



RESEARCH ARTICLE

A revision of the genus *Dehaasia* (Lauraceae) in the Indo-Burmese region

Tapas Chakrabarty^{1*}, Anand Kumar² & Gopal Krishna³

¹4, Botanical Garden Lane, Howrah – 711 103, West Bengal, India

²Central National Herbarium, Botanical Survey of India, P.O. Botanic Garden, Howrah – 711 103, West Bengal, India

³Botanical Survey of India, CGO Complex, Salt Lake City, Kolkata – 700 064, West Bengal, India

*Email: tchakrab@gmail.com



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Abstract

A taxonomic revision of the genus *Dehaasia* Blume is presented for the Indo-Burmese region. Four species are recognized, keyed out and treated with references, type citations, synonymy, flowering and fruiting periods, local names and use, habitat, distribution and the specimens examined. *Dehassia rangamattiensis* is synonymized under *D. kurzii*. The report of *D. firma* from the Andaman Islands is based on a misidentified specimen of *D. kurzii*. The names *Dictyodaphne candolleana* (basionym of *D. candolleana*), *D. kurzii*, *D. rangamattiensis* and *Laurus incrassata* (basionym of *D. incrassata*) are lectotypified. In addition, lectotypification of *Cryptocarya cuneata* (basionym of *D. cuneata*), native to Malesia, is appended because the species has often been mistaken for *D. candolleana*.

Keywords

Taxonomy; lectotypification; misidentification; India; Myanmar

Introduction

The genus *Dehaasia* Blume comprises about 35 accepted species distributed from China, Northeast India and Southeast Asia to New Guinea (1). The generic name is orthographically conserved against *Hassia* Blume (2). The genus is characterized by the alternate, penninerved leaves, paniculate-cymose inflorescences, trimerous bisexual flowers, semipersistent unequal tepals, nine bilocular stamens, the fruits usually subtended by swollen or thickened and sometimes coloured pedicels. It is closely related to *Alseodaphne* Nees, differing only in the 2-locular rather than 4-locular anthers (3, 4). Hooker (5) revised *Dehaasia* in erstwhile British India and accepted four species of which three species were shown to be distributed in the Indo-Burmese region. Kostermans (3) presented a synopsis of *Dehaasia* and accepted 35 species. He (6) eventually described *D. assamica* from Meghalaya, India. Subsequently Mathew and Lakshminarasimhan (7) reported the occurrence of the Malesian *D. firma* Blume from the Andaman Islands. Gangopadhyay (8) described two new species from the area, one from Bangladesh (*D. rangamattiensis* M.Gangop.) and the other presumably from Arunachal Pradesh, India (*D. arunachalensis* M.Gangop.). He also reported the occurrence of the Malesian species *D. incrassata* (Jack) Kosterm. in the Nicobar Islands, India. Pandey and Diwakar (9) enumerated the occurrence of 5 species of *Dehaasia* in the Andaman and Nicobar Islands while Chakrabarty *et al.* (10) recorded four species in these Islands.

The present revision of *Dehaasia* in the Indo-Burmese region recog-

nizes four species in the area. A number of confusions and misidentifications have been clarified here and it is hoped that this presentation will be helpful in the accurate identification of the taxa occurring in the region. Five names are also lectotypified.

Materials and Methods

The present investigation was carried out based on the study of literature and available herbarium specimens housed at CAL, G, K, L, MICH, P, PBL and U. Of these, the specimens at CAL and PBL were studied physically whereas the materials of all other herbaria were studied through online resources. The descriptions were prepared based on dried materials except for the flowers, which were expanded by soaking in water for dissection and then measured under an Olympus SZ-61 stereomicroscope. The systematic treatment contains generic nomenclature, citation of type and description. The key to the species is then presented. Detailed nomenclature, typifications and descriptions are provided for each species. The vernacular names and uses, if any, flowering and fruiting periods and distribution of each taxon treated are indicated. Selected specimens examined during the present revision are also cited.

