

CEROPEGIA VINCAEFOLIA HOOK. (ASCLEPIADACEAE) FROM
MAHARASHTRA—ITS HISTORY AND IDENTITY

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A B S T R A C T

The correct identity of *Ceropegia vincaefolia* Hook., which has so far been confused with *C. hirsuta* Wt. et Arn. on account of its meagre and incomplete description, thus leading to the unnecessary introduction of two more new species has now been established in this critical study with the help of discussions and illustrations.

INTRODUCTION

Since 1839, when William Hooker first described *Ceropegia vincaefolia* in Curtis's Botanical Magazine, London (t. 3740), the identity of this species remained confused on account of meagre description, which resulted in publication of two more new species and subsequently merged with other species of the genus or reduced to a variety of some species. This beautiful plant was first received from Bombay at the Glasgow Botanic Garden from J. Nimmo. An English description of the species reads: "Stem very long, the thickness of a crow-quill, twining, slightly downy, branched. Leaves opposite, ovate, generally broadly so, acuminate, slightly downy above and below, ciliated at the margin: petioles rather short and thick. Peduncles an inch or more long, clothed with patent hairs, bearing a cyme of from four to six flowers. Calyx segments and bracteas subulate. Corolla greenish-white, variously sheathed and spotted with brown, the upper part of the segments of the limb deep brownish-purple; the tube inflated and globose below, dilated above: the limb of five erecto-connivent, oblong segments, internally hairy, the margins reflexed. Column varied with tawny and deep chocolate-brown, outer series or ray of five short, erecto-patent, emarginate, fleshy lobes, tipped with long hairs: inner of five erect, linear, compressed segments, the apex recurved and obscurely emarginate" Decaisne's (1844) description of the same species, in Latin, in DC's *Prodromus*, is practically the same.

Hooker f. (1883) in his *Flora of British India* under *C. hirsuta* Wt. & Arn. described 4 varieties of which *C. vincaefolia* Hook., reduced to varietal rank is one. The salient description reads: "Branches glabrous coronal lobes 5 short rounded emarginate ciliate". He stated that he had

seen no authentic specimen of this plant. He also described another species, *C. stocksii* Hook. f. from Konkan (in Maharashtra) as follows:—"An extensive climber. Leaves membranous . . . pedicels very short, hispid . . . corolla large, straight, $2\frac{1}{2}$ "-3", base slightly inflated, (when compared with *C. oculata* Hook.) lobes erect, linear from a small base coronal lobes 5 short broad ciliate, processes linear, straight" Commenting on this species he states: "This closely resembles *C. oculata* Hook. differing in long, linear corolla lobes. It may be a form of that plant; if so, the corolla affords a most treacherous character".

Cooke (1958) in *Flora of the Presidency of Bombay* accepted *C. vincaefolia* as a variety of *C. hirsuta* and remarked: "I have seen no authentic specimen of this, which can hardly be considered a good variety. The only difference between it and *C. hirsuta* proper appears to be in outer corona-lobes, which are described and figured in Bot. Mag. (l.c.) as erecto-patent emarginate".

Blatter and McCann, in 1931, described another new species, *C. polyantha* from Lingmala at Mahabaleshwar (Maharashtra), the salient features of which are: "Stem glabrous petiole stout... corolla 5 cm long straight. Tube much inflated below, almost globose...with long villous hairs inside the inflated base. Lobes 2.2 cm long, erect, linear, somewhat broader at base, margins reflexed, connate at tip, dark green in the upper 3/4, pale yellow-green in the lower part Outer corona cup-shaped, 5-lobed purplish above the middle, hairy inside and along the margins Inner corona of 5 linear, obtuse lobes, purple in the upper part, yellowish in the lower, glabrous straight..." While describing, it has also been compared with *C. oculata* Hook.

