examined are cited by country and province following the Quarter Degree Reference System for South Africa (Edwards & Leistner 1971; Leistner & Morris 1976). The recorded geographical distributions of the species were ascertained from Leistner & Morris (1976) and these were used to produce maps for the species.

Results

The species of the *Pteronia uncinata* group are erect, evergreen, perennial shrubs, 0.3 – 1.5 m in height. The leaves of all members are decussate (Fig. 1A – D), with *P. uncinata* sometimes having a 3-whorled arrangement in addition to the decussate leaf arrangement. This species also differs from the rest of the species in the group by the recurved/hooked leaf apices (Fig. 1C). The leaves are coriaceous and keeled to trigonous in *P. diosmifolia, P. fasciculata*, *P. teretifolia* and *P. uncinata* but succulent and subterete in *P. paniculata*. The group can be classified into two subgroups based on the leaf attachment and the presence or absence of glands on the cypselae. Free leaves and eglandular cypselae are diagnostic of a group of three species (*P. diosmifolia, P. teretifolia* and *P. uncinata*: Fig. 1C), while connate leaves, which give rise to persistent sheaths forming distinct sclerified scales on the branches, and the presence of glands on the cypselae, in addition to the cypselae hairs, are diagnostic for *P. fasciculata* and *P. paniculata* (Fig. 1A, B, D, E). The capitula are homogamous, discoid and terminal; they occur in dense clusters that are often arranged in a compound corymb. This is in contrast to the solitary capitula observed in *P. trigona,* which differentiates it from *P. teretifolia* or any member of the *P. uncinata* group. *Pteronia fasciculata* is distinct in its sessile, 1 – 2-flowered capitula (Fig. 1A, D) and the long pappus (9 – 10 mm: $\leq$ 8 in other species). In the remaining species (*P. diosmifolia, P. fasciculata*, *P. teretifolia*, and *P. uncinata*), the involucre is generally obconical in shape, except in *P. paniculata* that has a cylindrical involucre. The involucral bracts are generally glabrous with entire membranous margins in *P. teretifolia,* sparsely ciliate in *P. diosmifolia* and *P. uncinata* and hyaline-lacerate in *P. fasciculata* and *P. paniculata*. The pappus bristles are straw-coloured in *P. fasciculata, P. paniculata* and *P. teretifolia* but whitish in *P. diosmifolia* and *P. uncinata*.

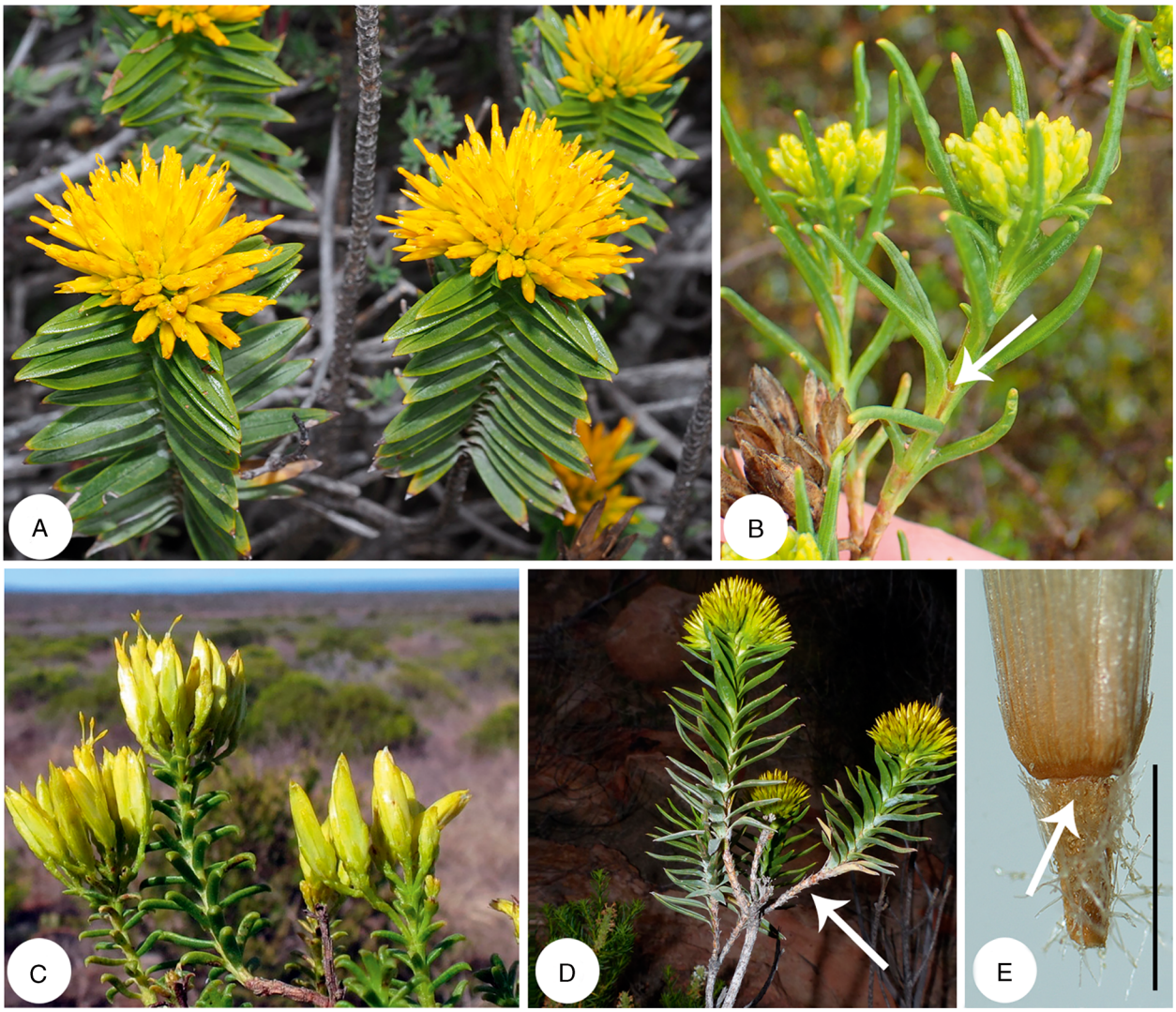


Fig. 1. Some species of the *Pteronia uncinata* group. **A** *P. fasciculata*; **B** *P. paniculata* (arrow showing persisting leaf sheath); **C** *P. uncinata*; **D** *P. fasciculata* (arrow showing sclerified scale on branches); **E** *P. fasciculata* cypsela (arrow showing glands). Voucher: **E** *Cattell & Cattell* 168 (NBG). Scale: **E** = 1 mm. Source: **A** – **D** iNaturalist.org. PHOTOS: **A** FELIX RIEGEL; **B** NICOLA VAN BERKEL; **C** KOOSCL; **D** SALLY ADAM; **E** A. O. BELLO.

Key to species of the *Pteronia uncinata* group

1. Capitula solitary, occasionally in terminal clusters of 2 – 8 . . . . . remaining species of *Pteronia*
   Capitula in terminal cluster of 10 – 60, often arranged into a dense compound corymb. 2
2. Leaves free, leaf bases not persisting as scales on branches; cypselae not glandular 3
   Leaves basally connate, leaf sheath differentiated into a distinct, sclerified scale which persists on branches; cypselae glandular 5
3. Involucral bract margins entire membranous; pappus straw-coloured . . . . . **1. P. teretifolia**
   Involucral bract margins ciliate; pappus whitish 4
4. Leaves with conspicuously recurved, hook-like apices; cypselae oblong . . . . . **2. P. uncinata**
   Leaves with straight apices; cypselae urceolate . . . . . **3. P. diosmifolia**
5. Leaves lanceolate, coriaceous, flattened, 3 – 5 mm wide, margins scabrous; capitula 1 – 2-flowered, sessile; pappus 9 – 10 mm long . . . . . **.4. P. fasciculata**
   Leaves linear, succulent, subterete, 1 – 2 mm wide, margins entire; capitula 4 – 5-flowered, pedunculate; pappus 4 – 5 mm long . . . . . **.5. P. paniculata**

Taxonomic Treatment

1. Pteronia teretifolia (*Thunb.*) *Fourc.* (Fourcade 1932: 87). *Osteospermum teretifolium* Thunb. (Thunberg 1800: 166; 1823: 713). *Osteospermum trigonum* Spreng. (Sprengel 1826: 628) **nom. illeg. superfl.** *Pteronia baccharoides* Less. (Lessing 1832: 196); de Candolle (1836: 357); Harvey in Harvey & Sonder (1865: 98); Hutchinson & Phillips (1917: 311) **nom. illeg. superfl.** Type: South Africa, Western Cape, 'Caput Bonae Spei' [Cape of Good Hope], *Thunberg* s.n. sub UPS-THUNB 20850 (holotype UPS-THUNB — microfiche!).

