

REVISION OF THE GENUS *ANTISTROPHE* A. DC. (MYRSINACEAE)

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A B S T R A C T

The genus *Antistrophe* A. DC. consists of five species viz. *A. serratifolia* (Bedd.) Hook. f., *A. oxyantha* (Wall.) A. DC., *A. solanoides* (King & Gamble) Nayar et Giri, comb. nov. *A. caudata* King & Gamble and *A. curtisii* King & Gamble. *A. serratifolia* is endemic to Anamalai hills of Western Ghats of India; *A. oxyantha* occurs in Khasi and Garo Hills and Bhutan. *A. solanoides*, *A. caudata* and *A. curtisii* occur in Malaya. A new variety *Antistrophe oxyantha* var. *bhutanica* Nayar et Giri from Bhutan is proposed.

The genus *Antistrophe* was proposed by A. De Candolle (1841 & 1844) for accommodating the species *Ardisia oxyantha* Wall. ex DC. occurring in Eastern India. Later J. D. Hooker (1876) transferred *Ardisia serratifolia* Bedd. which is endemic to Anamalai hills of the Western Ghats of India, to the genus *Antistrophe*. The genus *Antistrophe* is allied to the genera *Sadiria* Mez and *Tetrardisia* Mez. However *Antistrophe* differs from *Sadiria* in having petals shortly connate at the base; whereas in *Sadiria* the petals are united up to or above the middle. In *Tetrardisia* the flowers are 4-merous, whereas in *Antistrophe* the flowers are 5-merous.

Antistrophe A. DC. in Ann. Sci. nat. 2. ser. 16. 79. 1841 et in DC. Prodr. 8: 92. 1844; Hook. f. in Benth. et Hook. f., Gen. Pl. 2: 647, 1846; C. B. Clarke, in Hook. f. Fl. Brit. Ind. 3: 531. 1882; C. Mez,

Pflanzenr. 9 (iv. 238): 187. 1902; Kanjilal, Das et al. Fl. Assam 3: 187, 1939; Gamble, Fl. Madras 2: 756. 1921.

Slender shrubs. Leaves alternate, petiolate lanceolate or elliptic lanceolate or elliptic, margin entire, wavy or serrate. Inflorescence in axillary fascicles subsessile. Flowers 5-merous; pedicel slender, bracts small. Calyx 5-lobed, triangular or ovate lanceolate. Petals 5, briefly joined at the base, imbricate. Stamens 5, free, attached at the base of the corolla, filament short, anthers free, elliptic-lanceate, dorsally punctate. Ovary ovoid or ellipsoid, style slender, stigma punctiform. Fruit, a berry, globose, pericarp coriaceous. Seed solitary, globose, albumin ruminant.

Type: *Antistrophe oxyantha* A. DC.

Distribution: Five species occurring in Eastern Himalaya, Khasi, Garo and Lushai hills of Eastern India, Anamalai hills of South India and Malaya peninsula.

KEY TO THE SPECIES

Leaf margin deeply serrate throughout

... 1. *A. serratifolia*

Leaf margin entire or wavy:

Branches glabrous or puberulous:

Leaves large, 9-17 cm × 2.5-5 cm, lanceate or elliptic-lanceate, apex gradually acuminate, side nerves 15-18 pairs. (India):

Calyx-lobes small, 1-1.5 mm × 1 mm, leaves coriaceous. (Meghalaya & Mizoram)

... 2. *A. oxyantha*

Calyx-lobes larger 2.5-3 mm × 1.5 mm; leaves membranous. (Bhutan)

... 2a. *A. oxyantha* var. *bhutanica*

Leaves smaller, 5-12 cm $\times$ 2-3.5 cm, elliptic, apex abruptly acuminate or caudate-acuminate, side nerves 9-12 pairs. (Malaya):

Inflorescence 4-6 flowered; side nerves of leaves forming a loop at a distance of $\frac{2}{3}$ from the mid-rib; petals acuminate ...

Inflorescence 1-2 flowered; side nerves of leaves not forming a loop; petals caudate-acuminate ...

Branches rusty glandular hirsute ...

3. *A. solanoides*

4. *A. caudata*

5. *A. curtisii*

ENUMERATION

Antistrophe serratifolia (Bedd.) Hook. f. in Benth. & Hook. f. Gen. Pl. 2: 647. 1876; C. B. Clarke in Hook. f. Fl. Brit. Ind. 3: 532. 1882; Mez in Pflanzenr. 9 (iv. 238): 188. 1902; Gamble, Fl. Madras 2: 756. 1921. *Ardisia serratifolia* Bedd. Ic. Pl. Ind. Or. t. 113. 1869.

Types: *Beddome* 4848, 4849, 4850 (K).