Systematic treatment

Dehaasia Blume in Nees, Syst. Laur. 372. 30 Oct–5 Nov. 1836 (“*Hassia*”), *orth. cons.*; Werff in Blumea 46(1): 136. 2001; Hook.f., Fl. Brit. India 5: 125. 1886; Fijrid. et al. in Blumea 65(2): 168. 2020.

Lectotype [designated by Kostermans (11)]: *Dehaasia microcarpa* Blume [= *Dehaasia incrassata* (Jack) Kosterm. (*Laurus incrassata* Jack)].

= *Cyanodaphne* Blume, Mus. Bot. 1(21): 333. 1851.

Lectotype [designated by Kostermans (11)]: *Cyanodaphne cuneata* (Blume) Blume (*Cryptocarya cuneata* Blume) [= *Dehaasia cuneata* (Blume) Blume].

Shrubs or trees; twigs usually greyish, with prominent leaf scars; terminal buds not perulate. *Leaves* alternate, crowded near apices of branches, often glaucous beneath, entire, penninerved; petioles channelled above. *Inflorescences* axillary and subterminal, slender, paniculate-cymose, pedunculate, repeatedly branched; ultimately flowers arranged in dichasia; lateral flowers of dichasia opposite; axis pubescent to glabrous. *Flowers*: trimerous, bisexual, distinctly stalked; tepals 6, unequal, the outer 3 usually smaller than the inner 3, deciduous or persistent; stamens 9, triseriate; anthers 2-locular, first and second whorls introrse, third whorl extrorse and biglandular (on filaments); ovary sessile; style short or long; stigma simple or peltate. *Fruits* with thin mesocarp, seated unprotected on pedicels; fruiting pedicels usually thickened and coloured.

Key to the species

- 1a. Leaf buds (and young shoots) tomentellous
.....*D. assamica*
- b. Leaf buds (and young shoots) sparsely puberulous to glabrous.....2

- 2a. Leaves rounded to obtuse or sometimes apiculate or occasionally acuminate (acumen up to 10 mm long) at apex; fruits globose or sometimes ovoid, 1.5–3 cm long*D. candolleana*
- b. Leaves apiculate to acuminate at apex; fruits ellipsoid-oblong to cylindrical-oblong, 2–4.5 cm long3
- 3a. Leaves cuneate to cuneate-attenuate at base, often glaucous beneath; midrib impressed above; tertiary nerves scalariform-reticulate; reticulations of minor nervules often very prominent; fruiting pedicels 0.5–3.5 cm long *D. kurzii*
- b. Leaves acute to cuneate at base, not glaucous beneath; midrib flat to slightly raised above; tertiary nerves scalariform; reticulations of minor nervules inconspicuous; fruiting pedicels 3–5 cm long*D. incrassata*

Enumeration of taxa

Dehaasia assamica Kosterm. in Adansonia, n.s. 17(1): 91. 1977.

Type

INDIA. Meghalaya, Garo hills, Near Nokrek, 3 August 1950, *Thakur Rup Chand 2778* (holotype L0036306, image!, Fig. 1; isotype MICH1104545, image!).



Fig. 1. Holotype of *Dehaasia assamica* Kosterm.

Available at: <https://data.biodiversitydata.nl/naturalis/specimen/L%20%200036306>

? = *Dehaasia arunachalensis* M.Gangop. in Bull. Bot. Surv. India 48: 124. 2006.

Type

Collection details not available (holotype Arunachal Pradesh Forest Research Institute, Itanagar herbarium) – *n.v.*

Trees (stature unknown); young shoots brown tomentellous; branchlets blackish, terete, glabrous. Leaves narrowly oblong, elliptic-oblong to oblong-oblong, 9–25 × 2–6.5 cm, acute to cuneate at base, obtuse and apiculate at apex, chartaceous, glabrous, blackish above when dry, pale brown beneath, not glaucous; midrib impressed above, raised beneath; lateral nerves 8–12 pairs, arcuate, flat and prominent above, raised beneath; tertiary nerves faint above, prominent beneath, scalariform; reticulations of minor nervules faint above, prominent beneath; petioles 1–1.5 cm long, glabrous. Flowers: not seen. Infructescences paniculate, ca 13 cm long. Fruits globose, 1.5–2 cm in diameter; fruiting pedicels slightly thickened, 1–1.3 cm long.

