

## NYPHOIDES BEAGLENSIS (MENYANTHACEAE): A NEW AUSTRALIAN SPECIES

by

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### ABSTRACT

Aston, Helen I. *Nymphoides beaglesensis* (Menyanthaceae): a new Australian species. *Muelleria* 6(5): 359-362 (1987). — *Nymphoides beaglesensis* is described and its diagnostic features illustrated. The species is known only from the Beagle Bay area of the Kimberley region of Western Australia.

### TAXONOMY

This paper is the fourth precursor to a revision of *Nymphoides* Séguier in Australia. Descriptions of eight new species appeared in three previous papers (Aston 1982, 1984, 1986). Except for an extreme modification of the transverse fringe of each corolla lobe, the common characters given on page 35 of the first paper also apply to *N. beaglesensis*. This species belongs in the "indica group" defined on the same page.

#### *Nymphoides beaglesensis* H.I. Aston, sp. nov.

Laminae foliorum integrae, latissime ovatae ad  $\pm$  rotundatae, profunde cordatae sino angusto, c. (20-)25-50 mm longae x c. 22 mm latae. Petiolus folii, quod inflorescentiam sustinet, conspicuus c. 1.5-7.5 mm longus, quam lamina paulo brevior ad fere duplo longior. Inflorescentia c. 7-17 pedicellorum vel dense aggregatorum vel per rhachim ad 18 mm longam approximatum formata; nonnumquam 2-4 inflorescentiae contiguae una ut videtur. Flores heterostylosi, 5-partiti. Corolla c. 18-22 mm lata, alba vel alba subroseo-malvacea suffusa, atomarronino-malvacea in fauce; lobi corollae alis lateralibus latis, haud profunde laciniatis, praediti; glabri praeter duos conspicuos fasciculos caespitosos pedicellatos capillorum papillosorum, singulos in lateribus basi loborum; papillae tubi corollae simplices, breves, c. 0.3-0.8 mm longae, c. 50-70 aggregatae in fasciculo denso sessile vel subsessile. Capsula ellipsoidea ad late ellipsoidea, 3.5-6.0 mm longa. Semina c. 33-64 in capsula, paene globosa, minime ad modice utrinque compressa, 0.75-0.95 mm longa x 0.70-0.85 mm lata x 0.55-0.70 mm crassa, maturitate atrofumosa; pagina caespitibus tuberculorum 1-8 erectorum obtusorum, ad 0.5 mm longitudine vel dispersis vel solis, apud iuxtaque marginem; caruncula basalis circularis, pallida, crassa, conspicua.

*N. triangulari* H.I. Aston atque *N. elliptica* H.I. Aston et corollae colore et petiolo longo folii quod inflorescentiam sustinet similis; differt, tamen, praecipue in magnitudine sculpturaque seminis, in dispositione capillorum in lobis corollae, et in papillorum tubi corollae.

Apparently annual. *Petiole-like stems* few, arising from the plant base, slender, flexuose, 4-20 cm long x c. 0.8-2 mm diam.; true petiole of stem leaves conspicuous, c. 1.5-7.5 cm long, a little shorter than to almost twice as long as the blade, about equal in width to the stem and like it tinged or deeply coloured with maroon-purple. *Basal leaves* also present, their petioles few-30 cm long. *Leaf blades* floating, entire, very broadly ovate to  $\pm$  circular in outline, deeply cordate with a narrow basal sinus; sinus c. 30-45% of total blade length, of c. 0°-30° angle or the lobes slightly overlapping; basal lobes obtuse to rounded; blade c. (20-)25-50 mm long x c. 22-47 mm wide, widest just above the level of petiole insertion, dark green above, paler green tinged with purple or entirely deep maroon-purple beneath, not spongy. *Inflorescence* as for the "indica group", the pedicels subtended by acute bracts c. 1-6 mm long and grouped c. 7-17 together in a cluster distanced from the subtending leaf blade by the conspicuous petiole; pedicels either tightly massed in each cluster or the rachis of the cluster extended to 18 mm long with the pedicels