Pteronia acerosa DC. (de Candolle 1836: 357); Walpers (1843: 970). *Pteronia acerosa* var. *triflora* DC. (de Candolle 1836: 357) **nom. superfl. autonym**. Type: South Africa, Zw. Gamtos und Kroem Rivier R. I., 1 Jan. 1835, *Drège* 3977 [G00457856] (lectotype G-DC — image!, selected here).

Pteronia acerosa var. *quinqueflora* DC. (de Candolle 1836: 357). Type: South Africa, Eastern Cape, 50.5. Albany, 1 Jan. 1835, *Ecklon & Zeyher* 1864 [G00457847] (lectotype G-DC — image!, selected here).

Pteronia acerosa var. *multiflora* DC. (de Candolle 1836: 357). Type: South Africa, Eastern Cape, Port Elizabeth (3325): 5.7. Uitenhage (–CD), 1 Jan. 1835, *Ecklon & Zeyher* 218 [G00457852] (holotype G-DC — image!).

Evergreen perennial *shrub* c. 1 m in height, much branched; branches erect. *Leaves* decussate, free from each other at base, slightly spreading, simple, linear, 6 – 12 × ± 1 mm, trigonous, coriaceous, glabrous, apex acute, margins entire. *Capitula* 2 – 3-flowered, homogamous, discoid, terminal, corymbose (10 – 25 capitula), pedunculate to 6 mm long, bearing smaller linear bracts; involucre narrowly obconical, 8 – 10 × 2 – 3 mm, 4 – 5-seriate; involucral bracts glabrous, narrow, margins entire, membranous, outermost bracts lanceolate, 3 – 4 mm long, apex obtuse, middle bracts ovate to lanceolate, 6 – 7 mm long, apex obtuse, innermost bracts narrowly lanceolate, 9 – 10 mm long, apex subacute. *Florets* bisexual; corolla yellow, tubular, 8 – 9 mm long, limb 5-lobed, tube glabrous; anthers 4 – 5 mm long, apical appendages acuminate; filament slightly swollen distally; style branched, 9 – 10 mm long, branches flattened, c. 3 mm long, stigmatic-papillate. *Cypselae* turbinate, 1 – 2 × 1 mm, contracted into a neck at apex, setulae of twin-hairs appressed villous, eglandular; pappus bristles barbellate, biseriate, connate at base, 7 – 8 mm long, slightly shorter than florets at fruiting stage, straw-coloured. Fig. 2.

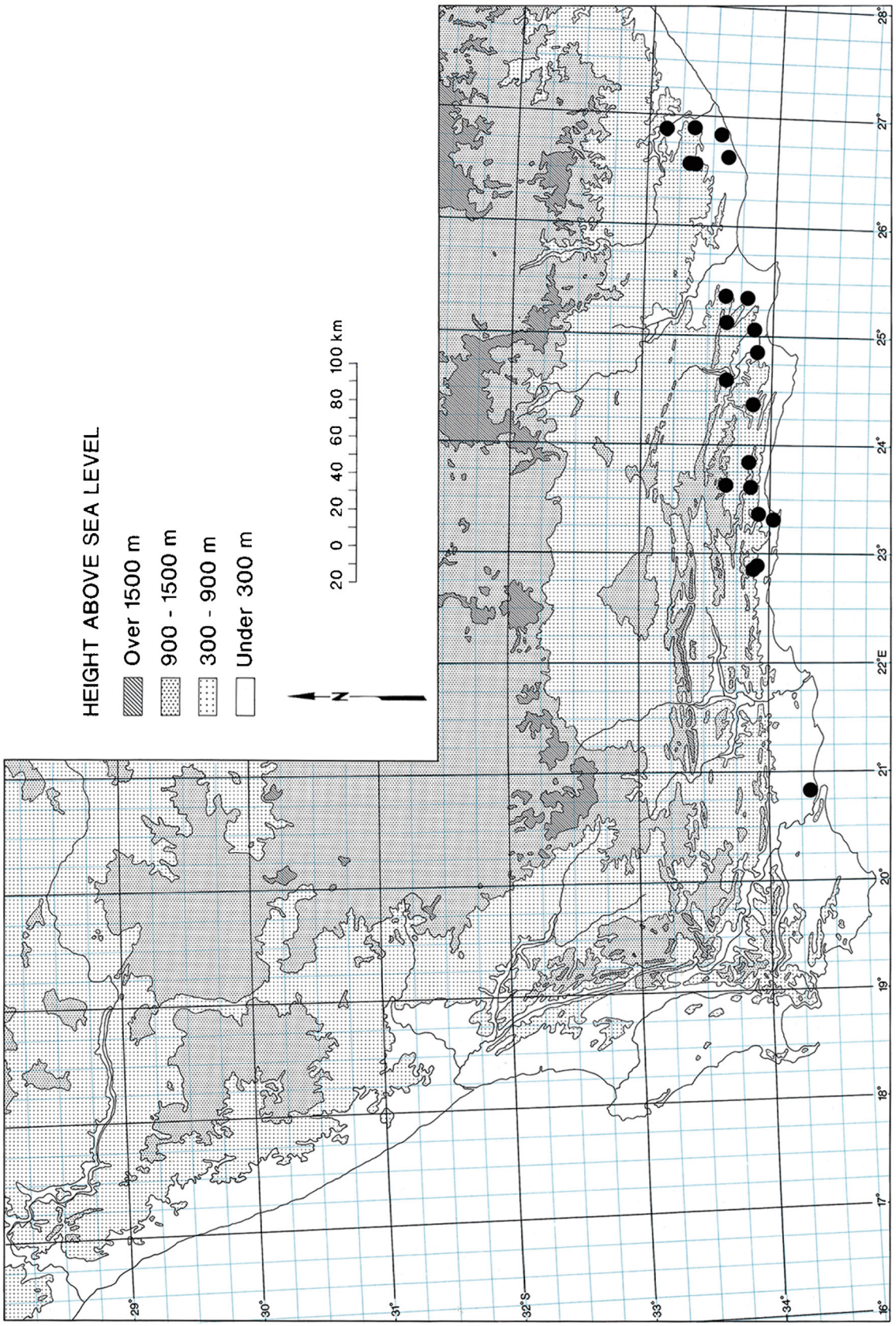
DISTRIBUTION. This species is restricted to fynbos vegetation, from the Outeniqua mountains to Knysna in the Western Cape through to Grahamstown and Port Elizabeth in the Eastern Cape. Map 1.

SPECIMENS EXAMINED. SOUTH AFRICA. Western Cape. 3322 (Oudtshoorn): Die Hoek, N of Outeniquas (–DD), 15 Jan. 1947, *Esterhuysen* 13602 (BOL, NBG); Paardekop, Knysna (–DD), 3 June 1952, *Compton* 23576 (NBG). 3323 (Willowmore): Near Keurbooms R. Mouth (–CD), August 2007, *Baard* 871 (PRE). 3420 (Bredasdorp): Potberg Estates, near Cape Infanta (–BD), 18 June 1974, *Bayliss* 6712 (NBG). 3423 (Knysna): Keurbooms River Hill (–AB), May 1908, *Fourcade* 181 (BOL). Precise locality unknown: Cape of Good Hope, *Thunberg* s.n. sub UPS-THUNB 20850 (holotype UPS-THUNB). Eastern Cape. 3323 (Willowmore): Kouga Dwaasrivier, Joubertina (–DA), 23 Feb. 1976, *Manson* 250 (NBG); Louterwater (–DC), 30 April 1935, *Compton* 5225 (BOL, NBG); Joubertina (–DD), 2 April 1959, *Van Breda* 526 (PRE). 3324 (Steytlerville): Between Essenbos and Assegaaibos, Suuranysberge (–CD), 5 March 1990, *Joffe* 804 (PRE); Humansdorp Division, top of hill between Thornhill and Hankey (–CD), *Lewis* 66115 (SAM); Cambria (–DA), 13 April 1952, *Barker* 7861, 7915 (NBG); Hankey hills, Humansdorp (–DD), 12 April 1952, *Compton* 23415 (NBG). 3325 (Port Elizabeth): Groendal Wilderness Reserve, Uitenhage (–CA), 28 March 1975, *Scharf* 1804 (PRE); Groendal State Forest track above Springfield, Uitenhage (–CB), 9 March 1983, *Vlok* 564 (NBG, PRE); Loerie road from Hankey (–CC), 18 May 1976, *Bayliss* 6322 (PRE); Uitenhage (–CD), 14 April 2005, *C.R.E.W.* CR579 (NBG); 5.7. Uitenhage (–CD), 1 Jan. 1835, *Ecklon & Zeyher* 218 (G-DC — *P. acerosa* var. *multiflora* holotype). 3326 (Grahamstown): Albany Division, Assegaaisbos (–AD), *Ecklon & Zeyher* s.n. [two sheets], 254, 255, 277 (SAM); *Drège* s.n. (SAM); Trumpeters Drift, Albany (–BB), 6 April 1975, *Bayliss* 1387 (PRE); Featherstone Kloof (–BC), 21 Feb. 1932, *Rennie & Rennie* 210 (BOL); Near Grahamstown (–BC), May 1926, *Dyer* 449 (PRE); Farm Brooklands, 17 m from Grahamstown, Bathurst (–BC), 30 March 1955, *Johnson* 1135 (PRE); Clivis mountain, Grahamstown (–BC), *MacOwan* 148 (SAM); Albany (–DA), April 1947, *Story* 2275 (PRE), c. 3.22 km [2 miles] from Assegaaibosch station (–DA), 3 Feb. 1943, *Fourcade* 5954 (NBG); Hopewell Farm, Batrurst (–DB), 7 July 1947, *Compton* 19838 (NBG). Precise locality unknown: Zw. Gamtos und Kroem Rivier R. I., 1 Jan. 1835, *Drège* 3977 (G-DC — *P. acerosa* lectotype); 50.5. Albany, 1 Jan. 1835, *Ecklon & Zeyher* 1864 (G-DC — *P. acerosa* var. *quinqueflora* lectotype); *Ecklon & Zeyher* 1858 (G-DC); Uitenhage, Albany, Swellendam distr., *Ecklon & Zeyher* s.n. (M); Gauritz, *Burchell* 4721 (G-DC), *Burchell* 5009 (G-DC).

