Ten new species and notes on the genus *Psoralea* L. (Psoraleeae, Fabaceae) from South Africa

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**Abstract**

**Background and aims** – Following detailed phylogenetic and biogeographic studies of the tribe Psoraleeae, the genus *Psoralea* L. was shown to have been derived out of *Otholobium* C.H.Stirt. As *Psoralea* has nomenclatural priority, *Otholobium* has been subsumed into *Psoralea*, whereby two broad subgeneric groups are aligned with the previous descriptions of the separate genera, but some problems of placement of a few species remain unresolved. Work is ongoing to study and describe the nearly 20 undescribed species that will have to be considered before sectional groups can be established. In this paper we describe ten new species, including several putative taxa already recognized in regional floras, based on historic specimens and more recent field collections.

**Material and methods** – Standard practices of herbarium and field taxonomy have been applied to study herbarium material available at B, BLFU, BM, BOL, BR, E, GRA, J, JRAU, K, KEI, L, LE, LINN, M, MO, NBG, NH, NU, NY, OXF, P, PRA, PRC, PRE, PRU, S, SAM, SCHG, SRGH, TCD, Z, ZT, and US. Additional material was provided from fieldwork by the authors and collaborators.


**Conclusion** – The newly described species, all restricted to South Africa, increases the number of *Psoralea* species to 129. These species arise from expanded fieldwork into previously under-collected areas, as well as from better refinement in species delimitations in the leafless ‘aphylla’ and pinnately-leaved species complexes.

**Keywords**

Fynbos, new species, *Otholobium*, *Psoralea*, South Africa, taxonomy

**INTRODUCTION**

The tribe Psoraleeae consists of 228 species in nine genera, distributed worldwide but largely in the temperate biome (Bello et al. 2022). A recent phylogenetic and biogeographic study has shown that the endemic African genera *Psoralea* L. (67 spp.) and *Otholobium* C.H.Stirt. (52 spp.) form a strongly supported clade that is sister to the rest of Psoraleeae (Bello et al. 2022). These African species are predominantly distributed in the Fynbos and Succulent Karoo biomes of southern Africa with some outliers in the eastern parts of Africa (POWO 2023). As *Psoralea* is a clade derived from within *Otholobium*, and as it has nomenclatural priority, *Otholobium* has been subsumed in *Psoralea* (Bello et al. 2022). The re-defined genus *Psoralea* comprises 119 species making it the 10th...
largest genus in the Greater Cape floristic region. The genus forms two broad groups aligned with the previous descriptions of the separate genera but some problems of placement of a few species remain unresolved. There are still nearly 20 undescribed species that have been noted during fieldwork and herbarium studies, including putative taxa noted on herbarium specimens. In this paper we describe ten new species, of which some manuscript names are already being used informally on web sites such as iSpot and iNaturalist and popular handbooks (e.g. Manning and Goldblatt 2012; Bredenkamp 2019).

**MATERIAL AND METHODS**

This paper emanates from an ongoing project on the taxonomy, biogeography, and evolution of *Psoralea*. All the data and observations were recorded from specimens collected from their natural populations by the authors and collaborators cited in the acknowledgements, and from specimens loaned from various herbaria known to have the largest and most important collections of the southern African flora: B, BLFU, BM, BOL, BR, E, GRA, J, JRAU, K, KEI, L, LE, LINN, M, MO, NBG, NH, NU, NY, OXF, P, PRA, PRC, PRE, PRU, S, SAM, SCHG, SRGH, TCD, Z, ZT, and US (abbreviations following Thiers 2019). The distribution map was compiled from specimen data using QGIS v.3.28 (QGIS Development Team 2020). The conservation assessments follow the standard procedures based on the IUCN guidelines (IUCN 2012). Vegetation types referred to are taken from Mucina and Rutherford (2006). Localities are indicated using the quarter degree squares system of Edwards and Leistner (1971).

**TAXONOMIC TREATMENT**

*A. Psoralea* subgenus *Otholobium* (C.H.Stirt.) C.H.Stirt. & Muasya

1. *Psoralea schutteae* C.H.Stirt., sp. nov.

urn:lsid:ipni.org:names:77345663-1

Figs 1, 2

**Type.** SOUTH AFRICA – Western Cape Province: 3322 (Oudtshoorn) • Road from Cango Caves to Prince Albert (–AC); 33°23’51.9”S, 22°11’37.18”E; 11 Nov 1986; Stirton & Žantovská 11565; holotype: NBG; isotype: PRE.

**Diagnosis.** *Psoralea schutteae* has been included in *Psoralea candicans* Eckl. & Zeyh. but is distinguished by its densely branched compact spreading habit (*P. candicans* an erect laxly branched shrub up to 1.5 m tall with long virgate spreading branches); leaflets 8–9 × 2–4 mm, glands visible when fresh, drying reddish brown (*P. candicans* leaflets 10–20 × 3–4(–6) mm, glands scarcely visible when fresh but drying orange-red); flowers 5–6 mm long, stumpy in appearance, bracteate, bracts 2 mm long (*P. candicans* flowers 7–10 mm long, bracteate or minute); standard petal scarcely reflexed, dull white to pale lilac, nectar patch reddish violet but scarcely visible from the front (*P. candicans* standard petal bright white, nectar patch purplish, triangular, and violet flecked with white, and tapering towards apex); calyx teeth as long or slightly longer than the tube, equal, incurving, narrowly triangular with broad base, acute, teeth 3–4 × 0.5 mm, tube not constricted in middle, not suffused with purple (*P. candicans* calyx teeth 2–3 times longer than tube, subequal, slightly falcate to straight, linear-lanceolate, taper-pointed, teeth 4–8 × 1 mm, tube strongly constricted in middle, suffused with purple); fruiting calyx scarcely longer than the largely exposed fruit (*P. candicans* fruiting calyx 2–3 times longer than the fruit).

**Description.** Small rounded compact shrub up to 60 cm tall, facultative-reseeder. Stem branches numerous, dense, greyish brown, rough; young seasonal shoots canescent, laxly leafy, otherwise leaves smaller and overlapping in older plants. Leaves digitately trifoliolate, petiolate. Leaflets 8–9 × 2–4.0 mm, narrowly oblong to obovate (basal ones of shoot), recurved mucronate, microcogulate, slightly reflexed, greyish, nectar patch purplish, triangular, and violet flecked with white, drying reddish brown, surfaces sparsely pubescent, thicker along margins and on veins; surfaces nitid, dark green; petiole 1.0–2.0 mm long; petiolules 0.5 mm long. Stipules 1–2 mm long, broadly subulate, fused to lower third of petiole, semi-patent, narrowly lanceolate, persistent. Inflorescences axillary, sessile; comprised of 1 triplet of distinctly pedicellate flowers, each triplet bracteate, triplet bract oblong up to 2 mm long, canescent. Flowers 5–6 mm long, white; bracteate, bract narrowly oblong up to 2 mm long; pedicel up to 1 mm long. Calyx teeth as long or slightly longer than the tube, equal, incurving, narrowly triangular with broad base, acute, lobes 3–4 × 0.5 mm, vellum lobes scarcely fused above the tube; appressed hairy, glands evenly dispersed on teeth and tube; characteristically strongly accrescent in fruit, lobes erect, caging the clearly visible pod, veins ridged and prominent. Standard petals 6 × 6 mm, whole blade not folded tightly backwards but scarcely reflexed, dull white to pale lilac, nectar patch reddish brown but scarcely visible from the front, apex broadly emarginate; claw narrow, 3 × 1 mm, auricles scarcely developed. Wing petals longer than keel petals but not attached, 6.0 × 1 mm, claw 2 mm long; blade bilobed, hiding the keel, distal portion folded downwards; sculpturing upper basal and upper left central, comprising up to 20 transcostal lamellae, becoming smaller towards the centre, auricle swollen and rough; claw 2 mm long. Keel petals 3.5–4.0 mm long, blade 2.0 × 1 mm, apex acute, most of blade purple with darker veins; claw 3 mm long. Androecium: 4 mm long, pseudomonadelphous, non-fenestrate. Pistil 4.0 mm long; ovary 1.3 mm long, shaggy; height of curvature 1.2 mm, entasis well-developed at point of flexure, style glabrous,

Figure 2. Known distribution of the ten described *Psoralea* species. Map by Abubakar Bello.
forward sloping; stigma capitate, penicillate. **Fruits** 3 × 2 mm, obliquely obovate, papery, finely pubescent, distinctly reticulate. **Seeds** 3 × 2.3 mm, chestnut brown, hilum round, subcentral.

**Distribution and habitat.** **Psoralea schutteae** is a widespread species ranging from the Tulbagh region though Montagu to the Groot Swartberg mountain range (Fig. 2) occurring predominantly in Kango Limestone Renosterveld (FR11) but also in Swartberg Shale Renosterveld (FRS15) but also other types of renosterveld and renosterveld–fynbos transitions. It is a facultative-reseder setting copious seed but once established sprouts commonly after burns. It occurs between 550 and 750 m a.s.l.

**Phenology and ecology.** Flowering takes place in October and fruiting in November.

**Etymology.** The species is named in honour of the taxonomist and conservationist Dr Annelise Schutte-Vlok who has contributed significantly to modern revisions of the Cape genera of the tribe Podalyrieae (Fabaceae).

**Preliminary IUCN conservation assessment.** No assessment has been made of this species. As most of the known collections have been made along roadsides, they are now very threatened by roadside works. Few collections have been made beyond such localities so it should be looked for in remaining vegetation away from roads. However, as it is widespread and commonly colonial, it is preliminary considered as Least Concern: LC.

