VANILLA WIGHTIANA LINDL. (ORCHIDACEAE) — A NEW RECORD FOR THE EASTERN GHATS

The genus *Vanilla* P. Miller is represented in India by four species, namely *V. wightiana* Lindl., *V. walkeriae* Wt., *V. andamanica* Rolfe and the recently recorded *V. pilifera* Holtt. During the course of a botanical exploration in some localities of Eastern Ghats, the authors collected *V. wightiana* forming robust and extensive growth of hundreds of plants along the thorny shrub forest (Plate) in the Rajavomangi reserve forest, East Godavari district, Andhra Pradesh. Reference to literature revealed that *V. wightiana* was thought to be confined to far south Indian region, covering lower Kerala Hills and Nilgiris and the present collection from Eastern Ghats (± 600 m) shows the extension of distribution towards Eastern Ghats of Andhra Pradesh, and is described and illustrated here. Its occurrence along the intervening zone, namely, the Nullamalais may be possible and a very intensive search may reveal its occurrence in some of those areas.

Vanilla wightiana Lindl. in Wight Cat. no. 2091. 1833 ; Hooker f. in Fl. Brit. India 6 : 90. 1890; Fischer in Fl. Pres. Madr. 8 : 1451. 1928 (Repr. ed. 3 : 1015. 1957). *V aphylla* Lindl. Gen. & Sp. Orchid. 436. 1840 (*non* Blume 1825) ; Wight Ic. 3(3), t. 931. 1845. (possibly *V. walkeriae* Wt. Ic. 3(3), t. 932. 1845).

Climbing terrestrial orchid reaching to 5 m. *Roots* 0.5-0.7 cm thick, many, long, branched, develop nearest the ground and grow downwards into the humus and soil. *Tendrillar adhesive roots* 4-6 × 0.20-0.4 cm, light green when young, one at each node opposite the leaf, later clasping the tree trunk. *Stem* 0.5-1.9 cm diam., fleshy, terete, vertically grooved along one face, internodes 6.0-18.5 cm long, green, branching at nodes. *Scale leaves* 2.5-4.2 × 1.0-1.5 cm, sessile, many-nerved, elliptic, ovate-lanceolate, acuminate, deciduous leaving a scar. *Inflorescence* terminal with 8-16 flowers in dense, simple raceme. *Floral bracts* light green, persistent, 1-2 × 0.5-0.8 cm, broadly ovate, obtuse, 7-11 × 5.0-6.5 cm, white with light pinkish tinge at lip base, slightly sweet-scented. Sepals and petals fleshy, many-nerved, obtuse-acute, greenish outside, subequal. *Sepals* 4.5-5.5 × 1.0-1.5 cm. *Petals* 3.8-5.0 × 2.0-2.5 cm, incurved at the margins at the distal half. *Lip* 3.5-4.5 × 2.0-2.5 cm, indistinctly 3-lobed, infundibular, obovate, acute, adnate to column with basal half margins. *Disc* with two lateral, distinct retrorsely barbate crests with median line, hirsute at central part, wavy at the distal margins. *Column* 1.5-2.0 cm long, adnate at the lateral margins with the basal margins of the lip except towards apex. *Anther cap ca* 2.5 × 3.0 mm, 2-celled, hinged, attached terminally to the column. *Pollinia* two, granular ; *Rostellum ca* 2.5 × 2.0 mm, ovate, obtuse. Fruits 12-15 × 0.7-1.4 cm, fleshy, slightly curved at base, indistinctly 3-ridged, vertically 3-lobed at apex. *Seeds* 0.5-1.0 mm, many, black, hard, ovoid, warty, embedded in white gelatinous material (Plate and Figs. 1-11).

Fl. : March-April ; *Frt.* : April-Oct. (Fruits need about 8 months for ripening).

Loc. name : *Vine mokka ; Naga Nalleru* (Telegu). Local people seem to be not familiar with the plant.

Ecological note : *Vanilla wightiana* Lindl. forming dense patches grows profusely climbing over small thorny bushes and trees of *Canthium dicoccum* var. *umbellatum, Diospyros* spp., *Tarenna asiatica, Manilkara hexandra, Atalantia manophylla,* etc. in the dry scrub lands. Well drained

gravelly laterite soil is best suited for this species.

Specimens examined: *Localities*: (1) Near Labarthi (small area), Rajavomangi reserve forest, Elsewaram forest Range, East Godavari District, Andhra Pradesh, *Sudhakar* 7611, on 4-4-1980 (in flower) ; *Sudhakar* 12162 and 12168 on 24-4-1981 (in flower and fruit) ; *Sudhakar* 12171, on 15-8-1981 (in fruit).