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and their bracts spaced up to 3 mm apart along it; stems often bearing 2-4 close-spaced inflorescences only 2-7 mm apart so that both or all these inflorescences may appear as one, particularly when the subtending leaf develops only at the lower inflorescence. *Pedicels* very slender, 25-80 mm long x <0.5(-1) mm diam., green tinged with pale to deep maroon-purple. *Flowers* heterostylous, 5-partite. *Calyx lobes* lanceolate to narrowly ovate, acute, c. 4.8-6 mm long. *Corolla* c. 18-22 mm span, "white" (Dann 70) or white with the central sections of the lobes tinged pinkish-mauve and grading to deep maroon-mauve at the throat (Kenneally 9451). *Corolla lobes* broadly ovate to broadly obovate, emarginate; mid-section of lobe glabrous except for two conspicuous long-stalked tuft-like clusters of minutely papillate hairs positioned one on each side at the lobe base, each beside the insertion of the filament; hair clusters consisting of c. 10-22 hairs to 1.3 mm long on a stalk c. 0.2-1.1 mm long; side wings of lobe broad, undulate, shallowly lacinate (deeply so at the apex), extending from the apex almost to the lobe base. *Corolla tube* somewhat shorter than the calyx; tube papillae short, obtuse, c. 0.3-0.8 mm long, c. 50-70 together in a dense cluster, the cluster sessile or on a base of slightly raised tissue c. 1-1.5 mm long. *Stamens* with filaments c. 0.5 mm and c. 2.2 mm long in long-styled and short-styled flowers respectively; anthers broadly linear, 3-4 times as long as broad, 1.3-2 mm long. *Gynoecium (long-styled flower)* c. 6 mm or more long; ovary ellipsoid, gradually tapered into the style; placentas 2, about one third of the ovary length, positioned centrally down the ovary wall; ovules c. 45-77; style c. 2.3 mm long, slender; stigmas 2, each an erect lacinate wing (not fully examinable on material seen). *Gynoecium (short-styled flower)* c. 4.6-4.9 mm long; style c. 0.5-0.7 mm long; stigmas c. 1-1.4 mm long x 2.4-2.6 mm broad, strongly lacinate into numerous papillae, appearing brush-like. *Capsule* ellipsoid to broadly ellipsoid, ± equal to the calyx, 3.5-6 mm long. *Seeds* c. 33-64 per capsule; body of seed near-globose but slightly to moderately laterally compressed, 0.75-0.95 mm long x 0.70-0.85 mm wide x 0.55-0.70 mm thick, dark grey-brown-black when mature, the surface bearing spaced clusters of 1-8 erect obtuse tubercles to 0.5 mm long, or sometimes the faces smooth and the tubercle-clusters present only on and near the edges; basal caruncle circular, pale, very thick and conspicuous. Fig. 1.

#### TYPE COLLECTION:

8 km east of Beagle Bay Mission, Dampierland Peninsula, in permanent pool known locally as "Bunguaduk", 16° 58' S., 122° 44' E., Kimberley region, Western Australia, 20.viii.1985, K.F. Kenneally 9451 (Holotype: PERTH. Isotype: MEL 1549338).

#### OTHER SPECIMENS EXAMINED:

*Western Australia (Kimberley region)* — Bungaduk Waterhole, 6.7 km E. of Beagle Bay Aboriginal Community, 16° 59' S., 122° 40' E., 24.vi.1984, J.R. Dann 70 (PERTH). Beagle Bay, 16° 56' S., 122° 45' E., [22-24.iv.]1879, A. Forrest s.n. (MEL 1549339).

#### DISTRIBUTION:

*Western Australia* — Known only from a very restricted area east of Beagle Bay, Kimberley region, from the three collections cited above, two of which (probably all three) came from the same waterhole.

#### HABITAT:

Shallow fresh water or on mud at water's edge. Permanent waterhole or billabong. Fl. and Fr. recorded late April to late August.

#### NOTES:

Readily recognised as a member of the "indica group" by the white to pinkish-mauve flowers and the clustered inflorescence arising from the apparent petiole, although the frequent occurrence of inflorescences with extended rachises, and often the presence of close-spaced inflorescences with only one subtending leaf for all,

