

## Two new species of *Tristaniopsis* (Myrtaceae) from Sabah

Berhaman Ahmad<sup>1</sup> and Peter G. Wilson<sup>2</sup>

<sup>1</sup>Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia  
[bahaman@ums.edu.my](mailto:bahaman@ums.edu.my)

<sup>2</sup>National Herbarium of New South Wales, Royal Botanic Gardens and Domain Trust,  
Mrs Macquaries Road, Sydney NSW 2000, Australia  
[peter.wilson@rbgsyd.nsw.gov.au](mailto:peter.wilson@rbgsyd.nsw.gov.au)

### Abstract

Two new species of *Tristaniopsis* (Myrtaceae) are described for Sabah: *Tristaniopsis musa-amanii* Berhaman & Peter G. Wilson and *T. sam-mannanii* Berhaman & Peter G. Wilson. Both species occur on ultramafic substrates.

### Introduction

*Tristaniopsis* Brongn. & Gris is a genus of c. 50 species, with a distribution extending from Burma and Thailand in the north, through Malesia and extending to eastern Australia and New Caledonia. The *World Checklist of Myrtaceae* (Govaerts et al. 2008) includes 25 species in Malesia, many of which occur on the island of Borneo. In the recent family treatment in the *Tree Flora of Sabah and Sarawak*, Ashton and Teo (2011) recognised 11 species, four of which were divided into subspecies.

A recent study of the genus in Borneo (Berhaman 2011) has revealed greater diversity in the genus than indicated by Ashton and Teo (2011) and a further nine putative new taxa were identified, all but one of which occur in Sabah. We are here taking the opportunity to describe two of these new taxa for Sabah to coincide with the 2015 international 'Heart of Borneo' conference.

### Taxonomic account

Both species described here have been studied in the field. Initial measurements were based on fresh material, confirmed and supplemented by additional measurements on dried herbarium material where necessary. Inflorescence terminology follows Briggs and Johnson (1979).

***Tristaniopsis musa-amanii*** Berhaman & Peter G. Wilson, sp. nov.

**Type:** Malaysia: Sabah: Ranau, Kg. Nalumad, *Berhaman A. 878 et al.*, 5 Oct 2015 (holo: SAN; iso: K, KEP, L, NSW, SING, UMS).

**Diagnosis:** Similar to *Tristaniopsis microcarpa* P.S. Ashton in having white deciduous bark but distinguished from it and other species in Sabah by the following combination of characters: young growth and inflorescences covered with short brown hairs, petiole slender up to 2.5 cm long, leaves oblong-elliptical with the abaxial surface of the lamina densely hairy, the adaxial surface glabrous, and the margins somewhat revolute.





**Fig. 1.** *Tristaniopsis musa-amanii* Berhaman & Peter G. Wilson. **A.** Blaze showing thin outer bark and brownish to white inner bark; **B.** inflorescence showing brown, tomentose axes and creamy white petals; **C.** young leaves densely covered in brown hairs; **D.** fully expanded thyrsoide infructescence showing the ellipsoid capsules, leaves with sunken midrib and revolute margin, and the distinct, slender petiole. Photos: Berhaman Ahmad.

**Tree** of medium height, to 20 m tall; trunk 20–25 cm diameter, lacking buttresses. **Bark** smooth, white, deciduous, peeling off in thin strips; inner bark white, sapwood pale yellow. **Twigs** round, young parts densely hairy; epidermis not soon peeling off. **Leaves** oblong to elliptical, 4.5–7.5 cm long, 1.3–3.5 cm wide, upper surface glabrous, sometimes slightly bullate, lower surface densely clothed with brown hairs; base cuneate, petiole distinct 2–2.5 cm long, covered with brown hairs; apex acute to acuminate; secondary veins sparse 18–22 pairs, 5–6 mm apart, raised below and obscure above; midrib sunken on upper surface, raised on lower surface; margin slightly revolute, intramarginal vein inset c. 1 mm. **Inflorescence** a thyrsoide, always longer than the leaf blade; peduncle slender, 5–8 cm long, hairy, 3–4-branched; flowers up to 20; bracts persistent, 8–12 mm long, 3–4 mm wide, densely covered with brown hairs. **Flowers** creamy white; pedicel 1–2 mm long; hypanthium shallow, hairy; petals 5, white, 2.5–3 mm across; stamens yellowish, 1–2(–3) opposite each petal; filaments glabrous, 1–1.5 mm long; anthers dorsifixed, c. 0.2 mm long; stigma capitate, style 1.5–2 mm long; ovary half-inferior. **Capsule**



ellipsoid, glabrous, 4–5 mm long, 1.5–2 mm wide, only the lowermost quarter immersed in the hypanthium, pedicel 1–1.5 mm long; seeds 4–4.2 mm long, wing 2–2.5 mm long, 1–1.5 mm wide. **Fig. 1**