Fruiting

July–August.

Habitat

Occurring at about 1300 m altitude.

Distribution

India (Meghalaya) – endemic.

Specimens examined

Known from the type collections only.

Notes

Dehaasia assamica was described by Kostermans (6) based on the single specimen of *Thakur Rup Chand 2778* from Garo hills, Near Nokrek which was housed at L. A duplicate of this collection is now found to be housed at MICH. Therefore, the specimen at L bearing annotation by Kostermans is the holotype and its duplicate at MICH is the isotype. The above description is based on the study of the images of the type and protologue. *Dehaasia arunachalensis* was described based on a specimen devoid of any herbarium label. From the description and the drawing, it is evidently very close to *D. assamica*, and perhaps conspecific, apparently differing only in the somewhat stiffer texture of the leaves. However, as we could not examine the type, it is indicated here as a synonym with a question mark to draw attention of the future workers because occurrence of the species is quite expected in Arunachal Pradesh and the stiffer texture of the leaves may eventually found to be individual variations of a single species only.

Dehaasia candolleana (Meisn.) Kosterm. in Bot. Jahrb. Syst. 93(3): 431. 1973; Chakrab. *et al.* in Ramakrishna *et al.*, Recent Trends Biodivers. Andaman & Nicobar Isl. 186. 2010, *p.p.* – *Dictyodaphne candolleana* Meisn. in DC., Prodr. 15(1): 80. 1864. – *Endiandra candolleana* (Meisn.) Kurz, Forest Fl. Burma 2: 295. 1877.

Lectotype (designated here): MYANMAR. Amherst, 16 July 1827, *Wallich 1610* (G-DC barcode G00692819 sheet 02, image!, Fig. 2; isolectotype K001116522, image!). Residual



Fig. 2. Lectotype of *Dictyodaphne candolleana* Meisn. © Conservatoire et Jardinbotaniques de la Ville de Genève.

syntypes: MYANMAR. Tavoy, 2 December 1827, *Wallich 566* (G-DC barcode G00692819 sheet 01, NY00355111, images!).

Alseodaphne grandis sensu Kurz, Forest Fl. Burma 2: 293. 1877, *p.p.*, *non* Nees, 1831 [*Kurz 981* (CAL)].

Dehaasia kurzii King ex Hook.f., Fl. Brit. India 5: 125. 1886, *p.p.* [Andaman specimens].

Dehaasia cuneata sensu Hook.f., Fl. Brit. India 5: 125. 1886, *p.p.*, *quoad syn. Dictyodaphne candolleana*, *non* (Blume) Blume, 1837.

Dehaasia elongata sensu Hook.f., Fl. Brit. India 5: 126. 1886, *non* Blume, 1837 [*King's collector s.n.* (CAL)].

Trees, 5–20 m high; young shoots sparsely pubescent to glabrous; branchlets greyish or brownish, terete, glabrous. Leaves cuneate-obovate to orbicular-obovate or occasionally obovate-oblong to oblanceolate or oblong-elliptic, 10–34 × 4–13 cm, cuneate to cuneate-attenuate at base, sometimes decurrent into petioles, rounded to obtuse or sometimes apiculate or occasionally acuminate (acumen ca 10 mm long) at apex, chartaceous to thinly coriaceous, glabrous, greenish-brown or blackish or chocolate-brown to dark brown above (often glossy) when dry, pale brown, chocolate-brown and often glaucous or glaucous beneath; midrib sunken or impressed above, raised beneath; lateral nerves slender, 6–12 pairs, straight or arching uniformly, flat and prominent above, raised beneath; tertiary nerves prominent to obscure above,

prominent to faint beneath, scalariform to percurrent; nervules finely reticulate, prominent to obscure above and beneath; petioles 1–4 cm long. *Panicles* terminal and axillary, 5–16 cm long, glabrous. *Flowers*: pedicels 2–5 mm long; outer tepals deltoid to suborbicular, 0.5–1 × 0.8–1.8 mm; inner tepals broadly ovate to suborbicular, ca 2.5 × 2.3 mm; stamens ca 2.5 mm long; ovary globose, ca 1.5 mm in diameter; style ca 1 mm long. *Fruits* globose or sometimes broadly ovoid, 1.5–3 cm long, 1.5–2.5 cm in diameter, smooth; fruiting pedicels 0.3–1.8 cm long, thickened, fleshy.