(2) Near Munjaram (small area), Rajavomangi reserve forest, *Rolla Rao & Sudhakar* 12187 (in fruit), on 8-11-1981.

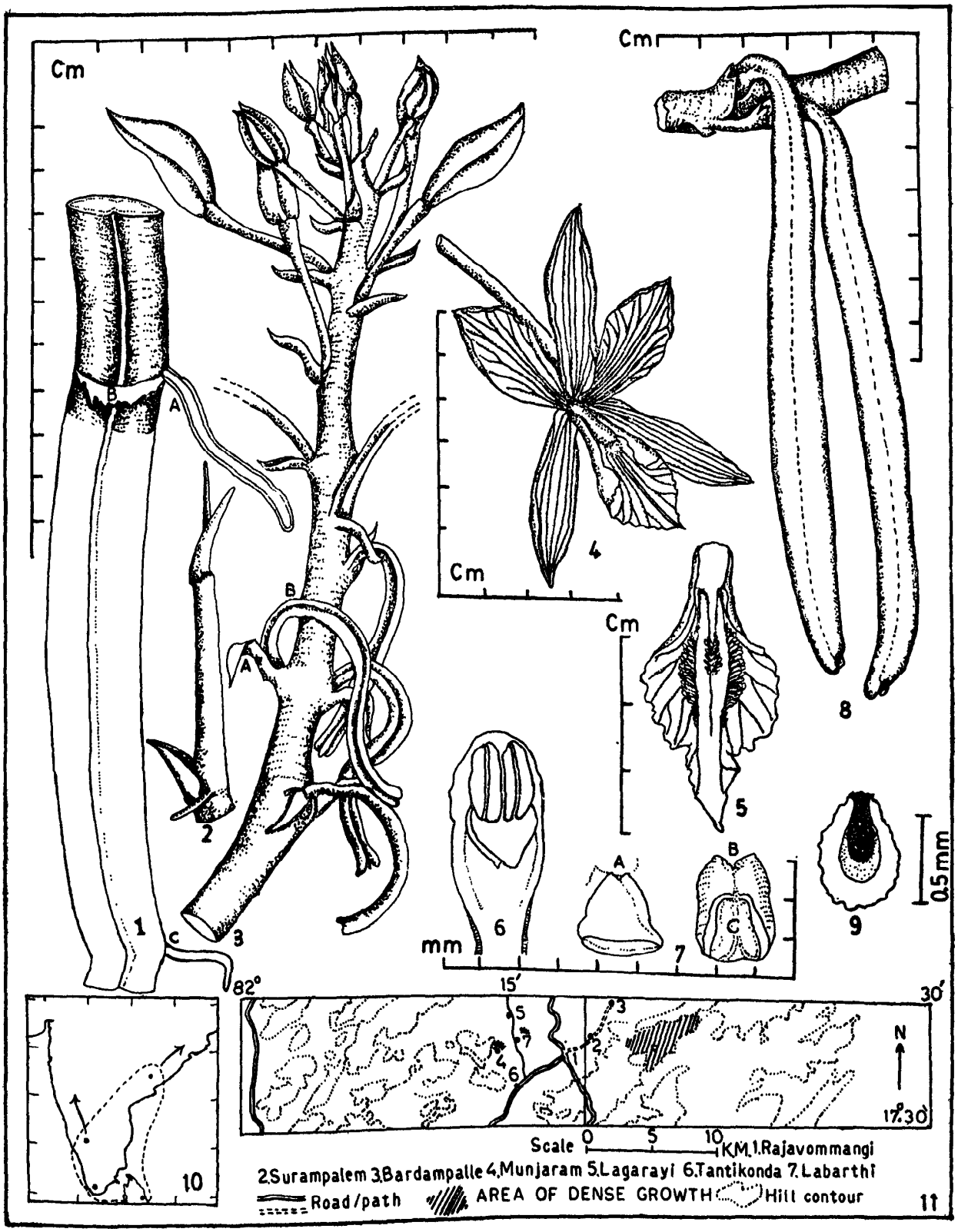
(3) Near Surampalem (over 2 sq. km area), Rajavomangi reserve forest, *Rolla Rao & Sudhakar* 12183 (in fruit) on 8-11-1981. (All deposited in Botany Deptt. Herbarium, Andhra University, Waltair ; *Sudhakar* 12162, 12168 & 12171 and *Rolla Rao & Sudhakar* 12183 deposited in CAL, BSI & MH ; also K & L).



