

A New Species of, and Reinstatements in, *Octamyrtus* (Myrtaceae)

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Abstract

The taxonomy of *Octamyrtus* Diels is reviewed and six species are recognised. *Octamyrtus halmaherensis* Craven & Sunarti is newly described and *O. arfakensis* Kaneh. & Hatus. ex C.T. White and *O. glomerata* Kaneh. & Hatus. ex C.T. White are reinstated. Neotypes are designated for *O. behrmannii* Diels and *O. insignis* Diels. A key to the species is provided.

Introduction

Due to its largish, multipetalled flowers that commonly are red or pink, *Octamyrtus* Diels is an intriguing genus of Papuasian Myrtaceae. The syndrome of floral features, i.e. long, more or less tubular, often brightly coloured flowers, suggests that its several species may be pollinated by birds. The genus was revised in 1978 by Scott who recognised three species, *O. behrmannii* Diels, *O. insignis* Diels and *O. pleiopetala* Diels, with the last-named species containing two varieties, *O. pleiopetala* var. *arfakensis* (Kaneh. & Hatus. ex C.T. White) A.J. Scott and the typical morph (Scott 1978a).

The first author's long-standing interest in this attractive genus was re-kindled by an inquiry from Marcel Polak, Leiden, as to the identity of collections he had made on the Vogelkop, Indonesian New Guinea, in 1995 and 1996. Polak's specimens had extremely large leaves with the lamina decurrent to the petiole and yellowish-coloured flowers; they keyed to *O. insignis* in Scott's key (1978a). Upon comparison with collections lodged in herb. CANB, and those cited by Scott (1978a) in his revision as being *O. insignis*, the Polak specimens proved to be significantly different. The CANB specimens of *O. insignis* had distinctly petiolate, non-decurrent leaves and pink to red flowers. During collaborative investigations of *Octamyrtus* specimens in BO, the first author noted that the Polak specimens had much in common with an isotype

specimen of *O. glomerata* Kaneh. & Hatus. ex C.T. White, a species placed in synonymy with *O. insignis* by Scott (1978a).

The investigations were continued during a study visit by the second author to CANB in 2003 with the conclusion that the Polak specimens were conspecific with the type collection of *O. glomerata* and that this species was distinct from *O. insignis*. It was further concluded that Scott had inappropriately combined *O. arfakensis* Kaneh. & Hatus. ex C.T. White with *O. pleiopetala* although he did give the former taxon status at the rank of variety. An anomalous collection from Maluku (*de Vogel* 3140), differs from all other collections of the genus that we have seen in possessing sessile, cordate leaves and we conclude that this represents a new species, described below as *O. halmaherensis* Craven & Sunarti.

Octamyrtus has much in common with *Rhodomyrtus* (DC.) Rchb., but differs from this genus in having a greater number of petals, 6, 8 or 12 as against 4 or 5 in *Rhodomyrtus* (Scott 1978a). The petals in *Octamyrtus* are often red or pink and may be up to c. 6 cm long. In most species of Malesian rainforest Myrtaceae, the petals are relatively insignificant with the stamens providing the primary visual signal for pollinators; in this respect *Octamyrtus* appears to be unique. Nonetheless, in features of the ovules and placentation, and seeds and fruit morphology the species of *Octamyrtus* are so similar to Papuanian *Rhodomyrtus* that they may in future be found to be better placed in that genus.

Taxonomy

Octamyrtus Diels

Octamyrtus Diels, Bot. Jahrb. Syst. 57 (1922) 373. –**Type:** *Octamyrtus insignis* Diels (lecto, vide McVaugh, Taxon 5 (1956) 144).

1. *Octamyrtus arfakensis* Kaneh. & Hatus. ex C.T. White

Octamyrtus arfakensis Kaneh. & Hatus. ex C.T. White, J. Arnold Arb. 32 (1951) 144. *Octamyrtus pleiopetala* var. *arfakensis* (Kaneh. & Hatus. ex C.T. White) A.J. Scott, Kew Bull. 33 (1978) 305. –**Type:** Indonesian New Guinea, Arfak Mountains, Lake Gita, 1900 m, Kanehira & Hatusima 14028 (lecto A, not seen (image seen); isolecto BO, BRI not seen).

Notes: Although White (1951) cited the Kanehira and Hatusima collection as being the type when he described *O. arfakensis*, he did not designate a holotype. Scott (1978a) designated the specimen lodged in A as holotype and thus effectively has selected the lectotype. The BRI material cited by Scott as an isotype is fragmentary, consisting of a single leaf only (A.R. Bean, *pers. comm.*) and Scott's choice of the A specimen as lectotype is appropriate.