**Additional material examined.** SOUTH AFRICA – Western Cape Province: 3319 (Worcester) • Tulbagh (–AC); Ecklon s.n.; MEL [MEL1542103], NBG [SAM 15414] • Nuwekloof Pass (–AC); 30 Nov. 2007; Muasya & Stirton 3369; BOL • Nuwekloof Pass (–AC); 18 Oct. 1941; Barker 2374; NBG • Cogmanskloof dam, Kanetvlei (–AD); 1 Jan. 2008; Muasya & Stirton 3559; BOL • Along roadside near Karoo Poort (–BA); 29 Nov. 1908; Pearson 4805; BOL, K, NBG • Hex River Valley near De Doorns (–BC); 30 Oct. 1974; Goldblatt 3203; BR, MO • Hex River Valley, De Doorns (–BC); 1 Oct. 1893; Bolus 8005; NBG • Hex River; 1 Oct. 1983; Bolus 3056; NBG • Hex River East; Oct. 1893; Tyson 3104; SAM • Between Hottentots Kloof and Karoo Poort (–BC); 29 Nov. 1908; Pearson 4811; K • Bokkeveld Flats (–BC); Oct. 1923; M. Levyns & J. Levyns 527; NBG • 27.5 km from Worcester to Villiersdorp (–BD); 30 Nov. 2011; Muasya & Stirton 3911; BOL • Rabiesberg, Worcester (–CA); 26 Sep. 1935; Compton 5823; BOL, NBG • ibid.; 27 Sep. 1935; Lewis s.n.; BOL [BOL32219] • Karoo Gardens (–CB); 26 Sep. 1953; Compton 24365; NBG • Karoo Gardens (–CB); Jan. 1977; Perry 24; NBG • Worcester (–CB); 28 Oct. 1948; Liebenberg 4200; PRE • Worcester (–CB); 14 Nov. 1962; Olivier 207; PRE • Langeberge, Robertson (–DB); Nel s.n.; NBG [NBG 254651] • Karoo Koppie, Robertson (–DD); Sep. 1934; Kuum s.n.; NBG [NBG 254655] • 3320 (Montagu); Lower Gannaga Pass, Tanqua National Park (–AA); 19 Sep. 2008; Rosch 601; NBG • 22 km from Montagu to Barrydale (–CA); 26 Oct. 1986; Stirton & Zantovská 11283; K, NBG • Klipbokkraal (–CC); 26 Oct. 1961; Van Breda 1494; PRE • Warmwaterberg (–CD); 1 Jan. 2008; Muasya & Stirton 3563; BOL • 2 km S of Bonnievlei on road to Stormsvlei (–CD); 29 Jul. 1988; Bean & Viviers 2029; BOL, NBG • 55 km from Montagu to Barrydale (–CD); 26 Oct. 1986; Stirton & Zantovská 11282; K, NBG • Anysberg Mountain, near Towusfontein (–DA); 31 Dec. 1986; Vlok 1823; PRE • Ruggens, Zuurbraaks (–DC); 11 Sep. 1897; Galpin 3960; PRE • Near start of the Barrydale Hiking Trail (–DC); 22 Aug. 2015; Du Preez 102; BOL • 3321 (Ladismith): on top of pass to Gamaskloof, Swartberg Mountains (–BC); 2 Oct. 1986; Vlok 1632; NBG, NU, PRE • In Karoo near Gauritzrivier (–DC); Zeyher s.n.; K, S, SAM, W. – 3322 (Oudshoorn) • Swartberg Pass (–AC); 12 Dec. 1981; Stirton 10332; K, NBG, PRE • Swartberg Pass (–AC); Stirton 11565; K, NBG • Between Kliphuisvlei and Die Hell (–AC); 2 Mar. 1986; Goldblatt 7993; MO • Foot of Swartberg Pass on road to Oudshoorn (–AC); 4 Oct. 1974; Goldblatt 1974; NBG • 3 km from Cango caves on Oudshoorn–Prince Albert Road (–AC); 1 Jan. 2008; Muasya & Stirton 3575; BOL • Rus-en-Vrede (–AC); 12 Dec. 1981; Stirton 10332; BOL, K, NBG, PRE • Rus-en-Vrede (–AD); 28 Sep. 2010; Muasya & Stirton 5587; BOL • Swartberg Pass, near Forester's House (–CC); 11 Dec. 1981; Stirton 10321; K, NBG, PRE. – 3420 (Bredasdorp) • Van Rheenen's Crest farm, above Dam, nr. Heidelberg (–AA); 25 Nov. 2011; Stirton & Muasya 13544; BOL.

**B. Psoralea subgenus Psoralea**

2. **Psoralea papillosa** C.H.Stirt. & Muasya, sp. nov. urn:lsid:ipni.org:names:77345664-1

Figs 2, 3

Psoralea sp. 28 ("Psoralea papillosa C.H.Stirt. ms.", nom. nud.), Stirton and Schutte (2012: 575)

**Type.** SOUTH AFRICA – Western Cape Province: 3320 (Montagu) • Kogmanskloof, Legoland climbing area; 33°48′49.5″S, 20°5′29.79″E; 25 Jul. 2012; Gwymee-Evans 6988; holotype: BOL; isotypes: NBG, PRE.

**Diagnosis.** Species similar to **Psoralea kougaeensis** C.H.Stirt., Muasya & A.Bello from which it differs in its hemispherical habit (**P. kougaeensis** erect columnar habit), seasonal shoots bright yellowish green, glabrous (**P. kougaeensis** greenish-black, briskly pubescent), terminal and lateral leaflets about equal, basal pair longest (**P. kougaeensis** terminal leaflet shorter than lateral leaflets), flowers 1–2 per axil, 9–10 mm long (**P. kougaeensis** 3–5 per axil, 12–15 mm long), peduncle absent (**P. kougaeensis** stout and rigid), cupulium bilobed (**P. kougaeensis** trilobed) with abaxial pair deeply cleft, appearing trilobed; standard petal broadly elliptic, white, with a 2 mm wide violet purplc nectar patch above the vertical scarcely swollen callosities (**P. kougaeensis** standard petal very broadly ovate, dark mauve fading towards the margins and with a large broadly triangular central nectar patch above the swollen callosities from which arises a vertical purple flash tapering to the apex), and calyx teeth glabrous, subequal,
carinal lobe slightly longer but narrower than the rest (P. kougaensis equal, glabrous to sparsely pubescent with carinal lobe slightly wider and less hairy than rest).

**Description.** Rounded shrubs up to 1.5 m tall; resprouter. Stems 2–4, branching from lower parts, semi-erect to arcuate, brown with scattered semi-storied lenticels; young seasonal shoots bright green, glabrous. Leaves 5(–7)-foliolate, petiolate, terminal and lateral leaflets about equal, 24–25 × 0.5 mm, mid-pair 5 mm shorter; basal leaves of seasonal shoots somewhat larger, 30 × 0.7 mm; furrowed on adaxial surface, surface papillose, margins irregular. Stipules 2–2.5 × 0.6–1.0 mm, fused to base of petiole, glabrous, apex acute, subulate-triangular, recurving, becoming woody when old, 1–2-veined, densely glandular, tightly recurved, sides reflexed. Inflorescences axillary to upper nodes of short seasonal shoots; peduncle absent. Flowers 1–2 per axil, 9–10 mm long, basal bracts paired, free, minute; cupulum 1.5 mm long, bilobed with abaxial pair deeply cleft, appearing trilobed, covering base of calyx, lobes equal, patent, acuminate, adaxial lobe broadest, sparsely black-haired, minutely glandular, 1-veined; pedicel 3.5 mm long, glabrous, glandular. Calyx lobes 5.0–5.5 × 2–4 mm; teeth subequal, 3 mm long, outside glabrous, inside black-haired in sinuses and midrib area; tube 4 mm long, not distinctly ribbed, carinal lobe slightly longer but narrower than the rest. Standard petals 7 × 6 mm; claw 1.7 mm long, narrow, incurved; white, broadly elliptic, reflexed to 90°; with a 2 mm wide violet purple nectar patch above the vertical scarcely swollen callosities; apex apiculate. Wing petals 11 × 4 mm, claw 3–4 mm long; longer than keel petals, strongly folded along the middle; auricle well-developed, swollen and anastomosing; sculpturing present along the top groove, upper basal, comprising up to 7 curving transcostal lamellae. Keel petals 10 × 3 mm, claw up to 4 mm long, apex acute. Androecium 10 mm long; tenth stamen free, sheath split adaxially, fenestrate. Pistil 10 mm long, ovary 1.5 mm long, sessile, glabrous; height of curvature 4 mm, thickest at point of flexure, stigma capitate. Fruits and seeds unknown.

**Distribution and habitat.** Endemic to South Africa (Fig. 2). So far known only from three collections between 203 and 210 m a.s.l. on the ecotone of Robertson Succulent Karoo (SKv7) and South Langeberg Sandstone Fynbos (FFs16) (Mucina and Rutherford 2006) and from two sightings on iNaturalist. The hinterland of this species is poorly explored so it can be expected to occur more widely.

**Phenology and ecology.** Little is known about the ecology of this distinctive species. Flowering occurs in July.

**Etymology.** The specific epithet *papillosa* (Latin ‘papilla’ = nipple) refers to the single row of small, raised glands on the upper surface of the leaflets on either side of the abaxial groove of the leaflet.

**Preliminary IUCN conservation assessment.** Still too poorly known to make an assessment, therefore warranting Data Deficient (DD). The hinterland of its known occurrence, particularly the arid fynbos habitats in the Little Karoo, is still not well explored.

**Additional material examined.** SOUTH AFRICA – Western Cape Province: 3320 (Montagu) • Kogmanskloof, Legoland climbing area, (–CC); 15 Jul. 2019; du Preez 675; https://www.inaturalist.org/observations/39443551; BOL.

**Observation.** South Africa, Western Cape Province: Montagu, Kogmanskloof, 33°48’48.52”S, 20°05’32.6”E, 15

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3. **Psoralea vlokii** C.H.Stirt. & Muasya, sp. nov.

urn:lsid:ipni.org:names:77345665-1  
Figs 2, 4, 5  

**Type.** SOUTH AFRICA – Western Cape Province: 3322 (Oudtshoorn) • Northern slopes of the Outeniqua Mountains, Upper reaches of Grootdoringsbosrivier, 3322CD; 12 Nov. 1986; Stirton & Žantovská 11582; holotype: PRE; isotypes: K, NBG.  

