PLANT PORTRAITS

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13. Cheiranthera volubilis Benth. (Pittosporaceae)


Illustration: Based on fresh material preserved under _R. Davies & W. Bushman_ 145, from near junction of Church Road and West-End Highway, north from gate into Flinders Chase National Park, Kangaroo Island, 8.x.1983 (AD).

A glabrous twiner 20 cm to 1 m tall. _Stem_ weak, slender, terete, branching chiefly at the base, usually purplish-brown, glabrous, papillose with flaky epidermis. _Leaves_ erect, alternate, sometimes clustered at the node, sessile, linear, mucronate, strongly involute so as to appear almost terete, channelled on the upper surface and somewhat papillose, glabrous and with sparsely ciliate margins, 2-22 (-30) mm long, 0.5-1 mm broad. _Flowers_ solitary, terminal, drooping from a lone slender peduncle; peduncle purplish, 1-5 cm long. _Sepals_ 5, free, lanceolate, acute, greenish-blue with scarious margins, glabrous, glandular-viscid outside, 4-6.5 mm long, 1-1.5 mm broad. _Petals_ 5, free, obovate, glabrous, deeply violet-blue, 14-15 mm long, ± 7 mm broad. _Stamens_ 5, all curved towards one side of the flower; anthers conspicuously sulphur-yellow, longer than the filaments, narrowly oblong-ovoid, obtuse, ± 4.5 mm long, about 1 mm broad, opening by two apical pores; filaments violet-blue, flat, curved, glabrous, 3-3.5 mm long. _Ovary_ superior, cylindrical, abruptly constricted at both ends, glabrous, 3-3.5 mm long, ± 1.5 mm in diameter; style subulate, glabrous, violet-blue, ± 4 mm long, stigma entire. _Fruit_ not seen.

_C. volubilis_ is endemic to Kangaroo Island, South Australia, where it is reported chiefly from the western and southern parts of the island. A detailed description of this species is provided here for the first time. The descriptions provided by _Bentham_ (1863) and _J.M. Black_ (1948) lack details. The publications of _Bennett_ (1972, 1978) are the most recent references dealing with the genus _Cheiranthera_, but she describes mainly new taxa and did not mention _C. volubilis_.

This species is very similar to _C. parviflora_ Benth. in its solitary flowers being borne on slender terminal peduncles. Nevertheless, _C. parviflora_ can easily be distinguished by its leaves being much broader, flat and with slightly revolute or recurved margins and its comparatively smaller flowers. Moreover, _C. parviflora_ is endemic to Western Australia while _C. volubilis_ occurs only on Kangaroo Island in South Australia. _C. volubilis_ is also closely related to _C. alternifolia_ _E. Bennett_, but the latter can readily be identified by its twiggy branches and corymbose inflorescence.

According to field notes accompanying the specimens _R. Davies & W. Bushman_ 144, 155 (AD), this species occurs chiefly in sandy, silty or clayey soil with laterite. It has been collected from a 'gentle south-facing slope near crest of broad ridge of dissected plateau'. The species was found to regenerate in areas bulldozed or destroyed by fire. _C. volubilis_ is found in association with low open shrubland of _Xanthorrhoea tateana_ _F. Muell._ and _Caustis pentandra_ _R. Br._ _G. Jackson_ (608 & 416 in AD) collected it from 'ironstone rubble under pine plantation'.

References


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14. Acacia glandulicarpa R. M. Reader (Leguminosae- Mimosoideae)

Acacia glandulicarpa F.M. Reader, Vic. Nat. 13: 146 (1897); Whibley, Acacias of South Australia (1980) 136.

Illustration: Based on fresh material preserved under R. Davies & W. Bushman 517, from Burra Creek Gorge, southern side c. 1 km west of end of road into gorge, c. 22 km from Robertstown, 29. vii. 1983 (AD).

Shrubs rounded, spreading, usually much branched, 1-2 m high, with dull olive-green foliage; branchlets grey-brown, terete, pubescent, marked with small raised phylloide bases. Phyllodes small, obliquely oblong-obovate to more or less elliptical, 5-12 mm long, 3-6 mm broad, erect, thick, rigid, glabrous, minutely glandular, 2-nerved with usually central nerve more prominent, lateral nerves somewhat anastomosing and few obscure, apex shortly mucronate. Stipules small, thick, almost deltoid, persistant. Inflorescences simple and axillary, solitary or twin, flower heads bright yellow, small 8-20 flowered; peduncles about as long as phyllodes. Calyx 5-lobed, lobes about as long as the tube, ciliate, somewhat clothed with whitish shining hairs. Petals glabrous, oblong-ovate, slightly oblique, rather acute, with a broad prominent nerve. Legumes narrowly oblong, 1.5-3 cm long, 2-3 mm broad, straight or curved, viscid and covered with glandular shining hairs. Seeds depressed oblique in legume obovoid elliptoid, funicle short folded under seed and thickening gradually into an elongated aril. Flowering time: July-October.