In his revision, of the genus *Ceropegia*, Huber (1957) reduced *C. polyantha* Blatt. & McC. to a variety of *C. oculata* Hook. and named it *C. oculata* var. *subhirsuta*, while he maintained *C. vincaefolia* as synonymous to *C. hirsuta* Wt. & Arn. Also *C. stocksii* Hook. f. has been merged with *C. oculata* by him.

DISCUSSION

The study of *Ceropegia* of Western ghats has now established that all those species mentioned above (barring *C. oculata* and *C. hirsuta*) refer only to one species, viz. *C. vincaefolia* Hook. whose poor description and understanding led to the prevailing confusion on its identity. This was due to faulty description of its stem being "downy or pubescent", omission of "hairs" inside the inflated base of corolla, and the term "recurved" (here mistaken as hooked) used for showing the position of the apex of the inner corona. It should be noted that *C. hirsuta* and other allied species (Fig. 1. E, a & b) are the only ones among twiners which have pubescent stem and the apex of inner corona clearly hooked. But the original colour plate (t. 3740) of *C. vincaefolia* (reproduced in Fig. 1. A, a & b) and the description (minus pubescent stem) in Curtis's *Botanical Magazine* shows stem glabrous, presents the true nature of the flowers and its buds, the outer corona "erecto-patent, emarginate" and the inner corona "compressed" lanceolate-rhomboidal with apex "recurved" which really means "divergent" as is actually the case and not "hooked" as has been conceived and seen in *C. hirsuta*. It is, therefore, wrong to call *C. vincaefolia* as a variety or put as synonym of *C. hirsuta* as both these are quite different from each other.

While describing *C. stocksii* Hook. f. (l.c.) is also silent about inflated base of corolla and does not characterize inner corona but gives a correct description of corolla lobes, whereas Cooke (l.c.) specifies the inner corona as "linear-oblong or somewhat oblanceolate" though he has also left out the inflated corolla base. This specification of corona and corolla lobes (Fig. 1. C, b) of *C. stocksii* does not match with corona (Fig. 1. F) and corolla lobes (Fig. 1. C, a) of *C. oculata* Hook. Therefore, there seems to be no justification in putting *C. stocksii* as synonymous to *C. oculata* by Huber (l.c.) who seems to have been influenced to do so by Hook. f.'s (l.c.) comments on his species. The non-specification of inflated base of Corolla in *C. vincaefolia* and *C.*

stocksii by their respective authors and other workers, thereby missing the hairs inside, (or it might have been ignored thinking it to be of no significant value), particularly led Blatter et McCann (l.c.) to describe *C. polyantha* as a new species by virtue of the colour of flowers and the hairs inside the inflated base of corolla of that species.

Now, if one scrutinizes the salient features of *C. vincaefolia*, *C. stocksii* and *C. polyantha* (= *C. oculata* var. *subhirsuta* Huber) and refers to the figures of the flowers of these species (Fig. 1. A, C, b, B & D respectively), all these would stand out as same. To strengthen this, the herbarium specimens of Bhide (31-8-1907) from Maharashtra in Cooke's collections at the herbarium of Western Circle, Botanical Survey of India, Poona and identified either as *C. stocksii* or *C. hirsuta* var. *vincaefolia* by previous workers serve good examples as these specimens were later annotated by Charles McCann as *C. polyantha*. This again shows the close relation among the above 3 species and therefore can be said to be the same only. Blatter and McCann (l.c.) did not give exact specification of inner corona of *C. polyantha* and it was left to Santapau et Irani (1958) to point out & illustrate (Fig. 1. D, a & b) correctly the nature of inner corona as "lanceolate-rhomboidal" in shape, dark purple in colour, erect, divergent at tips, so similar to the ones described and illustrated for *C. vincaefolia*. The study under cultivation of *C. polyantha* collected from its type locality and elsewhere in Maharashtra confirms to original description (minus erratic ones) and illustration of *C. vincaefolia*. In fact the shape and colour of the coronary structure is so characteristic that none of the species of *Ceropegia*, so far reported from Maharashtra (erstwhile Bombay State) or may be from India, have similar type of corona. The character of inner corona of *C. hirsuta*, mentioned by Hooker, f. (l.c.) as broad curved or hooked seems to be a mixture with *C. vincaefolia*.