**Diagnosis.** Species similar to **Psoralea trullata** C.H.Stirt. but differs in being a sprawling multi-stemmed reseeding shrublet (**P. trullata** a tangled multi-stemmed resprouting suffrutex); leaflets 1-foliolate, 2.5–4.5 mm wide, linear, apex attenuate (**P. trullata** 0.5–2.0 mm wide, linear to linear-oblong, apex acuminate); stipules 2.0–3.1(–3.5) mm long (**P. trullata** 5–7(–10) mm long); flowers 8–9 mm long, white, standard petal with pale mauve or hyaline veins (**P. trullata** flowers 10–12 mm long, purple or purplish-blue, standard petal with dark veins and a distinct nectar guide comprising a white flabellate base topped with a violet fringe); wing petals 7 × 3 mm, not constricted towards the base, auricle not narrow and not peg-like (**P. trullata** 14–15 × 3 mm, strongly restricted towards base, auricle almost peg-like); keel 9 mm long, tip of keel short and abruptly acuminate (**P. trullata** keel 20–21 mm long, slender, with a long and attenuated beak).

**Description.** Low, spreading, glabrous shrublet up to 50 cm tall, reseeder. Stems numerous, slender, terete, finely ridged, glandular; rootstock slender, caduate. Leaves stipulate, 1(--3)-foliolate, linear to linear-narrowly oblong but flattening towards the apex, densely covered in sub-epidermal glands. Leaflets 7–13 × 2.5–4.5 mm, slightly grooved along upper surface, base cuneate. Stipules 2.0–3.1(–3.5) × 0.5–1.0 mm, fused for two-thirds their length, collar-like, adnate to petiole, narrowing further up the stem. Inflorescence reduced to a solitary axillary flower. Flowers 8–9 mm long, white; stalked; cupulum composed of two long almost free acute teeth opposite a small hemispherical tooth, tube 1 mm deep, inner face of teeth glabrous. Calyx 6 mm long, lobes unequal, carinal tooth much longer than lateral and vexillar teeth, almost boat-shaped, longer than the flower, lateral teeth longer than the falcate and partially fused vexillar teeth, acute; tube 3.5 mm deep; inner face of teeth glabrous, glandular. Standard petals 9–10 × 8–9 mm, broadly elliptic, appearing broadly ovate when standard petal is erect, weakly auriculate, appendages scarcely developed, white with veins from hyaline to pale mauve, flushed with pale green in upper parts, apex acute, tipped green; claw 1.5 mm long. Wing petals as long as the keel blades, 7 × 3 mm, claw 3.0 mm long; upcurved and with the blade flaring strongly sideways from mid-point of the blade; auricle well-developed; sculpturing upper basal with 4–7 transcostal lamellae shortening towards the middle axis of the blade. Keel petals 9 × 3 mm, claw 3.5 mm long, 3.5 mm high from claw axis; apex almost rostrate. Androecium 9 × 2 mm, vexillary stamen free. Pistil 9 mm long, ovary 1.3–1.5 mm long, glabrous; gynophore present, 0.5 mm

**Figure 4.** *Psoralea vlokii*. A. Jan Vlok holding a plant. B. Whole plant in habitat. C. Side view of flower showing cupulum and subtending leaf. D. Frontal view of flower. E. Flower bud. F. Side view of flower showing cupulum and subtending leaf. G. Fruiting calyx. H. Frontal view of flower showing variation in colour. Photographs: B by Charles Stirton; A, F, H by Brian du Preez; D by Dave U; C, E, G by Nicky van Berkel.
long; style glabrous, thickened at point of flexure, height of curvature 3.5 mm, stigma capitate, finely penicillate. Fruits and seeds unknown.

**Distribution and habitat.** *Psoralea vlokii* is a rare endemic montane species and occurs on the Langeberg and Outeniqua mountains in the North Outeniqua Sandstone Fynbos (FFs18) and North Langeberg Sandstone Fynbos (FFs15) vegetation types (Mucina and Rutherford 2006) (Fig. 2). It can form large colonies and favours permanent swampy seepage with *Cliffortia graminea* L.f. and *Platycaulos compressus* (Rottb.) H.P.Linder on wet sandy soils but also occurs on drier slopes in mountain fynbos occurring between 530 and 590 m a.s.l. It has been recorded from Tschando shales and Hutton Series soils.

Phenology and ecology. Flowering occurs commonly after fires from December to January and thereafter only sporadically. The multi-stemmed appearance also gives the impression that plants emanate from a rootstock, but they clearly germinate after fire (fide Jan Vlok and personal observation). *Psoralea trullata*, by contrast, occurs at higher altitudes between 1100 and 1600 m a.s.l. and favours steep rocky slopes and ledges with peaty soils overlying Table Mountain Sandstone and has a broader distribution stretching from the Outeniqua Pass to the Great Wintershoek mountains.

Etymology. The specific epithet *vlokii* is named after the Cape plant ecologist, botanist, and phytogeographer Jan Vlok who first showed the first author this species in the field, and for his past and continuing outstanding contribution to the study and discovery of plants of the Karoo and for his ongoing mentorship of professional botanists and amateurs who visit the region.

Preliminary IUCN conservation assessment. Although this species can be locally common after fires little is known about its population density or perseverance after fire. However, like *P. trullata*, the unique rare, red-flowered *P. implica* C.H.Stirt. (DuToitskloof), and *P. cataracta* C.H.Stirt. (Northern Tulbagh valley) it is difficult to find in the veld or identify in its restioid-like vegetative state, which probably accounts for their supposed rarity. The known observations and collections of *P. vlokii* cluster across 320 km of mountain ranges and have been found mostly on either side of the Tradouw, Garcia, and Outeniqua passes with little known of the largely intervening areas so it can be expected to be more common than encountered so far. Vlok and Raimondo (2007) assessed it as Endangered: EN B1ab(iii,v). However, since then it has been found in more locations so it needs to be reassessed. They noted that in 2007 it occurred in an EOO of < 250 km², from five locations which were declining due to dense alien pine and *Hakea* Schrad. invasion of the habitat, and that it was also likely to be overly sensitive to water extraction. Although these threats are still present, the broadening of its distribution range suggests lowering its conservation status (Jan Vlok pers. comm.).

Additional material examined. SOUTH AFRICA – Western Cape Province: 3322 (Oudtshoorn) • Next to forestry track along Grootdoringssrivier, Northern slopes of the Outeniqua mountains; 8 Oct. 1985; *Vlok 1271*; K, NU, PRE • Upper tributary of the Moordkuils, southern foothills of the Outeniqua mountains (–CC); 1985, *Vlok 1354*; K, PRE • Near Kleindoringssrivier, lower northern slopes of the Outeniqua Mountains (–CD); 14 Nov. 1984, *Stirton 8650*; K, NU.


Type. SOUTH AFRICA – Western Cape Province: 3419 (Caledon) • Southern slopes of mountains north of Rivieronderend, 3419 (–DC); 34°08’7.87”S, 19°53’57.07”E; 19 Nov. 1980; C.H. Stirton 8219; holotype: NBG; isotype: K.

Diagnosis. Species similar to *Psoralea usitata* C.H.Stirt. but differs in its reseeding habit (*P. usitata* resprouting); 1-foliolate leaves (*P. usitata* leaves reduced to appressed scales), branches and branchlets stiffly erect (*P. usitata* arching to drooping), stipules bifid (*P. usitata* stipules 1-fid); flowers pale mauve, 17–18 mm long, faintly sweetly smelling (*P. usitata* purple and white, 9–14 mm long, unscented); pedicles 8–9 mm long; cupulum trilobed, teeth equal (*P. usitata* 2–3 mm long, cupulum bilobed with one of the pair bifurcate); calyx teeth about equal to calyx tube, margins not ciliate (*P. usitata* calyx teeth shorter than calyx tube, margins ciliate); calyx strongly accrescent, swollen and fleshy, berry-like, teeth tightly closed during seed maturation, shiny and oily, becoming papery and accrescent in fruit (*P. usitata* slightly accrescent, never berrylilke, with teeth erect).

Description. Virgate shrub up to 2.2 m tall, colonial reseeder. Stems 1–3, glabrous. Branches erect and stiff even when in flower. Seasonal shoots green, rounded with 10–12 fine grooves in cross-section, glandular, clustered on last season branch tips; previous season's wood green with brown flaky bark. Leaves 1-foliolate, spirally arranged, appressed to shoot, up to 18 × 2 ± mm, becoming shorter towards apex of shoots, very narrowly obovate, brownish yellow, glabrous, persistent, laterally compressed and hemispherical in cross-section, with 1 mm long mucro, glandular, even when in flower.