HABITAT. Sandy or stony soil, sometimes limestone outcrops, from 130 – 860 m above sea level (a.s.l.).

CONSERVATION STATUS. This species does not fall into any threatened category in the Red List of SANBI's

Fig. 2. Morphology of *Pteronia teretifolia*. Voucher: *Vlok* 564 (NBG).



Map 1. Known distribution of *Pteronia teretifolia*.

Threatened Species Programme. Its conservation status is of Least Concern (LC) in South Africa (SANBI 2020).

PHENOLOGY. Flowering is from late summer to the early winter (February to June).

VERNACULAR NAME. *Naaldgombos* (Afr.), Needle Gumbush (Eng.).

NOTES. *Pteronia teretifolia* shares the free leaf bases and the eglandular cypselae with *P. diosmifolia* and *P. uncinata* (Fig. 1C) but is distinguished by the straw-coloured pappus and entire membranous involucral bract margins (pappus white and bract margins ciliate in *P. diosmifolia* and *P. uncinata*). This species shares the linear, trigonous, glabrous, entire leaves with *P. trigona* but differs by the decussate leaf arrangement and the narrow (2 – 3 mm wide), pedunculate and corymbose capitula (alternate leaf arrangement and broad [8 – 10 mm wide], sessile and solitary capitula in *P. trigona*).

Five collections of *Pteronia acerosa* var. *triflora* were cited by de Candolle. *Drège* 3977 is selected as lectotype because it is the most complete specimen. For *Pteronia acerosa* var. *quinqueflora*, there are two original collections of Ecklon & Zeyher from Albany in G-DC, both mounted on a single sheet. The *Ecklon & Zeyher* 1864 collection is selected as lectotype as it has more complete features.

2. **Pteronia uncinata** *DC.* (de Candolle 1836: 357); Harvey in Harvey & Sonder (1865: 99); Hutchinson & Phillips (1917: 310). Type: South Africa, Western Cape, Clanwilliam (3218): 'Langevaley R.I.' [Lange Valley] (–BC), 1 Jan. 1835, *Drège* 2762 [G00457858] (lectotype G-DC — image!, selected here; possible isolectotypes HAL0110988, HBG505179, K000273460, K000273462 — 3, P027285 — 7, images!).

Pteronia verticillata DC. (de Candolle 1836: 357). Type: South Africa, Western Cape, Simonstown (3418): 'Nordhook' [Noordhoek] (–AB), Reçu en 1816, *Anon.* s.n. [G00457853] (holotype G-DC — image!).

Evergreen perennial *shrub* to 1 m in height, much branched; branches erect, sulcate. *Leaves* decussate or 3-whorled, free from each other at base, dense, simple, acicular, 5 – 13 × ± 1 mm, sulcate above, convex below, coriaceous, glabrous, apex acute, recurved, margins entire. *Capitula* 4 – 5-flowered, homogamous, discoid, terminal, corymbose (10 – 40 capitula), pedunculate (5 – 10 mm long); involucre narrowly obconical, 9 – 11 × 4 – 5 mm, 3 – 5-seriate; involucral bracts glabrous, narrow, margins sparsely and shortly ciliate, rarely entire, outermost bracts narrowly ovate, 3 – 4 mm long, apex obtuse, middle bracts oblong, 6 – 7 mm long, apex obtuse, innermost bracts linear to lanceolate, 9 – 10 mm long, apex subacute. *Florets* bisexual; corolla yellow, tubular, 7 – 8 mm long, limb 5-lobed, tube glabrous; anthers 3 – 4 mm long, apical appendages acuminate; filament not swollen distally; style branched, 11 – 12 mm long, branches flattened, c. 2 mm long, stigmatic-papillate towards tips. *Cypselae* oblong, 2 – 3 × ± 1 mm, contracted into a neck at apex, setulae of twin-hairs finely villous, eglandular; pappus bristles barbellate, biseriate, connate at base, 7 – 8 mm long, as long as florets at fruiting stage, whitish. Fig. 3.

DISTRIBUTION. This species is restricted to strandveld vegetation along the Western Cape coast from Clanwilliam through to Riversdale. Map 2.

SPECIMENS EXAMINED. SOUTH AFRICA. Western Cape. 3218 (Clanwilliam): Coastal Strandveld dunes off Elandsbaai road (–AD), 25 June 1968, *Boucher* 93 (NBG); 'Langevaley R.I.' [Lange Valley] (–BC), 1 Jan. 1835, *Drège* 2762 (G-DC — *P. uncinata* lectotype; possible isolectotypes HAL, HBG, P); Rocher Pan Nature Reserve (–CB), 28 July 1981, *Le Roux & Van Rooyen* 52 (NBG). 3317 (Saldanha): Danger Point, Saldanha (–BB), 8 March 1953, *Hall* 631 (BOL, NBG). 3318 (Cape Town): Massenberg (–AA), 6 Sept. 1996, *Desmet* 61 (NBG); Near Langebaan Lagoon (–AA), 16 March 1970, *Axelson* 159 (NBG); Langebaan, Saldanha Bay (–AA), *Foley* 12124 (SAM); Yzerfontein (–AC), 28 March 1973, *Taylor* 8376 (NBG). 3418 (Simonstown): Noordhoek (–AB), Feb. 1918, *Rogers* 14272 (BOL), Reçu en 1816, *Anon.* s.n. (G-DC — *P. verticillata* holotype); Chapmans Peak (–AB), 24 Feb. 1918, *Pillans* 2999 (PRE); Krom R., Cape of Good Hope Nature Reserve (–AD), Feb. 1964, *Taylor* 5694 (NBG). 3419 (Caledon): Gansbaai, Uilandskraal Mond R., N side of the road from Franskraal to Pearly Beach (–CB), 17 March 2008, *Bennett, Pekeur & Wall MSBP* 3664 (NBG); Gansbaai (–CB), 14 March 1976, *Hall* 4608 (NBG); Buffeljachts Farm, Bredasdorp (–DA), 23 March 1982, *Boucher* 5055 (NBG). 3420 (Bredasdorp): Bontebok Park (–AB), 17 Feb. 1951, *Compton* 22628 (NBG); Dunes W of Heuningnes R. Mouth (–CA), 8 June 1983, *O'Callaghan* 619 (NBG). 3421 (Riversdale): Still Bay (–AD), May 1915, *Muir* 1989 (BOL), *Muir* 441 (SAM).

HABITAT. *Pteronia uncinata* favours sandy soil at ±300 m (a.s.l.).