An erect shrub with rusty villous branchlets. Leaves lanceate, 8-16 $\times$ 2-5 cm, base cuneate, apex acuminate, margin deeply serrate, side nerves raised on the upper surface and deeply imprinted on the upper surface, gland-dotted, upper surface glabrous, under surface rusty-pubescent along the nerves; petiole 8-10 mm long, rusty-puberulous, canaliculate. *Flowers* in axillary fascicles; pedicel 8-10 mm long, slender, rusty puberulous. *Calyx* 5-lobed, lobes triangular 1 mm long, apex acute, sparsely puberulous, punctate. *Petals* 5, imbricate, lanceate, 4-5 mm long, gland-dotted. *Stamens* 5, smaller than the petals. *Ovary* ovoid, style slender, stigma punctiform. *Fruit* a berry, one-seeded.

Distribution: INDIA: Tamil Nadu, Anamalai hills, Iyperpadi, alt. 1400 m, 13.5.1913. C. E. C. Fischer 3589 (CAL).

This erect shrub is an endemic species restricted to the Anamalai hills, occurring at altitudes varying from 900 to 1500 m. The leaf margin is characteristic in having prominent tooth-like serrature.

A. oxyantha (Wall. ex A. DC.) A. DC. in Ann. Sci. Nat. 2 ser., 16: 84. 1841 et in DC., Prodr. 8: 92. 1844; C. B. Clarke, in Hook. f. Fl. Brit. Ind. 3: 532. 1882; Mez, Pflanzenr. 9 (iv. 238): 188. 1902; Kanjilal, Das *et al.* Fl. Assam. 3:

187. 1939. *Ardisia oxyantha* Wall. Cat. 2275 nomen; A. DC. in Trans. Linn. Soc. 17: 121. 1834.

Type: *Wallich* 2275 (Isotype CAL).

Shrub about 2 m high. Branches glabrous or puberulous. Leaves oblong or oblong-lanceate 9-17 $\times$ 2.5-4 cm, base cuneate, apex acuminate, glabrate, gland-dotted, side nerves 10-14 on either side, prominent on the undersurface; petiole 8-16 mm long. *Inflorescence* 2-5 flowers in axillary fascicles; pedicel 8-10 mm long. *Calyx* 5-lobed, lobes triangular, 1-1.5 $\times$ 1 mm, puberulous, gland-dotted. *Petals* 5, lanceate 6-7 $\times$ 1.5-2 mm, apex acuminate, gland-dotted. *Stamens* 5, filament short, anthers free, 5 mm long. *Ovary* ovoid, style filiform, stigma punctiform. Fruit globose, 1-seeded.