Leaves 1–3, glabrous. Branches and branchlets stiffly erect (*P. usitata* arching to drooping), stipules bifid (*P. usitata* stipules 1-fid); flowers pale mauve, 17–18 mm long, faintly sweetly smelling (*P. usitata* purple and white, 9–14 mm long, unscented); pedicles 8–9 mm long; cupulum trilobed, teeth equal (*P. usitata* 2–3 mm long, cupulum bilobed with one of the pair bifurcate); calyx teeth about equal to calyx tube, margins not ciliate (*P. usitata* calyx teeth shorter than calyx tube, margins ciliate); calyx strongly accrescent, swollen and fleshy, berry-like, teeth tightly closed during seed maturation, shiny and oily, becoming papery and accrescent in fruit (*P. usitata* slightly accrescent, never berrylilke, with teeth erect).
tube 4 mm long; calyx shorter than corolla; inner face of calyx teeth densely covered in black stubby hairs, margins not ciliate; vexillar tooth purplish, rest green; strongly ribbed; prominently glandular, glands constant in size, same density all over, drying orange; fleshy and berry-like during seed maturation with teeth tightly closed, shiny and oily, becoming papery, orangey brown and accrescent in fruit. **Standard petals** 15–17 × 16 mm; broadly ovate, pale mauve but darker towards the apex, nectar patch a dark purple central strip, often absent, veins not coloured; 2 free vertical curved 2 × 3 mm, narrow, white appendages present 2 mm above claw; auricles well-developed, almost tubular when pressed together with anthesis; apex emarginate; claw 5 mm long. **Wing petals** 16 × 6 mm, longer than keel petals; pale mauve, narrowly cultrate, straight, hooded and touching when viewed from front, furrowed from auricle to tip, sculpturing present, upper basal, with up to ten lamellae transcostal lamellae; fused to keel petals near base; apex rounded; claw 7 mm long. **Keel petals** 13 × 7 mm, tip discoloured with an oblong-shaped purple discolouration otherwise white, apex acute; claw 6–7 mm long. **Androecium** 13 × 2 mm when closed, tenth filament mostly free but slightly adherent in lower third. **Pistil** 12 mm long, ovary 1.5 mm long; style filiform, 9 mm to point of flexure, glabrous but with few stalked club-shaped glands on ovary; pedicellate, gynophore 0.5 mm; height of curvature 4.5 mm, stigma penicillate. **Fruits** 6 × 4 mm, papery, reticulate, black, oblong. **Seeds** 4 × 5 mm, brownish black; hilum white, raised 0.5 mm.

**Distribution and habitat.** *Psoralea pallescens* is currently known from the Riviersonderend Mountains from Greyton to Riviersonderend (Fig. 2). It is restricted to terraces on rocky southern open slopes on Table Mountain Sandstone in Greyton Shale Fynbos (FFh7) at 250–300 m a.s.l. and on the NW aspect of seasonally waterlogged sandstone streambanks (Rebelo et al. 2006).

**Phenology and ecology.** Flowering takes place mainly from November to December and sporadically up to June. It is unique in the genus *Psoralea* in having a strongly accrescent calyx that swells into a shiny, oily, fleshy, berry-like structure during seed maturation by the teeth enclosing tightly into a closed structure. When the seed is mature, and the conditions are right the calyx dries out, the teeth open and the single papery, reticulate, black, oblong fruit becomes exposed. At this point, the calyx is covered in dark orange glands. Dispersal usually happens under windy conditions when the stiff branches are shaken by wind and the papery fruit is expelled. Dispersal is primarily by wind and secondarily by water as the light papery fruits float easily and may wash away from the zone of ejection. It grows at a lower altitude or in valleys, sometimes higher up, than does *P. usitata* which is a montane species of seepages and stream banks at higher altitudes.

**Etymology.** The specific epithet *pallescens* (Latin ‘pallescens’ = becoming pale) alludes to the pale mauve flowers.

**Preliminary IUCN conservation assessment.** This reseeding species is quite common where it occurs in large colonies. It can be expected to be found elsewhere on the
Riviersonderend Mountains, but the area is surprisingly under-collected. It has a narrow distribution range and a small area of occupancy (< 2000 km²), hence based on the IUCN criteria (IUCN 2012) its present status corresponds to Vulnerable: VU B2ab(i,ii,iii).

Additional material examined. SOUTH AFRICA – Western Cape Province: 3419 (Caledon) • Greyton-McGregor Hike (–BA); 15 Jun. 2017; Brian du Preez 89; BOL • Groot Toren 181, mid slopes of Riviersonderend mountains (–BB); 1 Apr. 2009; Helme 6025; NBG.


Figs 2, 7

*Psoralea* sp. 5 (“*Psoralea fulva* C.H.Stirt. & Muasya ms.”, nom. nud.), Stirton and Schutte (2012: 572)

Type. SOUTH AFRICA – Western Cape Province: 3319 (Worcester) • Kanetvlei valley, Zandriafskloof, Farm Dome Citrus, 3319 (–AD); 33°29’59.73”S, 19°29’45.21”E; 11 Oct. 2009; Muasya & Stirton 4075; holotype: BOL; isotype: NBG.

Diagnosis. The species differs from *Psoralea usitata* in its reseeding habit (*P. usitata* resprouting); smooth yellowish tan stems with dense vertical rows of white lenticels (*P. usitata* grey and coarsely textured); stems give rise to numerous sparsely hairy drooping seasonal shoots each of which terminates in 5–7 small flowers giving its distinctive "pom-pom" look (mass-flowering) during the short flowering season (*P. usitata* young seasonal shoots stiffly erect arising from the tips of old bare branches giving a terminal shrub-like appearance on the top of the bare stems, each shoot producing flowers sequentially (trap-line) in upper axils); pale mauve standard petals without darker veins and without or with a small central purple flash (*P. usitata* purple to dark blue with darker veins and a distinct central purple flash), glabrescent calyx tube longer than the scarcely ribbed greenish yellow teeth (*P. usitata* glabrous calyx tube shorter than strongly ribbed purplish teeth).

Description. Large reseeding shrubs from 2–4 m tall forming large colonies. Stems 1(–2), tan with vertical grey lenticels, woody throughout, terete; branches erect, stiff, emerging from near base of plants, producing many erect side branchlets along the stem for first few years giving the plant a brush-like appearance; branches erect to arching, arising along the whole branch, smooth, green with pale yellow striations, glandular. Leaves usually absent, if present on post-flowering shoots, then 1-foliolate, 8–10 × 0.5 mm, conduplicate, covered in minute glands, finely hairy; petiole fused to apex of scales (fused stipules), scales 4 × 0.5–2.0 mm; persistent, appressed, not tightly congested, glandular, teeth 2 mm long, hairy on the inside. Inflorescences complex, pseudo-spicate, comprised of congested terminal clusters of 4–5, short 25–40 mm long shoots, each bearing 2–5 axillary flowers; each cluster subtended by a 30–55 mm long branchlet; pedicel 3–4 mm long, inserted in the cupulum; cupulum stout and rigid, bilobed with one of

the vexillar lobes strongly bilabiate appearing trifid, half the length of the pedicel, free from the calyx; glabrous; lobes equally developed, narrowly triangular; base of pedicel hairy. Flowers 12–15 mm long; purple and white; maturing sequentially; basal bracts paired, free, small; 1.5 mm long, triangular. Calyx 7 mm long; tube 3 mm long; glabrous; more or less equal to lateral and vexillar teeth; teeth subequal, the keel tooth slightly longer; the lateral and vexillar calyx teeth acute, falcate, narrowly triangular, the carinal calyx tooth 4 × 2 mm; acute, slightly broader than the other four teeth; the vexillar calyx lobes scarcely fused above the tube; calyx shorter than corolla; ribs distinctly thickened; glands dense, constant in size and equally distributed across the teeth and tube, inside of teeth densely covered in stubby black hairs. Standard petal 11–12 × 11–13 mm; broadly ovate, apex minutely mucronulate, blade mauve to white but darker in upper parts, veins and central flash pale purple, appendages white, paired, prominent, ridged, free; claw 2–5 mm long. Wing petals 11–12 × 6 mm; up-curving with lateral horizontal folds, auriculate; slightly adherent to and longer than keel petals; claw 5 mm long. Keel petals 11–12 × 4 mm; claw 4–6 mm long; apex convex. Androecium 11 mm long, upper end curved inwards, tenth stamen lightly attached, scarcely fenestrate. Pistil 10 mm long, ovary 1 mm long, glabrous, uni ovulate, style 7 mm long, swollen at point of flexure, height of curvature 5 mm, stigma penicillate. Fruits 4 × 3 mm, papery, reticulate, wrinkled, style persistent. Seeds 3 × 2 mm, khaki brown with fine black speckles; hilum sub-terminal, aril well-developed, white.

Distribution and habitat. Psoralea fulva is a reseeding plant restricted to low-lying areas fringing the mountains of the Hex and Breede river valleys within the Western Cape Province (Fig. 2). It is allopatric with P. usitata, P. rigidula, and P. fleta which all occur higher up in the mountains. It is sympatric with the pinnately-leaved P. suaveolens C.H.Stirt., A.Belo & Muasya and occurs mostly along streams, gulleys, and seepages in mid montane valleys and in lowland fynbos between 250 and 550 m a.s.l. in the following vegetation types: Breede Alluvium fynbos (FFA2), Breede Shale Fynbos (FFh4), North Hex Sandstone Fynbos (FFs7), South Hex Sandstone Fynbos (FFs8), and Hawequas Sandstone Fynbos (FFs10) (Rebelo et al. 2006).

Phenology and ecology. Flowering occurs mainly in September and October but also sporadically through to March. Psoralea fulva was incorporated previously as part of Psoralea usitata as Form 4 (Psoralea sp. 5; Stirton and Schutte 2012). The young plants look superficially like P. aphylla, P. fleta, P. gigantea, and P. usitata (Psoralea sp. 5; Stirton and Schutte 2012; Dludlu et al. 2015) during the first few years of growth but as they mature, they develop quite different habits. According to Bello et al. (2017), Psoralea fulva produces occasional spontaneous hybrids with P. suaveolens C.H.Stirt., A.Belo & Muasya (Muasya & Stirton 5931; BOL) where they co-occur in disturbed sandy places alongside streams as they enter the Kanetvlei lowlands. There is also a mixed population of hybrids between P. fleta and P. fulva on the left-hand lower slope on the road from Worcester as it enters the DuToitskloof. This population comprises a great array of flower colours and habits.

Etymology. The specific epithet fulva (Latin ‘fulvus’ (-a, -um) = tawny or yellowish brown) alludes to the distinct colour of the stems.
Preliminary IUCN conservation assessment. This species is locally abundant where it occurs but falls largely out of conservation areas and is mostly on private lands. However, it is now quite scarce along the valley bottoms and persists only around some farm dams and in remaining seepages and drainage ditches in its former lowland habitat which has been transformed into vineyards. It is unlikely to survive on the valley bottoms due to agricultural and urban expansion and so may become restricted in future to the lowest slopes of the surrounding mountains. It is currently assessed as Near Threatened: NT (IUCN 2012).

