



Amomum andamanicum (Zingiberaceae): a new species from the Andaman Islands, India

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Key words

Amomum
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Abstract A new species of *Amomum* from the Andaman and Nicobar Islands is illustrated and described. The plant shows similarity with *A. hypoleucum* of South India and Sri Lanka in vegetative habit. The species can be distinguished by the presence of silvery silky abaxial side of lamina with appressed pubescence, creeping slender rhizomes, many flowered spike with short peduncle produced directly from base of the aerial stem, green to orange coloured persistent bracts arranged in two rows, glabrous anther and many fruits produced with prominent irregularly lobed ridges. A comparison with other *Amomum* species of the Andaman Islands is also provided.

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INTRODUCTION

The ginger family *Zingiberaceae* is the largest of the eight families comprising the monophyletic tropical order Zingiberales (Pederson 2004). *Zingiberaceae* consist of 53 genera and over 1200 species (Kress et al. 2002). *Amomum* Roxb. is the second largest genus after *Alpinia* Roxb. in the ginger family with about 150–180 species, widely distributed in Southeast Asia (Xia et al. 2004). In India the genus is represented by 22 species, mostly restricted to North-East India and South India.

The first reported species of *Amomum* from the Andaman and Nicobar Islands was *A. fenzlii*, described with illustrations by Kurz in 1876, based on a collection from Camorta in the Nicobar Islands (Balakrishnan & Nair 1979). Subsequently, Baker (1892) reported *A. fenzlii* Kurz (transferred to *Hornstedtia* by Schumann 1904) and *A. aculeatum* Roxb., and Balakrishnan & Nair (1979) added *A. maximum* Roxb. The most recent account of *Zingiberaceae* in the Andaman and Nicobar Islands (Srivastava 1998) accordingly lists two species. Recent field explorations in the Andaman and Nicobar Islands by the authors resulted in the collection of an interesting species of *Amomum* with creeping slender rhizomes and silvery silky leaves, which looks similar to *A. hypoleucum* Thwaites but differs in many characters. Specimens were planted in Calicut University Botanic Garden, Kerala, South India. The same species had been collected on Mt Harriet, South Andamans, in 1994 by a research team of the Tropical Botanic Garden and Research Institute (TBGRI) from the Andamans and was introduced to the garden at Palode, Thiruvananthapuram, South India. This plant established well and flowered in 2008 and was used for the description and illustration of the species except for the fruiting characters which are based on the wild collections made from Mt Harriet (type locality) and other regions of the Andaman Islands. A comparison with the other species of *Amomum* in the Andaman and Nicobar islands is provided in Table 1.

Amomum andamanicum belongs to Group IV of the informal grouping of Smith (1985) and also shows some morphological

affinities with cluster 1 of the *A. maximum* group in the phylogenetic grouping of Xia et al. (2004).

TAXONOMY

Amomum andamanicum V.P.Thomas, M.Dan & M.Sabu,
sp. nov. — Fig. 1; Map 1; Plate 1

Amomo hypoleuco similis, pedunculo brevi e caulis basi ipse parienti, spica brevior multiflora, bracteiviridibus asaurantiaciis persistentibus, anther glabra, fructibus plurimis angulis prominente irregulariter lobatis differt. — Typus: *Dan M & Jabbar A 54686* (holo TBGT; iso CAL, CALI), culture at Tropical Botanic Garden, Palode, Thiruvananthapuram, India, originally from Mt Harriet, South Andamans, 17 March 2008.