Flowering & fruiting

January–October.

Local name

Burmese: *Kyeoekyurthve*.

Habitat

Scattered in coastal to inland forests up to 200 m altitude in the Andaman Islands and up to 500 m in Myanmar.

Distribution

India (Andaman Islands), Myanmar and Thailand.

Specimens examined

INDIA. Andaman and Nicobar Islands: Andaman Islands, without precise locality, 9 August 1884, *King's collector 108* (CAL0000033733 – syntype of *D. kurzii*); *ibid.*, 1884, *King's collector s.n.* (CAL – identified in pencil as *Dehaasia kurzii* King in King's own handwriting) – syntype of *D. kurzii*; *ibid.*, 1884, *King's collector s.n.* (CAL herb. acc. nos. 551535, 551536, 551537, 551538, 551539, 551540, 551541, 551542, 551543, 551544, 551545, 551546). South Andaman Island, without locality, 8 March 1901, *Heinig 382* (CAL). Mount Harriet, *s.d.*, *King's collector 68* (CAL). Anikhet, 11 August 1894, *King's collector s.n.* (CAL). Balughat, 16 July 1892, *King's collector s.n.* (CAL); *ibid.*, 7 July 1894, *King's collector s.n.* (CAL). Near east coast of Port Blair, 14 March 1891, *King s.n.* (CAL). MYANMAR. Tenasserim [and Andamans], *Helper Kew Distrib. No. 4270* (U.1359249); *ibid.*, *Brandis s.n.* (CAL); *ibid.*, Htwetwa, 4 December 1904, *collector's name illegible 445* (CAL herb. acc. no. 551554). Amherst, 11 April 1849, *Falconer 754* (L.1797148); *ibid.*, 17 September 1827, *Wallich 2594 C* (CAL, K001116522). Tavoy, 28 April 1921, *Russell 1931* (CAL); *ibid.*, *s.d.*, *Russell 158* (CAL); *ibid.*, Boya hill, June 1901, *Mokim 380* (CAL). Pegu, Touqueqhat, *s.d.*, *Kurz 981* (CAL herb. acc. no. 551532). Martaban, *s.d.*, *Kurz 981* (CAL).

Notes

Meissner (12) described *Dictyodaphne candolleana* from Myanmar and cited “Wallich in herb. Birman. N. 566, 1610” in the protologue. Kostermans (3) cited two specimens as the type, which was therefore not an effective lectotypification as per Art. 9.3 (2). There are two type specimens at G-DC in fruiting and the better one is designated here as the lectotype. Kochummen (13), while reporting the species from Malaysia, reported the fruits to be ellipsoid. *Dehaasia kurzii*, when described, was a mixture of two species and the Andamans collections cited in the protologue belong here. These specimens (syntypes of *D. kurzii*) are

identified by King in his own handwriting.

Dehaasia incrassata (Jack) Kosterm. in J. Sci. Res. (Jakarta) 1: 91. 1952; Backer & Bakh.f., Fl. Java 1: 131. 1964; M.Gangop. in Bull. Bot. Surv. India 48: 152. 2006; Chakrab. et al. in Ramakrishna et al., Recent Trends Biodivers. Andaman & Nicobar Isl. 187. 2010; Fijrid. et al. in Blumea 65(2): 171. 2020. – *Laurus incrassata* Jack, Malayan Misc. 2(7): 33. 1822 (*incrassatus*). – *Machilus incrassata* (Jack) Nees in Wall., Pl. Asiat. Rar. 2: 70. 1831 (*incrassatus*). – *Haasia incrassata* (Jack) Nees, Syst. Laur. 376. 1836. – *Persea incrassata* (Jack) Nees, Syst. Laur. 127. 1836.

Lectotype (designated here): [icon] *Machilus tertia species media* in Rumphius, Herb. Amboin. 3: 70, t. 41.1743, Fig. 3.