Additional material examined. SOUTH AFRICA – Western Cape Province: 3319 (Worcester) • Kanetvl valley, Zandrifskloof, Farm Dome Citrus (–AD); 11 Oct. 2009; Muasya & Stirton 4075; BOL • Near De Doorns, Citrus Farm (–AD); 26 Dec. 2007; Muasya & Stirton 3528; BOL • Hex River mountains, Kanetvl, near Reservoir (–AD); 22 Sep. 2010; Muasya & Stirton 5512; BOL • Hex River Valley (–CB); 21 Feb. 2011; Muasya, Chimphango & Stirton 5930; BOL • Hex River Mountains, Zandrif dam, River bed below (–BC); 11 Oct. 2009; Muasya & Stirton 4079; BOL • Waaihoek turnoff on Worcester - Ceres Road (–CA); 3 Feb. 1981; Walters 2426; NBG • Du Toitskloof Mountains, Delabat Ravine (–CA); 28 Mar. 2009; Muasya, Chimphango & Stirton 4480, 4490; BOL • Du Toitskloof Pass (–BA); 27 Dec. 2007; Muasya & Stirton 3541; BOL • Near bottom of Du Toitskloof Pass (–BA); 10 Oct. 2008; Muasya & Stirton 4071, 4071, 4072, 4073; BOL • bottom of Du Toitskloof Pass on Worcester side (–CA); Esterhuysen 28238; BOL • ibid.; 24 Sep. 2014; Stirton 13995; BOL • Fairy Glen, lower slopes of Brandwagberge (–CB); 19 Sep. 1981; Stirton 9142; PRE • Die Eike Farm, Goudini, 17 Nov. 2011; Stirton 13504; BOL • Rawsonville (–CB); 14 Dec. 1938; Louw 105; NBG • Pokkraal dam (–CB); 21 Feb. 2011; Muasya & Stirton 5939, 5940; BOL • Worcester (–CB); Fine 30; PRE • ibid.; Rehmann 2429; NBG • Farm Eensgevonden, Rawsonville (–CB); 18 Nov. 2011; Stirton 13508; BOL • ibid.; 24 Jul. 2010; Muasya & Stirton 5391; BOL • Watervalkloof in Sidubar, Horlosieberg, Farm Eensgevonden (–CB); 28 Mar. 2009; Muasya & Stirton 4491; BOL • Hex River Mountains near De Doorns, Keurhoek Valley (–CB); 25 Dec. 2007; Muasya & Stirton 3504; BOL • Brandvllei (–CD); 12 Mar. 1985; Van der Kooy 1104; NBG.

6. Psoralea nubicol a C.H.Stirt. & Muasya, sp. nov. urn:lsid:ipni.org:names:77345668-1 Figs 2, 8

Psoralea sp. 17 ("Psoralea nubicola C.H.Stirt. ms.", nom. nud.), Stirton and Schutte (2012: 574)

Type. SOUTH AFRICA – Western Cape Province: 3320 (Montagu) • above Grootvadertsbosch, highest point of Lemoenshoek Peak; 33°55’0.68”S, 20°52’30.94”E; 6 Dec. 1981; 1366 m a.s.l.; Stirton, Rourke & Esterhuysen 10212; holotype: NU [NU-0015573-2]; isotypes: BOL, BR, J, K, MO, NBG, NH, NU [NU0015573-1, NU0015573-3, NU0086848], P, PRE, SCHG.

Diagnosis. Species similar to Psoralea forbesiae C.H.Stirt., A.Bello & Muasya which occurs in the Swartberg Mountains but differs in its low sprawling habit (P. forbesiae densely branched shrubs up to 2.5 m tall with most parts covered in small cracker-like glands; mature plants can be semi-spherical); leaves bluish-green, narrowly obovate, 7–8 × 2–3 mm, terminal leaflet longer and wider than the 5–7 × 2 mm, elliptic to narrowly elliptic laterals (P. forbesiae leaves yellowish green, linear-oblong, 13–22 × 0.5–0.6 mm, terminal leaflets longer and wider than 12–20 mm long, 2–3 mm laterals); flowers exceed leaves (P. forbesiae flowers about same length as leaves); flower buds held vertically to the sprawling shoots (P. forbesiae flowers held laterally to vertical shoots); standard petal purple to violet-mauve with darker veins (P. forbesiae standard petal white or mauve fading towards margins, with a purple vertical flash tapering to the apex and some basal veins purplish, apex greenish on front and back).

Description. Low sprawling, resprouting shrub up to 80 cm tall and 300 cm wide, highly resinos, strong smelling. Stems profusely and densely branched, splayed, stacked in layers, intertwined, glabrous, densely warty. Leaves pinnately 3-foliate, rarely 4-foliate, petiolar, 9–10 mm long, stipulate, densely glandular. Leaflets elliptic to narrowly obovate (terminal only), subequal, somewhat conuplicate, fleshy, bluish-green, glabrous, densely glandular, glands fewer and larger below than above, drying black; terminal leaflet longest, 7–8 × 2–3 mm, laterals 5–7 × 2 mm, symmetrical; petiole 4–5 mm long, rachis 2 mm long. Stipules 2–3 mm long, paired, fused at base to petiole, triangular, glaucous, persistent, patent, margins dimpled, glabrous, glands prominent. Inflorescences 1-flowered, borne sequentially (trap-line) in most nodes of short seasonal shoots; peduncle present, 15–26 mm long, twice longer than flower; pedicel 2 mm long. Flowers 10 mm long, purple to violet-mauve and white; buds purplish; cupule 3–4–fdd, teeth situated near apex of the peduncle, 3–4 mm long, carinal tooth largest, glabrous, pubescent inside teeth, hairs black and white, few hairs along the teeth. Calyx 7 mm long, lobes equal, teeth triangular to lanceolate, vexillar pair somewhat falcate, and somewhat fused above tube; glabrous outside, finely black-haired on inside of teeth; tube 4 mm long, distinctly ribbed, glandular. Standard petals 8 × 9 mm long; claw 2 mm long; very broadly ovate, dark mauve to violet-mauve, veins darker, appendages present, parallel situated above the auricles, apex emarginate, reflexed 90° degrees; nectar patch present, comprised of a white M-shaped patch above the appendages and with a central vertical purple flush. Wing petals 7 × 3 mm; claw 3 mm long; white, free from and longer than keel petals, ciliate, strongly folded along top third, apex rounded; base of blade auriculate on upper basal margin, sculpturing present, upper basal comprising 2–3 transcostal lamellae in 3 rows; tips of blade flared outwards but almost cucullate. Keel petals 9 x 3 mm; claw 3 mm long; white.
with purple patch on inner faces near the tip, not fused to the wing petals. **Androecium** 9 mm long; tenth stamen free from the adaxially split sheath, fenestrate at base. **Pistil** 9 mm long, gynophore present, ovary 1 mm long, glabrous except for club-shaped glands towards apex of ovary; height of curvature 3.5 mm, thickened at point of flexure, stigma capitulate. **Fruits** and **seeds** unknown.

**Distribution and habitat.** *Psoralea nubicola* is a high montane endemic found in rich peaty soils within rocky outcrops in mountain fynbos between 1500 and 1800 m a.s.l. in the North Langeberg Sandstone Fynbos (FFs15) vegetation type (Fig. 2) and occurs in a few massed colonies on the highest points of the uppermost peaks of the Langeberg mountains (Mucina and Rutherford 2006). No other *Psoralea* in the Cape is situated as high as this species. These localities are regularly covered in mist or dense clouds.

**Phenology and ecology.** Flowering takes place between August and November. Something very akin to this species occurs in the uppermost parts of the Swartberg Mountains and may belong to this species but only a few isolated plants have been found near the summit and although similar in many features the plants appear to be part of the hybrid swarm reported from the Swartberg Pass (Bello et al. 2018) so are difficult to assess. Further field investigation is needed of the Swartberg plants.

**Etymology.** The specific epithet *nubicola* (Latin 'nubis' = cloud and 'cola' = dweller) refers to its high mountain habitat.

**Preliminary IUCN conservation assessment.** The known isolated distribution of this species lies within a protected area. It has no perceived threats. A drying climate may be a long-term threat as it probably relies on precipitation from mist for its moisture requirements. It dominates the local vegetation. It is currently assessed as of Least Concern: LC (IUCN 2012).

**Additional material examined.** **SOUTH AFRICA**

– **Western Cape Province: 3320 (Montagu)** • above Grootvadersbosch, Lemoenshoek Peak (-DD); 2 Jul.1981; Rourke 1760; NBG • Groottberg (-DD); 14 Dec. 2007; Knox 5205; BOL • ibid.; Nov. 1927; Thorne s.n.; NBG [SAM44530].

7. *Psoralea luteovirens* C.H.Stirt. & Muasya, sp. nov. urn:lsid:ipni.org:names:77345669-1 Figs 2, 9, 10

**Type.** **SOUTH AFRICA** – **Western Cape Province** • Vensterklip Farm between wind pump and Vensterklip, 3218 (-AD); 32°16’52.50”S, 18°25’08.55”E; 19 Nov. 2017; Ibrahim 1427; holotype: BOL; isotypes: NBG, K, L, MO, PRE.

