

A new combination in the endemic Malagasy genus *Helmiopsis* (Malvaceae-Dombeyoideae)

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ABSTRACT

A new combination in the endemic Malagasy genus *Helmiopsis* (Malvaceae-Dombeyoideae), *H. rigida* (Baill.) Dorr, is proposed.

RÉSUMÉ

MOTS CLÉS

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Une nouvelle combinaison dans le genre endémique malgache *Helmiopsis* (Malvaceae-Dombeyoideae), *H. rigida* (Baill.) Dorr, est proposée.

I have long suspected that *Dombeya rigida* Baill. was misplaced in the genus *Dombeya* Cav. (Malvaceae-Dombeyoideae; see BAYER et al. 1999). The characters most critical in determining the correct generic placement of this species, however, lie in its fruit and seed that, apart from their brief mention in ARÈNES (1959: 233-234), were unknown to me until recently. Examination of fruiting material of *Perrier de la Bâthie* 5535 (K), which matches in all vegetative characters an isotype (*Hildebrandt* 3442, K) of *D. rigida* in flower, shows that *D. rigida* has winged seeds. Given also that the stamens and staminodes form a tube (as opposed to the stamens being clustered in fascicles), these characters indicate that *D. rigida* is allied with *Helmiopsis* H. Perrier and *Helmiopsiella* Arènes. The former genus differs

from the latter in having staminodes opposite the petals (versus opposite the sepals), nectariferous tissue on the calyx lobes and/or petals (versus none), and locules glabrous in all stages of flowering and fruiting (versus villous, with the hairs detaching as the fruit develops).

Dombeya rigida, with staminodes opposite the petals, nectariferous tissue on the petals, and locules glabrous in all stages of flowering and fruiting, belongs in *Helmiopsis*, and the following new combination therefore is proposed.

***Helmiopsis rigida* (Baill.) Dorr, comb. nov.**

Dombeya rigida Baill., Bull. Mens. Soc. Linn. Paris 1: 487 (1885) [1 avril 1885]; Baron, Revue de

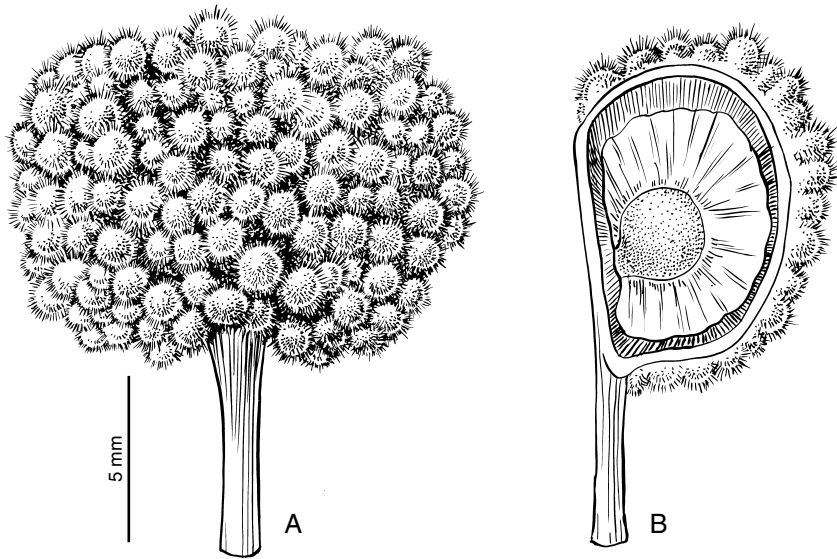


Fig. 1. — *Helmiopsis rigida*, capsule and seed: **A**, capsule showing papillae; **B**, capsule locule showing the position of a seed and its wing. From *Perrier de la Bâthie 5535* (K). — Drawn by A. TANGERINI.

Madagascar 3: 940 (1901); Palacky, *Cat.* 5: 28 (1907); Hochreutiner, *Candollea* 3: 60 (1926); Arènes, *Candollea* 16: 296 (1958); Arènes, *Fl. Madag.* 131: 233 (1959). — Type: *Hildebrandt 3442*, W Madagascar pr. Trabonji, mai 1880, fl. (holo-, P-2 sheets; iso-, G-DC, Kl, US!).