Acacia glandulicarpa has a disjunct distribution. The main occurrence is as scattered populations in the West-Wimmera, Victoria with the largest populations in the Gerang-Gerung- Kiata area (Stowe J. (1982) Vic. Nat. 99: 52-65).

In South Australia a small population of A. glandulicarpa occurs in the Northern Lofty Region on north-west facing slopes on skeletal soil with slate and shale. A. glandulicarpa was first recorded in September 1966 from this area by C.D. Boomsma (AD 96637002). Recently R. Davies and W. Bushman searched the area and observed 18 plants with no seedlings apparent.

The vegetation is low shrubland associated with Eucalyptus socialis F. Muell. ex Miq., E. brachycalyx Blakely and Callitris preissii Miq. Other acacias observed in the near and surrounding area are Acacia brachybotrya Benth., A. oswaldii F Muell., A. calamifolia Sweet ex Lindley, A. ligulata Cunn. ex Benth., A. pycnantha Benth.

Acacia glandulicarpa is similar in habit and related to A. roundifolia Hock. but the latter differs in having one main nerve on the phylloide and a spirally coiled more or less glabrous legume.

About one-third of the population in Victoria is either in National Parks reserves, the John Smith Memorial Sanctuary or Crown Land. In South Australia the small population showed signs of sheep grazing in the area so it has been considered vulnerable as defined by Leigh, Briggs and Hartley (1981).
Cheiranthera volubilis Benth, A, several branches each ending in a flower, x 0.7; B, insertions of leaves on branch, x 1; C, flower bud and developing fruit, x 0.7; D, transverse section through leaf, x 4; E, flower in close up, x 3; F, flower with sepals and petals removed in side view, x 3.
Acacia glandulicarpa Reader. A, habit, x 0.7; B, phyllode in back view, x 2; C, phyllode in front view, x 2; D, flower, x 10; E, legume, x 0.7; F, portion of legume, x 2; G, portion of legume opened to show seeds on funicle, x 2; H, glandular hair from legume, x 6.
Swainsona tephrotricha F. Muell. A, habit, x 0.7; B, standard in front view, x 1; C, standard in back view, x 1; D, wing from the inside, x 1; E, keel in side view, x 1; F, flower with petals removed, x 1; G, flower in side view, x 1; H, legume from above, x 1; J, legume in side view, x 1; K, opened legume, x 1.
Pseudanthus micranthus Benth. A, habit, x 1; B, branchlet with flower buds, x 3; C, mature stem with two female flowers and one male, x 3; D, female flower, x 6; E, developing fruit, x 3; F, aborted fruit from previous year, x 3; G, male flower on mature stem, x 5; H, male flower in side view, x 10; G, male flower in surface view, x 10.
15. Swainsona tephrotricha F. Muell. (Leguminosae-Papilionoideae)

Swainsona tephrotricha F. Muell., Linnaea 25 (1853) 392.

Illustration: A-G Based on fresh flowering material preserved under R. Davies & W. Bushman 518, 29.vii.1983, 2.5 km WSW Eudunda along main road to Kapunda (AD); H-K from: R.H. Kuchel 3113, 14.ix.1973, Arkaroola, Flinders Ranges (AD).

Ascending or suberect perennial, with pithy stems, usually 10-30, sometimes 100 cm high; indumentum of dense silvery or grey medifixed, flattened hairs, appressed, sometimes with the ends spreading on stems, leaves and peduncles. Leaves 3-10, commonly c. 5 cm long, with (9-) 13-17 (-19) leaflets; leaflets oblanceolate to elliptic, 7-30 x 2-15 mm, broadly acute, with recurved mucro, pubescent evenly on both sides; stipules lanceolate, 5-8 mm long, pubescent. Flowers few to 30 on the distal half of the peduncle 8-30 cm long, flowers 8-10 mm long, pedicels c. 2 mm long, densely pubescent with dark and/or white hairs; bract ovate-lanceolate, slightly longer or shorter than hoary pedicel; bracteoles subulate, to 0.5 mm long, inconspicuous. Calyx 4-6 mm long, densely covered with grey and/or dark hairs giving it a dark appearance; teeth triangular, c. 1 mm long. Petals brilliantly rose-pink, drying purplish; standard broadly obcordiform, about as long as broad, with oblique venation, without calli, with a wide short claw c. 2 mm long; wings shortest, oblong on a slender claw c. 3 mm long; keel shorter than the standard, semicircular, obtuse, often with a pair of folds near the auricle, with slender claw c. 3 mm long. Ovary shortly stipitate, fusiform, appressed-pubescent with short hairs except for longer and spreading ones along the suture; style slender, bearded along whole length, with tip slightly but never abruptly bent, a minute tuft of obscure hairs behind the stigma. Pod subglobose, c. 10 mm long, slightly impressed along suture, distinctly beaked, densely pubescent with white hairs, 10-20-seeded. Seeds reniform, up to 2 mm long, brown.

Swainsona tephrotricha is usually found on higher ground and slopes in brown earth with limestone and/or shale in a variety of plant associations ranging from open semi-arid tussock grasslands to open shrublands and disturbed roadside vegetation invaded by exotics.

