A NEW PHEBALIUM (RUTACEAE) ENDEMIC TO KANGAROO ISLAND

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Abstract

Phebalium equestre is described and illustrated; it is endemic to eastern Kangaroo Island and is regarded as endangered.

Populations of the only Phebalium on Kangaroo Island were referred tentatively to P. hillebrandii J.H. Willis by Wilson (1970) and by Armstrong & Telford (1986); their status as a distinct endemic species close to P. brachyphyllum Benth. was first suggested by Davies (1986). The rarity of this species is demonstrated by the absence of any herbarium collections prior to 1952. No Phebalium other than P. pungens (=Eriostemon pungens) was listed for Kangaroo Island by Cleland and Black (1927; 1941; 1952), and Wilson (1970) had seen only one collection.

Phebalium equestre D.A. Cooke, sp. nov.

Frutex nanus diffusus virgatus ad 30 cm altus. Caules repetite divaricati; ramuli graciles laeves vel rubescentes, pilis stellatis c. 0.2 mm longis pubescentes. Folia brevissime petiolata, patentia, ephippioidea, transverse oblonga cordata 1-3.5 mm longa 1.8-4 mm lata, subcoriacea glandulis depressis punctata, supra scabra, subtus glabra, marginibus integris recurvis, apicibus obtusis decurvis ut videtur retusis. Flores terminales solitarii vel 2-3 cymam umbelliformem sessilem formantes, in pedicellis 2-4 mm longis rubentibus infime bibracteolatis; alabastra obovoidea obtusa 2.3-3 mm longa rosa. Calyx turbinatus sparsim glandulosus lobis transverse triangularibus c. 0.3 mm longis. Petala anguste elliptica 2.5-3.5 mm longa glabra, extra rosa valdiore apicem versus, intra alba, apicibus acutis inflexis, in aestivatione valvata. Stamina 10 erecta biseriata, ea petalis altemantia eis subaequantia, ea petalis opposita eis breviora; filamenta teretia glabra; antherae versatile oblongae cordatae retuseae c. 0.5 mm longae, sine glandula apicale, luteolae raro roseo-tinctae. Gynobasis cylindrica c. 0.5 mm alta glandulosa vinacea. Ovarium 0.8-1 mm altum vinaceum carpellis 4-5 obtusis; stylus 1-1.3 mm longus. Coccus patens c. 3 mm longus minute apiculatus sparsim stellato-pilosus. Semen ovoideo-reniforme c. 2.5 mm longum laeve fuscum exarillatum, placenta persistenti postremo membranacea. (Fig. 1).

Type: Three Chain Road, Kangaroo Island, 3.x.1986, B.M. Overton 435 (Holotype: AD).

Etymology: Latin equester, belonging to cavalry or to horsemen; in reference to the saddle-shaped leaves.

Virgate dwarf spreading shrub to 30 cm high. Stems repeatedly divaricate-branched; branchlets slender, smooth, green or becoming reddish, pubescent with stellate hairs c. 0.2 mm long. Leaves very shortly petiolate, patent, saddle-shaped, transversely oblong, cordate, 1-3.5 mm long, 1.8-4 mm wide, subcoriaceous, dotted with depressed glands, scabrous above, glabrous below; margins entire, recurved; apices obtuse, decurved, appearing retuse. Flowers terminal, solitary or 2-3 forming an umbel-like sessile cyme; pedicels 2-4 mm long, reddish,
Phebalium equestre A, flowering branch; B, flower in lateral view; C, flower from above; D, branchlet and detail of stellate hairs of branchlet; E, leaf in adaxial, apical and abaxial views; F, stamens of outer and inner series; G, anther in dorsal and ventral views; H, calyx; I, ovary with gynobase and style; J, ripe coccus; K, seed. Drawn from holotype and from cultivated material.
with 2 bracteoles at the base; upopened flowers obovoid, obtuse, 2.3-3 mm long, pink. Calyx turbinate, sparsely glandular, with transversely triangular lobes c. 0.3 mm long. Petals valvate, narrowly elliptic, 2.5-3.5 mm long, glabrous, externally pink deeper towards the apex, internally white; apices acute, inflexed. Stamens 10, erect, biseriate, those alternating with the petals subequal to them, those opposite the petals shorter; filaments terete, glabrous; anthers versatile, oblong, cordate, retuse, c. 0.5 mm long, lacking an apical gland, pale yellow rarely tinted pink. Gynobase cylindrical, c. 0.5 mm high, glandular, wine-red. Ovary 0.8-1 mm high, with 4-5 obtuse carpels, wine-red; style 1-1.3 mm long. Coccus patent, c. 3 mm long, minutely apiculate, sparsely stellate-pubescent. Seed ovoid-reniform, c. 2.5 mm long, smooth, fuscous; aril absent; placenta persistent, ultimately membranous.

P. equestre is restricted to the Hundred of Haines, Kangaroo Island. It occurs mainly on sandy soils in Eucalyptus diversifolia mallee, often associated with E. cosmophylla and Melaleuca uncinata. It also extends to lateritic soil and E. cneorifolia mallee (Davies, pers. comm.). These habitats have largely been cleared and the remaining Phebalium populations are restricted to road verges and small patches of native vegetation subject to stock grazing. Flowering occurs in August to October.

Specimens examined

SOUTH AUSTRALIA: c. 200 m down road to Salt Lakes from intersection of Penneshaw-Kingscote road and American River road, 4.vi.1984, R. Davies 562 (AD); American River, 22.x.1974, N. Gemmell 328 (AD 97617349); Three Chain Road, 3.ix.1984, K.C. Holliday s.n. (AD 98433148); road joining Kingscote-Penneshaw road to South Coast road, G. Jackson 328 (AD 96347015); Salt Lakes road, 7.ix.1965, G. Jackson 444 (AD 96548007; MEL); Kangaroo Island, 14.vii.1952, T.R.N. Lothian s.n. (AD 96429007); Seal Bay road turnoff, 6.vii.1977, M.D. Moore s.n. (AD 97838007); Three Chain Road, 21.ix.1985. B.M. Overton 382 (AD 98624078).

Phebalium equestre is placed in the section Leionema (F. Muell.) Benth. on the basis of its stellate vestiture, valvate petals, anthers without apical glands and the persistence of the placental endocarp on the seed. It differs from the closely related P. brachyphyllum in being smaller in all measurements with a diffuse divaricate habit, a characteristic leaf shape and fewer flowers in the inflorescence; these characters are maintained in cultivated specimens. It differs further from P. bilobum Lindley and P. hillebrandii in having leaves which are broader than they are long with entire apices and upper surfaces scabrous with rigid simple papillae.

Anther colour, used in the key of Armstrong & Telford (1986), does not appear to be a useful character in this species, varying from yellow to pale pink on the same plant. The carpel number may be 5 as in P. brachyphyllum or reduced to 4 as in P. bilobum and P. hillebrandii. At anthesis the carpels are obstone as in P. brachyphyllum; the apiculum which develops on the fruiting carpel may be homologous to that observed in flowers of P. hillebrandii (Wilson, 1971) but appearing later in development.

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References


