NEW AUSTRALASIAN SPECIES OF PEPLIDIUM AND GLOSSOSTIGMA (SCROPHULARIACEAE)

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Abstract

Peplidium foecundum W.R. Barker from arid central and south-eastern Australia and Glossostigma cleistanthum W.R. Barker from central and south-eastern Australia and New Zealand are formally named and described.

Two species, respectively from the genera Peplidium and Glossostigma, are newly described to provide names for their treatment in the forthcoming Flora of New South Wales (Barker et al., in press). Both species occur in central and south-eastern arid Australia, but the Glossostigma extends into higher rainfall areas of south-eastern mainland Australia and to New Zealand. Their evolutionary relationships, adaptations and biogeography have been dealt with previously in a paper on the subtribe Mimulinae (Barker 1982). Attention is also drawn to the recent description of a new Peplidium in arid Australia (Barker 1990).

Peplidium foecundum W.R. Barker, sp. nov.


P. maritimum auct. non (L.f.)Asch.: J. Black, Trans. R. Soc. S. Austral. 57 (1933) 156.

Species nova speciebus staminibus duobus fructibusque indehiscentibus affinis; a P. maritimo (L.f.)Asch. (syn. P. humifusum Delile) differt fructibus seminibusque maioribus, a ceteris corollis e calyce vix exsertibus fructibusque abundantibus.

Holotypus: W.R. Barker 3545, 16.ix.1978, South Australia. Region 2: Lake Eyre Basin. Stuart Highway, ca. 46 km by road S of Coober Pedy (29°25'S 134°48'E). Prolific, intermixed with Peplidium spp. (Barker 3544, 3546) and Limosella curdieana. Small claypan, dried out, in gibber plain; low open shrubland. Prostrate, large- succulent-leaved herb. Corolla reduced, but 2-lipped, the upper shorter than the lower, the lips pale blue with yellow-green spot on lower side of mouth, stigma slowly irritable. AD97925247.

Isotypi: 4 duplicates to be distributed.

Prostrate ?annual, moderately densely eglandular pubescent, with branches to c. 20 cm long. Leaves fleshy; petiole to 0.6 cm long; blade ovate to elliptic, to 2.5 cm long, obtuse. Flowers single, in most bract axils; pedicel 0-2 mm long. Calyx narrow cylindrical, 2-3 mm long, enlarging in fruit. Corolla obscure, c. 3-4 mm long, pale blue to ?white, with the lower side of the mouth yellow-green with no obvious palate; lips very short. Stamens 2. Capsule ovoid to ?globular, 3-4.5 mm long; seeds 0.7-1.4 mm long, furrowed.

P. foecundum is confined to the central arid regions of Australia, in all mainland states except Western Australia and Victoria. It grows in and beside ephemeral pools in clay to loam soils, often on gibber plains.
This species is notable amongst its congeners for its capacity to produce prolific fruits, from which is derived the specific epithet (from the Latin adjective foecundus meaning fruitful or bountiful). The fruits appear clustered in leaf axils, because of their being borne on axillary short shoots. It shares with P. maritimum a small corolla, but in P. foecundum the lips are not prone to spreading like all other species. This characteristic together with the abundant fruits and the low pollen-ovule ratio has led to the proposal that the flowers are at least facultatively autogamous (Barker 1982).

Selected specimens examined (73 total seen)


Glossostigma cleistanthum W.R. Barker, sp. nov.


G. submersum auct. non Petrie: ?Petrie, Trans. N. Zeal. Inst. 23 (1890) 401, partly (Peine WELT60049 appears to have been part of the type collection of G. submersum which otherwise comprises many sheets of G. diandrum).


Species nova staminibus duobus G. diandrum affinisima, non solum differt a speciebus omnibus differt floribus cleistogamis et fructibus subsessilibus, sed etiam a G. elatinoides lobis tribus calycis et a G. drummondii Benth. staminibus duobus.

Holotypus: W.R. Barker 3558, 23.ix.1978. South Australia. Region 7: Eyre Peninsula. South extremity of main north-south ridge of Carappee Hill, ca. 7 km by road ENE of Darke Peak, ca. 100 m N of road. (33°26'2"S 136°16'E). Prolific in occasional rockholes. In dark brown silt sometimes with Limosella curdieana (Barker 3560); within 20 m of pool with Glossostigma sp. (Barker 3559). On slopes of mountain with granite outcropping; ephemeral pools in depressions in granite. Creeping herb, submerged in ca. 10 cm water, but
in view of heavy rains over prior 2 days, possibly formerly exposed. Cleistogamous. Fruits hard, downturned in silt. Material fixed in ethanol. AD97930260. Isotypi: 5 duplicates to be distributed.

Small, glabrous, creeping, aquatic or terrestrial, cleistogamous, ephemeral or short-lived perennial herb, sometimes forming dense mats. Leaves in spaced pairs, 4-45 mm long, with the mid vein apparent throughout the lower side, sometimes obscure on drying, the thin flat, white to pale green petiole gradually dilated into a more or less thick, narrow obovate or oblong, obtuse, porrect, green or reddened blade (0.15-) 0.3-1 times longer and 1-3 times broader than the petiole. Pedicels usually 0-0.5 mm long, shorter than the leaves, downturned in fruit, rarely 5-9 mm long and erect. Calyx urceolate, green, enlarging to 1.5-3 mm long in fruit, never opening. Corolla rudimentary. Stamens 2, included. Stigmatic lobe narrow elliptic. Seeds 0.3-0.8 mm long.

G. cleistanthum is widely distributed though rare across central and south-eastern mainland Australia and in New Zealand. It grows in wet-montane to arid regions, in silt in rock pools, in clay on creekbeds, on swamp margins or river flats or in dams, and flowers and fruits whether exposed or submerged.

This species is distinguished from its congeners by its flowers which never open, its rudimentary corolla, and its usually sessile or subsessile flowers and fruits. The specific epithet derives from the first characteristic, coming from the Greek cleistos, meaning closed, and the Latinized adjectival form of the Greek anthos, flower. The proposal that the flowers are cleistogamous is supported not only by observation, but also by an extremely low pollen-ovule ratio (Barker 1982).

G. diandrum (L.)Kuntze is its closest ally, sharing with it the single pair of stamens. In rare instances G. diandrum also has cleistogamous flowers, but these tend to be stalked and occur on plants with normal flowers as well.

Selected specimens examined (58 total seen)


**References**

