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A New species of *Amomum* Roxb. (Zingiberaceae) from Nagaland, India

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ABSTRACT: A new species of *Amomum* from Nagaland is described and illustrated. The photographs and illustrations are provided. The species shows similarity with *A. maximum* in having bi-lobed ligule and white flowers and non-stoloniferous rhizome, but differs in slender habit, glabrous lamina, ligule with rounded apex, nonperishable, smaller bracteole, obtuse dorsal corolla lobe, pubescent anther lobe and ridged fruits.

KEY WORDS: *Amomum*; India; Nagaland; New species; Zingiberaceae.

INTRODUCTION

Amomum s.l. 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 members of the genus are mainly distributed to North-East India, Peninsular India and Andaman-Nicobar Islands (Thomas and Sabu, 2012) and *Amomum s.s* is represented by 8 species (De Boer *et al.,* 2018). Recent studies on Zingiberaceae of Northeast India and Sikkim had led to the discovery of several new species of *Amomum* and allied taxa (Thomas *et al*., 2009; 2012; 2013; 2014; 2016; Hareesh and Sabu, 2018; Sabu *et al.*, 2018). During the field studies in North-East India, we encountered an interesting species from Kohima of Nagaland, which are distinct from so far described species. On critical examination it turned out to be new species and here described and illustrated.

TAXONOMIC TREATEMNT

Amomum nagamiense V.P. Thomas & M. Sabu, ***sp. nov.*** **Figs. 1 & 2**

Type: INDIA, **Nagaland,** Kohima Dist.: Kohima, forest behind Zoo, 25 May 2007, *V.P. Thomas & V.A. Muhammed Nissar 95440* (holotype CALI!, isotype CATH!).

Similar to *A. maximum* in having bilobed ligule, white flowers, and non-stoloniferous rhizome, but differs in slender habit, glabrous lamina, ligule with rounded apex, non-perishable, smaller bracteole, obtuse dorsal corolla lobe, pubescent anther lobe and ridged fruits.

Rhizome non-stoloniferous, slender, 0.5−0.7 cm thick, length/breadth ratio *c*. 4, covered with chartaceous, glabrous scales, apex slightly emarginate. *Leafy shoots* 50−70 cm tall, slender, clump forming; sheath 0.6−1.2 cm wide at base, green, margin membranous and glabrous, puberulous externally. *Leaves* 3−6 per shoot; lamina elliptic or oblanceolate, 17−26 × 2.5−5.2 cm, dark green above, pale beneath, base cuneate, margin ciliate towards apex, apex acuminate, glabrous on both surfaces; midrib glabrous; veins raised above; petiole 1.2−4 cm long, pale green, glabrous; veins prominent above. *Ligule* bilobed, 0.6−1.5 cm long, membranous, apex rounded, drying, deciduous, pubescent externally. *Inflorescence c.* 6.5 cm long, *c*. 6 flowered, arising from the rhizome just below the aerial stem; peduncle *c.* 2 cm long. *Outer bract* broadly lanceolate, *c.* 2.8 × 1.8 cm, maroon, membranous, margin glabrous, pubescent externally, glabrous internally; inner bract, lanceolate, 4−4.1 × 0.6−0.9 cm, membranous, not perishable during anthesis, white, margin ciliate, apex curled, pubescent externally, glabrous within, not perishable during anthesis. *Bracteole* non-tubular, highly reduced, represented by small oblong structure, apical beak absent, 0.4−0.6 × 0.1 cm, white, margin glabrous, puberulous externally, glabrous internally. *Flower* 7−7.5 cm long, white, borne singly from each bract. *Calyx* 3-lobed without any subulate horns, 3.4−3.5 × *c*. 0.8 cm, membranous, white tinged with pink, unilaterally split, cleft *c.* 1 cm deep, pubescent externally, glabrous within. *Corolla* tube 2.6−3.2 cm long, *c.* 0.5 cm wide at mouth, white tinged with pink, pubescent externally, glabrous within except near mouth; dorsal corolla lobe oblong, 3−3.4 × 1.3−1.5 cm, white, margin ciliate, hooded at apex, obtuse, glabrous; lateral corolla lobes lanceolate, 2.9−3.4 × 1−1.4 cm, margin ciliate, apex rounded, glabrous. *Labellum* obovate, entire, 3.3−4 × 2−2.2 cm, white, yellow patch and pink streaks form design at centre, margin crenulate and unlobed, pubescent towards base internally. *Lateral staminodes* usually reduced to 0.2 cm long, or absent, base of staminode hairy. *Stamen* 2.2−2.4 cm long; filament 0.5−0.6 × 0.3−0.35 cm, white, pubescent within; connective puberulous; crest obscurely trilobed, 0.3−0.5 × 1−1.1 cm, white, glabrous; anther thecae oblong, 1.4−1.5 cm long, creamy-white,