Besides, observation on colour of the corolla lobes of specimens collected from different climatic regions reveals variation in them. The range of variation, noticed so far, in the colour of the upper 2/3 part of the corolla lobes is from brownish-green to brownish-red or dark-blooded (in specimens from deciduous forest zones) and to dark green (in specimens from evergreen forest zones) while the lower 1/3 broader part generally remains pale yellowish-green. The lobes are also some-times slightly spiral in formation (Pl. 1, A). The colour

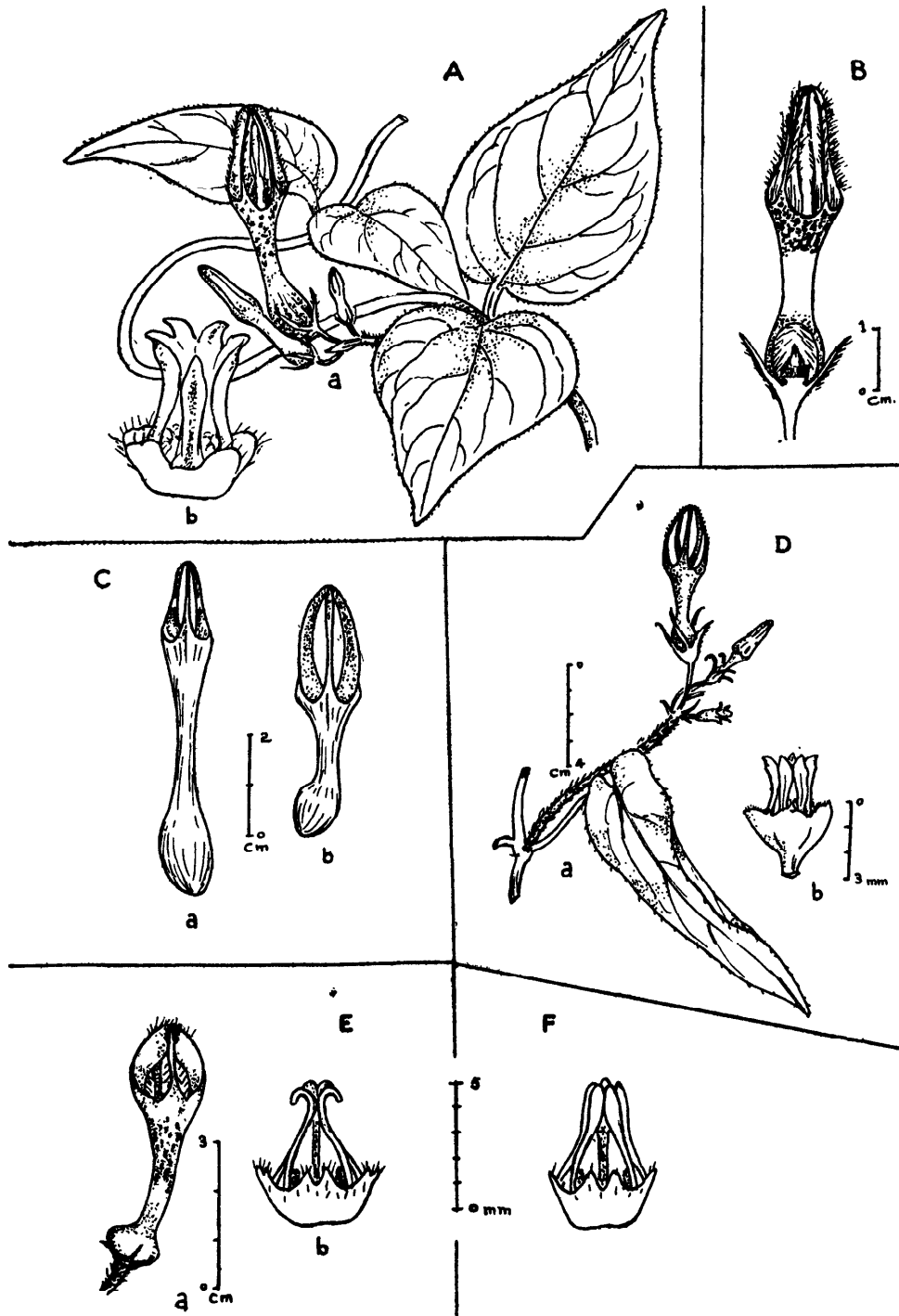


Fig. 1: A-F : A. *Ceropegia vincaefolia* Hook., (a) Stem, leaves, flowers, (b) Corona (partly reproduced from t. 3740 of Curtis's *Bot. Mag.* 1839). B. *C. polyantha* Blatt. et McC. Flower reproduced from t. 1, of Blatt. et McC. (1936). C. Flowers of (a) *C. oculata* Hook., (b) *C. stocksii* Hook. f. reproduced from t. III, f. 31a & 31b of Huber's monograph (1957). D. *C. oculata* var. *subhirsuta* Huber, (a) Stem, leaves, flowers, (b) Corona reproduced from t. 4, f. A-C, of Santapau et Irani (1958). E. *C. hirsuta* Wt. et Arn. (a) Flower, (b) Corona. F. Corona of *C. oculata* Hook.

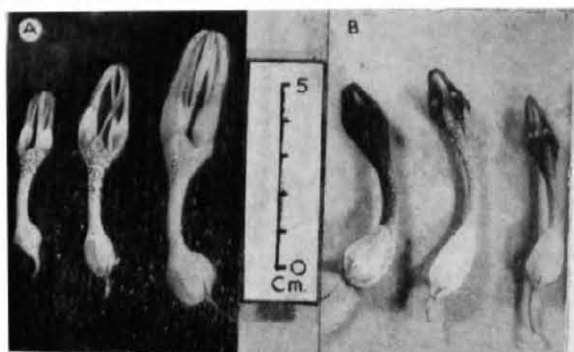


Plate I (A-B) : A. Showing range of variation in the flowers of *Ceropegia vincaefolia* Hook. B. Showing range of variation in the flowers of *C. oculata* Hook.