**Distribution:** Endemic to Borneo; recorded from Sabah, Sarawak and Brunei Darussalam.

**Etymology:** The specific epithet honours Datuk Seri Panglima Musa Aman, Chief Minister of the state of Sabah since 2003, who is in charge of the management of natural resources in Sabah, including conservation and sustainable management of forest resources.

**Habitat:** Recorded on ultramafic substrates, common around Mt Kinabalu and Crocker Range in Sabah. Also recorded on ultramafic substrates in Sarawak and Brunei.

**Selected specimens examined:** MALAYSIA: SABAH: Tuaran, G. Alab, *Sumbing* SAN 121663, 11 Aug 1987 (SAN, K, KEP); Tambunan, Trusmadi FR, *Mikil* SAN 32077, 26 Sep 1962 (SAN); Ranau, Kinabalu National Park, *Meijer* SAN 54005, 16 Sep 1965 (SAN); G. Alab, Tambunan, *Sumbing* SAN 121663, 11 Aug 1987 (SAN); *Meijer* SAN 21953, Jun 1960, Ranau, Kinabalu National Park (SAN); Tambunan, Crocker Range, *James & Aban* SAN 65015, 9 Oct 1969 (SAR, K, SAN); Ranau, Kg. Nalumad, *Daim Andau* 325, 15 Dec 1995 (SAN, K); Ranau, Nalumad, *Daim Andau* 546, 24 Aug 1996 (K); Sipitang, Meligan, *Diwol* SAN 141804, 24 Mar 1999 (SAN, KEP); Kinabatangan, Gn. Rara FR, *Wong* 2142, 25 Jul 1992 (SAN, SAR). MALAYSIA: SARAWAK: Bario, Apad Keruma, Pa' Kelapang, Marudi, *Yii* S.558553, 1 May 1968 (SAR, SAN); Limbang, Ulu Sg. Berangan, *Rena* S.60834, 9 Mar 1991 (SAR); Lawas, Bukit Binuda, *Rena* S.60908, 15 Nov 1991 (SAR); Bau, Gunung Orad, *Rantai* S.70219, 29 Dec 1994 (SAR); Limbang, Sg. Sipayan, *Lai* S.76877, 24 Apr 1974 (FRIM, SAR). BRUNEI DARUSSALAM: Gunung Pagon Periuk, Limbang, *Ashton BRUN* 2414A & B, Apr 1958 (SAR).

**Notes:** Beaman and Anderson (2004) cited two unnamed species of *Tristaniopsis*: *T. sp. 1* (John H. Beaman 7676 & 7709, Hampuan Hill, 1300 m a.s.l.) and *T. sp. 2*. (Daim Andau 325). The first author has examined photographs of these specimens, courtesy of the late John Beaman. Indeed, *Daim Andau* 325 is a *Tristaniopsis* and is the taxon described here as *Tristaniopsis musa-amanii*. However, the specimens Beaman 7676 & Beaman 7709 are not a species of *Tristaniopsis* and most likely represent a species of *Symplocos* (Symplocaceae).

*Tristaniopsis sam-mannanii* Berhaman & Peter G. Wilson, sp. nov.

**Type:** Malaysia: Sabah: Mount Alab, Tambunan, *Berhaman A., P.G. Wilson, Postar M. and S. Sengun* SAN 152569, 29 Aug 2010, (holo: SAN; iso: K, KEP, L, NSW, SING).

**Diagnosis:** Bark is persistent, corky and scaly making it most similar to *Tristaniopsis kinabaluensis* P.S. Ashton *sensu lato* but the new species is distinct in having glabrous leaves, flowers with 1(–2) stamens opposite each petal, and a glabrous, ellipsoid-oblong capsule.