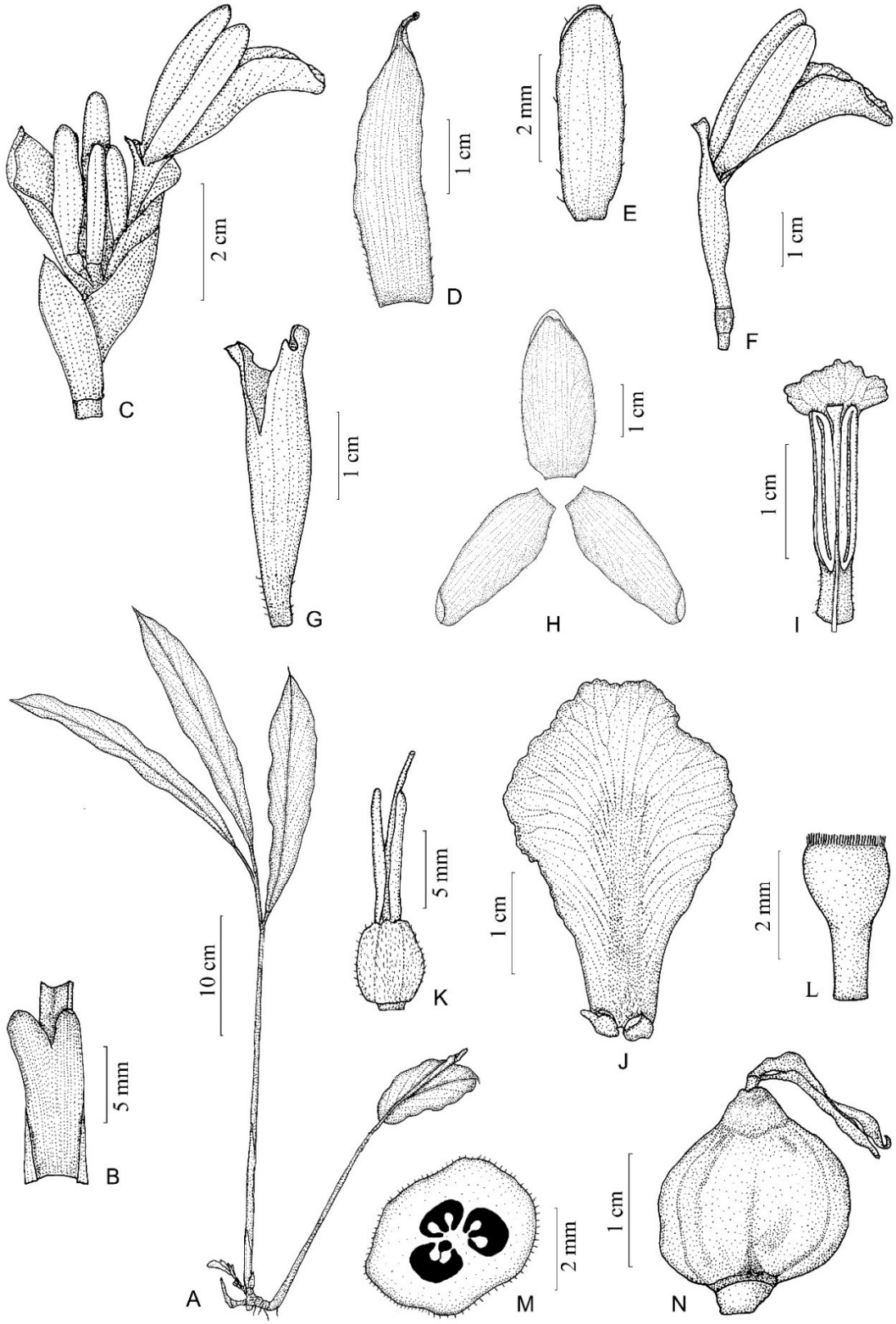

Fig. 1. Illustration of ***Amomum nagamiense***. **A**: habit. **B**: ligule. **C**: inflorescence. **D**: inner bract. **E**: bracteole. **F**: flower. **G**: calyx. **H**: corolla lobes. I: stamen. **J**: labellum. **K**: ovary with epigynous glands and style. **L**: stigma. **M**: cross section of ovary. **N**: fruit. Illustration by V.P. Thomas

