

prominent and pointed (Figure 2e). Whereas in *I. denisonii* and *I. lawsonii*, bacules on muri are obscure. With regard to the haploid chromosome numbers, *I. clavata* and *I. agumbeana* exhibit $n = 8$ (Figure 2f) whereas *I. lawsonii* exhibits $n = 10$, and chromosome number is still unknown in *I. denisonii*.

If this new species is compared with other scapigerous species which have somewhat bulged or clavate spur (viz. *I. clavicornu*, *I. laticornis* and *I. dendricola*), the most distinguishing character is the presence of a distinct and long dorsal auricle in *I. clavata* and its complete absence in the other three species.

Plants are found frequently in shade on moist barks of large tree trunks along with mosses in semievergreen forests. For the size of the plant, the flower is big. Attempts to collect this rare balsam during early August have proved unsuccessful. It appears that the species appears during late August and September and disappears soon after the rains at the end of October. This species is endemic to Pushpagiri Hills in Bisle Ghat and is highly

endangered as this place has become a tourist spot.

Type: Bhaskar 328, Pushpagiri Hills, Panorama point, Bisle Ghat, Hassan Dist., Karnataka, 24-9-1972; deposited at the Herbarium, PG Department of Botany, Manasagangotri, Mysore University, Mysore (MGM).

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ACKNOWLEDGEMENT. I thank Mr M. D. Theuerkauf, Gurukula Botanical Sanctuary, Wynad, for constant encouragement and to Sri N. Veerendra Babu for his assistance in preparing the manuscript.

Received 4 May 2006; accepted 18 August 2006

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A new species of *Ceropegia* L. (Asclepiadaceae) from the Western Ghats of India with a note on series *Attenuatae* Huber

Ceropegia L. (Asclepiadaceae, subfamily Asclepiadoideae, tribe Stapelieae) is an old world tropical genus containing about 200 species, widespread in the perimeter of the Indian Ocean. Huber¹ classified the species of the genus into 21 sections. The Indian species of *Ceropegia* belong to ten sections. Under the section *Tiloris* Huber, three series have been recognized, viz. *Attenuatae*, *Campanulatae* and *Bowkerianae*. Distribution of the former is restricted to peninsular India and the latter two are restricted to tropical and extra tropical southeastern Africa. In India, the genus is presently represented by 48 species, including three varieties. Huber¹ rendered a systematic account of the genus, wherein three species, namely *Ceropegia spiralis* Wight, *C. fimbriifera* Bedd. and *C. attenuata* Hook. have been treated under series *Attenuatae* Huber, sect. *Tiloris*. To these four species, viz. *C. noorjahaniae* Ansari², *C. mahabalei* Hemadri et Ansari³, *C. anantii* Yadav et al.⁴ and *C. mohanramii* Yadav et al.⁵ have been added from

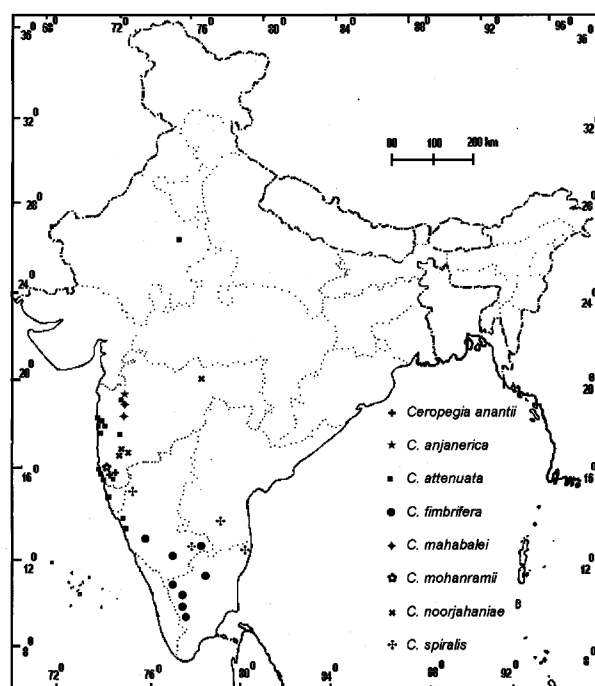


Figure 1. Map showing distribution of *Ceropegia* species belonging to series *Attenuatae*.

Maharashtra. All the species in the series *Attenuatae* are endemic to peninsular India, particularly to the Western Ghats, which is one of the centres of diversity of *Ceropegia*. Series *Attenuatae* is characterized by linear or linear-lanceolate leaves, globose tubers, sessile or shortly pedunculate, uni- or few-flowered, bracteate cymes and corolla lobes that are connate at the apex.

