

**A NEW SPECIES OF *DISSOCHAETA* BLUME
(*MELASTOMATACEAE*) FROM KALIMANTAN
(BORNEO, INDONESIA)**

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Dissochaeta atrobrunnea (*Melastomataceae*–*Dissochaeteae*) from Kalimantan (Borneo, Indonesia) is described and illustrated. The species can be assigned to *Dissochaeta* sect. *Dissochaeta* and is easily recognized by its dense cover of light brown, sessile, stellate hairs and dark brown, 4–6 mm long bristles on branches, leaf undersurfaces, petioles, inflorescences, bracts and hypanthia. Like all other species of *Dissochaeta* sect. *Dissochaeta*, *D. atrobrunnea* shows heterantherous flowers.

Keywords. Borneo, *Dissochaeta* sect. *Dissochaeta*, heteranthery, Kalimantan, *Macrolenes*.

INTRODUCTION

Dissochaeta s.l. (including *Macrolenes*, *Diplectria* and *Creochiton* p.p.) comprises c.60 species that are characterized among shrubby Old World *Melastomataceae* by their scrambling growth form. The monophyly of the scrambling melastome species distributed in the Old World is supported by molecular data and probably evolved only once in the family (Clausing & Renner, 2001). Connected to the scrambling growth are a number of morphological adaptations shared by all species of *Dissochaeta* s.l.: thin, non-self-supporting branches, long internodes, pendent flowering and fruiting branches, specialized wood anatomy, interpetiolar outgrowths, and lignified, adventitious roots. The last two may help climbing and stabilization.

Dissochaeta s.l. is distributed in Malesia between 10°N and 8°S. Its members can be found predominantly in secondary vegetation or in more open places within primary vegetation, such as tree fall gaps, river margins and roadsides. They climb several metres high and produce their flowering and fruiting branches over the tops of trees and larger shrubs.

The most recent contributions to the systematics and taxonomy of *Dissochaeta* and allied genera (*Diplectria*, *Macrolenes*, *Creochiton*) have been made by Bakhuizen van den Brink (1943), Maxwell (1980, 1982, 1983), Veldkamp (1978), Veldkamp & Nayar (1978), Veldkamp *et al.* (1978), Nayar (1980) and Renner *et al.* (2001). These treatments have been consulted to ensure that the species newly described here has not been described before, to identify its placement within *Dissochaeta* and to find morphologically related species.

The classification of *Dissochaeta* s.s. has been revised by Maxwell (1983). He accepted three sections: *Dissochaeta* sect. *Dissochaeta*, *D.* sect. *Anoplodissochaeta* Baill. and *D.* sect. *Omphalopus* (Naudin) Baill. The new species described here shows the major synapomorphies of *Dissochaeta* sect. *Dissochaeta*, which are two fertile stamen whorls with characteristic heteranthery (see below), alternipetalous stamens with two filiform appendages, and well-developed calyx lobes. Therefore, *D. atrobrunnea* is classified under *Dissochaeta* sect. *Dissochaeta*.

***Dissochaeta atrobrunnea* G.Kadereit, sp. nov. Fig. 1.**

A ceteris speciebus *Dissochaetae* sect. *Dissochaetae* cum indumento et pilorum stellatorum et setorum composito setis longioribus 4–6 mm (haud <3 mm) longis et appendiculis ventralibus antherarum longioribus (6–7 mm, non <3 mm) differt. Rami, facies foliorum inferiores, petioli, inflorescentiarum axes, pedicelli, bracteae, bracteolae et hypanthium cum pilis stellatis sessilibus pallide brunneis et setis simplicibus 4–6 mm longis atrobrunneis tecti. Nodi sulcis interpetiolaribus elevatis et setis dense confertis provis; nodorum setae in parte tertia inferiore pilis stellatis ipsae obtectae. – Type: Indonesia, Borneo, Central Kalimantan, Barito Ulu, 114°06'E, 0°02'S, in secondary forest near base camp of the Barito Ulu Project, *Kade Sidyasa* PBU229 (holo E).