Dombeya guazumaefolia Baill., *Bull. Mens. Soc. Linn. Paris* 1: 495 (1885) [6 mai 1885]; Baron, *Revue de Madagascar* 3: 940 (1901); Palacky, *Cat.* 5: 27 (1907). — Type: *Bernier 340 pro max. parte*, 2^e env., Madagascar “Ad sin. Ling-vatou” (P-3 sheets).

ADDITIONAL MATERIAL EXAMINED. — MADAGASCAR, *Mahajanga*: *Perrier de la Bâthie 5535*, bords de l’Anjobona (Boeny), Aug. 1905, fl., fr. (K, P); *Service Forestier 31-SF*, Tsingy de Namoroka, 8^e réserve (BR, P); *Service Forestier 3570-SF*, bords de rivière Marofototra, route Befandriana-Nord, 4 June 1951, fl. (K, P); *Service Forestier 15772-SF*, forêt d’Analamazava, Befandriana, 12 June 1956, fl., immature fruit (K, P); *Service Forestier 22630-SF*, s.d., fl. (BR, P, US).

ARÈNES (1959: 234) referred other specimens to *Dombeya rigida*, but I have not had the opportunity to critically evaluate them in the context of this note.

The description of the fruit and seed of this species provided by ARÈNES (1959: 233-234) can

be modified as follows: Capsule subglobose to depressed globose, depressed apically, rounded basally, more or less 5-lobed, 10-12 mm tall, 10-15 mm in diameter, strongly papillate with papillae of irregular size, pale brownish-ferruginous stellate-pubescent. Seeds 2 per locule, asymmetrically ovate or reniform, c. 3 mm long, 2.5 mm wide, laterally flattened, glabrous, lustrous, each with a narrow, 1-1.5 mm wide, membranous, dorsal wing.

The presence of papillae on the mature fruit of *Helmiopsis rigida* is somewhat problematic. While papillae are conspicuous in the one specimen with mature fruit (Fig. 1), examination of the ovaries of flowering material fails to show papillae, even nascent ones. Additionally, papillae were not mentioned by either HOCHREUTINER (1926: 60-61) or ARÈNES (1959: 233-234), both of whom cited *Perrier de la Bâthie 5535* (albeit not the sheet I examined at Kew). Furthermore, papillae are not seen on the fruit of other species of *Helmiopsis*, but then only four of the ten species recognized are known in fruit.

For most species of *Helmiopsis* the presence and position of seed wings have been inferred from ovule morphology. In the species where mature

fruit are unknown, the ovules have apical wings 2-6 times as long as the ovule proper. In those species known from fruit, the seeds have either a pronounced, 4-30 mm long, apical wing (*H. hily* Arènes and *H. inversa* H. Perrier), a relatively inconspicuous, 1-1.5 mm long, dorsal wing (*H. rigida*), or a "narrow, membranous, ventral keel" (*H. sphaerocarpa* L. Barnett; BARNETT 1987).

In addition to this reduced seed wing, *Helmiopsis rigida* shares several other characters with *H. sphaerocarpa*. The inflorescences are multi-branched and many-flowered, the capsules are spheroidal rather than conical, and the capsules have 2, laterally-flattened seeds per locule (*Helmiopsis hily* evidently has only one, tetragonous seed per locule). Both species key (ARÈNES 1959: 96) to *Helmiopsis* subg. *Helmiopsis* sect. *Glandulipetalae* Arènes. In *H. rigida* (as opposed to *H. sphaerocarpa*), however, the inflorescence is terminal and axillary (versus terminal only), and glandular tissue occurs on the petals alone (versus on both the calyx lobes and petals).

Inclusion of *Dombeya rigida* in *Helmiopsis* modifies slightly a character that was thought to unite the genus (see e.g., ARÈNES 1959: 95-96; HUTCHINSON 1967: 506). Previously, all species of *Helmiopsis* had peltate scales that set them apart from the closely related *Helmiopsiella*. *Helmiopsis rigida*, with its more or less stellate-hispidulous indumentum, would appear to be a remarkable exception but for the fact that *H. cal-*

cicola (H. Perrier) Arènes, which has peltate scales, also has stellate-villous indumentum on the upper surface of its leaves. Moreover, the utility of indumentum as a generic character in the Malvaceae-Dombeyoideae recently was dispelled by JENNY et al. (1999).

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