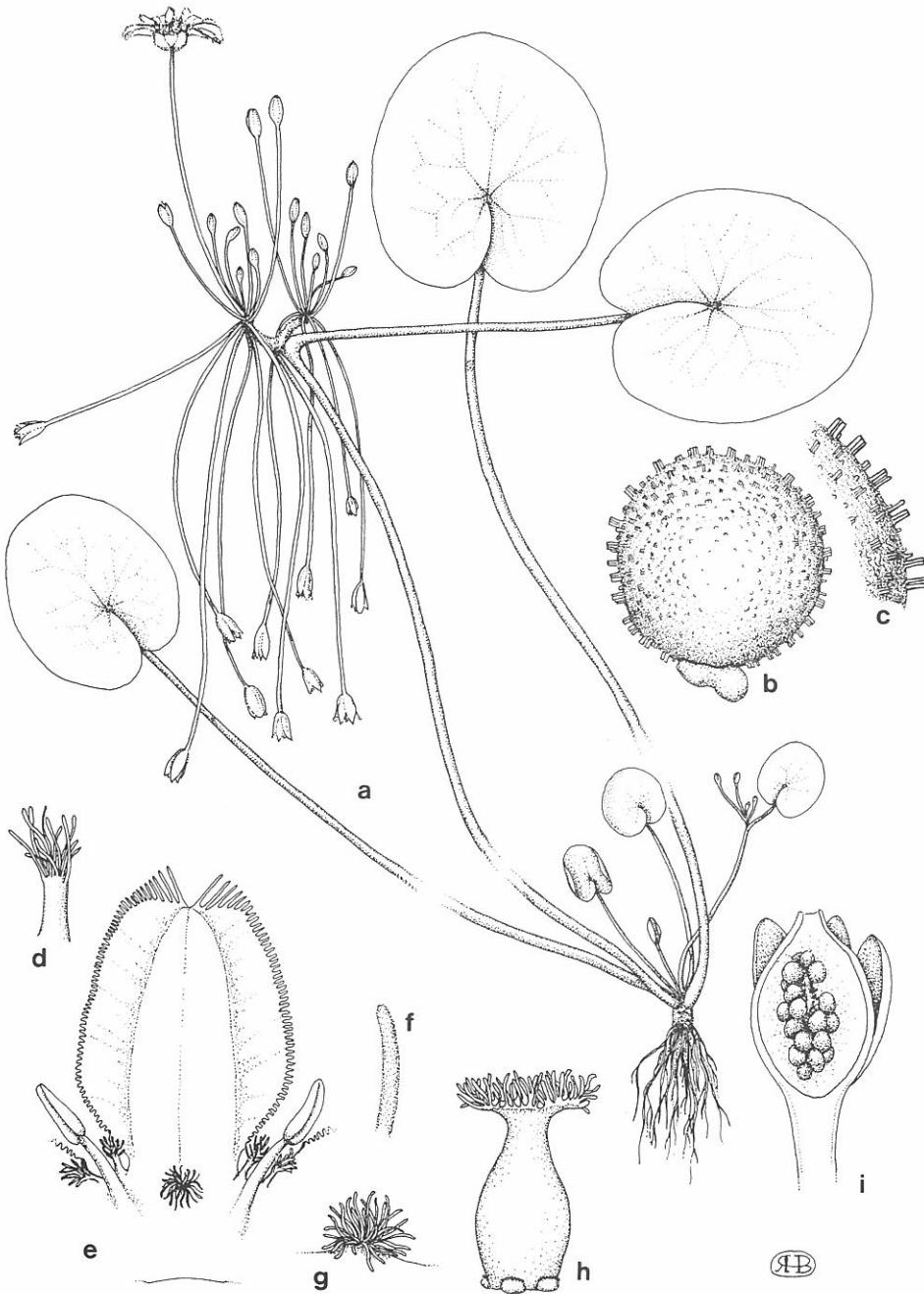


Fig. 1. *Nymphoides beaglensis*. a — habit, x 0.8. b — seed, lateral view, x 34. c — seed, enlargement of edge portion, x 68. d — stalked hair-cluster from lateral position at corolla lobe base, x 8. e — corolla, portion showing one lobe with its basal fringe represented only by two stalked lateral hair-clusters, one of the papilla clusters of the throat, and two stamens, x 5.5. f — papilla from a cluster of the corolla throat, x 25. g — papilla cluster from corolla throat, lateral view, x 8. h — gynoecium of short-styled flower, x 6. i — capsule, longitudinal section showing one of the placentas with seeds; some seeds removed, x 5. Lower rooting portion of habit from *Dann 70*; remainder of figure from *Kenneally 9451*.

are unusual for the group. *Nymphoides beaglensis* differs from all other species of the "indica group" in its ornamentation of the corolla lobes (the presence of distinctive stalked lateral hair clusters at the base being the only semblance of the transverse fringe of papillae found in other species) and in its seed characters. In the pinkish-mauve tinge to the corolla and in the long petiole of the inflorescence-subtending leaf, *N. beaglensis* most closely resembles *N. triangularis* H.I. Aston and *N. elliptica* H.I. Aston from Cape York Peninsula. However, the latter two species differ from *N. beaglensis* particularly in their seeds, in the complete fringe of papillae across the corolla lobe base, and in the papillae of the corolla tube consisting of fine branched hairs.

Examination of some flowers which had part-withered before placement in spirit, or which were softened by boiling, presented difficulties, but a flower from *Dann 70* and one from *Forrest s.n.* apparently had anthers held level with the stigmas and on filaments 1-1.5 mm long, i.e. intermediate in length to the measurements recorded in long-styled and short-styled flowers. They could represent a mid-styled condition and, if so, the species is tristylous.

As I have not seen this species in the field, information obtained from photographs and spirit material (PERTH 4821/B) accompanying the type collection and spirit material of *Dann 70* (PERTH 4535/B) has been particularly valuable in providing details of flower structure and in adding to the information obtainable from the dried sheets. The recent collections have enabled me to confirm my suspicion that the early collection of Forrest would prove to belong to an undescribed species.

The approximate day and the month of collection of *Forrest s.n.* has been determined from his journal (Forrest 1880).

The epithet *beaglensis* refers to Beagle Bay, near which the species is apparently endemic.

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