Impatiens clavata Bhaskar sp. nov. – a new scapigerous balsam (Balsaminaceae) from Bisle Ghat, Western Ghats, South India

The species of *Impatiens* L. (family Balsaminaceae) are extremely difficult to classify as they exhibit few distinguishing key characters. There are only a few authentic and monographic studies on *Impatiens* of South India. The latest monographic work on South Indian *Impatiens* has revealed one new species (*I. agnumaea*) and a new ‘pollen variety’ (*I. acutis, var. granulata*) in the Section ‘Scapigerae’. Another new scapigerous species (*I. chandrasekharanii*) was reported from Akkamalai, Annamalai in Coimbatore District. Among the known South Indian species of *Impatiens*, there are three Scapigerous species which exhibit somewhat clavate-shaped spur in the flower, viz. *I. clavicornis*, *I. laicorna* and *I. densiroco*. But in all these species the wing petal does not have a dorsal auricle, which is an appendage of the anterior lobe. The new species now reported has a sickle-shaped spur, uniquely clavate (most unique and prominent than in the other three species) and wings have a long and distinct dorsal auricle produced into the clavate spur. The clavate spur measures nearly 18 mm long and 5–7 mm wide at one-fourth distance from the bulged tip and is characteristically flattened and tape-like. Besides, the taxon exhibits several other differences which warranted describing this as a distinct species.

This new species was collected by the author on large trees (epiphytic plant) from Pushpagiri Hills, about 8 km from Bisle (Bisle–Subramanya Road), Sakleshpur taluk, Hassan district, Karnataka on 24 September 1972 and 1 October 1973. Recently, on the basis of location details given by the author, W. D. Theuerkauf (Gurukula Botanical Sanctuary, Wynad) also collected this plant from this locality during September 2006. While working on the flora of Hassan district, C. S. Saldana collected exactly similar specimens from Bisle on 18 September 1969, but he identified it as *I. barbieri* Hk.f. based on his authentication made at Kew Herbarium. The present author had also accordingly followed his identification. But only recently, after having got the access to the type material of *I. barbieri* Hk.f., which is preserved at Madras Herbarium, Coimbatore (Figure 1), it was confirmed that the specimen from Pushpagiri Hills, Bisle is not *I. barbieri* but a distinct species having a prominent clavate shaped spur and a 13 mm long dorsal auricle, endemic to this locality.

*I. barbieri* was named after its collector C. A. Barber by Sir J. D. Hooker (JDH) and it was collected from Cadamaney (adjointing Bisle) in the erstwhile Mysore State on 8 September 1903. JDH has made a sketch of the floral parts on the type sheet, according to which the spur is short and not clavate. Unfortunately, in the type sheet of *I. barbieri*, the flowers and plants are not properly spread and pressed. Therefore, the drawings left on the type sheet are the only basis for comparison. JDH did not give any description for *I. barbieri*, but only gave a key character that the spur is small compared to *I. scapiflora* and *I. acutis* and grouped it under the scapigerous balsams having...
dorsal auricle. Therefore, based on this, the specimen collected by the author from Pushpagiri Hills, having a long clavate spur is proved to be distinct and in no way related to I. barberi. Hence, it is treated here as a new species and is named I. clavata due to the prominent clavate nature of the spur (Figure 2 c).

Table 1 gives the differences between I. barberi and I. clavata sp. nov.

The complete description of the new species is given below:

Section: ‘Scapigerae’
Impatiens clavata Bhaskar sp. nov.
Epiphytic scapigerous tuberous herbs, perennial, 4–5 cm tall, tubers whitish. Leaves radical, 10–15 mm long, petiolate, lamina ovate, slightly inequilateral, attenuate, shallowly crenate, apex round, five-nerved, sparsely pilose above and glabrous below. Scapes 1–3 flowered, up to 4–5 cm long, bracts minute, 1.5 mm long; flowers pink or white, pedicel 10 mm long, glabrous, sepals three-nerved, equilateral, furunculate, obtuse at apex; spur clavate, 18 mm long, 5–7 mm wide at one-fourth distance from the bulged tip, characteristically ribbon-like, nerves incurved, reticulate at the bulged tip; standard 3 mm long; wings three-lobed, anterior lobe with long (13 mm) dorsal auricle produced into spur; posterior lobe elliptic, 18 mm long, venation open dichotomous. Capsules ovate, many seeds; seeds brown, hairy all over the testa, hairs towards the ends comparatively longer than those at the lateral sides, bands on hairs spiral.