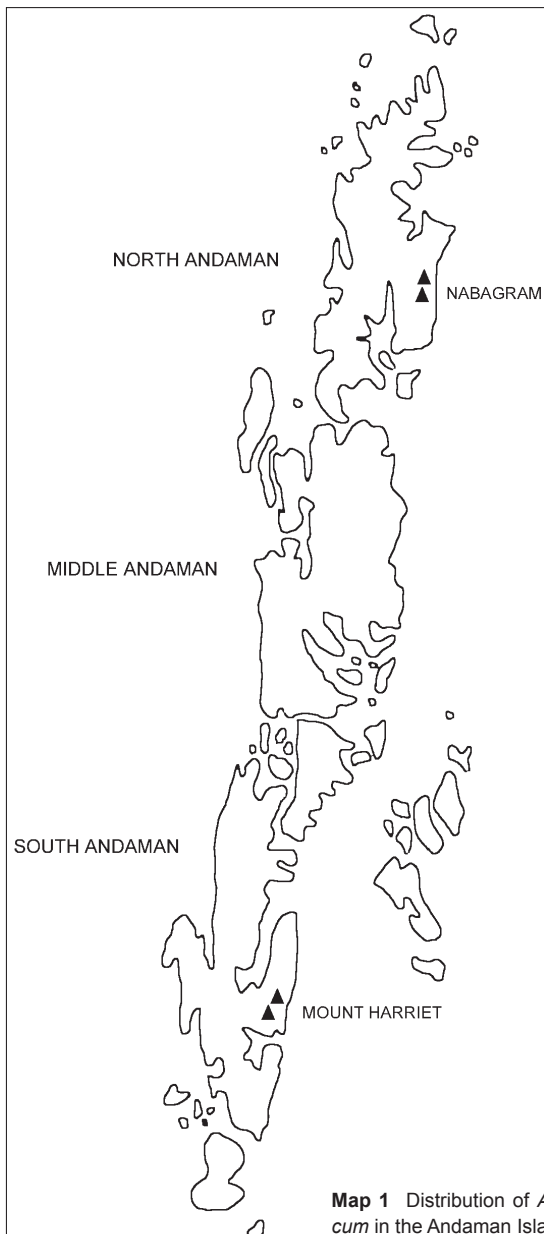
Rhizomatous perennial herb. *Stem* 1–1.5 cm girth at base. *Rhizome* 0.4–1 cm thick, slender, subterranean with many imbricate scales; scales 1.5–2.5 cm long, ovate-oblong, glabrous, acute to rounded at apex. *Leafy shoots* 60–90 cm tall; pseudostem green, swollen at base; sheath 1.2–2 cm wide near base, glabrous. *Leaves* simple, alternate, distichous; lamina 35–60 by 3.5–7 cm, elliptic-lanceolate or lanceolate, dark green on upper side, silvery silky beneath with appressed hairs, margin entire, slightly wavy; apex acuminate, base oblique; midrib green, glabrous; nerves many, parallel; petiole 3–7.5 cm long, grooved above, glabrous. *Ligule* 0.3–0.6 cm long, truncate or notched at apex, green, glabrous on both sides. *Inflorescence* 3.5–6.5 by 2–2.5 cm, radical, compact, born from rhizome just below the bulbous base of pseudostem, 8–10 flowered, 1 or 2 flowers at a time; peduncle absent or very short up to 0.5 cm with closely imbricate bracts. *Flower* 6–7 cm long, pale yellow, born singly from each bract and bracteole. *Bract* 2.7–3.3 by 2.3–3 cm, ovate, imbricate, green to orange-purple, glabrous, arranged in two rows; apex ends with a small cusp. *Bracteole* 3.7–4.5 by 1.1–1.5 cm, non-tubular, membranous, oblanceolate, white, pink towards tip, glabrous, apex acute. *Calyx* 2.7–3.2 by 0.7–0.8 cm, unequally 3-lobed, 2 lobes bearing beaks, cylindrical, tubular, nearly equal to corolla tube, white, glabrous, some hairs near the apex. *Corolla* tube 3.1–3.4 cm long, pale yellow, dark maroon towards the base, densely hairy inside; dorsal lobe 3.3–3.4 by 1.5–1.6 cm, obovate, pale yellow, glabrous, apex pouched with a beak; lateral lobe 3.1–3.2 by 1.2–1.3 cm, oblanceolate, pale yellow, glabrous, one side

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Table 1 Comparison of *A. andamanicum* with other species of the genus in the Islands.