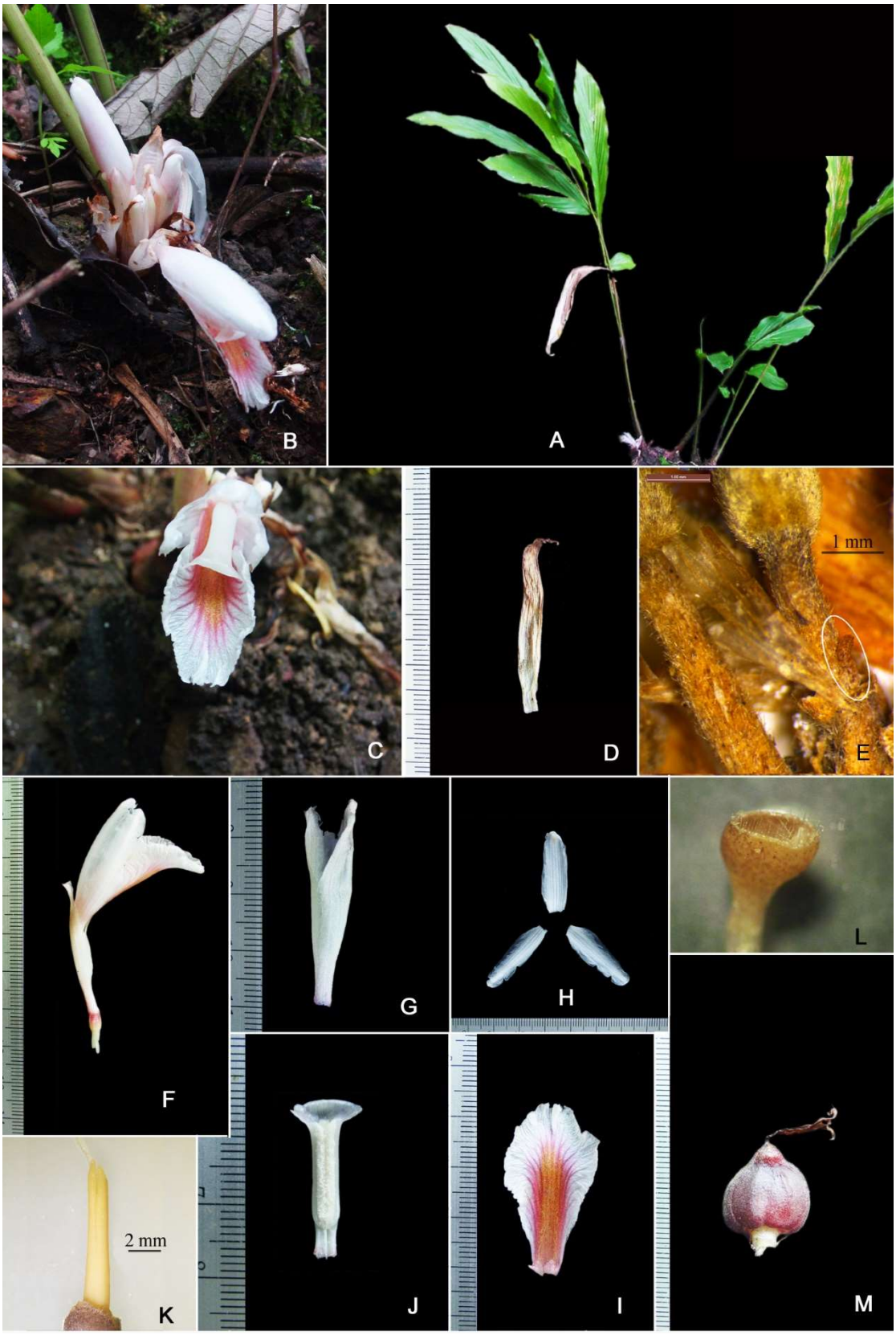

Fig. 2. Photographs of ***Amomum nagamiense***. **A**: habit. **B** & **C**: inflorescences. **D**: inner bract. **E**: bracteole. **F**: flower. **G**: calyx. **H**: corolla lobes. **I**: labellum. **J**: stamen. **K**: ovary with epigynous glands and style. **L**: stigma. **M**: fruit. Photos by V.P. Thomas.