Scrambling shrub up to 12 m long (Fig. 1A). *Branches* terete, up to 3 cm in diameter, young branchlets flattened and grooved, indumentum consisting of a dense cover of light brown, sessile, stellate hairs and dark brown bristles; bristles 4–6 mm long, unbranched, 0.1–0.2 mm thick at the base, becoming more narrow towards the acute tip (Fig. 1A–C). *Nodes* swollen and thickly covered with indumentum; here the bristles are covered with stellate hairs on the lower third (Fig. 1C). *Leaves* ovate, base cordate, apex acute, lamina glabrous above, covered with stellate hairs and a few bristles along the midnerve below (Fig. 1B); lamina 8–11 × 4.5–7 cm, petiole 5–9 mm long, densely covered with stellate hairs and bristles. *Inflorescences* in upper leaf axils or terminal, thyrses or polythyrses, when axillary with 5–9 flowers, when terminal with 15–30 flowers (Fig. 1A). *Bracts* elliptic, 10–15 × 3–5 mm, bracteoles subulate, 7–9 × c.2 mm, both with bristles on the dorsal surface and along the margin, persistent (Fig. 1D). *Hypanthium* narrow-campanulate, more or less covered with stellate hairs and bristles, 6–8 × c.4 mm (Fig. 1E, F); calyx rim with four triangular lobes, lobes c.2 mm long with thickened tips and with larger bristles on the tips. *Petals* broadly ovate, c.10–12 × c.5–6 mm, white with a purple flush, reflexed at maturity, caducous (Fig. 1F). *Stamens* 8 in two dimorphic whorls, outer, alternipetalous stamens with c.9 mm long filaments, 3–4 mm long pedoconnectives, and 8–9 mm long anthers, slightly curved, base of the pedoconnective with two up to 6 mm long filiform ventral appendages; inner, epipetalous stamens with c.7 mm long filaments and c.9 mm long, S-shaped anthers, ventral appendages filiform, up to 6 mm long, dorsally appendaged with two small ridges (Fig. 1G). *Ovary* 2/3 as long as the hypanthium, lower half adnate to the hypanthium by 8 septa, top of ovary

thickened, stamen pockets of the alternipetalous stamens extending to the base of the ovary, those of the epipetalous stamens extending to the lower third of the ovary (Fig. 1F); style 14–16 mm long. *Fruit* urceolate, c.12 × c.6 mm, with four lobes, more or less covered with stellate hairs and bristles; pericarp thick, drying brown. *Seeds* numerous, cuneate, c.0.6 mm long.

Notes. Within *Dissochaeta* sect. *Dissochaeta*, *D. atrobrunnea* shows similarities with species that also have an indumentum of stellate hairs and bristles on most parts. These are *D. alstonii* Nayar, *D. densiflora* Ridl., *D. rostrata* Korth., *D. rostrata* Korth. var. *floccosa* J.F.Maxwell, *D. rostrata* Korth. var. *horrida* J.F.Maxwell, *D. hirsuta* Hook.f. ex Triana, *D. malayana* Furtado, *D. porphyrocarpa* Ridl. and *D. setosa* Schwartz. All named species have much shorter bristles (<3 mm) and much shorter anther appendages (<3 mm long) than *D. atrobrunnea*. Individually all of them differ in further characters such as shape of hypanthium and calyx rim, shape of bracts and bracteoles and shape of the anther appendages.

Dissochaeta atrobrunnea also shows similarities with some species of *Macrolenes*, such as *Macrolenes echinulata* (Naudin) Bakh.f. and *Macrolenes hirsuta* (Cogn.) J.F.Maxwell in terms of indumentum and flower morphology. However, these two species show axillary, few-flowered inflorescences (vs. axillary and terminal, many-flowered inflorescences in *D. atrobrunnea*), numerous filiform appendages on the connective of the alternipetalous stamens (vs. two filiform appendages in *D. atrobrunnea*) and a pair of hair cushions at the base of the midrib on the undersurface of the leaf (absent in *D. atrobrunnea*).

Dissochaeta atrobrunnea shows heterantherous flowers with feeding stamens (epipetalous, S-shaped stamens) and pollinating stamens (alternipetalous, C-shaped stamens). Heteranthy is known from many genera within *Melastomataceae* (Renner, 1989; Endress, 1994). In *Dissochaeta* s.l. it is the most striking similarity between *Dissochaeta* sect. *Dissochaeta* and *Macrolenes*.