<i>Amomum aculeatum</i>	<i>Amomum andamanicum</i>	<i>Amomum maximum</i>
Habit 120–380 cm tall, robust, sheath maroon coloured	Habit 60–90 cm tall, not robust, sheath green coloured	Habit 60–300 cm tall, robust, sheath green coloured
Rhizome thick	Rhizome slender and forming runners	Rhizome thick
Leaves 40–56 by 7–12 cm, green and glabrous beneath	Leaves 36–60 by 3.5–7 cm, silvery, appressed pubescent beneath	Leaves 25–114 by 7–15 cm, pale green, velvety villous beneath
Ligule 0.9–1.2 cm long, apex truncate or slightly emarginate	Ligule 0.3–0.6 cm long, apex truncate or slightly emarginate	Ligule 3.5–5.5 cm long, bifid
Inflorescence 7–21 cm long, peduncle 10–17 cm long	Inflorescence 3.5–6.5 cm long, peduncle up to 0.5 cm long	Inflorescence 7–21 cm long, peduncle 8–15 cm long
Flower 5.5–6.5 cm long, many flowering at a time, pale yellow	Flower 6–7 cm long, 1 or 2 flowering at a time, pale yellow	Flower 7–7.5 cm long, many flowering at a time, white
Bract elliptic to ovate, thin, maroon, horned at apex, spirally arranged, not persistent in fruits	Bract ovate, thick, green to orange-purple coloured, glabrous, horned at apex, compactly arranged in 2 rows, persistent in fruits	Bract ovate, thin, white, pubescent, spirally arranged, perishable before anthesis
Bracteole tubular	Bracteole non-tubular	Bracteole absent
Calyx 2-lobed	Calyx unequally 3-lobed	Calyx 3-lobed
Labellum wedge-shaped, pale yellow at centre with pinkish red stripes, 3-lobed, median lobe clefted	Labellum obovate, pale yellow red at centre, yellow towards centre, not lobed	Labellum obovate, white with yellow at centre tinged with red, not lobed
Anther crest distinctly 3-lobed	Anther crest not lobed	Anther crest not lobed
Capsule globose, 2.5–3 cm long, echinate, reddish brown	Capsule globose, 1.5–2.5 cm long, 10–12 ridged, ridges mostly towards the upper half, irregularly lobed, apex somewhat flattened, green	Capsule 2–3 cm long, 9-ribbed, ridges present along the length, slightly lobed, apex tapering, green



Map 1 Distribution of *A. andamanicum* in the Andaman Islands.

folded inwards near apex. *Labellum* 3.3–3.5 by 2.7–3 cm, obovate, pale yellow, red at centre, yellow towards the tip, appears pink when dried, densely hairy in the middle part within, margin crumpled, distantly crenulate. *Lateral staminodes* c. 0.5 cm long, more or less flattened, pale yellow towards the tip and red towards base, glabrous, pubescent at base. *Stamen* 1, perfect, 2.3–2.6 cm long; filament 0.9–1 by 0.3 cm, pale yellow, minutely hairy inside; connective slightly hairy, produced into a crest; crest 1.3–1.6 by 0.4–0.5 cm, pale yellow, glabrous, minutely crenulate; anther 2-celled, thecae 1.1–1.3 by 0.1 cm, oblong, pale yellow, blunt at apex, base narrowly ending, margin glabrous, dehiscence complete, linear. *Epigynous glands* 2, 0.6–0.8 cm long, oblong, white, glabrous, style exactly passing through the middle of two glands. *Ovary* c. 0.5 by 0.4 cm, inferior, puberulous outside; locules 3; ovules many on axile placenta, 2 or 3 in each row; style c. 4.9 cm long, linear; stigma c. 0.1 cm long, subglobose, situated at the tip of the anther thecae, not exceeding the crest, mouth ciliate, opening elliptic, apical. *Infructescence* 11–18.5 by 4–4.5 cm. *Fruit* a capsule, 2–7 per spike, 1.5–2.5 cm long, green, globose, 10–12 ridged, ridges mostly towards the upper half, irregularly lobed, apex somewhat flattened, puberulous. *Seeds* many, 0.3–0.4 cm long, black, glabrous, arillate; aril white.