Affinis ad speciem I. denisonii, Bedd., I. agumbeana Bhaskar et Razi, et I. lawsonii Hk.f., tamen differt culcari clavate distincto ad 18 mm longo includenti distintaque ‘auricula dorsali’ 13 mm longa.

Typus lectus a Pushpagiri Hills, Bisle Ghat, Hassan district, Karnataka; 24 September 1971. V. Bhaskar 328, positus in Herb. Mysore University, Manasagangotri, Mysore.

Among scapigerous species of Impatiens of South India, there are only three more species which have a distinct dorsal auricle produced into the spur, viz. I. denisonii Bedd., I. agumbeana Bhaskar and Razi and I. lawsonii Hk.f., but I. clavata sp. nov. differs from these species in having 18 mm long clavate spur, 5–7 mm wide enclosing a 13 mm long dorsal auricle. In I. denisonii the spur is not clavate and dorsal auricle is not more than 10 mm long, while in I. agumbeana and I. lawsonii the spur is not clavate and dorsal auricle and spur are not more than 5 mm long.

Seed characters also differentiate I. clavata from I. denisonii. In the former, hairs on seeds are filamentosus, while in the latter they are short, and not filamentosus. In both I. clavata and I. agumbeana hairs are elongated at either ends of seeds (but more dense in I. agumbeana), while the hairs on the lateral sides are short. The hairs are spirally banded in both the species.

In addition to these morphological characters, there are a few similar and dissimilar micro-morphological characters in these four related species. In I. clavata and I. agumbeana, muri on pollen exine sculpturing has distinct bacules and dilpabiculate. But in I. clavata, lumina is irregular and the processes of the exine are

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<thead>
<tr>
<th>Table 1. Differences between I. barberi and I. clavata</th>
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<tr>
<td>I. barberi Hk.f. (Type sheet) (Figure 1)</td>
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<tr>
<td>Plant is about 12 cm (dwarf plant compared to I. denisonii, according to Hk.f.)</td>
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<tr>
<td>Leaves oblong, about 10 per plant, petiole 3.5 cm long</td>
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<tr>
<td>Scapes 4 to 5 per plant, about 12 cm long, more than 4–5 flowered per scape</td>
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<tr>
<td>Pedicel about 15 mm long</td>
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<tr>
<td>Wing petals about 10 mm long, dorsal auricle about 5 mm long 13 mm long</td>
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<td>Spur not sickle-shaped not clavate, short (less than 10 mm) and cylindrical</td>
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Figure 2. a. Impatiens clavata sp. nov. plant; b. Sepal; c. Clavate spur; d. Wing petal with dorsal auricle; e. Tricolpate pollen grains; f. Haploid chromosomes (n = 8)
A new species of Ceropelia L. (Asclepiadaceae) from the Western Ghats of India with a note on series Attenuatae Huber

Ceropelia L. (Asclepiadaceae, subfamily Asclepiadoideae, tribe Stapelieae) is an old world tropical genus containing about 200 species, widespread in the perimeter of the Indian Ocean. Huber classified the species of the genus into 21 sections. The Indian species of Ceropelia belong to ten sections. Under the section Tiloris Huber, three series have been recognized, viz. Attenuatae, Campanulatae and Bowkeriana. 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. Huber rendered a systematic account of the genus, wherein three species, namely Ceropelia spiralis Wight, C. fimbriferum Bedd. and C. attenuata Hook, have been treated under series Attenuatae Huber, sect. Tiloris. To these four series, viz. C. noorjahaniae Ansari, C. mahabalei Hemadri et Ansari, C. anantanii Yadav et al. and C. mohanramii Yadav et al. have been added from

Figure 1. Map showing distribution of Ceropelia species belonging to series Attenuata.


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