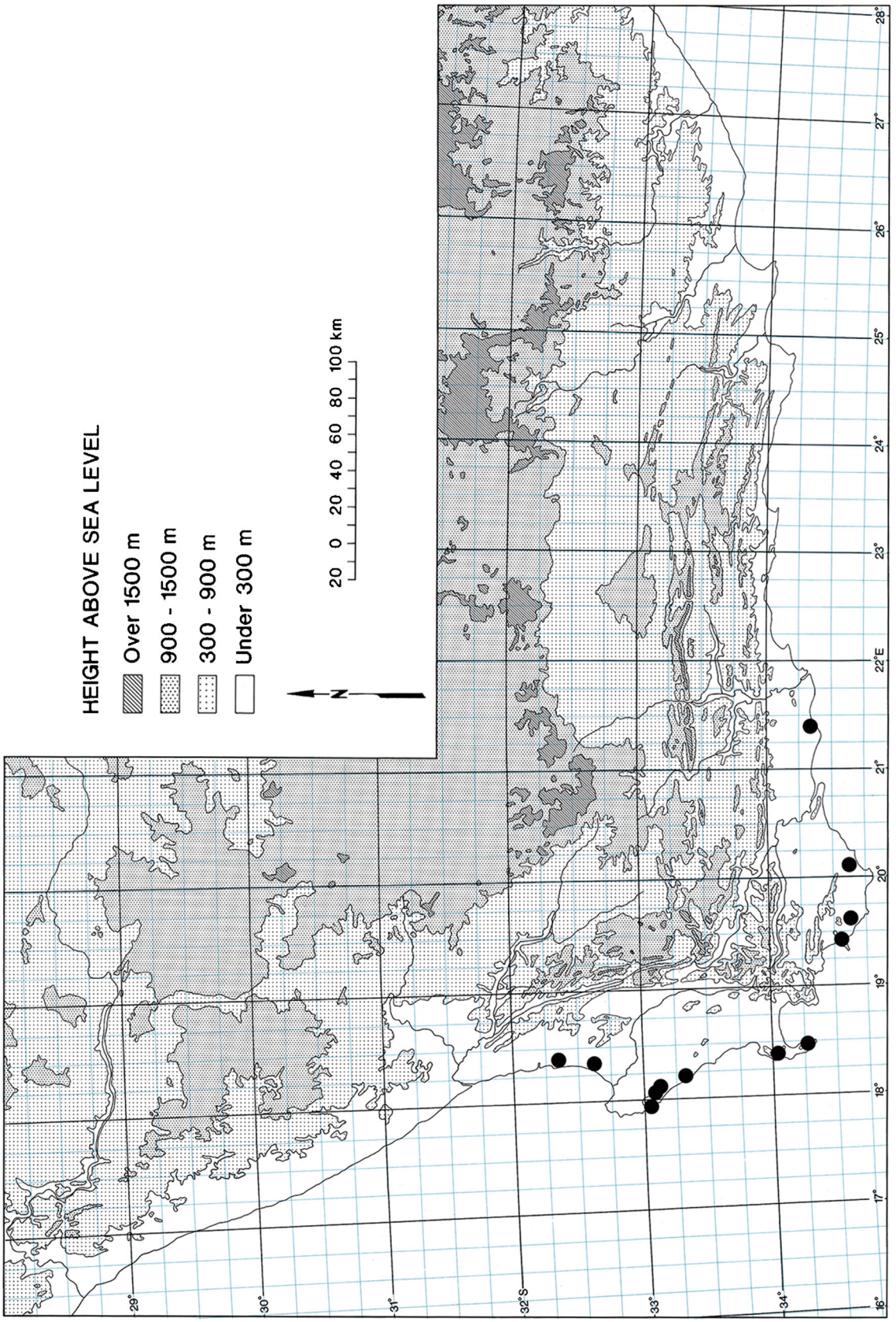
CONSERVATION STATUS. *Pteronia uncinata* does not fall into any threatened category according to the SANBI's Threatened Species Programme. The South African conservation status for this species is evaluated as Least Concern (LC; SANBI 2020).

PHENOLOGY. Flowering is in mid to late summer (December to April).

VERNACULAR NAME. *Strandgombos* (Afr.), Beach Gumbush (Eng.).

NOTE. *Pteronia uncinata* is easily distinguished from the other corymbose species by the conspicuously recurved, hook-like leaf apices, as alluded to by the

Fig. 3. Morphology of *Pteronia uncinata*. Voucher: *Boucher* 93 (NBG).



Map 2. Known distribution of *Pteronia uncinata*.

species epithet (Fig. 1C). The species shares the ciliate bract margins and the whitish pappus with *P. diosmifolia* but is distinguished by the oblong cypselae (urceolate in *P. diosmifolia*).

De Candolle cited only the Drège collection from Lange valley and this collection was traced in G-DC with some possible isotypes in several other herbaria. As de Candolle worked in G (Stafleu & Cowan 1976), the G-DC collection is selected as lectotype of *Pteronia uncinata*.

3. Pteronia diosmifolia *Brusse* (1990: 151). Type: South Africa, Western Cape, Bredasdorp (3420): Elandvlei farm, 1.2 km NE of farm house (–CA), 27 Feb. 1984, *Burgers* 3226 [PRE0691399-0] (holotype PRE — image!; isotypes K000273524 — image!, NBG0200168-0!, STE!).

Evergreen perennial *shrub* to 0.5 m in height, much branched; branches erect. *Leaves* decussate, free from each other at base, spreading, lanceolate, 5 – 8 × 1 – 2 mm, keeled, coriaceous, glabrous, apex acute, margins sparsely and minutely ciliate, rarely entire. *Capitula* 2 – 3-flowered, homogamous, discoid, terminal, corymbose (10 – 20 capitula), pedunculate to 7 mm, bearing smaller lanceolate bracts; involucre narrowly obconical, 7 – 10 × 4 – 6 mm, 4 – 6-seriate; involucral bracts glabrous, narrow, apex subacute, margins scantily and minutely ciliate, rarely entire, outermost bracts lanceolate, 2 – 3 mm long, middle bracts lanceolate, 5 – 6 mm long, innermost bracts linear to lanceolate, 8 – 9 mm long. *Florets* bisexual; corolla yellow, tubular, 6 – 7 mm long, limb 5-lobed, tube glabrous, ribbed near base; anthers 3 – 4 mm long, apical appendages acute; filament slightly swollen distally; style shortly branched, 8 – 9 mm long, branches somewhat flattened c. 1.5 mm long, stigmatic-papillate. *Cypselae* urceolate, 1 – 2 × 1 mm, contracted into a neck at apex, setulae of twin-hairs finely villous, eglandular; pappus bristles barbellate, biseriate, connate at base, 5 – 6 mm long, slightly shorter than florets at fruiting stage, whitish. Fig. 4.

DISTRIBUTION. This species is endemic to fynbos vegetation on the Agulhas plains between Bredasdorp and Arniston in the Western Cape. Map 3.

SPECIMENS EXAMINED. SOUTH AFRICA. Western Cape. 3420 (Bredasdorp): De Hoop (–AD), *Van der Merwe* 2013 (NBG); Kliprug farm, 5 km from Arniston on road to Bredasdorp (–CA), *Burgers* 3253 (NBG); Elandvlei farm, Bredasdorp (–CA), 15 March 1977, *Hugo* 837 (NBG); Elandvlei farm, 1.2 km NE of farm house (–CA), 27 Feb. 1984, *Burgers* 3226 (PRE holotype; isotypes K, NBG, STE).

HABITAT. *Pteronia diosmifolia* favours limestone habitats, very rarely on shale, at ≤300 m (a.s.l.).

CONSERVATION STATUS. The South African conservation status for *Pteronia diosmifolia* is Vulnerable D2 (VU D2; SANBI 2020). The locality of this species is threatened by invasive aliens (Herman *et al.* 2006).

PHENOLOGY. Flowering is in late summer (February and March).

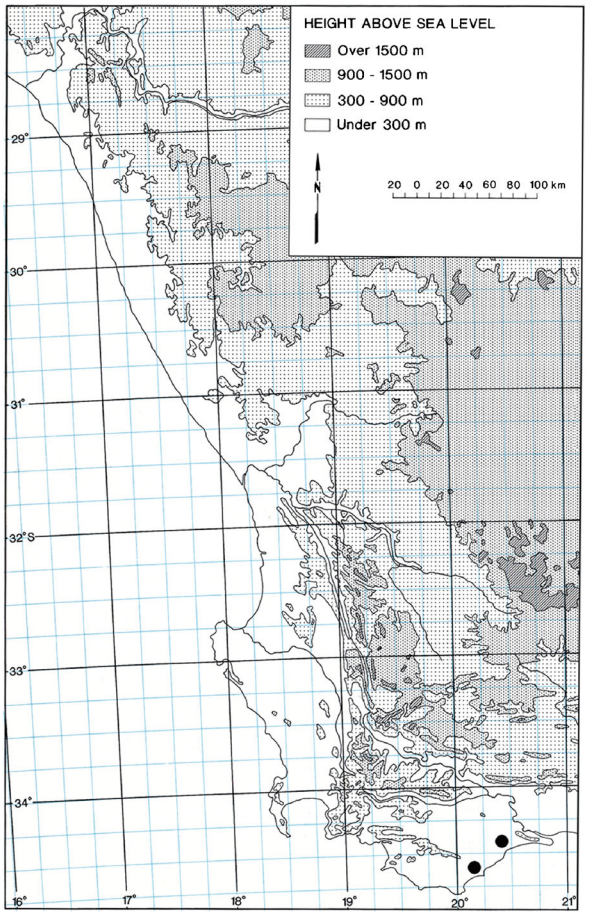
NOTES. *Pteronia diosmifolia* shares the ciliate involucral bract margins and white pappus with *P. uncinata* but is distinguished by the straight leaf apices and the urceolate cypselae (leaf apices hooked (Fig. 1C) and cypselae oblong in *P. uncinata*).