**Diagnosis.** Species similar to *Psoralea glaucescens* Eckl. & Zeyh. sharing such features as having an unstable and variable number, length, and insertion of leaflets but differs in its large undity open shrubby habit with 1-few smooth greyish brown stems (*P. glaucescens* a densely compact hemispherical shrub arising from multiple grey stems with rough bark); absence of seasonal burst-branching (*P. glaucescens* with seasonal burst branching from tips of previous seasonal shoots); leaves green, (3–4–)5–6-foliolate (*P. glaucescens* glaucous, (3–4–)5–foliolate reducing to 1-foliolate in flowering shoots); flowering sparse (*P. glaucescens* flowering profuse); flowers 1(–2) borne in axillary axes subtended by 5-fid leaflet (*P. glaucescens* with 1–3 flowers per axil borne by a 1-foliolate leaflet); and standard petal white, with small purple flash, green in upper parts paling towards the margins, veins not discoloured (*P. glaucescens* creamy yellow, tinged green, with a long central purple flash and veins). **Description.** Large untidy shrub up to 2 m tall and wide. **Stems** 1-few; branches many, glabrous, rigid; seasonal shoots green, striped, rounded with 4–5 angles in cross-section, finely yellow striped, glandular but glands below the surface, old wood brown. **Leaves** (3–4–)5–6-foliolate. **Leaflets** very variable in number, length and insertion, upper three leaflets digitate, (10–15–)30–45 × 2 mm, becoming shorter towards apex of shoots, linear, dark green, glabrous, laterally compressed, apex rostrate; densely glandular (translucent), glands impressed, persistent; rachis 5–7 mm long, green, glabrous; petiole (5–)7–10(–15) mm long. **Stipules** subulate, 1-nerved, green with oragey glands, tips acute, 2–3 mm long, rapidly senescent then recurring. **Inflorescences** are borne in most upper axes of seasonal shoots with 1–3 flowers per axil and often an aggregate of many very short side branches off the main axis with up to 5 axils with flowers; buds green with purple midline, glabrous; peduncles present, 12–20 mm long, paired free basal bracts minute, triangular; pedicels 2–3 mm long; cupulum bifid, with one of the teeth cleft, teeth equal, triangular, acute, glabrous, 3 mm long, situated at the apex of the peduncle, dotted with small orange glands. **Flowers** 14–15 mm long; axillary, 1–3 per axil, patent, yellowish green and white, veins not discoloured; maturing sequentially up the shoot; faintly sweet-scented. **Calyx** glabrous, lobes subequal, with keel tooth 2 mm longer and twice broader than other 4 teeth; longer than 4 mm long calyx tube; carinal tooth 6–7 mm long, broadly ovate, acute, cucullate; vexillar calyx lobes fused just above the tube; calyx shorter than corolla; inner face of calyx teeth finely covered in white hairs, margins finely ciliate; vexillar teeth green; all teeth strongly ribbed; glands numerous, prominent, glands mostly constant in size, same density all over, drying orange. **Standard petal** 10–13 × 13 mm; broadly ovate, green in upper parts paling towards the margins, nectar patch a small narrow 2 mm long purple central strip arising between the two free vertical 2 mm long narrow white swollen appendages above the claw, veins hyaline; auricles well-developed, almost tubular when pressed together at anthesis; apex emarginate; claw 3 mm long. **Wing petals** 12 × 5 mm, longer than keel petals; claw 4 mm long; white, broadly culate, straight, tips folded inwards but not touching when viewed from front, furrowed from auricle to tip; sculpturing present, upper basal, with up to ten parallel transcostal lamellae; not fused to keel petals near base.
Keel petals 10 × 6 mm; claw 4 mm long; white, apex rounded, purple-tipped. Androecium 10 mm long, tenth filament mostly free but slightly adherent towards base, fenestrate, nectarial ring present. Pistil 10 mm long, ovary 2 mm long, pedicellate, gynophore 0.5 mm; covered all over with short-stalked club-shaped glands; style filiform, scarcely swollen, sharply recurved, height of curvature 4 mm, stigma capitate, penicillate. Fruits known only at immature stage, narrowly obovate, strongly reticulate, chartaceous, brown. Seeds kidney-shaped, hilum central, elliptic, black.

Distribution and habitat. *Psoralea luteovirens* is endemic and restricted to low hills in the Verlorenvlei area at 80–180 m a.s.l. in Graafwater Sandstone Fynbos (FFs2) on conglomerate rocky areas growing in cracks in rocky slabs surrounded by Lamberts Bay Strandveld (FS1) whereas *P. glaucescens* is a montane species distributed in the Richtersveld, Kamiesberg, Bokkeveld, and Matsikamma Mountains (Fig. 2).

Phenology and ecology. Flowering takes place from November to December.

Etymology. The specific epithet *luteovirens* (Latin ‘luteus’ = yellow and ‘virens’ = green) refers to the distinctive yellowish-green colour of the flowers.

Preliminary IUCN conservation assessment. This species is poorly collected, known from a single locality. It has a narrow distribution range and a small area of occupancy (< 10 km²), in an area under increased conversion into agriculture, hence based on the IUCN criteria (IUCN 2012) its present status corresponds to Critically Endangered: CR B2ab(i,ii,iii,iv,v).

**Observations.** South Africa, Western Cape Province: Vensterklip, NE of Elandsbaai, 32°16′52.39″S, 18°25′08.47″E, 15 Jan. 2020, obs. by Brian Du Preez, [https://www.inaturalist.org/observations/37366545](https://www.inaturalist.org/observations/37366545); Vensterklip, NE of Elandsbaai, 32°16′54.23″S, 18°25′07.1″E, 21 Nov. 2019, obs. by Brian du Preez, [https://www.inaturalist.org/observations/37366539](https://www.inaturalist.org/observations/37366539); Vensterklip Farm, Clanwilliam District, 32°16′50.99″S, 18°25′09.98″E, 21 Nov. 2019, obs. by Petra Broddie, [https://www.inaturalist.org/observations/18774301](https://www.inaturalist.org/observations/18774301); Verlorenvlei, Vensterklip Farm, 21 Nov. 2019, obs. by Gigi Laidler, [https://www.inaturalist.org/observations/18774301](https://www.inaturalist.org/observations/18774301).


Type. SOUTH AFRICA – Western Cape Province • On Markuskrall dirt road to Paleishewel off N7, along Palmietfontein River, 3218CD; 32°25′50.89″S, 18°57′10.86″E; 24 Oct. 2009; Muasya & Stirton 4775; holotype: BOL.

Diagnosis. *Psoralea prompta* is like *P. verrucosa* Willd. ex Spreng. within which it was previously included and with which it shares, unusually in *Psoralea*, multi-flowered shortly pedunculate inflorescences, and partially fused cupulate bracts but differs in its reseeding habit (*P. verrucosa* a resprouter); old wood greyish brown with age with white storied lenticels (*P. verrucosa* brownish with blotchy lenticels); green shoots and branches smooth with small flushed dimpled-like glands (*P. verrucosa* with rough, bluish green shoots and branches covered in distinct...
raised warty glands); leaves variable, (1–)3–5-foliolate but mostly pinnately trifoliate, terminal leaflet 70–85 × 4.0–4.5 mm, laterals 51–60 mm long; flowering shoot leaves 1-foliolate, 33–45 × 2.0–2.5 mm (P. verrucosa leaves pinnately (2–)3-foliolate at base of shoots and on water shoots, 1-foliolate and smaller thereafter reducing in size up the flowering shoot, terminal leaflet 35–50(–55) × 1.0–1.5(–3) mm, laterals if present smaller, as are 1-foliolate leaves); stipules narrowly lanceolate to linear (P. verrucosa stipules subulate becoming triangular); flowers pale mauve and white (P. verrucosa flowers dark mauve or purple); wing petals white (P. verrucosa wing petals mauve).

**Description.** Tall floppy tree-like shrub up to 4 m tall, reseeded. **Stems** 1 to few, arching, branching profusely in upper parts, finely covered in shallow crateriform glands, greasy to the touch, glabrous, glaucous when young, branches forming in tight bunched clusters, becoming woody. **Leaves** variable, (1–)3–5-foliolate but mostly pinnately trifoliate, petiolate, stipulate. **Leaflets** greyish, glabrous, dimpled, flat, apex acute, base rounded, narrowly elliptic to linear-oblong, midrib distinctly keeled below, larger on seasonal shoots than on flowering shoots, terminal leaflet 70–85 × 4.0–4.5 mm, laterals 51–60 mm long; flowering shoot leaflets 1-foliolate, 33–45 × 2.0–2.5 mm; petiole 20–28 mm long, verrucose; petiolules yellow, glabrous. **Stipules** present, 3–4 × 0.5 mm on flowering short shoots, 7–8 × 1 mm on subtending branchlets, narrowly lanceolate to linear, patent to incurved, green becoming scarious, glabrous. **Inflorescences** terminal on short shoots, axillary, pedunculate, scattered along seasonal shoots, 2–7-flowered per peduncle; peduncle 10–22 mm long, green, dimpled, glabrous. **Flowers** 12–14 mm long, mauve, bracts absent; scent absent, cupulum imperfect, variable depending on flower congestion, trifid, < 1 mm long, well to poorly developed. **Calyx** lobes 5–7, teeth equal, carinal tooth 2 mm wide, slightly broader than the rest, triangular, glandular, outside glabrous, inside of teeth finely white-haired; teeth and upper part of calyx often flushed purple, vexillar teeth fused for one third their length, tube 2.5–3 mm long, equal to teeth, carinal lobe slightly broader than the rest; vexillar teeth fused above tube for one third their length and somewhat incurved. **Standard petals** 13–15 × 10–20 mm; claw 2–3 mm long; very broadly ovate, standard petal with purple flush and darker purple flash, veins darker mauve, reflexed 90–120° at anthesis; free swollen white callosities, apex emarginate. **Wing petals** 10–12 × 4–7 mm; claw 4 mm long; white to pale mauve, longer than keel, cultrate with a broad groove between auricles, strongly folded once along the middle; auricles swollen, well-developed, sculpturing upper basal, comprising up to 5–8 weak curved transcostal lamellae; wings lightly adherent to base of keel. **Keel petals** 8–13 × 3.5–5 mm; claw 4–5 mm long; blade upcurved, apex acute. **Androecium** 9–10 m long, apex incurved, tenth stamen free, sheath split adaxially, fenestrate. **Pistil** 8–9 mm long; ovary 1.5 mm long, stipitate ~1 mm long, glabrous, glandular especially near apex, height of curvature 3 mm, thickened at point of flexure, stigma capitulate, penicillate. **Fruits** and seeds unknown.