Table 2 Comparison of distinguishing characters of *A. hypoleucum* and *A. andamanicum*.

<i>Amomum hypoleucum</i>	<i>Amomum andamanicum</i>
Inflorescence 11–13 cm long	Inflorescence 3.5–6.5 cm long
Spike 1–3-flowered, produced on slender creeping rhizomes	Spike 8–10-flowered, produced from the base of the stem
Bract oblong, thin, membranous, white, pubescent, unhorned, lax, arranged in spiral and perishable	Bract ovate, thick, green to orange-purple (variously coloured), glabrous, horned at apex, compactly arranged in two rows, persistent in fruits
Bracteole c. 2.5 cm long, beaked	Bracteole 3.7–4.5 cm long, not beaked
Labellum c. 4.1 by 3.6 cm, ovate, white, clawed at base	Labellum 3.3–3.5 by 2.7–3 cm, obovate, pale yellow, not forming a claw
Anther thecae hairy at base	Anther thecae glabrous
Capsule 1–2 per spike, slightly ridged	Capsule 2–7 per spike, prominently ridged, ridges irregularly lobed

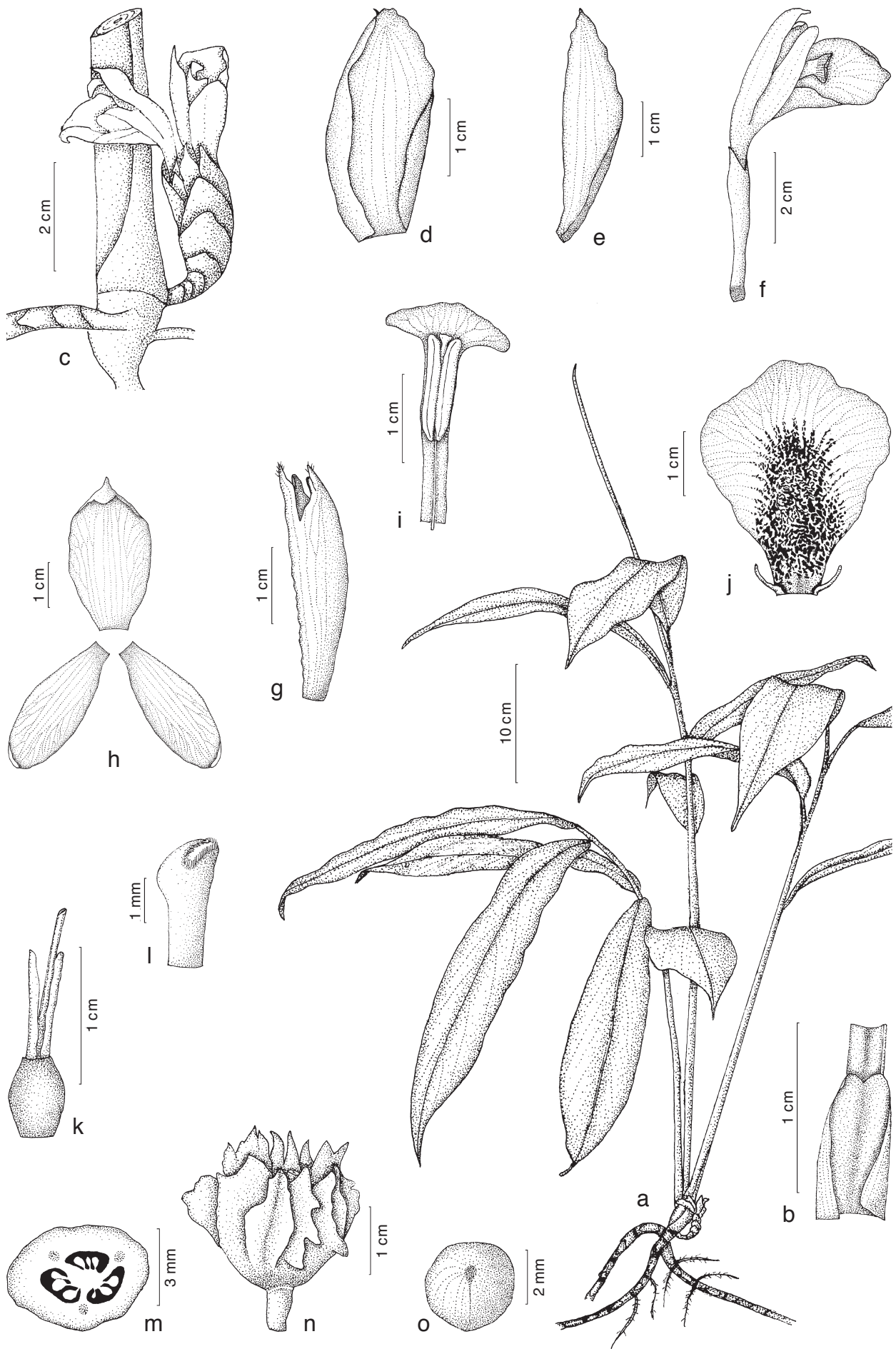


Fig. 1 *Amomum andamanicum* V.P.Thomas, M.Dan & M.Sabu. a. Habit; b. ligule with a part of sheath; c. inflorescence; d. bract; e. bracteole; f. flower; g. calyx; h. corolla lobes; i. stamen; j. labellum; k. ovary with epigynous glands and style; l. stigma; m. cross section of ovary; n. fruit; o. seed (a–m: *Dan M & Jabbar A 54686*, TBGT; n–o: *Thomas & Shameer 113637*, CALI). — Drawing by V.P. Thomas.



Plate 1 *Amomum andamanicum* V.P.Thomas, M.Dan & M.Sabu. a. Population of plants under cultivation; b. ventral and dorsal surfaces of leaves; c. ligule; d, e. inflorescence; f. calyx; g. lateral staminode; h. stigma; i. anther with crest; j. infructescence. — Photos by V.P. Thomas.