4. Pteronia fasciculata *L.f.* (Linnaeus filius 1782: 357); Linnaeus (1796: 1202); Thunberg (1800: 143); Poiret (1804: 733); Thunberg (1823: 630); de Candolle (1836: 360); Harvey in Harvey & Sonder (1865: 103); Hutchinson & Phillips (1917: 310); Compton (1931: 313). *Henanthus fasciculatus* (L.f.) Less. (Lessing 1832: 195). Type: South Africa, Western Cape, 'Caput Bonae Spei' [Cape of Good Hope], *Thunberg* s.n. sub UPS-THUNB 18674 (holotype UPS-THUNB — microfiche!).

Evergreen perennial *shrub*, 0.3 – 1.5 m in height, much branched; branches erect. *Leaves* decussate, connate at base with leaf sheath persisting on branches, crowded, closely overlapping, viscid, simple, lanceolate, 15 – 40 × 3 – 5 mm, flattened and slightly keeled on upper part with somewhat sunken midrib, coriaceous, glabrous, apex acute to acuminate, margins minutely scabrous. *Capitula* 1 – 2-flowered, homogamous, discoid, terminal, compound-corymbose (12 – 60 capitula), corymbs aggregated into compound heads, sessile; involucre narrowly obconical, 14 – 17 × 4 – 6 mm, 3 – 4-seriate; involucral bracts glabrous, narrow, apex acute, with narrow hyaline-lacerate margins, outermost bracts lanceolate, 4 – 6 mm long, keeled, middle bracts linear, 10 – 12 mm long, innermost bracts linear, 14 – 15 mm long. *Florets* bisexual; corolla golden yellow, tubular, 9 – 10 mm long, limb 5-lobed, tube glabrous, ribbed near base; anthers 4 – 5 mm long, apical appendages acute; filament not swollen distally; style branched, 10 – 11 mm long, branches somewhat flattened, c. 3.2 mm long, stigmatic-papillate at tips. *Cypselae* narrowly ovate, 2 – 3 × 1 – 2 mm, contracted into a neck at apex, glandular on surface, setulae of twin-hairs densely appressed, whitish villous, glandular; pappus bristles barbellate, biseriate, connate at base, 9 – 10 mm long, as long as florets at fruiting stage, straw-coloured. Fig. 5.

DISTRIBUTION. This species occurs in succulent Karoo vegetation from Lokenburg near Calvinia in the Northern Cape, through to Uniondale in the Western Cape. Map 4.

Fig. 4. Morphology of *Pteronia diosmifolia*. Voucher: *Burgers* 3226 (NBG).



Map 3. Known distribution of *Pteronia diosmifolia*.

SPECIMENS EXAMINED. SOUTH AFRICA. Northern Cape. 3119 (Calvinia): Lokenburg, 21 m S of Niewoudtville (–CA), 10 Oct. 1953, *Story* 4289 (PRE). Western Cape. 3219 (Wuppertal): Hill slopes S of Wuppertal (–AC), 11 Oct. 2010, *Koekemoer* 3962 (PRE); Matjiesrivier Nature Reserve (–AD), 5 Oct. 1997, *Lechmere-Oertel* 828 (NBG); Cederberg, Oudekraal Farm, between Ramkraal and Oukraal (–AD), *Koekemoer* 2437 (PRE); Ramkraal (–AD), 14 Sept. 2002, *Bruyns* 9301 (BOL); Blinkberg Pass, Between Ceres and Clanwilliam (–CB), 24 Oct. 2000, *Koekemoer* 2040 (PRE); Cederberg (–CB), 13 March 1997, *Lechmere-Oertel* 608 (NBG); Swartruggens (–DC), 1 Oct. 1991, *Bean & Viviers* 2751 (BOL); 60 km NE of Ceres, Swartruggens (–DC), 4 Dec. 2008, *Jardine & Jardine* 1040 (NBG). 3319 (Worcester): Bokkeveld, between Montagu and Triangle (–AB), *Barnard* 751 (SAM), *Thorne* 53126 (SAM); 22.54 km [14 miles] S of Worcester near Breede Rivier (–CA), 20 Nov. 1969, *Stayner* s.n. (NBG); Worcester (–CB), 23 Dec. 1939, *Barker* 502 (NBG); Villiersdorp (–CD), 30 Nov. 1976, *Walters* 1611 (NBG); 1 km NE of Hammansberg (–CD), 10 Nov. 1987, *Midgley & Bosenberg* 87 (NBG); Hex R. Mts (–DA), *Lamb* 1557 (SAM); Riviersonderend Mts, Jonaskop (–DC), 14 Jan. 1979, *Boucher* 4245 (NBG). 3320 (Montagu): 2 km N of Rooinek Pass (–BD), 7 Nov. 1985, *Bayer* 5024 (NBG); Cogmanskloof (–CC), 10 Nov. 1946, *Middlemost* s.n. (NBG); Anysberg (–DA), 8 Oct. 1982, *Van Zyl* 3414 (NBG); S slope of Touwsberg (–DB), 5 Oct. 1993, *Bean* 2903 (BOL); Farm Zorgvliet (–DB), 5 Oct. 1993, *Germishuizen* 6811 (PRE); Swellendam in Kannaland, between Kogmanskloof and Gourits R. (–DC), *Drège* 141 (SAM), *Ecklon & Zeyher* 243, s.n. (SAM), *Mund* 16169 (SAM); Warmwaterberg (–DD), 7 Oct. 1993, *Cloete* 2449 (PRE). 3321 (Ladismith): Witteberg, Laingsburg (–AC), 10 Nov. 1935, *Compton* 5917 (BOL), 23 Oct. 1939, *Compton* 8006 (NBG), 8 Nov. 1948, *Compton* 21181 (NBG); Little Karoo, Ladismith (–CA), 6 Jan. 1951, *Van Zinderen Bakker* 288 (PRE); Bailey Peak (–CB), 12 Nov. 1974, *Oliver* 5468 (NBG); Calitzdorp (–DA), 9 Nov. 1998, *Meyer* 1752 (PRE); Gamka Mt Reserve (–DB), 21 Sept. 1982, *Cattell & Cattell* 168 (NBG). 3322 (Oudtshoorn): Tierberg, Prince Albert (–AB), 12 Nov. 1989, *Dean* 720 (BOL), 8 Nov. 1988, *Taylor* 12020 (NBG); Oudtshoorn Division, Swartberg Mts (–BC), *Stokoe* 59948 (SAM); Kandelaarsrivier, George (–CA), 3 Dec. 1951, *Compton* 23092 (NBG); Near Kandelaarsrivier between Oudtshoorn and Robinson Pass (–CA), *Lewis* 3752 (SAM); 20 km from Oudtshoorn on the road to George (–CB), 11 Nov. 1978, *Botha* 2221 (PRE). 3323 (Willowmore): Tourberg hills, N of Georgida (–AD), Nov. 1941, *Fourcade* 5446 (NBG); Uniondale (–CA), 4 Dec. 1950, *Maguire* 779 (NBG), 11.20 km [7 miles] N of Uniondale (–CA), Jan. 1928, *Fourcade* 3590 (NBG). Precise locality unknown: Between Montagu and Ladismith, *Thorne* 53126 (SAM); Cape of Good Hope, *Thunberg* s.n. [1254745] (LD), *Thunberg* s.n. sub UPS-THUNB 18674 (UPS-THUNB holotype).

HABITAT. *Pteronia fasciculata* occurs on sandstone and rocky soil from 300 – 1000 m (a.s.l.).