= *Haasia microcarpa* Blume in Nees, Syst. Laur. 373. 1836. –



Fig. 3. Lectotype of *Laurus incrassata* Jack.

Dehaasia microcarpa Blume, Rumphia 1: 162, t. 44. 1837; Hook.f., Fl. Brit. India 5: 126. 1886.

Lectotype [designated by Kostermans (3)]: INDONESIA. Java, Bantam, Tjitorep, *s.coll.* (possibly *Hasskarl*) *s.n.* (L0036319, image!). Additional original material: INDONESIA. Java, without precise locality, *Blume s.n.* (L0926338, image!); Java, Lebak, *Blume s.n.* (L0926346, image!). Java, without precise locality, *van Hasselt s.n.* (L0926345, im-

age!).

= *Dehaasia media* Blume, Rumphia 1: 163. t. 45. 1837.

Lectotype [designated by Fijridiyanto *et al.* (14)]: INDONESIA. Moluccas, Ambonia, *s.d.*, *s.coll. s.n.* (L0036322, image!; isolectotypes L0036323, L0036324, images!).

Dehaasia candolleana sensu B.K. Sinha, Fl. Great Nicobar Isl. 365. 1999, *non* (Meisn.) Kosterm., 1973.

Tree, 5–20 m high; bark light brown; young shoots sparsely puberulous to glabrous; branchlets greyish, terete, glabrous. *Leaves* oblong-elliptic (or narrowly so) to obovate, 11–23 (–34) × 4–9 (–11) cm, acute or cuneate at base and sometimes slightly decurrent into petioles, acuminate (acumen 5–20 mm long, mostly acute) at apex, chartaceous to thinly coriaceous, glabrous, green or often pale brown or blackish above and beneath when dry, not glaucous; midrib flat or slightly raised above, raised beneath; lateral nerves 7–10 pairs, arcuate, faint and flat above, raised beneath; tertiary nerves faint above, somewhat prominent beneath, scalariform; reticulations (of minor nervules) inconspicuous; petioles 1–2 cm long, glabrous. *Panicles* 4–10 cm (*ca* 15 cm in fruiting) long; axis sparsely puberulous to glabrous. *Flowers*: pedicels 2.5–4 mm long; outer tepals deltoid to suborbicular, *ca* 1 × 1.5 mm; inner tepals wide ovate to suborbicular, 2–3 × 1.8–2.5 mm, glabrous; stamens *ca* 2.5 mm long; ovary ovoid, *ca* 1 mm long; style *ca* 1.5 mm long. *Fruits* oblong-ellipsoid, *ca* 3.5 × 2 cm, rounded at apex; fruiting pedicels fleshy, 3–5 cm long, red when fresh.

Flowering & fruiting

March–October.

Habitat

Common on the edges of forests or inland forests up to 200 m altitude.

Distribution

India (Nicobar Islands), Thailand and throughout Malesia.

Specimens examined

INDIA. Andaman and Nicobar Islands: Katchal Island, Way to Jula, 13 August 1974, *P.Chakraborty* 2068 (CAL, PBL); West Bay, Delhi village, 14 June 1977, *P.Chakraborty* 6038 (CAL, PBL); Great Nicobar Island: 27 km on North-South Road, 7 March 1980, *Dwivedi* 7916 (CAL, PBL); 40 km on East-West Road, 24 September 1980, *Hore* 8201 (CAL, PBL); Laful forest, 10 May 1981, *Dwivedi* 8530 (CAL, PBL); *ibid.*, 4 June 1981, *Hore* 8728 (CAL, PBL).

Notes

Jack (15) described *Laurus incrassata* based on his collections from Natal, Bencoolen in Sumatra and cited “*Machilus medius*. Rumph: Amb: 111. p. 70. T. 41”. Thus, the Rumphius drawing cited by Jack also belongs to original materials. As most of the Jack's collections were destroyed by fire during transit to Europe (1, 16, 17), we designate here the Rumphius drawing as lectotype in the absence of herbarium specimens collected by Jack. The neotype of *Laurus incrassata* designated by Fijridiyanto *et al.* (14) becomes redundant herewith as per Art. 9.19 (2). Fur-

ther, the lectotypification of *Hassia microcarpa* by Fijridiyanto *et al.* (14) is also superfluous because of an earlier effective lectotypification (3). However, in case of *D. media*, Kostermans (3) cited a specimen and drawing as the type which is not an effective lectotypification.

