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# New record of an eastern Himalayan endemic species *Agapetes bhutanica* from Chirang Reserve Forest, India

The genus Agapetes was named by George Don in 1834 from the Greek word 'agapetos' meaning showy flowers. After George Don, detailed investigation of the genus was done by C. B. Clarke (1882) who recognized 26 species which were published in J.D. Hooker's Flora of British India. However, at present the genus comprises of 100-109 species across the world and distributed in northeastern India, Bangladesh, China, Laos, Malaysia, Myanmar, Nepal, Bhutan, Thailand, and Vietnam (Banik 2014; POWO 2021). The genus is represented by 57 species including 17 endemics in India (Banik 2014). In India, members of this genus are restricted to occur in the eastern Himalaya (Arunachal Pradesh, Sikkim, & West Bengal) and northeastern India (Assam, Meghalaya, Manipur, Nagaland, & Mizoram).

As a part of botanical collections in Chirang Reserve Forest under Kokrajhar District in Assam, the authors came across a species of beautifully flowered specimens which were belonging to the genus *Agapetes* D.Don ex G.Don in the family Ericaceae. A few populations were spotted on the trunk of *Syzygium formosum* (Wall.) Mason along a stream over tiny stones bedrock in a humid place of Ultapani Forest. After critical examinations of authentic herbarium specimens housed at CAL, ASSAM and consultation of relevant literature (Balakrishnan & Chowdhury 1966; Sengupta 1973; Long & Rae 1991; Banik 2014), these specimens were identified as *Agapetes bhutanica* N.P. Balakr. & Sud. Chowdhury.

The species is distributed in India (West Bengal) and Bhutan and hitherto unrecorded for Assam (Kanjilal et al. 1939; Barooah & Ahmed 2014). This species is closely allied to A. odontocera (Wight) Benth. & Hook.f., but it differs from it in having glandular hairs on pedicels and calyx (vs. glabrous pedicels and calyx in A. odontocera), light pink or whitish corolla (vs. dark red corolla in A. odontocera). Voucher specimens of collected species are deposited at ASSAM (Eastern Regional Centre, Shillong, Botanical Survey of India), and along with the field note book at Bodoland University Botanical Herbarium (BUBH!), Kokrajhar, Assam. The photographs were taken under stereo microscope Leica EZ4 HD camera. Distribution map of the species was prepared using QGIS 3.4.

### Taxonomic treatment

## Agapetes bhutanica N.P. Balakr. & Sud. Chowdhury in Reinwardtia 7(3): 287. 1966; Sengupta in Rec. Bot. Surv. India 20: 136. 1973; D.G. Long & Rae in Grierson & D.G. Long, Fl. Bhutan 2(1): 403. 1991; Banik & Sanjappa in Sanjappa & Sastry, Fasc. Fl.

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India Ericaceae 25: 262. 2014 (Figures 1 & 2). Epiphytic shrub; stem terete, smooth when young, rough when old, lignotubers basal, amorphous, rough, white inside, soft, while brownish-grey, lenticellate at maturity; branches spreading, terete, 6–15 mm in diameter, lenticellate when old, young branchlets bluntly angled, greenish; cataphylls scattered on young branchlets, linear-lanceolate, c.  $0.5-1 \times 0.2$  cm, dark brown, apex pointed; leaves pseudowhorled, 4–6 in each, 3–8 cm apart; lamina linear-lanceolate to occasionally narrowly oblanceolate, 8–17  $\times$  1.5–3 cm, glabrous, attenuate to cuneate at base, acute to

shortly acuminate at apex, margin undulate, subentire or obscurely crenate; midrib raised, thick, smooth; lateral nerves 15–23 pairs, anastomosing with intramarginal nerves; petioles 1–3 mm, green. Inflorescence corymbose, subfasciculate, 4–12 flowered, arising from leafless old branches; peduncle reduced, almost lacking or 1mm beset with pinkish-white glandular hairs; bracts ovate to linear-subulate, minute, margin with glandular hairs, brown; pedicels 1.5–1.8 cm long, pale green to pink (base to apex), gradually enlarged towards apex, densely glandular hairs towards base; calyx 5-lobed, lobes splitting to middle, connate at base,

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Agapetes bhutanica N.P. Balakr. & Sud.Chowdhury. A—Habit | B—Leaf | C—Cataphylls on young branchlet | D—Flowers | E—Lignotubers on habitat | F—Cut of Lignotuber | G—Lignotuber with lenticels. © Sanswrang Basumatary & Sanjib Baruah.

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Agapetes bhutanica N.P. Balakr. & Sud.Chowdhury. A—Flowers | B—Pedicels with glandular hairs | C—Bracts | D—Matured floral apex with stamens beak and style | E–F—Calyx | G—Stamens | H— Filaments and anthers | I—Stigma | J—Corolla nerves with glandular hairs | K—Spur | L—Apical view of ovary | M—Transverse section of ovary. © Sanswrang Basumatary.

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triangular ovate, c. 2-1.6 mm, pinkish to pale green, densely glandular hairs outside; corolla 2.5-3.0 cm long, (in buds 5-angled at apex) tubular at base, 5-7 mm in diameter, slightly enlarged upwards, 8-11 mm in diameter, pinkish-red wavy transverse lines, glandular hairs on nerves outside, lobes 5, c. 6-8×4-5 mm, revolute at apex; stamens 10 in 2 rows, 5 alternating with another 5; filaments linear, incurved, c.  $2.5 \times 0.8$  mm, puberulous, white; anther including tubules c. 2.5mm long; anther 4–5 mm long, linear-oblong, verrucate, dark brown; tubule c. 2 cm long, golden-yellow, glabrous, spurred at bellow middle of tubule; spur c. 0.7-1 mm long, recurved at c. 45° angled; style filiform, longer than stamens, glabrous, c. 2.9 cm long, pale green; stigma discoid, capitate

Flowering: March–May.

Fruiting: July–August.

**Habitat**: Epiphyte on the trunk of of *Syzygium formosum* in moist deciduous forest along with mosses, lichens (foliose), and epiphytic Orchidaceae members viz., *Bulbophyllum* spp., *Calostylis rigida*, *Eria lasiopetala* at altitudes ranging 100–500 m.

**Distribution**: India (West Bengal, Assam is being reported in this work), Bhutan.

**Specimens examined:** India, Assam, Kokrajhar District, Chirang Reserve Forest, Ultapani, 27.488 N, 90.663 E , 180 m, 20 March 2021, S. Basumatary & S. Baruah 0371 (ASSAM, BUBH!). Bhutan, eastern Bhutan, near Deothang, on the road to Tashiglang, 800 m, 29 March 1965, N.P. Balakrishnan 41943A (holo-CAL!); N.P. Balakrishnan 41943B (iso-ASSAM).

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