The epithet '*atrobrunnea*' refers to the dark brown colour of the bristles which are present on most parts of the plant.

Additional specimen examined. INDONESIA. Borneo, Central Kalimantan, South Kahayan, 5 km south of Tumbang Sian logging camp, 113°25'E, 0°35'S, 150 m, open places in primary lowland forest, climber up to 12 m long, *J.S. Burley et al.* 852 (E, L).

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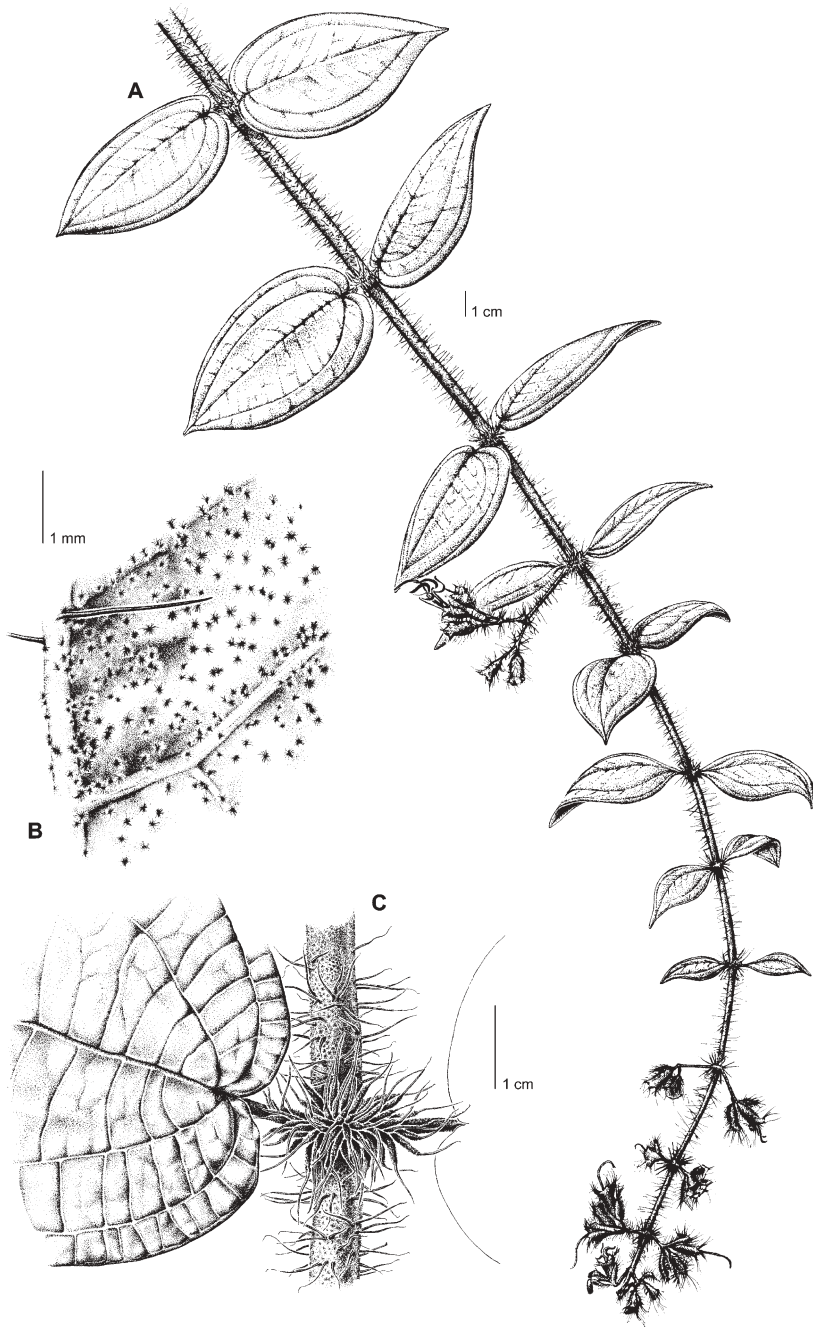


FIG. 1. *Dissochaeta atrobrunnea* G.Kadereit (drawn from *Kade Sidyasa* PBU229, holo E). A, flowering branchlet; B, leaf undersurface; C, interpetiolar outgrowth, petioles and cordate leaf base; D, bract (left) and bracteole (right); E, flowers; F, section of a flower which shows two exserted stamens and two sitting in the stamen pockets, the ovary and the style; G, alternipetalous stamen (left) and epipetalous stamen (right).