**Distribution and habitat.** *Psoralea prompta* is a rare species known only from a few collections and from sightings on iNaturalist (Fig. 2). It overlaps slightly with *P. verrucosa* in the north-eastern part of its range. It occurs in seepages and along stream banks between 80 and 280 m a.s.l. within Cederberg Sandstone Fynbos (FFs4) and can be expected to be found in more patches of this fragmented vegetation type.

**Phenology and ecology.** Flowering takes place from October to November.

**Etymology.** The specific epithet *prompta* is derived from the Latin 'promptus' (-a, -um) meaning visible, manifest and refers to its striking colonial habit in an otherwise dry region.

**Preliminary IUCN conservation assessment.** No assessment has been made of this species as its distribution is still too uncertain, therefore warranting Data Deficient (DD). However, as it is near roads and consequently the known populations may be quite vulnerable to changes in drainage patterns.

**Additional material examined.** SOUTH AFRICA – Western Cape Province: 3219 (Wuppertal) • Biedouw Valley, in stream near a causeway (–AA); 7 Nov. 1982; Stirton & Zantovská 11501; K • Kransvleikloof, Olifants River Mts (–BD); 32°15′24.99″S, 18°50′02.21″E; 29 Oct. 2018; Helme 9347; NBG; [https://www.inaturalist.org/observations/17984791](https://www.inaturalist.org/observations/17984791).

**Observation.** South Africa, Western Cape Province: Road off Bulshoek Dam, 32°01′42.74″S, 18°49′45.47″E, 12 Dec. 2017, obs. by Joan Kleynhans, [https://www.inaturalist.org/observations/17456342](https://www.inaturalist.org/observations/17456342).


**Figs** 2, 12


**Psoralea sp. D ("crista") Stirton** (2019: 1038)

**Type.** SOUTH AFRICA – Eastern Cape Province: 3324 (Steytlerville) • Great Wintershoek Mountains, Cockscomb; 2 Feb. 1958; Esterhuysen 27531; holotype: PRE; isotype: BOL

**Diagnosis.** Species similar to *Psoralea keetii* Schönländ ex H.M.L.Forbes from which it differs in its low shrubby habit (*P. keetii* erect robust shrub up to 2 m tall); leaflets drooping, small, not fleshy, 7–13 × 2.5–4.5 mm, elliptic, flat, with symmetrical lateral leaflets (*P. keetii* leaflets large, displayed, fleshy, 20–26 × 7.5–11.0 mm, narrowly obovate to obovate, laterals asymmetrical); flowers 8–9 mm long, blue, solitary, borne on long green pedicels (*P. keetii* flowers 10–11 mm long, dark mauve to blue with darker blue nectar guide, borne on long purple pedicels); cupulum distinctly trifid, lobes toothed (*P. keetii* cupulum scarcely developed, lobes rounded); calyx teeth green,
teeth equal, shorter than the tube (P. keetii calyx teeth purple, teeth subequal, shorter than the tube).

**Description.** Low glabrous shrublet up to 50 cm tall. **Stems** glabrous, green, slender, terete, finely ridged, covered in variously sized glands. **Leaves** pinnately trifoliolate, stipulate, densely covered in glands drying black. **Leaflets** 7–13 × 2.5–4.5 mm, flat, elliptic, apex mucronate, base cuneate, laterals smaller, symmetrical; petioles 4–7 mm long, channelled. **Stipules** 2.0–3.1(–3.5) × 0.5–1.0 mm, fused at base, adnate to petiole in lower part, broadly triangular and narrowing further up the stem. **Inflorescences** reduced to a solitary flower, axillary, produced on short lateral shoots. **Flowers** 8–9 mm long, blue; cupulum shortly trifid, tube 1 mm deep, keel lobe 1.7 mm long, laterals 1.4 mm long; inner face of teeth finely covered in black stubby hairs, densely glandular. **Calyx** 6 mm long, teeth equal, carinal tooth symmetrical, obtuse, other four asymmetrical, falcate, acute; tube 3.5 mm deep; inner face of teeth covered in short appressed black hairs, externally densely encrusted with raised glands, evenly on teeth and tube. **Standard petals** 9–10 × 8–9 mm; claw 1.5 mm long; broadly obovate, weakly auriculate, appendages well-developed, free from auricles; apex truncate. **Wing petals** 7 × 3 mm, sharply upcurved; auricle well-developed; sculpturing upper basal with 4–7 transcostal lamellae, shortening towards the middle axis of the blade. **Keel petals** 9 × 3 mm, 3.5 mm high from claw axis; claw 4.5 mm long; apex rounded, slightly beaked below apex. **Androecium** 9 × 2 mm, vexillary stamen free. **Pistil** 9 mm long, ovary 1.3–1.5 mm, glabrous; gynophore present, 0.5 mm long; style glabrous, thickened at point of flexure, height of curvature 3.5 mm, stigma capitate, finely penicillate. **Fruits** and **seeds** unknown.

**Distribution and habitat.** *Psoralea crista* is a rare mountain endemic known from only two collections from Cockscomb Peak in the Great Wintershoek Mountains (Fig. 2) in Kouga Sandstone Fynbos (FFs28) and Kouga Grassy Sandstone Fynbos (FFs29) (Mucina and Rutherford 2006). It was first collected 35 years ago by Miss Elsie Esterhuysen. A second collection was made in the same general locality in 2008 by Nick Helme. The species prefers slightly damp areas or seasonal seepages on NE and E slopes below cliffs at ca 1400–1600 m a.s.l.

**Phenology and ecology.** Flowering occurs in January and February, fruiting up to May. No recent collections have been made of this species and no photographs are available.

**Etymology.** The specific epithet *crista* (Latin word ‘crista’ = crest or terminal tuft) alludes to the fleshy stipules reminiscent of a rooster’s fleshy cockcomb and the name of the Cockscomb Mountain where it occurs.

**Preliminary IUCN conservation assessment.** This species is probably highly localised on a single mountain. Recent attempts by the High-Altitude Group of CREW (Custodians of Rare and Endangered Wild Flowers) have so far been unable to find it. It may be a resprouter and fire-dependent, likely to be prevalent after episodic fire, and preliminary assessed as Data Deficient (DD).

**Additional material examined.** SOUTH AFRICA – Eastern Cape Province: 3324 (Steytlerville) •

*Figure 11. Psoralea prompta. A. Shrubs in stream seepage. B. Coppicing shoots. C. Surface of young shoot with papillate glands. D. Shoot with axillary inflorescences in buds and subtending leaves. E. 3-flowered axillary inflorescence. F. 4-flowered pedunculate inflorescence showing partially fused lobes of cupulums from individual flowers. G. Apex of a pedunculate inflorescence showing more than one flower emerging from a partially formed cupulum. Photographs: A–G by Charles Stirton.*
Cockscomb Peak East, farm Afgunst 255, peak near cave (-DB); 31 May 2008; Helme 5478; NBG.

Figs 2, 13, 14, Table 1

*Psoralea* sp. 18 (“*Psoralea oreopola* C.H.Stirt. ms.”, nom. nud.), Stirton and Schutte (2012: 574)

**Type.** SOUTH AFRICA – Western Cape Province: 3218 (Clanwilliam) • Cederberg, Middelberg Pass, Kleinfontein extension, Elandskloof; 5 Nov. 1986; Stirton, Chimphango & Muasya 11488; holotype: BOL.

**Diagnosis.** Species similar to *Psoralea papillosa* C.H.Stirt. & Muasya, from which it differs in its 1.5–2 m tall obovate to broadly obovate habit with multiple stems (*P. papillosa* hemispherical habit with 2–4 main stems), seasonal shoots bright yellowish green, glabrous; (*P. papillosa* greenish black, bristly pubescent); leaves (2–)3 foliolate, basal pair of leaflets shorter than terminal leaflet (*P. papillosa* leaves 5(–7)-foliolate, basal pair of leaflets longer than the terminal leaflet); stipules subulate, rigid, sharp, senescent but persistent on older leaves, free from base of petiole (*P. papillosa* subulate-triangular, recurving, becoming woody when old, tightly recurved, sides reflexed, fused to base of petiole); flowers 1–2(–3) per axil, basal bracts or scales absent at base of peduncle (*P. papillosa* flowers 1(–2) per axil, basal bracts paired and present at base of peduncle); inner face of cupulate teeth finely white-haired (*P. papillosa* inner face of cupulate teeth sparsely black-haired); standard petal almost reniform in shape, transversely depressed, 3 times wider than long, appendages large and swollen (*P. papillosa* standard petal broadly elliptic, appendages present but scarcely swollen); calyx lobes 7–8 mm long, inside densely covered with white pubescence, carinal tooth same size but broader than the rest of the teeth (*P. papillosa* calyx lobes 5.0–5.5 mm long, inside black-haired in sinuses and midrib area, carinal tooth slightly longer but narrower than the rest).

**Description.** Obovate to broadly obovate spreading shrub up to 2 m tall; resprouter, strongly aromatic. Stems numerous, branching from lower and central parts, erect to arcuate, greyish brown with semi-storied lenticels; young seasonal shoots produced in a burst branching manner looking somewhat shrublet-like, bright yellowish green, glabrous. Leaves either 2-digitately foliolate or slightly pinnately 3-foliolate, upper rachis 1 mm long, petiole 12–15 mm long, petiolule yellow. Leaflets with terminal longer than lateral pair, 22–33 mm long, < 1 mm wide; lateral leaflets equal, 15–25 × 0.5 mm, furrowed on adaxial surface, convex below, surface with slightly raised small yellow glands, margins regular. Stipules 1 mm long, subulate, senescent but persisting in older leaves, glabrous, pungent, sharp, apex acute, angled at 45° to shoot. Inflorescences axillary to upper nodes of seasonal shoots, 1–2(–3) per axil; peduncle 7–9 mm long. Flowers 10–15 mm long, basal bracts or scales absent at base of peduncle; buds slender, acuminate; cupulum 5–6 mm long, teeth 3 mm, erect, acuminate, teeth equal, appearing bilobed but with abaxial pair deeply cleft, appearing trilobed, adaxial lobe broadest, enveloping the base of flower buds but free once the flower is mature, finely white-haired on inner face, minutely glandular. Calyx lobes 7–8 mm long, yellowish, teeth subequal, carinal lobe slightly longer but narrower than the rest, 4 mm long, outside glabrous, densely glandular between veins,

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Stirton et al.: Ten new species in the genus *Psoralea* L.