Plate : Dense mesh of green stems of *Vanilla wightiana* on *Manilkara hexandra* in the thorny scrub jungle near Surampalem.

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Figs. 1-11 : 1. Part of the stem showing root (A) and leaf scar (B) at each node (C) leaf scar on other side (not seen). 2. Terminal branchlet showing scale leaf at each node. 3. Terminal branchlet with scale leaf (A) young fruit (B) at each node ; flower buds at the top. 4. Flower. 5. Labellum. 6. Column with Pollinia. 7. Anther cap— (A) Lateral view, (B) Basal view with pollinia (C) opend. (1-7- based on *Sudhakar* 12162 and 12168). 8. Mature fruits (pods). 9. Seed (8 & 9 based on *Rolla Rao & Sudhakar* 12183). 10. Map showing distribution of the species. 11. Map showing actual localities in East Godavari district, A. P.

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NOTES ON *CROTON AROMATICUS* L. AND *C. LACCIFER* L. (EUPHORBIACEAE)

Geiseler (1807) combined *Croton aromaticus* L. with *C. laccifer* L. under the former binomial. Beddome (1872, 1873) in his treatment of *C. aromaticus* also favoured to combine *C. laccifer* and *C. caudatus* Geisel. to it and considered *C. moonii* Thw. and *C. nigro-viridis* Thw. as its varieties. J. D. Hooker (1887) having found no difference followed Geiseler and Beddome in uniting *C. laccifer* with *C. aromaticus* and retaining the binomial *C. aromaticus* L. for the combined species. However, unlike Beddome, he correctly treated *C. caudatus, C. moonii* and *C. nigro-viridis* as distinct species. However subsequent authors, Gamble (1925), Alston (1931) and Airy Shaw (1972) continued to consider *C. aromaticus* and *C. laccifer* as distinct species. Trimen (1898) treats *C. laccifer* as a variety of *C. aromaticus*. These two species are confined to Peninsular India and Sri Lanka only, until recently Airy Shaw reported *C. laccifer* from Thailand and paralleled in this curious disjunct distribution with species of *Phyllanthus, Sauropus* and *Mallotus*.

During the revisionary studies on the genus *Croton* L. for Indian subcontinent the authors after examining critically the available collection, both old and recent, from Peninsular India as well as Sri Lanka agree with Geiseler, Beddome and J. D. Hooker and conclude that *C. aromaticus* and *C. laccifer* are conspecific. Airy Shaw in a letter to the authors also indicated the same probability. Since the dates of publication of both the species are same, the binomial *C. aromaticus* L. should be retained for the combined species as Geiseler who first united these two species chose that name.

It seems pertinent to note that *C. aromaticus* displays a wide range of morphological variations (Fig. 1 shows the variation range in leaf shape) which led to the treatment of this complex species as two distinct entities by various authors but a careful study of the numerous specimens by the present authors revealed many intermediate forms. It would appear impossible to find out any natural demarcating lines even at the varietal level.

Croton aromaticus L. Sp. Pl. 1005. 1753 (as *aromaticum*) ; Geisel. Croton. Monogr. 21. 1807 ; Thw. Enum. Pl. Zeyl. 4 : 275. 1861 ; Bedd. Fl. Sylv. t. 283. A. 1872 et For. Man. 204. 1873, excl. syn. *C. caudatus* & var. *moonii* & *nigro-viridis* ; Hook. f. Fl. Brit. India 5 : 388. 1887 ; Trimen, Fl. Ceylon 4 : 48. 1898 ; Gamble, Fl. Madras 1315. 1925 (Repr. ed. 2 : 920. 1957) ; Alston in Trimen, Fl. Ceylon 6 : 264. 1931. *C. laccifer* L. Sp. Pl. 1005. 1753 ; Thw. Enum. Pl. Zeyl. 4 : 275. 1861 ; Gamble, Fl. Madras 1315, 1925 (Repr. ed. 2 : 920. 1957) ; Alston in Trimen, Fl. Ceylon 6 : 264. 1931 ; Airy Shaw in Kew Bull. 26 : 248. 1972. *C. tiliaefolius* var. *aromaticus* (L.) Lam. Encycl. 2 : 206. 1786. *Aleurites laccifera* (L.) Willd. Sp. Pl. 4 : 590. 1805. *Croton aromaticus* var. *laccifer* (L.) Trimen, Fl. Ceylon 4 : 48. 1898.

Flowering and fruiting : Jan.-Dec.

Properties : Said to be used medicinally. A kind of lac is extracted from the bark of this plant in Sri Lanka which is used in varnish-making.