**Synonym:** *T. kinabaluensis* *sensu* Ashton (2005) *pro parte*.

**Tree** to 20 m tall; trunk 35 cm diameter. **Bark** persistent, corky, scaly; inner bark white, thin; sapwood pale, white. **Twigs** somewhat square in cross-section, glabrous; epidermis peeling off in thin flakes. **Leaves** oblong to elliptical, thick and leathery, discolorous (undersurface yellowish); lamina 7.5–9.5 cm long, 4–5.5 cm wide, glabrous on both surfaces; base cuneate; petiole 5–8 mm long, with a narrow wing 1.5–2 mm wide; apex rounded obtuse; secondary veins 3–4 mm apart, raised and coarse on upper surface with distinct net-like tertiary veins, smooth on lower surface; midrib sunken on upper surface, raised on lower surface; intramarginal vein inset c. 1 mm. **Inflorescence** a corymb-like (flat-topped) thyrsoid; peduncle 2.5–6 cm long and 3.5–5 mm thick, 2–3-branched, multi-flowered (up to 50). **Flowers** creamy white to pale yellow, pedicel 1.5–2 mm long; hypanthium shallow, glabrous; petals 5, white, c. 3.5–4.2 mm across; stamens yellowish, 1(–2) opposite each petal; filaments glabrous, c. 3 mm long; anthers dorsifixed, c. 0.5 mm long; stigma capitate, style c. 2.5 mm long; ovary half-inferior. **Capsule** ellipsoid, glabrous, 3–4 mm long, 1.5–2 mm wide, only the lowermost quarter immersed in the hypanthium; seeds winged, 2.5–3 mm long and 0.5–1 mm wide. **Fig. 2**

**Distribution:** Apparently endemic to Sabah.

**Etymology:** The specific epithet honours Datuk Sam Mannan, Director of the Sabah Forestry Department, who has vigorously promoted the protection and sustainable use of forest resources.

**Habitat:** Recorded on ultramafic substrates, Gunung Alab, Tambunan, and Gunung Trusmadi and Crocker Range in Sabah.

**Other specimen examined:** MALAYSIA: SABAH: Mount Alab, Tambunan, *Berhaman A and Postar M.* AB771, 16 Mar 2009 (SAN).

**Taxonomic and Nomenclatural Notes:** This taxon was included in the broadly circumscribed species *T. kinabaluensis* by Ashton (2005), but differs in bark, leaf indumentum, and the number of stamens.





**Fig. 2.** *Tristaniopsis sam-mannanii* Berhaman & Peter G.Wilson. **A.** Flowering branchlet with trunk in background; note persistent, scaly bark and blaze; **B.** close-up of top of inflorescence showing the single stamens opposite each petal; **C.** thyrsoid inflorescences with long, thick peduncles, branched 2–3 times, flowers clustered at the top, corymb-like; note also the glabrous leaves with short petioles. Photos: Berhaman Ahmad.

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## References

- Ashton PS (2005) New *Tristaniopsis* Peter G. Wilson & J.T. Waterh. (Myrtaceae) from Borneo. *Gardens Bulletin Singapore* 57: 269–278
- Ashton PS, Teo S (2011) *Tristaniopsis*. In: Soepadmo E, Saw LG, Chung RCK, Kiew R (eds) *Tree Flora of Sabah and Sarawak* 7: 308–322. Forest Research Institute Malaysia, Kepong
- Beaman JH, Anderson C (2004) *The plants of Mount Kinabalu. 5: Dicotyledon families Magnoliaceae to Winteraceae*. Natural History Publications (Borneo), Kota Kinabalu; Kew: Royal Botanic Gardens, Kew.
- Berhaman A (2011) Taxonomic Revision and Phylogeny Study of the Genus *Tristaniopsis* (Myrtaceae) of Borneo. Unpublished dissertation, University of Aberdeen
- Briggs BG, Johnson LAS (1979) Evolution in the Myrtaceae — evidence from inflorescence structure. *Proceedings of the Linnean Society of New South Wales* 102: 157–256
- Govaerts R, Sobral M., Ashton P, Barrie F, Holst BK, Landrum LL, Matsumoto K, Mazine FF, Nic Lughadha E, Proença C, Soares-Silva LH, Wilson PG, Lucas E. (2008) *World Checklist of Myrtaceae*. Royal Botanic Gardens, Kew

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