Table 1. Comparison between ***A. nagamiense***, ***A. glabrum***, ***A. maximum*** and ***A. menglaense.***

Attributes	***A. nagamiense***	***A. glabrum***	***A. maximum***	***A. menglaense***
Habit	50−70 cm tall, slender	80-150 cm tall, slender	100−450 cm tall, robust	100-150 cm tall, slender
Lamina	17−26 × 2.5−5.2 cm, elliptic or oblanceolate, glabrous beneath	25−55 × 4−5 cm, elliptic-lanceolate, glabrous beneath	25−114 × 7−16 cm, oblong to oblong-lanceolate, tomentose beneath	35−40 × 7.5−9.5 cm, elliptic or oblong-lanceolate, glabrous beneath
Ligule	0.6−1.5 cm long, bilobed	0.3−0.4 cm long, bilobed	2−5.5 cm long, 2-cleft	0.5 cm long, emarginate
Bract	Not perishable during anthesis	Not perishable during anthesis	Perishable during anthesis	Not perishable during anthesis
Bracteole	Highly reduced	Tubular, 3 cm long	Absent	Tubular, 3.5 cm long
Dorsal corolla lobe	obtuse	Apiculate	Cuspidtae	Mucronate
Labellum	Yellow patch and pink streaks at centre	Yellow and red patches at centre	Yellow patch and red streaks at centre	Red at center with radiate lines and yellow apex
Anther	Pubescent at apex and base	Glabrous	Glabrous	Glabrous
Capsule	Slightly ridged	Crispid winged	Winged	Smooth

base acute, apex nearly rounded, bending outside, pubescent at apex and base; dehiscing throughout their length. *Epigynous glands* 2, 0.8−1 cm long, creamy-white, apex acuminate, glabrous. *Ovary* globose, 0.3−0.4 × 0.2−0.3 cm, pubescent externally, 3-locular; ovules many on axile placentae; style *c.* 4.8 cm long, glabrous; stigma cup-shaped, *c.* 0.1 cm across, pale yellow with red spots, mouth ciliate, opening terminal. *Infructescence c.* 3.5 cm long, 4−5 capsules per spike, calyx persistent; peduncle 2−3 cm long. *Capsule* ovate, slightly ridged, *c.* 1.5 × 1.6 cm, dark maroon, pubescent externally. *Seeds* many, angular, *c*. 0.3 × 0.3 cm, arillate; aril white.

Flowering & Fruiting: May−June.

Distribution: India (Nagaland).

Ecology: Found growing as undergrowth in the semi-evergreen forest at an altitude of 1000 m asl in NE India.

Etymology: Named for the Indian State Nagaland.

Affinities: The species shows similarity with *A. maximum* in having bi-lobed ligule, white flowers, and non-stoloniferous rhizome, but differs in many attributes. A comparison with two other related species *Amomum glabrum* S. Q. Tong and *A. menglaense* S. Q. Tong are also presented (Table 1).

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LITERATURE CITED

de Boer, H., M. Newman, A.D. Poulsen, A.J. Droop, T. Fér, T.T. Hiền, K.H. Le, V. Lamxay, J.F. Richardson, K. Steffen and J.L. Škorničková. 2018. Convergent morphology in Alpinieae (Zingiberaceae): Recircumscribing *Amomum* as a monophyletic genus. Taxon **67(1)**: 6-36.

Hareesh, V.S. and M. Sabu. 2018. *Amomum riwatchii* (Zingiberaceae): a new species from northeastern India. Bot. Lett. **165(2)**: 223-227.

Sabu, M., V. S. Hareesh, T. Miban and A. K. Das. 2018. *Amomum nimkeyense* (Zingiberaceae), a new species from Arunachal Pradesh, northeastern India. Phytotaxa **340**(2): 197-200.

Thomas, V.P., M. Sabu and U. Gupta. 2009. Taxonomic studies on cultivars of *Amomum subulatum* Roxb. (Zingiberaceae). Rheedea **19(1&2)**: 25-36.

Thomas, V.P. and M. Sabu. 2012. Two new species of *Amomum* (Zingiberaceae) from Western Ghats, India. Edinburgh J. Bot. **69(2)**: 313-321.

Thomas, V.P., M. Sabu and S.K. Chathurvedi. 2012. *Amomum carnosum* (Zingiberaceae): a new species from Nagaland, North-East India. Kew Bull. **67(3)**: 549-553.

Thomas, V.P., M. Sabu and H. Lalramnghinglova. 2013. *Amomum dampuianum* and *Amomum mizoramense* spp. nov. (Zingiberaeae) from Mizoram, northeast India. Nord. J. Bot. **31(5)**: 561-568.

Thomas, V.P., V.A. Muhammed Nissar and U. Gupta. 2014. *Amomum sabuanum* (Zingiberaceae): A new species from Sikkim, India. Phytotaxa **159(2)**: 122-126.

Thomas, V.P., M Sabu and E. Sanoj. 2016. Amomum meghalayense (Zingiberaceae): a new species from northeast India. Phytotaxa **245(2)**: 178-182.

Xia, Y.-M., W.J. Kress and L.M. Prince. 2004. Phylogenetic analysis of *Amomum* (Alpinioideae: Zingiberaceae) using ITS and *Mat* K DNA sequence data. Syst. Bot. **29(2)**: 334-344.