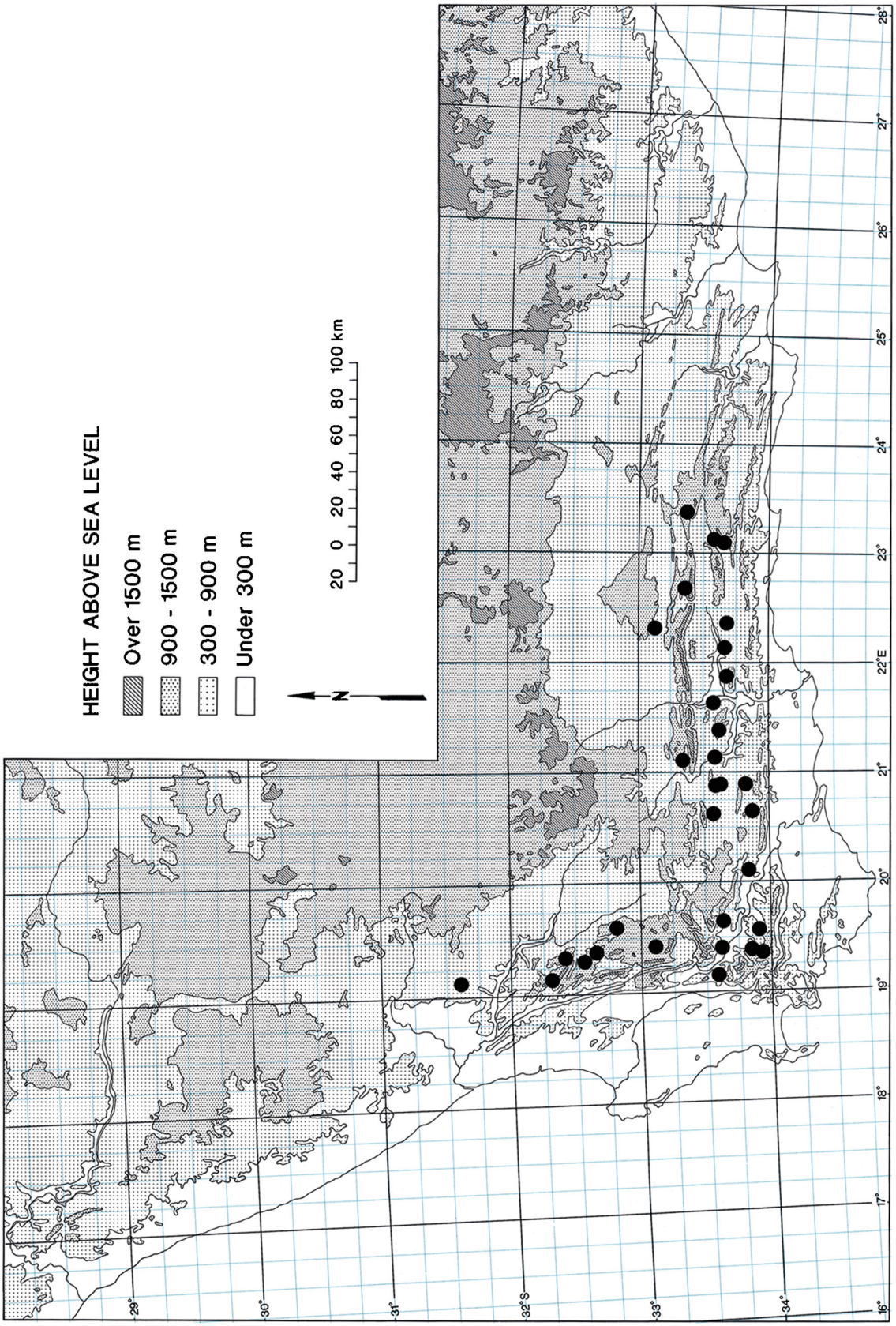
CONSERVATION STATUS. The conservation status of *Pteronia fasciculata* in South Africa is given as Least Concern (LC; SANBI 2020). This species is not considered to be threatened in its natural habitat (Vlok & Schutte-Vlok 2010).

PHENOLOGY. Flowering occurs in spring to mid-summer (October to January).

VERNACULAR NAME. Rank Gumbush (Eng.).

NOTES. *Pteronia fasciculata* and *P. paniculata* are readily distinguished from the other species in this group by the basally connate leaves with the leaf sheath differentiated into a distinct, sclerified scale which persists on the branches (Fig. 1B, D). Both species also have glands on the surface of their cypselae in addition to the villous hairs (Fig. 1E). *Pteronia fasciculata* can further be distinguished by the lanceolate, flattened, coriaceous leaves with scabrous mar-

Fig. 5. Morphology of *Pteronia fasciculata*. Voucher: *Midgley & Bosenberg* 87 (NBG).



Map 4. Known distribution of *Pteronia fasciculata*.

gins and the sessile, 1 – 2-flowered capitula (Fig. 1A, D) (linear, subterete, succulent, entire leaves and pedunculate, 4 – 5-flowered capitula in *P. paniculata*: Fig. 1B).

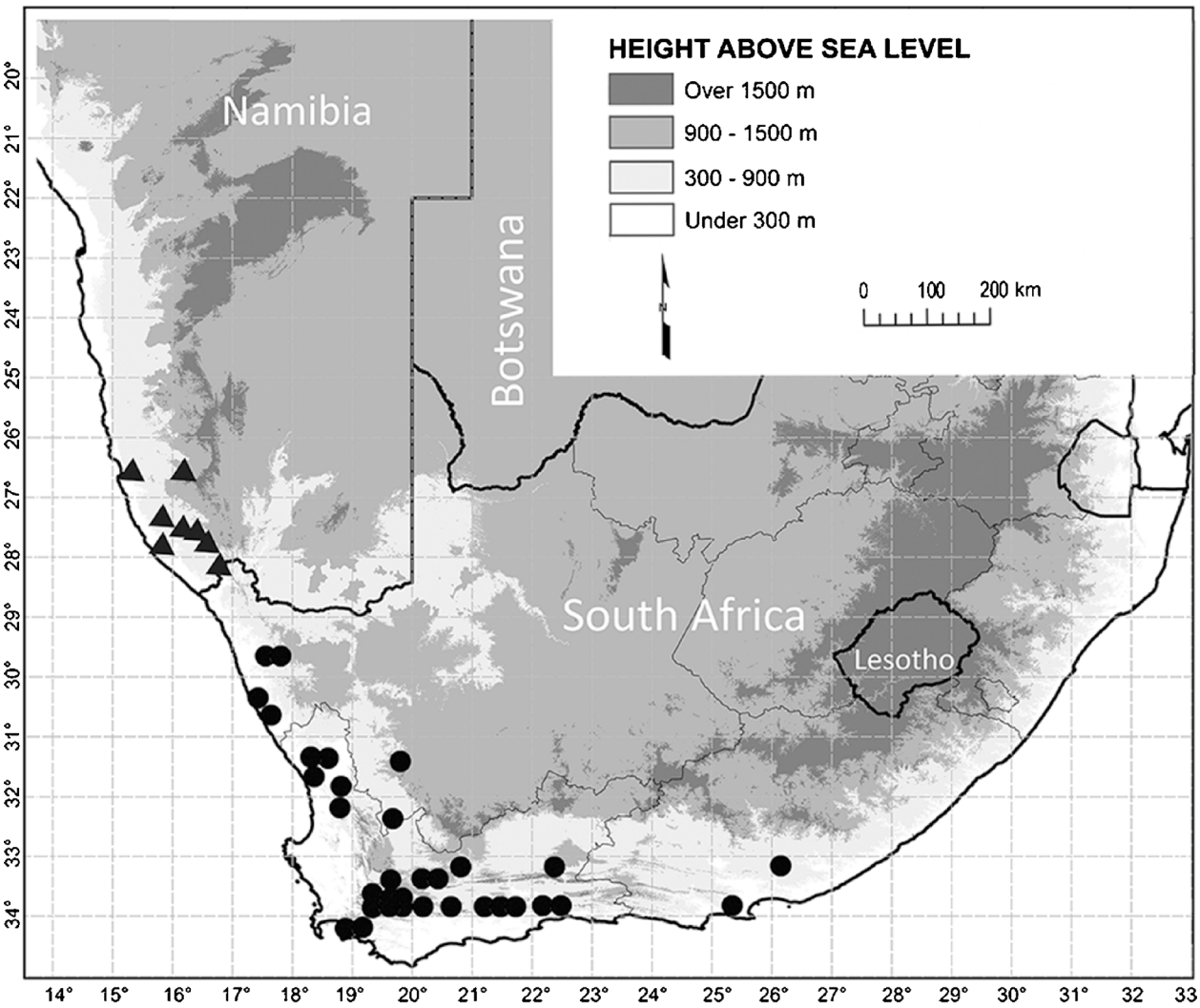
5. Pteronia paniculata *Thunb.* (Thunberg 1800: 143; 1823: 629); de Candolle (1836: 365); Harvey in Harvey & Sonder (1865: 102); Hutchinson & Phillips (1917: 312); Compton (1931: 314); Dinter (1931: 168); Merxmüller (1967: 157); Merxmüller & Roessler (1984: 90); Herman (2003: 278); Kolberg & Van Slageren (2014: 25). Type: South Africa, Western Cape, 'Caput Bonae Spei' [Cape of Good Hope], *Thunberg* s.n. sub UPS-THUNB 18685 (holotype UPS-THUNB — microfiche!).