Dehaasia kurzii King ex Hook.f., Fl. Brit. India 5: 125. 1886; C.E. Parkinson, Forest Fl. Andaman Isl. 228. 1923.

Lectotype [first-step, designated by Kostermans (3)]: MYANMAR. Tenasserim, *Helper* Kew Distrib. No. 4272 (BO, CAL, K, P); second-step (designated here): MYANMAR.



Fig. 4. Lectotype of *Dehaasia kurzii* King ex Hook.f. © The Board of Trustees of the Royal Botanic Gardens, Kew. Available at: <https://apps.kew.org/herbcat/getImage.do?imageBarcode=K000778468>

Tenasserim, *Helper* Kew Distrib. No. 4272 (K000778468, image!, Fig. 4; isolectotypes BO – *n.v.*, CAL0000021411!, P00745698, image!).

Alseodaphne grandis sensu Kurz, Forest Fl. Burma 2: 293. 1877, *p.p.*, *non* Nees, 1831 [*Kurz* 2429 (CAL)].

Dehaasia firma sensu S.P. Mathew & Lakshmin. in Indian J. Forest. 16(1): 79. 1993, *non* Blume, 1851 [*Mathew* 20498 (PBL)].

= *Dehaasia rangamattensis* M.Gangop. in Bull. Bot. Surv. India 48: 127, f. 13. 2006, *syn. nov.*

Lectotype (designated here): BANGLADESH. Chittagong Hill Tracts, Rangamati, March 1880, *Gamble* 7969 (CAL0000033951!; isolectotype CAL0000033952!). Paratypes: BANGLADESH. Chittagong Hill Tracts, Rangamati, May 1891, *Forest Officials s.n.* (CAL0000033949!;

CAL0000033950!).

Trees, 5–15 m high; young shoots sparsely puberulous to glabrous; branchlets greyish, terete, glabrous. *Leaves* elliptic to oblong-elliptic (or narrowly so) or obovate, cuneate-obovate to obovate-elliptic or obovate-oblong, 8–30 × 3–9 cm, cuneate to cuneate-attenuate at base, often slightly decurrent into petioles, apiculate to acuminate (acumen 5–13 mm long, acute or obtuse) at apex, chartaceous or sometimes thinly coriaceous, glabrous, greenish-brown, brown or blackish above when dry, paler and often brownish or chocolate-brown or dark brown and sometimes glaucous beneath; midrib impressed or occasionally flat above, raised beneath; lateral nerves (6–) 8–10 pairs, arching, flat and prominent above, raised beneath; tertiary nerves obscure to somewhat prominent above, prominent or sometimes faint beneath, laxly reticulate to scalariform; reticulations of minor nervules obscure to prominent above and beneath; petioles 0.5–4 cm long, 1–3 mm thick, glabrous. *Panicles* (4–) 6–15 cm long. *Flowers*: pedicels 3–4 mm long; tepals orbicular-ovate, sparsely puberulous to glabrous outside, ciliate along margins, the outer *ca* 1 × 1 mm, erect, the inner *ca* 2 × 2 mm; stamens 1–1.5 mm long; ovary ovoid, *ca* 1 mm long; style *ca* 0.5 mm long; stigma peltate. *Fruits* ellipsoid-oblong to cylindrical-oblong, 2–4.5 cm long, 1.5–3 cm in diameter; fruiting pedicels fleshy, 0.5–3.5 cm long.

Flowering & fruiting

February–December.

Local names

Burmese: Kyeze, Kywi-chi.

Uses

Timber is used for the construction of houses in Myanmar.

Habitat

Scattered from coastal to inland forests on loamy soil up to 200 m altitude (Andaman Islands); up to 500 m in Myanmar.

Distribution

India (Andaman Islands), Myanmar and Thailand.