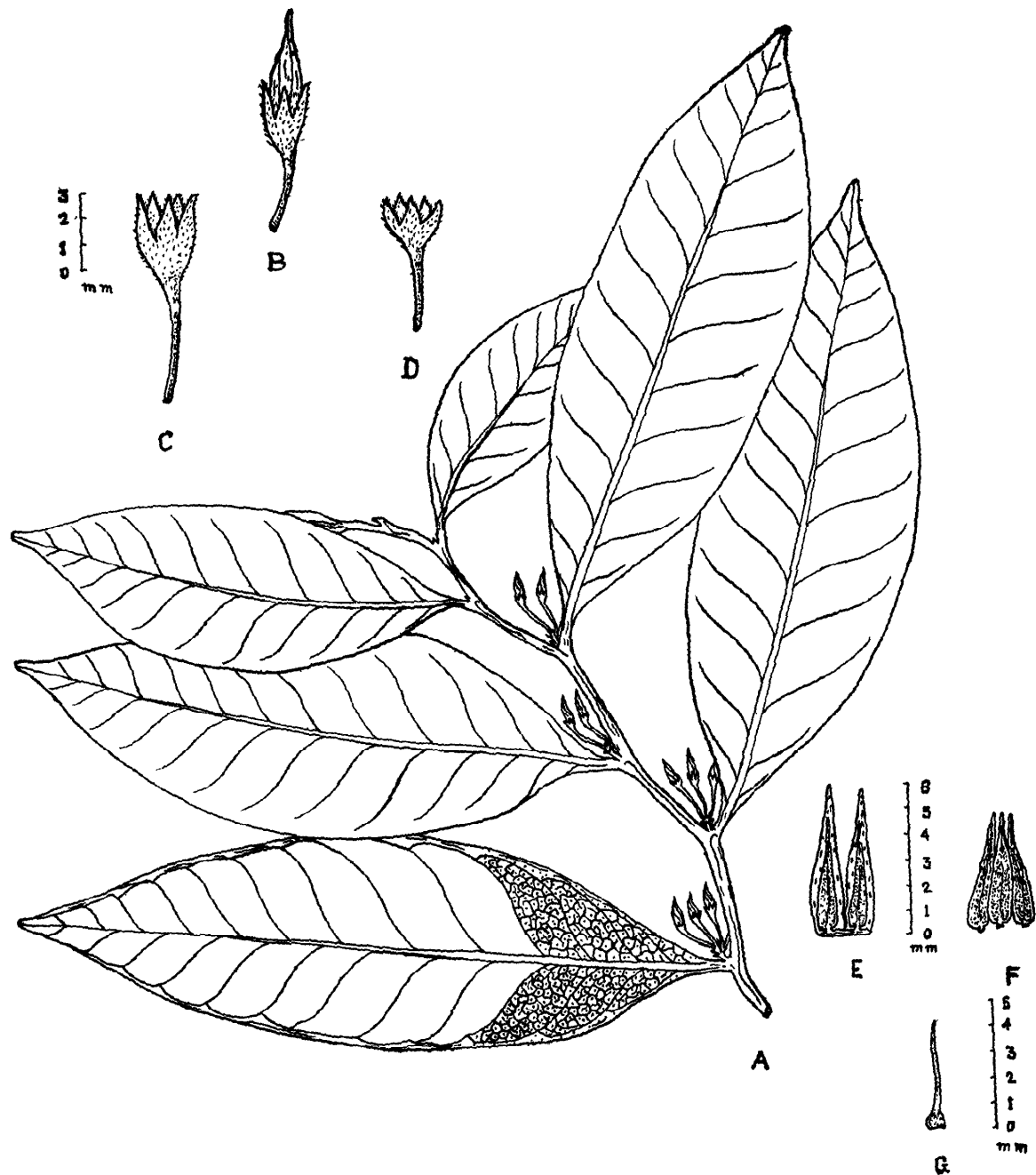
Distribution: BANGLADESH: Silhet, *Wallich* 2275 (CAL). INDIA: Meghalaya, Khasi, J. D. Hooker & T. Thomson 58 (CAL); *Ibid.*, Oldham 8 (CAL); *Ibid.*, Mausnuar, alt. 1100 m, C. B. Clarke 18487A (CAL); *Ibid.*, Kurz s.n. (CAL); Mizoram, South Lushai hills, alt. 1000 m, A. T. Gage 143 (CAL).

The specimen A. T. Gage 143 collected from Lushai hills has thicker coriaceous leaves and fewer glands on the leaf surface.

A. oxyantha* var. *bhutanica Nayar et Giri.

Affinis *A. oxyanthae*, sed foliis latioribus, calycis lobis majoribus, 2.5-3 mm longis, 1.5 mm latis, differt.

Slender shrub. Branches glabrous, zig-zag in appearance. Leaves elliptic-lanceate or elliptic, 12-17 $\times$ 4-5 cm, margin entire or sinuate, base cuneate, apex acuminate, side nerves 12-15 pairs, nerves prominent with distinct reticulations, minutely puberulous along the nerves, gland-



Antistrophe oxantha var. *bhutanica* Nayar et Giri

Figs. A-G: A. Plant. B. Flower bud. C. Calyx tube (*Antistrophe oxantha* var. *bhutanica*). D. Calyx tube (*Antistrophe oxantha*). E. Stamens attached to petals. F. Stamen. G. Pistil.

dotted, membranous. Inflorescence subsessile axillary fascicles, 3-4 flowers; pedicel slender, ± 15 mm long, puberulous. Calyx 5-lobed, lobes ovate-lanceate, $2.5-3 \times 1.5$ mm, connate up to the middle, puberulous. Petals 5, lanceate, $5-6 \times 1-1.5$ mm, punctate. Stamens 5, attached at the base of petals, filament short, anther $4-4.5$ mm long. Ovary globose, style slender, $4-4.5$ mm long, stigma punctiform. Fruit a berry.

Distribution: BHUTAN: alt. 1100 m, King s. n. (Holotype CAL); Ichunang, alt. 2000 m, *Dungbu* s.n. (CAL).

This variety is quite distinct from the typical *A. oxyantha* in having broader leaves, larger calyx lobes and membranous leaves. Besides this variety is restricted to Bhutan Himalayas; whereas the typical species is confined to Khasi, Jaintia and Garo hills of Meghalaya and Lushai hills of Mizoram. On the specimen from Bhutan D. Chatterjee (in herb.) commented as follows: "These two sheets of *Antistrophe* from Bhutan agrees well with three sheets of Haines in Herb. Kew from Bhutan. Unfortunately all are in fruit, although these are slightly different from the typical plant."