2. *Octamyrtus pleiopetala* Diels

Octamyrtus pleiopetala Diels, Bot. Jahrb. 57 (1922) 373. *Eugenia pleiopetala* F. Muell., Descr. Notes Papuan Pl. 1 (1877) 106 sub *Myrtella hirsutula*, nom. inval. (nom. prov.). –**Type**: Indonesia, Moluccas, Aru Islands, *Beccari s.n.* (?lecto MEL, not seen; isolecto K, L, not seen (images seen)).

Octamyrtus lanceolata C.T. White, J. Arnold Arb. 32 (1951) 145. –**Type**: Papua New Guinea, Western Province, *Brass 7701* (lecto A, not seen (image seen); isolecto BO; BM, BRI, K, L, not seen (image seen from L)).

Notes: Scott (1978a) followed Diels (1922) in treating the name *O. pleiopetala* as being a combination resulting from the transfer of Mueller's (1877) *Eugenia pleiopetala* to *Octamyrtus*. Scott, however, appears to have overlooked the long-standing provision of the various editions of the International Code of Botanical Nomenclature, including the most recent version (the Saint Louis Code), that pertains to names not accepted by their author(s) (Art. 34.1; Greuter *et al.* 2000). Mueller's (1877) name is invalidly published as he was tentative as to bestowing the epithet *pleiopetala* upon it (i.e. "to which the name *E. pleiopetala* might be given", p. 106); that he was also unsure as to which genus the new plant belonged is immaterial. Diels (1922) did not validate Mueller's name in *Eugenia* as he was recognising the species as belonging to his new genus, *Octamyrtus*, and treated the species accordingly. Thus Diels apparently has provided the first validly published name for the plant and, as he was treating it under a different genus to Mueller, the name *Octamyrtus pleiopetala* should not be treated as a new combination, even though Diels' name is based on the species concept and descriptive text Mueller derived from Beccari's specimens and is to be typified by those specimens.

Scott (1978a) cited specimens of *O. pleiopetala* in K and L as isotypes, presumably regarding the material assumed to be at MEL as the primary type, in this case lectotype as Mueller did not designate a holotype. Type material of *O. pleiopetala* has not been located in MEL (J.H. Ross, *pers. comm.*) and may no longer be extant in which case a lectotype will need to be selected from the other sheets of Beccari's collection that are available.

As with *O. arfakensis*, White (1951) did not designate a holotype when describing *O. lanceolata* and Scott's (1978a) designation of the material at A as holotype has effected lectotypification. The BRI isolectotype material *fide* A.R. Bean (*pers. comm.*) consists of an adequate flowering specimen.

3. *Octamyrtus behrmannii* Diels

Octamyrtus behrmannii Diels, Bot. Jahrb. 57 (1922) 376. –**Neotype** (here designated): Papua New Guinea, Morobe Province, Aseki Patrol Area, near Haumga, 6 April 1966, *Craven & Schodde 1195* (neo CANB; isoneo A, BRI, CHR, K, L, LAE, TNS).

Notes: With the loss of the type designated by Diels (1922), i.e. Behrmann in *Ledermann* 6969, during the Second World War, a neotype should be selected. Scott (1978a) apparently did not locate any of the original material and a neotype that conforms with Diels' circumscription has been designated above.

4. *Octamyrtus insignis* Diels

Octamyrtus insignis Diels, Bot. Jarhb. 57 (1922) 374. –**Neotype** (here designated): Papua New Guinea, Morobe Province, foothills NW of the Waria River, alluvial terraces along Pao streambed by Yai Village, 4 June 1999, *Takeuchi et al.* 13126 (neo CANB; isoneo LAE not seen).

Notes: With the loss of the type designated by Diels (1922), i.e. *Schlechter* 17428, during the Second World War, a neotype should be selected. Scott (1978a) apparently did not locate any of the original material and a neotype that conforms with Diels's circumscription has been designated above.

5. *Octamyrtus halmaherensis* Craven & Sunarti, sp. nov.

Octamyrtus halmaherensis Craven & Sunarti, a congeneribus foliis sessilibus et lamina cordata differt. –**Typus:** Indonesia, Maluku, Halmahera, Ekor, G. Panjang, 27 September 1974, *de Vogel* 3140 (holo BO; iso CANB, L not seen).