Ceropegia attenuate similes, floribus brevioribus ad 3.5 cm longis (non 7.5 cm), corollae lobis anguste obovatis planis (nec linearibus reflexisque) capitulum obovatum (non attenuatum) facientibus differt.

Type: INDIA, Maharashtra State, Nashik district, Anjaneri hill, Malpure-1 (Holotype CAL), Malpure-1 (Isotype K), Malpure-1 (Isotype BSI), Malpure-1 (Isotype BLAT), Malpure-1 (Isotype Shivaji University, Kolhapur).

Ceropegia anjanerica Malpure, Kamble and Yadav sp. nov.

Perennial erect herb. Rootstock tuberous; tubers 2–5 cm in diameter, depressed globose to discoid, roots fibrous. Stem terete, scabrid, usually unbranched, up to 20 cm high, 1–2 mm in diameter. Leaves opposite decussate, subsessile to petiolate; petioles 2–5 mm long; lamina elliptic to narrowly elliptic, 1.5–4.5 × 0.4–1.3 cm, mucronate at apex, tapering at base, scabrous adaxially, glabrous abaxially except the midrib, margins scabrous. Flowers solitary, axillary or extra axillary; peduncle 1–3 mm long; pedicel 4–12 × 1–2 mm, scabrous; bracts solitary, attached at the base of pedicel, linear, 1.2–3 × 0.3–0.5 mm, acute, scabrous. Sepals 9–13 × 0.6–0.8 mm, linear, acuminate, scabrous. Corolla 2.5–3.5 cm long, usually slightly curved, greenish yellow; corolla tube 1.2–1.5 cm long, gradually dilated at the base, glabrous, striated with purple lines inside, the lower inflated part deep purple in colour; corolla lobes narrowly obovate, 1.3–1.8 cm long, usually flat along margins, connate at tips, sometimes slightly twisted, forming an obovate head, pubescent inside. Outer corona cupular, consisting of five bifid lobes, densely ciliate along margins; inner corona of five linear, purple lobes, usually divergent, up to 4 mm long. Pollen masses yellow, attached to the brown pollen carriers by short caudicles, pollinarium 0.6 × 0.5 mm. Follicles usually double, up to 7.0 × 0.4 cm, straight, tapering to a fine point, erect. Seeds c. 5 × 2 mm, ovate, oblong; coma 1–1.6 cm long, white, silky (Figure 3).

Flowering and fruiting: September–November.

Distribution: Restricted to open exposed plateau of Anjaneri hill in Nashik district of Maharashtra. About 100 individuals were located in September 2005.

Habitat: Grows at an altitude of about 1296 m (19°55'326"N, 73°34'300"E), in well-drained soil. Typical associates are *Celosia argentea* L. var. *argentea*, *Eulalia shrirangii* Salunkhe & Potdar, *Jansenella griffithiana* (C. Muell.) Bor, *Lepidagathis cristata* Willd., *Senecio bombayensis* Blatt., *Smithia purpurea* Hook., and *S. pycnantha* Benth. ex Baker. The plateau enjoys misty, humid climate throughout the rainy season during which the species shows vegetative growth. With

receding rains, the species starts flowering and fruiting in September.

Etymology: The species is named after Anjaneri hill, the type locality.

Note: *Ceropegia anjanerica* Malpure, Kamble and Yadav, sp. nov. is allied to *C. attenuata* Hook. but differs in having shorter flower up to 3.5 (not 7.5) cm long, narrowly obovate and flat (not linear and reflexed) corolla lobes forming a obovate (not attenuate) head.

Key to the species of series *Attenuatae*:

1. Cymes 2–4 flowered 2
1. Cymes uni-flowered 3
2. Corolla lobes purple hairy at base and outer corona lobes subciliate *C. fimbriifera*



Figure 2a–g. *Ceropegia* species belonging to series *Attenuatae*. **a**, *Ceropegia anantii*; **b**, *C. anjanerica* sp. nov.; **c**, *C. attenuata*; **d**, *C. mahabalei*; **e**, *C. mohanramii*; **f**, *C. noorjahaniae*; and **g**, *C. spiralis*.