Table 1. Morphological variation in *Psoralea oreopola* and *P. intonsa*, and their hybrid.

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>Psoralea oreopola</em></th>
<th><em>Psoralea intonsa × oreopola</em></th>
<th><em>Psoralea intonsa</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf morphology</td>
<td>3-foliolate</td>
<td>5–7 and 3–5–7-foliolate</td>
<td>7-foliolate</td>
</tr>
<tr>
<td>Indumentum</td>
<td>Young stems glabrous</td>
<td>Glabrous to sparsely pubescent</td>
<td>Stem and young leaves pubescent</td>
</tr>
<tr>
<td>Floral morphology</td>
<td>Flowers white, calyx glabrous</td>
<td>Flowers white, pale mauve or purple, calyx glabrous or with margins ciliate</td>
<td>Flowers purple, calyx patently hairy</td>
</tr>
<tr>
<td>Inflorescence morphology</td>
<td>Cupulum and pedicel 15 mm long, teeth 5 mm long</td>
<td>Cupulum and pedicel 9–10 mm long, teeth 3–4 mm long</td>
<td>Cupulum and pedicel 5 mm long, teeth 3 mm long</td>
</tr>
<tr>
<td>Plant habit</td>
<td>Plant nitid, apple green</td>
<td>Plant variously green to glaucous</td>
<td>Plant glaucous</td>
</tr>
</tbody>
</table>

outer teeth glabrous, inside densely covered with white pubescence; tube 5 mm long, slightly longer than teeth. **Standard petals** 5 × 15 mm, almost reniform in shape, transversely deprimed, 3 times wider than long, white, reflexed 90–120°; nectar patch 2 mm wide, purple stripe with a few short radiating purple arms, arising above the large vertical paired swollen callosities, veins mauve; apex emarginate; claw 2 mm long, broad, straight. **Wing petals** 11–15 × 5 mm, longer than keel petals, strongly folded along mid line; blade spathulate, auricle well-developed, swollen and anastomosing; sculpturing present along top groove, upper basal, comprising up to 10 curving transcostal lamellae; claw 6 mm long. **Keel petals** 9 × 4 mm, sharply upcurved, apex acute; claw up to 7 mm long. **Androecium** 12 m long; tenth stamen free, sheath split adaxially, fenestrate. **Pistil** 10–11 mm long, ovary 7 mm long, stalked, with small recurved stalked glands, glabrous; style height of curvature 4 mm, thickest at point of flexure, stigma capitulate, base fringed with a ring of hairs. **Fruits** and **seeds** unknown.

**Distribution and habitat.** Endemic to fynbos on montane and lower slopes in the Cederberg in the Western Cape Province, South Africa (Fig. 2). A colonial species, it is found mainly on lower slopes, but also on upper sandy table lands and restio plains with occasional *Protea laurifolia* Thunb. and *Protea nitida* Mill. (fide Bean & Viviers 1765, BOL). The main soil type is acidic lithosol soil derived from Ordovician sandstones of the Table Mountain Sandstone Group on the Olifants Sandstone Fynbos and Cederberg Fynbos Sandstone vegetation types (FFS3, FFS4; Mucina and Rutherford 2006). The distribution is patchy; most of the records are from roadside collections, so it may be more common than its current distribution.

**Phenology and ecology.** Flowering occurs from September to January but mainly in December and rarely up to April. Incidences of hybridization involving *P. oreopola* have been documented at two disjunct localities in the Cederberg mountains. On the Pienaarsvlakte, above Algeria in the Cedarberg, there is a hybrid swarm

Figure 14. Hybrid swarm between *Psoralea intonsa* and *P. oreopola* in the large sandy vlei below the parking lot at the top of Pakhuis Pass above Clanwilliam. A. Four different hybrids. B. Hybrid. C. Hybrid. D. Flowering *P. intonsa* in foreground with non-flowering *P. verrucosa* around it. E. Group of *P. oreopola* plants. F. Hybrid. G. White flowers of *P. oreopola*. H. Hybrid. I. Hybrid. J. Flowering shoot of *P. intonsa*. K. *P. oreopola* in foreground and hybrid behind. Photographs: A–K by Charles Stirton.
between *P. oreopola* and *P. intonsa* C.H.Stirt., Muasya & A.Bello. The hybrid swarm encompasses a range of intermediate leaf foliation ranging from 3- to 7-pinnate leaflets (*Stirton, Muasya & Bello 11489* with 5-7 leaflets; *Stirton, Muasya & Bello 11492* with 3-, 5-, and 7-pinnate leaflets). The variation in this population is considerable and shows a range of flower colour intermediates. See Table 1. Hybridization between these two species (Fig. 14) also occurs in the large sandy vlei below the parking lot at the top of Pakhuis Pass above Clanwilliam: *Psoralea oreopola* hybrids (e.g. *Muasya & Stirton 3272, 3274*), and *P. intonsa*. Variation in this population is more complex than in the Algeria swarm and is complicated by the presence of *P. verrucosa*. It has not been studied in detail as in our previous studies of hybridization in *Psoralea* (Bello et al. 2018) as the area was later burnt and we were unable to revisit.

**Etymology.** The specific epithet *oreopola* is derived from the Greek word ὀρειός (of the mountain) and refers to their preferred locale.

**Preliminary IUCN conservation assessment.** Nearly all the existing populations occur in protected areas and only the plants on the lower slopes of valleys along road routes might be affected should changes occur to the landscape or via roadworks. The only perceived threat would be the establishment of new forest plantations and the spread of *Pinus* L. We consider it as Least Concern: LC (IUCN 2012).

**Additional material examined.** SOUTH AFRICA – Western Cape Province: 3218 (Clanwilliam) • Pakhuis Pass, Clanwilliam (–BA); Nov. 1929; *Thode s.n.*; PRE • Sandy vlei below the parking lot at the top of Pakhuis Pass above Clanwilliam (–AA); 11 Dec. 2007; *Muasya & Stirton 3271*; BOL • Heuningvlei, Pakhuis Pass, Cedarberg (–AA); 4 Sep. 2011; *Muasya & Stirton 1322*; BOL • 3219 (Wuppertal): Uitkyk Pass, Cedarberg (–AA); Dec. 1934; *Leipoldt s.n.*; BOL, NBG, PRE • ibid.; 3 Dec. 1934; *Salter 5077*; NBG, PRE • Middelburg Pass, Kleinfontein extension, Elandskloof (–AC); 5 Nov. 1986; *Stirton 11488*; PRE • Elandskloof, Koe Boukeveld (–AC); 16 Dec. 1935; *Levyns 5142*; BOL • Welbedacht Kloof, Cedarberg (–AC); 19 Oct. 1923; *Pocock 418*; NBG, PRE • NE base of Sneeuberg from Eikeboom farm up to Hoogvertoon, Sederhoutskloof, Cedarberg Forest Reserve (–AC); 5 Dec. 1964; *Taylor 6182*; NBG, PRE • Top of Uitkyk Pass, Cedarberg, Top end of Die Vlei, between Meid se Berg and Malkopkraal (–AC); 7 Feb. 2009; *Muasya & Stirton 4170*; BOL • ibid.; 7 Feb. 2009; *Muasya & Stirton 4270*; BOL • Wolfberg, Cedarberg Mountains (–AC); 7 Feb. 2009; *Muasya & Stirton 4376*; BOL • Pienaarvlak above Algeria in Cedarberg (–AC); 7 Nov. 1989; *Stirton 11489*; PRE • Sneeuberg track above Sederhoutskloof, 9 Dec. 1982; *Taylor 10519*; K, NBG • Mouton’s Klip, Welbedacht Vlei, Cedarberg (–AC); 5 Nov. 1986; *Bean & Viviers 1765*; BOL • Top of Duivelkopp, Clanwilliam Division (–BA); Jan. 1945; *Stokes 9240*; BOL • Top of Middelberg Pass (–CA); 13 Nov. 1985; *Snijman 975*; NBG, PRE • ibid.; 8 Feb. 2009; *Muasya & Stirton 4397*; BOL • Middelberg Plateau, Clanwilliam District (–CA); 12 Dec. 1939; *Esterhuysen 2471*; BOL • Middelberg mountains, Clanwilliam District (–CA); 14 Dec. 1941; *Esterhuysen 7191*; BOL • Groothout Summit, Clanwilliam District (–CA); 21 Dec. 1940; *Esterhuysen 4188*; BOL • South west slope of Cedarberg Tafelberg (–CB); 17 Dec. 1950; *Esterhuysen 18132*; BOL • Groothout Mountain, near Algeria (–CB); 19 Sep. 1991; *Stirton 9190*; PRE • 91 km from Op-die-Berg to Clanwilliam (–CB); 19 Sep. 1991; *Stirton 9184, 9185, 9187, 9190*; PRE • In vlei Cederberg reserve (–CC); 11 Dec. 2007; *Muasya & Stirton 3271*; BOL.

**CONCLUSION**

We described one species in *Psoralea* subgen. *Otholobium* and nine species in *P. subgen. Psoralea*. Among these species, six species were already established as informal names in literature and on herbarium specimens. Most of the species are known from limited collections but have been augmented with a wealth of information from iNaturalist, pointing to gaps in knowledge especially among lineages occupying narrow distribution ranges in the Cape flora.

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