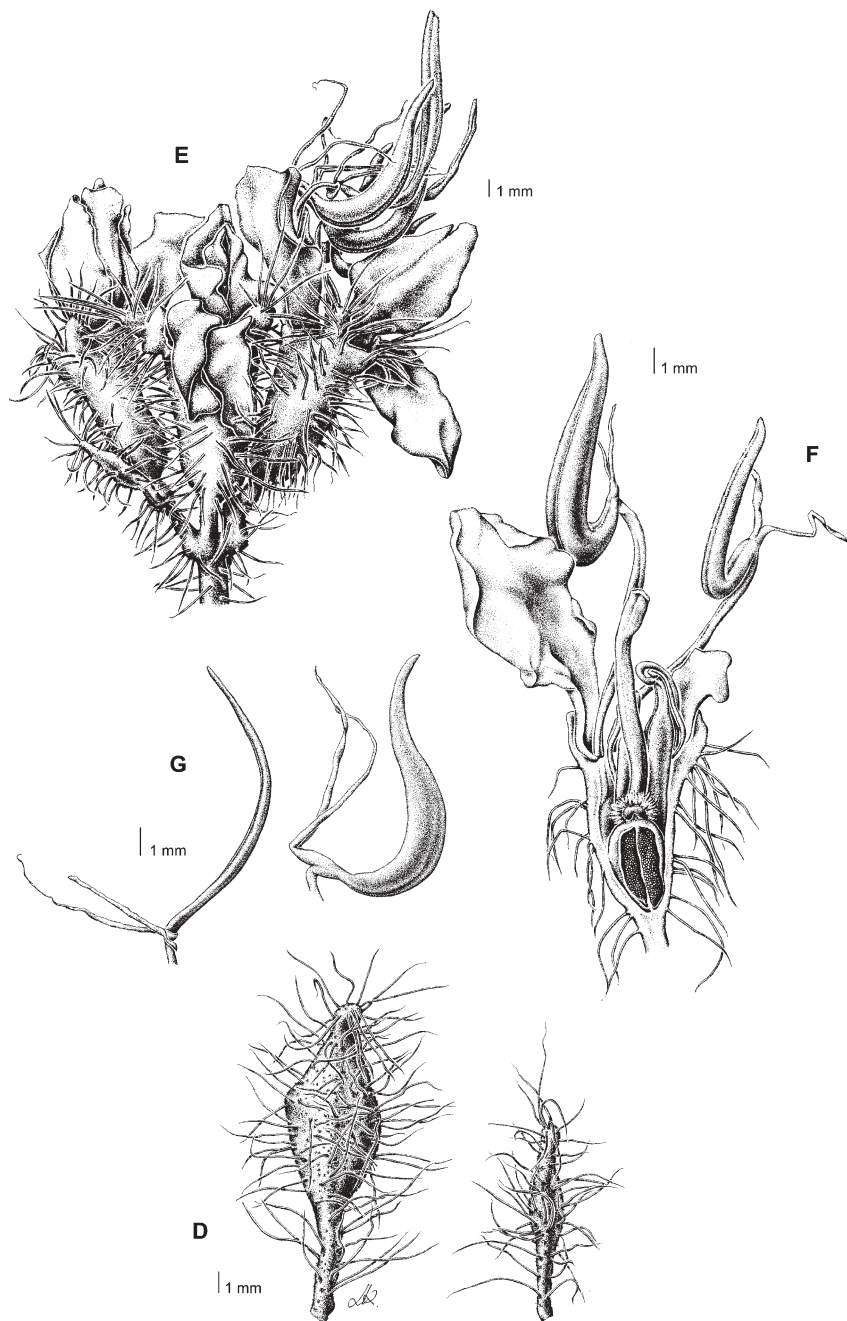


FIG. 1. (Cont'd).

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