Evergreen perennial *shrub* c. 0.9 m in height, much branched; branches erect, greyish. *Leaves* decussate, connate and encircling the branches at base, forming a persistent sheath of c. 5 mm long on branches, dense, simple, linear, 5 – 27 × 1 – 2 mm, subterete to slightly concave, succulent, glabrous, viscid, apex subobtuse to obtuse, margins entire. *Capitula* 4 – 5-flowered, homogamous, discoid, terminal, compound-corymbose (10 – 30 capitula), pedunculate to 6 mm long; involucre narrowly cylindrical, 8 – 14 × 2 – 4 mm, 3 – 4-seriate; involucral bracts glabrous, narrow, margins narrowly hyaline-lacerate, outermost bracts ovate-oblong, 3 – 4 mm long, apex obtuse, middle bracts oblong, 5 – 6 mm long, apex obtuse, innermost bracts oblanceolate, 8 – 10 mm long, apex subobtuse. *Florets* bisexual; corolla yellow, tubular, 6 – 10 mm long, limb 5-lobed, tube glabrous; anthers c. 3 mm long, apical appendages acute; filament not swollen distally; style branched, 8 – 9 mm long, branches somewhat flattened c. 1.6 mm long, stigmatic-papillate towards tips. *Cypselae* obovate, 2.5 – 3.0 × 1 – 2 mm, contracted into a neck at apex, glandular on surface, setulae of twin-hairs long villous with long tufted ring of hairs at base, eglandular; pappus bristles barbellate, biseriate, connate at base, 4 – 5 mm long, shorter than florets at fruiting stage, straw-coloured. Fig. 6.

DISTRIBUTION. This is a widely distributed species found in fynbos, renosterveld, strandveld and succulent Karoo vegetation. It is widely distributed from southwestern Namibia to Springbok in the Northern Cape of South Africa, through to Mossel Bay in the Western Cape and further east to Port Elizabeth and Grahamstown in the Eastern Cape. Map 5.

SPECIMENS EXAMINED. SOUTH AFRICA. Northern Cape. 2917 (Springbok): On road from Springbok to Kleinzee, near Tierhaak (–DA), 5 Feb. 1991, *Koekemoer* 518 (PRE); O'okiep, Namaqualand (–DB), *Scully* 1166 (SAM). 3017 (Hondeklipbaai): Spoeg R. Mouth (–AD), 18 Oct. 1980, *Le Roux & Parsons* 57 (NBG); Namaqua National Park, Coastal section between Sarrisaam and the sea (–DA), 29 Dec. 2010, *Koekemoer* 4002 (PRE). 3119 (Calvinia): Akkerendam Nature Reserve (–BD), 30 Nov. 1986, *Germishuizen* 4042 (PRE). Western Cape. 3118 (Van Rhynsdorp): 10 km from Koekenaap to Nuwerus (–AD), 4 Dec. 1981, *Stirton* 10134 (NBG); Knersvlakte (–BC), 8 Dec. 1988, *Van Blerk* 21 (NBG); Vredendal (–CB), 10 Oct. 2009, *Bergh* 2087 (NBG); Holrivier (–CB), *Hall* 178 (NBG); Doring R. Valley (–DD), 29 Nov. 2001, *Boucher* 6875 (NBG). 3218 (Clanwilliam): Clanwilliam (–BB), 14 Dec. 1957, *Rodin* 3048 (PRE). 3219 (Wuppertal): W slopes between Clanwilliam and Langkloof (–BC), 28 Nov. 1910, *Pillans* 5339 (NBG); Swartruggens, 60 km NE of Ceres (–DC), 4 Feb. 2010, *Jardine & Jardine* 1291 (NBG). 3319 (Worcester): Leeuwerfontein (–BC), 5 Nov. 1923, *Kotzé* 49 (NBG); Between Karoopoort and Houtpansdrift (–BC), *Pearson* 5017 (SAM); Worcester Veld Reserve (–CB), 6 Dec. 1965, *Van Breda & Joubert* 2152 (PRE); Karoo Garden (–CB), 20 Dec. 1946, *Compton* 18968 (NBG), 6 Dec. 1948, *Compton* 21206 (NBG); On road from Villiersdorp to Moordkuil (–CD), 17 Feb. 1992, *Joffe* 971 (PRE); Villiersdorp (–CD), 30 Nov. 1976, *Walters* 1612 (NBG); Mowershoogte (–DA), 3 Nov. 1959, *Van Rensburg* 338 (NBG); Farm Doringkloof, near Homestead (–DA), 22 Nov. 1985, *Morley* 461 (NBG); Keisies Doorn (–DB), Oct. 1922, *Levyns* 221 (BOL); 35 km beyond Montagu on road to Matroosberg (–DB), 6 Dec. 1976, *Venter* 1337 (PRE); Riviersonderend mts, Jonaskop (–DC), 14 Jan. 1979, *Boucher* 4246 (NBG); Vrolijkheid Nature Reserve, Robertson (–DD), 28 Dec. 1974, *Burgers* 22 (PRE). 3320 (Montagu): Near Touws R. Railway Station (–AC), *Bolus* 1046 (SAM); Witteberg, Laingsburg (–AD), 30 Nov. 1924, *Compton* 2811 (BOL), 10 Nov. 1935, *Compton* 5923 (BOL); Laingsburg (–BB), Jan. 1918, *Thode* 2898 (NBG); Montagu (–CC), Oct. 1923, *Levyns* 430 (BOL); Barrydale, Swellendam (–DC), 11 Dec. 1964, *Rycroft* 2759 (NBG). 3321 (Ladismith): Springfontein (–CC), 14 Jan. 1992, *Bohnen* 9252 (NBG); Muiskraal (–CC), 1 Dec. 1992, *Bohnen* 9339 (NBG); 7 km S of Van Wyksdorp (–CD), 16 Dec. 1992, *Bohnen* 9344 (NBG); Muiskraal c. 10 km W of Garcia's Pass on road to Barrydale (–DA), 22 Nov. 1983, *Mauve, Van Wyk & Pare* 53 (PRE); Between Herbertsdale and Van Wyksdorp (–DC), 10 Jan. 2011, *Koekemoer* 4070 (PRE); George, between Gouritzrivier and Langekloof (–DC), *Ecklon & Zeyher* 247 (SAM). 3322 (Oudtshoorn): Tierberg, Prince Albert (–AB), 12 Nov. 1989, *Dean* 722 (PRE); 12.88 km [8 miles] N of Robinson Pass, Mossel Bay (–CC), 2 Dec. 1951, *Compton* 23049 (NBG); George (–CD), Nov. 1927, *Fourcade* 3416 (BOL). 3418 (Simonstown): Hangklip (–BD), 23 Nov. 1958, *Taylor* 5883 (NBG). 3419 (Caledon): Hottentotskloof (–AA), 29 Nov. 1939, *Compton* 8206 (NBG). Precise locality unknown: E of Montagu,

Fig. 6. Morphology of *Pteronia paniculata*. Voucher: *Van Breda & Joubert* 2152 (PRE).



Map 5. Known distribution of *Pteronia paniculata*. The distributions recorded elsewhere that were not available in this study are mapped with triangles. Information from Kolberg & Van Slageren (2014).

Adamson 39051 (SAM). Precise locality unknown: Cape of Good Hope, *Thunberg* s.n. sub UPS-THUNB 18685 (UPS-THUNB holotype). Eastern Cape. 3325 (Port Elizabeth): Karoo-like hills by the Zwartkop R., Uitenhage Distr. (–CD), *Ecklon & Zeyher* 404 [two sheets], 814 [two sheets] (SAM). 3326 (Grahamstown): Riebeek E (–AA), 11 Oct. 1976, *Bayliss* 7958 (NBG); Near Brandkraal, Grahamstown (–BC), *MacOwan* 449 (SAM — three sheets).

HABITAT. *Pteronia paniculata* occurs on stony or rocky soil from 700 – 1400 m (a.s.l.).

CONSERVATION STATUS. The Namibian conservation status of this species is of Least Concern (LC; Kolberg & Van Slageren 2014). It also has a status of LC in South Africa (SANBI 2020). This widely distributed species is unpalatable and can be toxic and lethal to livestock. For this reason, the species is rarely browsed by herbivores (Vlok & Schutte-Vlok 2010).

PHENOLOGY. Flowering is in late winter to mid-summer (August to January).