of the corolla tube varies only from greyish-green to greenish-white.

CONCLUSION

Based on the illustration (t. 3740, and Fig. 1 & Pl. 1) and descriptions (minus the erratic ones) of the authors of the above related species and the concerned available herbarium specimens together with arguments and discussions given above, and in the light of the knowledge of several other species of the genus from Maharashtra, it can now positively be affirmed that *C. vincaefolia* Hook. is quite different and distinct from *C. hirsuta* Wt. et Arn., and the other related species (except *C. oculata* Hook.) referred to above, are the same as *C. vincaefolia*. Since, *C. vincaefolia* Hook. is valid and has priority in publication, all those related species have to be merged, and as the description of the same is incomplete, an amended description together with proper citation and synonyms is given below:

Ceropegia vincaefolia Hook. in Bot. Mag. t. 3740, 1839, emend Ansari; Decne. in DC. Prodr. 8: 642, 1844. *C. hirsuta* var. *vincaefolia* Hook. f. in Fl. Br. Ind. 4: 72, 1883, *C. stocksii* Hook. f. Ibid. 4: 74; Cooke, Fl. Pres. Bombay 2: 242, 1958. *C. polyantha* Blatt. & McC. in Bombay nat. Hist. Soc. 34: 936, 1931, et 36: 535, 1933. *C. oculata* var. *subhirsuta* Huber in Mem. Soc. Broter. 12: 65, 1957; Santapau & Irani in Bull. bot. Soc. Bengal 12: 13, t. 4, f. A-C, 1958.