A. solanoides (King & Gamble) Nayar *et* Giri comb. nov. *Ardisia solanoides* King & Gamble in J. Asiat. Soc. Bengal 74 (part II): 123. 1906.

Type: King's collector 4254 (CAL).

A small shrub, 1-1.5 m height. Branches slender, smooth, young branchlets puberulous. Leaves elliptic, 5-12 × 2-3.5 cm, base attenuate, apex abruptly long caudate-acuminate, side nerves 6-8 pairs forming a loop 2/3 from the midrib, upper surface and lower surface rusty puberulous when young and glabrous later on, gland-dotted; petiole 3-5 mm, minutely rusty puberulous. Inflorescence in axillary fascicles of 4-6 flowers; pedicel, 6-9 mm long. Calyx 5-lobed, lobes triangular 1 × 1 mm, gland-dotted, minutely ciliated on the margin. Petals 5, narrowly lanceate, 6-8 × 1.4 mm, gland-dotted. Stamens 5, filament short, anther linear lanceate, 5-6 mm long, gland-dotted on the dorsal side. Ovary globose, style slender ± 6 mm long, stigma punctiform. Fruit berry, bright red. (ex Collector).

Distribution: MALAYA: Perak, Larut, alt. 150 to 250 m. King's Collector 4254 (isotype CAL).

King and Gamble (*l.c.*) while describing the species noted as follows: "This species

very closely resembles *Antistrophe caudata*, but it is at once distinguished by the fact of the corolla lobes overlapping to the right instead of the left" On critical study it is seen that the nature of overlapping of petals to the right and left varies. Mez [Pflanzenr. 9 (iv. 238): 183. 1902] proposed a new genus *Afrardisia* for the African species having petals overlapping to the right and having placenta with uniseriate ovules. The status of this genus requires review as the nature of aestivation of the petals is considered a major generic character. However, in the taxon the arrangement of ovule is uniseriate, whereas in the genus *Ardisia* the arrangement of ovules is multiserrate. Hence it is proposed to transfer *Ardisia solanoides* to the genus *Antistrophe*. As noted by King and Gamble, this species is allied to *Antistrophe caudata*.

A. caudata King & Gamble, J. Asiat. Soc. Bengal 74 (Part II): 154. 1906.

Type: Wray 456, Wray 3242 isosyntypes (CAL).

A shrub or small tree. Branches smooth, young branchlets puberulous. Leaves elliptic-lanceate, 5.5-11 × 2-3.5 cm, base cuneate, apex acuminate, margin slightly wavy, side-nerves 10-12 pairs, gland-dotted, upper surface glabrous, lower surface puberulous, membranous; petiole 4-6 mm long. Inflorescence axillary, 1-2 flowered, pedicel 6-8 mm long. Calyx 5-lobed, lobes ovate, 1.5 × 1 mm, united at the base, margin slightly scarious, gland-dotted. Petals 5, petals pale green with orange centre, narrowly lanceate 6-7 × 1.5-2 mm, apex caudate-acuminate, gland-dotted. Stamens 5, inserted at the base of petals, filament short, anther narrowly lanceate, 5 mm long. Ovary, ovoid, glabrous, style filiform, 5 mm long, stigma punctate.

Distribution: MALAYA: Perak, Gunong Batu Pateh, alt. 1050 m, Wray 456; (CAL); *Ibid.* Wray 3324 (CAL).

This species is allied to *A. solanoides*, but differs in having inflorescence with 1-2

flowers, calyx lobes united at the base, apex of petals caudate-acuminate, petals pale green with orange centre; whereas in *A. solanoides* the inflorescence is 4-6 flowered, calyx lobes united at the middle and petals white with bluish tinge, and petals acuminate.

A. curtisii King *et* Gamble, J. Asiat. Soc. Bengal 74 (part II): 155. 1906.

Type: *Curtis* 3390.

A shrub. Branches rusty glandular hirsute, zigzag in appearance. *Leaves* elliptic or elliptic-oblong, 9-12 × 4-5 cm, base rounded, apex acuminate, margin entire, under-surface sparsely rusty hirsute, side nerves about 10 pairs; petiole 3.5-4 mm long. *In-*

florescence, densely rusty-hirsute, subsessile, in axillary fascicles of 4-6 flowers; pedicel 8-13 mm long. *Calyx* 5-lobed, lobes linear-subulate, 3 mm long, densely hirsute. *Petals* 5, ovate at base, apex caudate-acuminate ± 8 mm long. *Stamens* 5, attached to the base of petals, anther lanceate, 7 mm long. *Ovary* ovoid, style slender, 7 mm long.

Distribution: MALAYA: Kuran valley, below the gap. alt. 1333 m, *Curtis* 3390.

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