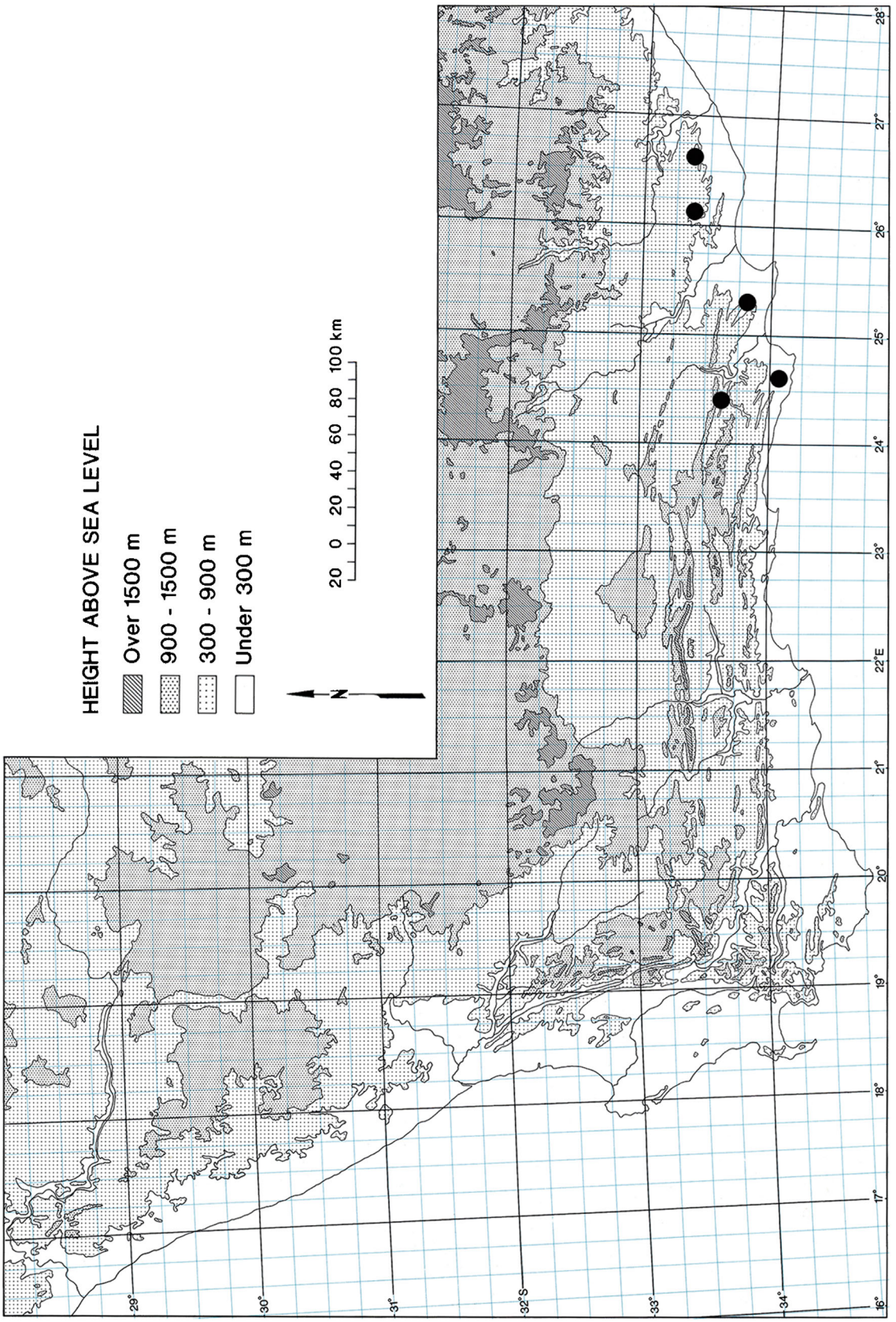
VERNACULAR NAME. *Gombossie, Kambro-bos, Kraak-kraak* (Afr.), Common Gumbush (Eng.).

NOTES. *Pteronia paniculata* shares the basally connate leaves and persisting leaf sheaths with *P. fasciculata* (Fig. 1B), but can readily be distinguished by the linear, subterete, succulent leaves with entire margins (lanceolate, flattened, coriaceous leaves with scabrous margins in *P. fasciculata*) and the pedunculate, 4 – 5-flowered capitula (sessile, 1 – 2-flowered in *P. fasciculata*).

Resurrected species

Pteronia trigona *E.Phillips* in Hutchinson & Phillips (1917: 318). Type: South Africa, Eastern Cape, Port Elizabeth, between Krakakamma and the upper part

Fig. 7. Morphology of *Pteronia trigona*. Voucher: *Viviers* 862 (NBG).



Map 6. Known distribution of *Pteronia trigona*.

of Leadmine R., 7 Feb. 1814, *Burchell* 4577 [K000273477] (lectotype K — image!, selected here).

Evergreen perennial *shrub* c. 0.7 m in height, much branched; branches erect, glabrous. *Leaves* alternate, dense, simple, linear, 5 – 13 × ± 1 mm, trigonous, succulent, glabrous, apex subacute, mucronate, margins entire. *Capitula* 10 – 15-flowered, homogamous, discoid, terminal, solitary, sessile; involucre obovoid, 10 – 15 × 8 – 10 mm, 5 – 6-seriate; involucral bracts glabrous, margins thinly membranous, outermost bracts ovate, 3 – 5 mm long, apex rounded, middle bracts oblong, 7 – 8 mm long, apex obtuse, innermost bracts linear or lanceolate, 10 – 11 mm long, apex obtuse. *Florets* bisexual; corolla creamish, tubular, 9 – 10 mm long, limb 5-lobed, tube glabrous; anthers 3 – 4 mm long, apical appendages acute; filament swollen distally; style branched, 9 – 10 mm long, branches flattened, c. 3 mm long, densely stigmatic-papillate at tips. *Cypselae* oblong, 1.5 – 2.0 × ± 1 mm, slightly contracted into a neck at apex, setulae of twin-hairs shortly villous, eglandular; pappus bristles barbellate, biseriate, connate at base, 6 – 7 mm long, shorter than florets at fruiting stage, brownish-yellow. Fig. 7.

DISTRIBUTION. *Pteronia trigona* is distributed on Mountains from Steytlerville through Port Elizabeth to Grahamstown in the Eastern Cape. Map 6.

SPECIMENS EXAMINED. SOUTH AFRICA. Eastern Cape. 3324 (Steytlerville): Smitskrall, Enkeldoorn track (–CB), 8 Dec. 1982, *Viviers* 862 (NBG, PRE). 3325 (Port Elizabeth): Uitenhage, Vanstaadens Mts (–CD), *MacOwan* 1072 (GRA); Port Elizabeth between Krakakamma and the upper part of Leadmine R., 7 Feb. 1814, *Burchell* 4577 (K lectotype). 3326 (Grahamstown): 38.64 km [24 miles] E of Grahamstown, Albany (–AC), 30 Nov. 1950, *Maguire* 652 (NBG). Featherstone Kloof near Grahamstown (–BC), *Atherstone* 3293 (SAM). 3424 (Humansdorp): Bush buck Gardens, N back of Kromme R. (–BA), 13 Nov. 2009, *Logie* FBG 507 (NBG).

HABITAT. *Pteronia trigona* favours sandy, clay and shale soil from 90 – 975 m (a.s.l.).

CONSERVATION STATUS. There is no information available on the conservation status of *Pteronia trigona*. Therefore, it is believed that no assessment has been made to determine the conservation status of this species because it was hitherto treated as a synonym of *P. teretifolia*. Due to lack of information, the Data Deficient (DD) status is assigned to this species.

PHENOLOGY. Flowering is in summer (November to December).

NOTES. *Pteronia trigona* and *P. teretifolia* are similar in their linear, trigonous, glabrous, entire leaves and in their distribution. These vegetative and distributional similarities probably explain why the two species have been treated as synonyms. However, these two are different in their leaf arrangement and reproductive characteristics. The leaves of *P. trigona* are alternately arranged and the capitula are broader (8 – 10 mm wide), 10 – 15-flowered, solitary and sessile as opposed to the decussate leaf arrangement and the narrower (2 – 3 mm wide), 2 – 3-flowered, corymbose and pedunculate capitula observed in *P. teretifolia*. This evidence clearly indicates that these two species are different from each other, as a result, *P. trigona* is here resurrected as a distinct species.

Pteronia trigona can also be confused with *P. cederbergensis* in having glabrous branches; linear, glabrous, entire leaves and broad capitula but can be distinguished by the alternate leaves and villous cypselae compared to the opposite leaves and glabrous-glossy cypselae found in *P. cederbergensis*.

Hutchinson & Phillips (1917) cited three collections from Uitenhage (*MacOwan* 1027), Port Elizabeth (*Burchell* 4577) and Albany (*MacOwan* s.n.). Of these three, only the collection from Uitenhage (*MacOwan* 1027) was traced in GRA initially, and no other specimens of *P. trigona* were found elsewhere. However, after a thorough search, the collection from Port Elizabeth (*Burchell* 4577) was later traced in K, which was filed under the name *Pteronia teretifolia*. As Hutchinson & Phillips worked at K (Stafleu & Cowan 1979), and this being the only collection available in K, out of the three cited, the *Burchell* 4577 collection is therefore selected as lectotype.

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