Tree 10 m tall, clear bole to 5 m, dbh 10 cm, rather gnarled, without buttresses or knots; bark red-brown, not fissured, strongly peeling. Branchlets finely pubescent, 5–7 mm wide. Leaves sessile, obovate, finely pubescent with the hairs weathering away on the adaxial surface, with oil dots (the white material present on the only specimens seen apparently is an artefact of preservation), 22–31.4 x 9.2–12.5 cm; base cordate; apex acute to short acuminate; midrib strongly prominent and rounded abaxially and slightly impressed to flat adaxially; primary veins strongly prominent abaxially and slightly impressed adaxially, arching, confluent at their apex with the next vein and an intramarginal vein not developed; secondary veins not or poorly developed; tertiary veins prominent abaxially, linking the primary veins in a more or less ladder-like pattern. Flowers 1–2 on a distal-axillary spicate inflorescence, 3 x 1 cm, inflorescence axis up to c. 1 cm long, the axis bracts, bracteoles, hypanthium and sepals densely and finely pubescent; bracteoles persistent in fruit, narrowly ovate, 10 mm long, pedicel 3–4.5 mm long. Hypanthium funnel-shaped, very slightly stipitate or estipitate, 5.5–7 x 5–5.5 mm. Sepals 4, green, persistent in fruit, ovate to subtriangular, 10.5–13.5 x 6–6.5 mm. Petals 8, bright red, blade glabrous, margin pubescent, narrowly elliptic to elliptic, 20–28 mm long, oil glands present. Stamens 35–37 mm long, filaments violet, anthers yellow, 2.4–2.8 mm long. Style at least 30 mm long (fully mature style not seen), stigma

green, peltate. Ovary 4-locular, with 2 rows of ovules in each locule. Immature fruit ellipsoid, 18 mm long, seeds not seen but horizontal and vertical septa present.

Habitat & ecology: Found in rather dense primary forest 20 m tall, with little undergrowth, on a rather steep hill side on deep clayey soil, 40 m alt, gregarious.

Distribution: Known only from the type collection.

Notes: *Octamyrtus halmaherensis* is readily distinguished from all other species of the genus in its leaves, which are sessile and cordate. Although known from limited material only, its diagnostic features are unique in the genus.

6. *Octamyrtus glomerata* Kaneh. & Hatus. ex C.T. White

Octamyrtus glomerata Kaneh. & Hatus. ex C.T. White, J. Arnold Arb. 32 (1951) 145. –**Type:** Indonesian New Guinea, *Kanehira & Hatusima 14126* (lecto A, not seen (image seen); isolecto BO, BRI fragment not seen).

Notes: As with the other *Octamyrtus* species described by White (1951), a holotype was not designated. Scott’s (1978a) designation of the A specimen as holotype effectively has nominated the lectotype. The BRI material cited by Scott as an isotype is fragmentary, consisting of some pieces of material in a packet (A.R. Bean, *pers. comm.*) and Scott’s choice of the A specimen as lectotype is appropriate.

Key to the Species of *Octamyrtus*

- 1a. Leaves distinctly petiolate, the lamina not decurrent
 - 2a. Sepals up to 10 mm long
 - 3a. Leaves with a distinct intramarginal vein; petals white, lemon-white, greenish white or light yellow 1. ***O. arfakensis***
 - 3b. Leaves without an intramarginal vein; petals pink or red, rarely yellowish white
 - 4a. Flowers inserted in the distal leaf axils 2. ***O. pleiopetala***
 - 4b. Flowers usually inserted on the trunk or on branchlets below the leaves, rarely in leaf axils 3. ***O. behrmannii***
 - 2b. Sepals 12 or more mm long 4. ***O. insignis***
- 1b. Leaves sessile or the lamina strongly decurrent to the petiole
 - 5a. Leaves sessile, the lamina cordate 5. ***O. halmaherensis***
 - 5b. Leaf lamina shortly petiolate, the lamina strongly decurrent to the petiole..... 6. ***O. glomerata***

Excluded species

Octamyrtus elegans (Bl.) Steen., Blumea 19 (1971) 146; *Macropsidium elegans* Bl., Mus. Bot. Lugd. Bat. 1 (1849) 85; *Psidium elegans* (Bl.) Miq., Fl. Ind. Bat. 1, 1 (1855); *Rhodomlyrtus elegans* (Bl.) A.J. Scott, Kew Bull. 33 (1978) 320. –**Type:** Indonesia, Maluku, Halmahera, in forests near Singanoli, Gilolo, July 1861, *Forsten s.n.* (holo L, not seen (image seen)).

Scott (1978a) considered this species to be conspecific with *Rhodomlyrtus calophlebia* C.T. White and in a later paper (Scott 1978b) published the combination *Rhodomlyrtus elegans* (Bl.) A.J. Scott.

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