A perennial twiner. Tuber sub-globose. Stem 3 m long, generally branched, terete, glabrous, slightly swollen at the nodes, greenish to dark purple. Leaves petiolate, 18 × 10 cm, gradually decreasing

in size upwards, ovate to ovate-lanceolate, acute or acuminate at the apex, cordate at base, subcoriaceous to membranous, slightly hairy above and along margins, glabrous beneath but for the nerves, with numerous glands at the base of the mid nerve; lateral nerves 5-8 pairs; petiole 1.5-5 cm long, grooved on the upper side, with glands on either side at the base. Flowers few to numerous in lateral umbellate cymes, peduncle 7-11 cm long from between the petioles, terete, hirsute, more or less dark-purple; bracts 1-1.4 cm long, linear, subulate, glabrescent; pedicels 2 cm long, terete, thick, glabrescent to glabrous. Calyx 1.5-2 cm linear-subulate, sparingly hairy along the mid nerve on the dorsal side. Corolla 3-8 cm long, straight or slightly curved; tube 1.6-4.5 cm long, funnel shaped below the lobes, glabrous, greyish-green to pale green with purple spots at the tip and at inflated part outside, dark purple inside with a pale green ring separating the upper part of the tube and the globose inflated base which is hairy inside; lobes 1.4-3.5 cm long, the broadest part being at the base, almost equal to or shorter than the tube, connate at the tip forming an ovoid-oblong, or ovoid head, sometimes slightly spirally twisted, glabrous outside, pubescent inside, ciliate along the margins and on the lower middle side, colour variable, greenish-brown, reddish brown or dark blooded to dark green in the upper part, generally pale yellowish-green with faint purple lines in the lower broadest part. Corona biseriate; outer cupular of 5 variable lobes broadly emarginate to bifid, purple, hairy inside and along margins, inner lobes 4 mm long, compressed, ligulate, oblanceolate or lanceolate-rhomboidal, divergent at the tips, glabrous, purple. Pollen-masses yellow, ovoid, attached to the pollen carriers by minute caudicles. Follicles $\pm 15 \times 0.5$ cm cylindric, tapering towards blunt apex, glabrous, greenish purple. Seeds $\pm 7 \times 4$ mm ovate-oblong, flattened with broad margin; coma ± 3 cm long.

Flowering : July-September.

Fruiting : September-October.

Vernacular name : Kharpudi, Khapar-Khutti.

Herbarium specimens examined : THANA DISTRICT: Mumbra, Billore 116485 (BSI); Shenoy 4057 (BLAT); Dahisar, Billore 116768 (BSI); KOLABA DISTRICT: Neral, Irani 5156; Karjat, Irani 2113-2119; Matheran, Irani 5400, 5155A (BLAT); SATARA DISTRICT: Mahabaleshwar, near Lingmala falls, Ansari 116555 (BSI); McCann 3439; Santapau 11906 (BLAT); POONA DISTRICT: Sinhadh hill,

Bhide s.n. (31-8-1907); *Kulkarni s.n.* (16-8-1909); *Ansari* 9998, 101583, 101595; *Puri* 5658, 5689 (BSI); *Vartak* 9804, 9806 (MACS); *Joshi*, 2475 (PU); Katraj ghat, *Kokani* 2467 (PU); DHULIA DISTRICT: Toranmal, *Pataskar* 105722, 105809 (BSI).

Standard abbreviations have been used except for Poona University (PU) and Maharashtra Association for the Cultivation of Science (MACS).

Distribution: The above citations include a few more localities in its distribution in addition to the ones earlier reported. It is endemic in Maharashtra.

Field notes: This species is generally found on hill slopes in scrub and deciduous forests and among bushes in evergreen parts. Though once common in some parts, it is now gradually becoming scarce on account of its tubers being eaten by local people.

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