The most northern part of the distribution of the species is confined to a region around Arkaroola in the Gammon Range of the northern Flinders Ranges and there are several records known of it. Only one or two have been collected to the south at Wilkawillina Gorge and Pekina; a single collection from Terowie in the Northern Lofty Region is preserved in the Adelaide Herbarium. From the Murray Region only one collection from Panaramitee Dam, south of Yunta and Eudunda is known.

The collection R. Davies & W. Bushman 518 from just south of Eudunda has notes on the ecology of the plants. They found 57 healthy plants with new growth on a gentle west-facing slope together with Stipa sp., Avena sp., Maireana brevifolia (R. Br.) P.G. Wilson, Salsola kali L., Marrubium vulgare L., Echium plantagineum L., Lomandra effusa (Lindley) Ewart and Vittadinia blackii N. Burb.

Here the survival of the plants could be threatened due to indiscriminate collecting because these are readily accessible populations of such showy flowers. Although the species seems to occur over such a large area between Eudunda and Arkaroola it is found only in a few scattered localities where it might be locally abundant. The plants are threatened with extinction throughout its distribution range due to heavy grazing by sheep and especially goats.

Swainsona tephrotricha was described by F. Mueller from Burra and the rivers Broughton, Hut and Hill. Subsequently Bentham (1864) reduced it to varietal level as S. lessertiifolia DC. var. tephrotricha. A.T. Lee (1948) reinstated it to species level in her revision of the genus and chose Mueller's specimen from Burra as the lectotype relying on observations published by Black (1927).
16. *Pseudanthus micranthus* Benth. (Euphorbiaceae)

*Pseudanthus micranthus* Benth., Fl. Aust. 6: 59 (1873).


Dwarf shrublet, rigid when with intricate branching, otherwise slender, 10-20 cm high, with some branchlets extended to 30 cm long, minutely pubescent with short, stiff, thick, greyish or often reddish hairs; woody branches arising from a tap root. Leaves alternate, rarely opposite, on distinct glabrous petiole to 0.5 mm long, evenly and widely spaced on greyish or reddish branchlets; lamina obovate or oblanccolate, 2-6 mm long, 1.2-5 mm wide, acute, glabrous and glaucous above, minutely papillose beneath, the midrib visible on the lower face often ending in a small mucro; stipules filiform, c. 0.5 mm long, brown, often caducous. Flowers unisexual on monoecious plants. Male flowers 1-3 in axil of leaves on terminal leafy shoots, turbinate, 1-1.5 mm long, attenuate into a pedicel to 1/3 of its length. Tepals 6, subequal, ovate, to 1 mm long, yellow with reddish tinge dorsally, imbricate in bud, rotate. Stamens 3, nearly as long as the perianth, with filaments free at the base, alternating with lobes of a minute rudimentary ovary, joined near the apex (probably by interlocking papillae) where the anthers form a crown; anther cells semiglobular, c. 1 mm across, usually red, dehiscing longitudinally, deciduous after anthesis. Female flowers solitary, sessile, scattered among male flowers. Tepals 5, 3 outer ones lanceolate-costate, 1.5-2 mm long, yellow usually tinged red distally, the inner segments ovate and shorter than outer ones, yellow-hyaline. Ovary if 2-locular then laterally compressed, if 3-locular then 3-lobed, each locule with 2 ovules and tapering into a recurved style to 0.5 mm long, undivided, dorsally papilllose, rarely capitate. Capsule obliquely ovoid, 4-5 × c. 3 mm, with three ridges dorsally, 1-locular and 1-seeded by abortion, light greenish-yellow turning brown, faintly reticulate. Seeds subglobose to ovoid, 2.5-3.5 × 2.5-3 mm, brown, smooth, shiny, slightly apiculate, without any fleshy terminal outgrowth (caruncle).

The species is rather restricted in the Southern Lofty Region from Port Elliot, Victor Harbor and Waitpinga through the Inman Valley, Willow Creek to Mount Compass, Yankalilla and Normanville. Flowers are apparently found throughout the year.

The unusual locality of the following specimen raises doubts as to its correctness as all other specimens of this species are from the restricted distribution on the southern Fleurieu Peninsula. Professor R. Tate sent material, according to the label, to F. Mueller in Melbourne who based on it the new species *Phyllanthus tatei*. Unfortunately the original note from Tate was not preserved and the specimen is labelled as being collected from the Bundaleer Range in the Northern Lofty Region. Later J. Black seemed to have examined this specimen and/or was given part of this collection for his own herbarium and copied in his own hand Mueller's locality onto the label. Black (1924) made the new combination *Micranthus tatei* (F. Muell.) J. Black but reversed his decision again in 1948. Eichler (1965) then placed the species into the synonymy of *Pseudanthus micranthus* where it is still maintained.
These rigid plants are apparently not grazed by sheep or cattle. They are found on hill sides, roadsides and sandy places where the long tap root penetrates the soil. When the plants are growing between shrubs or bushes and sheltered between them, the habit of the plant is more slender and branches are more straight and erect.

References

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