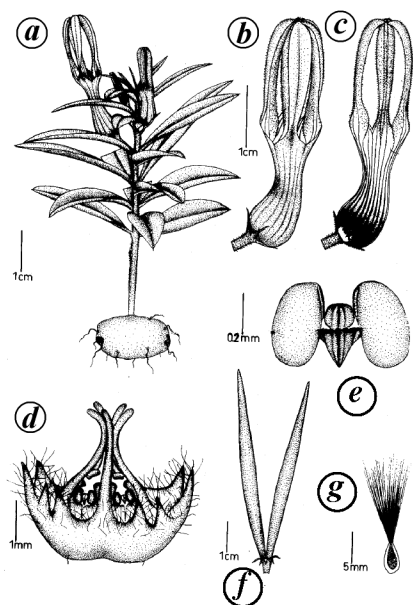


Figure 3. a, Habit; b, Flower; c, Dissected flower; d, Corona; e, Pollinarium; f, Follicle and g, Seed.

2. Corolla lobes and outer corona glabrous *C. noorjahaniae*
3. Corolla lobes shorter than corolla tube 4
3. Corolla lobes as long as or longer than corolla tube 5
4. Corolla lobes forming long beak *C. mahabalei*
4. Corolla lobes forming ampulliform head *C. mohanramii*
5. Corolla lobes with dark brown spot on either side in basal portion *C. anantii*
5. Corolla lobes otherwise 6
6. Corolla lobes with club-shaped hairs *C. spiralis*
6. Corolla lobes with simple hairs 7

7. Flowers up to 7.5 cm long with attenuate head *C. attenuata*
7. Flowers up to 3.5 cm long with obovate head *C. anjanerica*

Series *Attenuatae* is now represented by eight species in India and their distribution is shown in Figure 1. *Ceropegia spiralis* (Figure 2g) is sporadically distributed in South India and recorded from Balghat hills near Chennai, Bangalore, Cuddapah district in Andhra Pradesh and Gokak in Belgaum district, Karnataka. *Ceropegia fimbriifera*⁶ restricted to hills in South India grows at higher altitudes and is known to occur at Anamallai, Coimbatore, Hassan, Kolar, Mysore, Nilgiri, Salem and Shevoroy. The remaining six species are found in Central and northern western Ghats. *C. attenuata* (Figure 2c) is found growing at lower altitudes from Mumbai to Udipi and located at Bhatkal, Borivali National Park, Deogad, Karwar, Kasara, Khandala, Malwan, Matheran, Mumbra, Trombay, Vaibhavwadi and Vengurla, and shows significant diversity in flower size, shape and colour patterns. It is also reported from Galta area of Jaipur district, Rajasthan⁷. *C. noorjahaniae* (Figure 2f) is reported from Pasarni Ghat between Wai and Panchagani, Karthikswami, Khambatki Ghat and Jarandeshwar hills of Satara district. This species is recently collected from Melghat area of Amravati district, Maharashtra. *C. mahabalei* (Figure 2d) is restricted to hills around Junnar tahsil of Pune and Kasara of Thane district. *C. anantii* (Figure 2a) is so far known from hills around Salva and Phonda in Konkan. *C. mohanramii* (Figure 2e) is so far collected from only one location on lateritic plateau at Kochra in Sindhudurga district. *C. anjanerica* sp. nov.

(Figure 2b), similar to *C. attenuata*, is collected from Anjaneri hill near Nashik.

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ACKNOWLEDGEMENTS. We thank J. F. Veldkamp, National Herbarium, Leiden, The Netherlands for Latin diagnosis; Dr Girish Potdar for preparing the illustrations, the Head, Department of Botany, Shivaji University, Kolhapur for providing facilities and Department of Biotechnology, New Delhi for financial assistance.

Received 2 December 2005; revised accepted 5 June 2006

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A new variety of *Ceropegia oculata* Hook. (Apocynaceae: Asclepiadoideae) from Satpuda hill ranges of Maharashtra, India

Ceropegia L. included within-tribe Ceropegieae Decne. ex Orb. and subtribe Stapeliinae G. Don¹, comprising some 200 species which are distributed from southern Africa around the perimeter of the Indian Ocean to Australia² or 160 species distributed in Arabia, warm Africa, including Canary Island, Asia to Australia³. Ansari⁴ in his treatise on Indian *Cero-*

pegia described 44 species, of which 28 are endemic to India. Jagtap and Singh⁵ reported 45 species and three varieties from India. Subsequently, Sreekumar *et al.*⁶ and Yadav *et al.*⁷ added new species each from the Andaman Islands and Western Ghats of Maharashtra respectively. Jagtap and Das Das⁸ reported 22 species and one variety from Maharashtra

alone. Almeida⁹ reported 20 species and four varieties from Maharashtra. At present, the Satpuda hill ranges of Maharashtra together with the northern Western Ghats host 23 species and two varieties, of which 17 species and one variety are endemic. Among these, 15 species and one variety are strictly limited to these two regions^{10,11}, suggesting that they are