Specimens examined

INDIA. Andaman and Nicobar Islands: North Andaman Island, Durgapur, 26 November 1976, *N.G. Nair* 4923 (CAL, PBL); South Andaman Island, Bamboo flat, 16 March 1916, *C.E. Parkinson* 1104 (CAL); Kalatang forests, 14 March 1976, *Balakrishnan & Bhargava* 3468 (CAL, PBL); Shoal Bay, 16 May 1990, *Mathew* 20498 (PBL). MYANMAR. Tavoy, Boju hill, June 1901, *Mokim* 350 (CAL); North of Tavoy, Bawa forest, 25 October 1903, *No collector* 407 (CAL). Tenasserim, Heinze No. 1 Camp, 9 April 1921, *Russell* 1956 (CAL).

Notes

There was no requirement to specify a single herbarium before 1990 as per Art. 9.22 (2), so long as the type element (the single gathering) is indicated (Art. 7.11). Thus, the citation of type by Kostermans (3) conforms to first-step lectotypification (N.J. Turland, *pers. comm.*). Hence, a second-step lectotype is designated here following Art. 9.17 (2).

The lectotype bears pencil drawings of flowers by Hooker. The remaining syntypes of *D. kurzii* from the Andaman Islands, India represent *D. candolleana*. Thus, *D. kurzii*, when described, was a mixed assemblage and the present lectotypification narrows it to a single element, enabling unambiguous use of the name. In the case of *D. rangamattensis*, Gangopadhyay (8) cited “*J.S. Gamble* 7969 (CAL)” as the holotype in the protologue. This collection, *Gamble* 7969, consists of two duplicates at CAL and these two specimens are syntype under Art. 40.2 Ex. 3 (2). Therefore, we designate here one of the sheets (CAL0000033951) as the lectotype. The report of *D. firma* by Mathew & Lakshminarasimhan (7) is based on a specimen of *D. kurzii*.

Typification of *Cryptocarya cuneata*

Dehaasia cuneata (Blume) Blume, Rumphia 1: 164. 1837; Fijrid. *et al.* in Blumea 65(2): 171. 2020. – *Cryptocarya cuneata* Blume, Bijdr. Fl. Ned. Ind., Pt. 11: 558. 1826. – *Haasia cuneata* (Blume) Blume in Nees, Syst. Laur. 378. 1836. – *Cyanodaphne cuneata* (Blume) Blume, Mus. Bot. 1: 334. 1851.

Lectotype (designated here): INDONESIA. Java [Nusa Kambangan], *s.d.*, *Blume s.n.* (L0036313, image!, Fig. 5). Additional original material: INDONESIA. Java, Nusa Kambangan, *s.d.*,



Fig. 5. Lectotype of *Cryptocarya cuneata* Blume. Available at: <https://data.biodiversitydata.nl/naturalis/specimen/L%20%200036313>

Blume s.n. (L0036315, L0926399, images!).

Notes

The protologue of *Cryptocarya cuneata* cites the locality as “In sylvis Insulae Nusae Kambangae” (18). Kostermans (3) cited the type as “Typus: BLUME, Java, Nusakambangan, fl. (L).” Fijridiyanto *et al.* (14) cited the type as “Type: *Blume s.n.* (holo L.0036313; iso L.0036315), [Indonesia] Java, Nusa Kambangan.” It may, however, be mentioned that there are two specimens at L from Nusa Kambang, Java, collected by Blume (L0036315, L0926399, images!) which may be regarded as the uncited original material of the name (Art. 9.4) (2). The third specimen (L0036313, image!) although not bearing the specific locality, was identified by Blume in his own handwriting as “*Cryptocarya cuneata* Bl.” Thus this specimen is also the original material of the name. All these specimens bear annotations by Kostermans. As these specimens do not represent a single gathering, the citation by Kostermans (3) cannot be accepted as the first-step lectotypification as per Art. 9.17 and 9.19 (2). Hence, the best flowering specimen out of these three is designated here as lectotype of *C. cuneata*.

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Authors contributions

All authors have equally contributed in the planning the research and preparation of the manuscript.

Compliance with ethical standards

Conflict of interest: The authors declared that they have no conflict of interest.

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