Distribution — So far known only from South and North Andamans of Andaman Islands, India.

Habitat & Ecology — Evergreen forests along stream side, hill slopes and forest margins. Altitude: 200–250 m. Flowering and fruiting: February to October.

Etymology — The specific epithet '*andamanicum*' indicates the place of collection (Andaman Islands, India).

Note — The species shows similarity with *A. hypoleucum* in vegetative habit, silvery silky abaxial side of lamina with appressed pubescence and creeping slender rhizomes but differs in many-flowered shorter spike with short peduncle produced directly from base of the aerial stem, green to orange coloured persistent bracts arranged in two rows, glabrous anther and many fruits produced with prominent irregularly lobed ridges (Table 2).

Other specimens studied. INDIA, Andaman & Nicobar Islands, South Andamans, Kalatang, Natural regeneration area, opposite Silviculture Nursery, 19 Sept. 2007, V.P. Thomas & M.C. Shameer 113542 (CALI); North Andamans, Diglipur, 1.5 km from Rock fill Dam towards Nabagram, 215 m, N 13°09'19.8" E 092°58'06.4", 11 Oct. 2007, V.P. Thomas & M.C. Shameer 113565 (CALI); 2.5 km from Rock fill Dam towards Nabagram, 215 m, N 13°09'21.8" E 092°58'00.1", 11 Oct. 2007, V.P. Thomas & M.C. Shameer 113568 (CALI); Andaman & Nicobar Islands, South Andamans, 0.5 km from Mt Harriet towards Kalapather, 246 m, N 11°92'43.7" E 092°43'59.9", 23 Oct. 2007, V.P. Thomas & M.C. Shameer 113637 (CALI).

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