

Argyreia sharadchandrajii (Convolvulaceae), a new species from the Western Ghats, India

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Abstract: *Argyreia sharadchandrajii* Lawand & Shimpale, a new species from the Western Ghats of Maharashtra, India is described and illustrated. *Argyreia sharadchandrajii* is morphologically similar to *A. pilosa* Wight & Arn. but differs in habit, shape of leaves and bracts, indumentum and size of peduncle, sepal and berries. Notes on taxonomy and conservation status are provided.

Keywords: Asia, Ipomoeae, Maharashtra, Morning glory, Taxonomy.

Introduction

Argyreia Lour. is one of the speciose genera within the morning glory family Convolvulaceae. Until recently, the species number in *Argyreia* was the subject of uncertainty but a comprehensive nomenclatural review by Staples and Traiperm (2017) has given a convincing number of 135 species throughout the world. The genus is native to continental Asia with almost all taxa distributed in the tropical, sub-tropical regions of Southeast Asia, China and the Indian subcontinent. The concept of the genus has undergone several taxonomic alterations. *Lettsomia* Roxb. was separated from *Argyreia* by Roxburgh (1824) based on the presence of a bilocular ovary, and was later remerged with *Argyreia* by Choisy (1834). However, he established a new genus *Moorcroftia* Choisy (Choisy, 1834) that too was later sunk in *Argyreia* by Van Oostroom (1943). A

monographic study of the genus has not been attempted, although some comprehensive floristic treatments by Oostroom and Hoogland (1953), Austin (1980), Fang and Staples (1995), Staples and Traiperm (2010) are available. In India, the genus is represented by *c.* 40 species of which 17 are endemic (Lawand, 2019; Lawand *et al.*, 2019). Except Clarke's (1883) account of the genus in *The Flora of British India*, no complete treatment exists for Indian *Argyreia*. Since then, a few novelties were described from India: *A. boseana* Santapau & V.Patel from the Western Ghats (Santapau & Patel, 1958), *A. arakuensis* N.P.Balacr. from Araku valley (Balakrishnan, 1961), *A. srinivasanii* Subba Rao & Kumari from the Eastern Ghats (Kumari *et al.*, 2003) and *A. lakshminarasimhanii* S.Shalini, Sujana, Arisdason & D.Maity from the southern Western Ghats (Shalini *et al.*, 2020). Most taxonomic data pertaining to Indian *Argyreia* is scattered in regional floras.

The generic circumscription of *Argyreia* along with *Ipomoea* L. has been discussed early on by many authors (Clarke, 1883; Cooke, 1908; Oostroom & Hoogland, 1953). A recent molecular phylogenetic study (Muñoz-Rodríguez *et al.*, 2019) suggests that the traditional genus *Argyreia* should be merged in *Ipomoea*. However, after critical analysis of the literature, we have an opinion that it is better to maintain their identity as a separate entity. At the generic level *Argyreia* can easily be distinguished from its allied genera by an array of characters such as their habit as mostly semi-woody lianas, corolla with hairy midpetaline bands, flowers

subtended with well-developed bracts and indehiscent berry. Both genera can be separated on cytological evidence. Sampathkumar and Ayyangar (1981) have shown that chromosomes in *Argyreia* are longer (5–8.5 μm) while those in *Ipomoea* are shorter (2–4 μm). Notably, the genus *Argyreia* is distributed in Asia while *Ipomoea* occurs worldwide (Mabberley, 2018).

During botanical excursions in 2016, as part of a revisionary study of the genus *Argyreia* in India, the authors found a specimen of *Argyreia*. The first impression was that it represented a geographical variation of *A. pilosa* Wight & Arn., an endemic species of Peninsular India. The proposed species was observed for three consecutive years to confirm that it displays constant morphological characters. On a careful literature survey, studying characters of taxonomic significance, type and protologue of its morphologically allied species, *A. pilosa*, it was confirmed that our collection represents a new species of *Argyreia*, which is described and illustrated here.

Taxonomic treatment

Argyreia sharadchandrajii Lawand & Shimpale, sp. nov. Figs. 1, 2 & 3(e-h)

Similar to *A. pilosa* but can be distinguished by its prostrate habit, terete petioles, widely ovate to orbicular leaves, white sericeous indumentum on abaxial leaf surface, short peduncles, oblong or lance-ovate bracts, unequal sepals and larger berries (2–2.5 cm across). The differences between the two species are presented in Table 1 and pictorially represented in Fig. 3.

Type: INDIA, Maharashtra, Kolhapur district, Alate, Alamprabhu Sacred Grove, 788 m, N 16°45'50.6", E 74°22'19.7", 17.09.2016, PR Lawand 077 (holo CAL!; iso SUK!, BSI!).

Prostrate shrubs. Stems trailing along ground, white to brown hispid, older semi-woody, c. 1 cm across, grooved, herbaceous towards apex, green, terete. Leaves simple, alternate; petioles 11–25 cm long,

terete, densely white hirsute, longer than peduncles; lamina widely ovate to orbicular, 15–24 × 12–25 cm, apex acute, base cordate, basal lobes rounded, indumentum hirsute on adaxial surface, densely white sericeous on abaxial surface, secondary veins 8–9 pairs, conspicuous on abaxial surface. Cymes axillary, sub-capitate, 3–12-flowered; peduncles 2–5 cm long, white hirsute, shorter than petioles (up to $\frac{3}{4}$ length). Flowers sessile; bracts 2–3, one large foliaceous, oblong, 2–3.5 × 0.5–1.2 cm, small bracts lance-ovate, 1–2.5 × 0.3–0.6 cm, 3-nerved, hirsute on both surfaces, more densely on abaxial surface. Sepals 5, unequal; outer 3 longer, 1.2–1.3 × 0.4–0.5 cm, apex acuminate; inner two c. 1 × 0.4 cm, narrowly oblong, apex acute, hirsute outside, glabrous inside, persistent, enlarge in fruiting. Corolla infundibuliform, rose-pink, 5–7 × 5–6 cm; throat purple, c. 1 cm wide, hirsute on mid-petaline bands outside; corolla lobes twisted in bud, lobes shallowly emarginate. Stamens 5, epipetalous, included within corolla tube, unequal, 2 longer 2–3 cm long, 3 shorter 1.5–2 cm long; filaments dilated and glandular hairy at base; anthers arrow-shaped, 0.3–0.4 cm long, basifixed, pink. Ovary conical, 4-loculed, glabrous, encircled by annular disc; style single, 1.5–2 cm long; stigma bi-globular, papillate, white. Berries rounded, 2–2.5 cm across, 1–4-seeded, glabrous, yellow when ripe. Seeds trigonal, white with visible hilum.

Flowering & fruiting: Flowering from July to September and fruiting from October to December.

Habitat: This species grows in open habitats and trails amidst grassland but remain rooted near shrubs.

Etymology: The specific epithet '*sharadchandrajii*' is chosen after Shri. Sharadchandraji Pawar, former Union Minister of Agriculture, Government of India, New Delhi for his valuable contribution to Indian agriculture.

Distribution: Known from a single locality (Fig. 4) in the sub-ranges of Sahyadris (the Western Ghats), India.

Specimens examined: INDIA, Maharashtra, Kolhapur district, Hatkanangale, Ramling hills,



Fig. 1. *Argyreia sharadchandrajii* Lawand & Shimpale: **a.** Habitat; **b.** Habit; **c.** Flower–side view; **d.** Fruiting habit; **e.** Androecium; **f.** Gynoecium (photos by Vinod Shimpale).

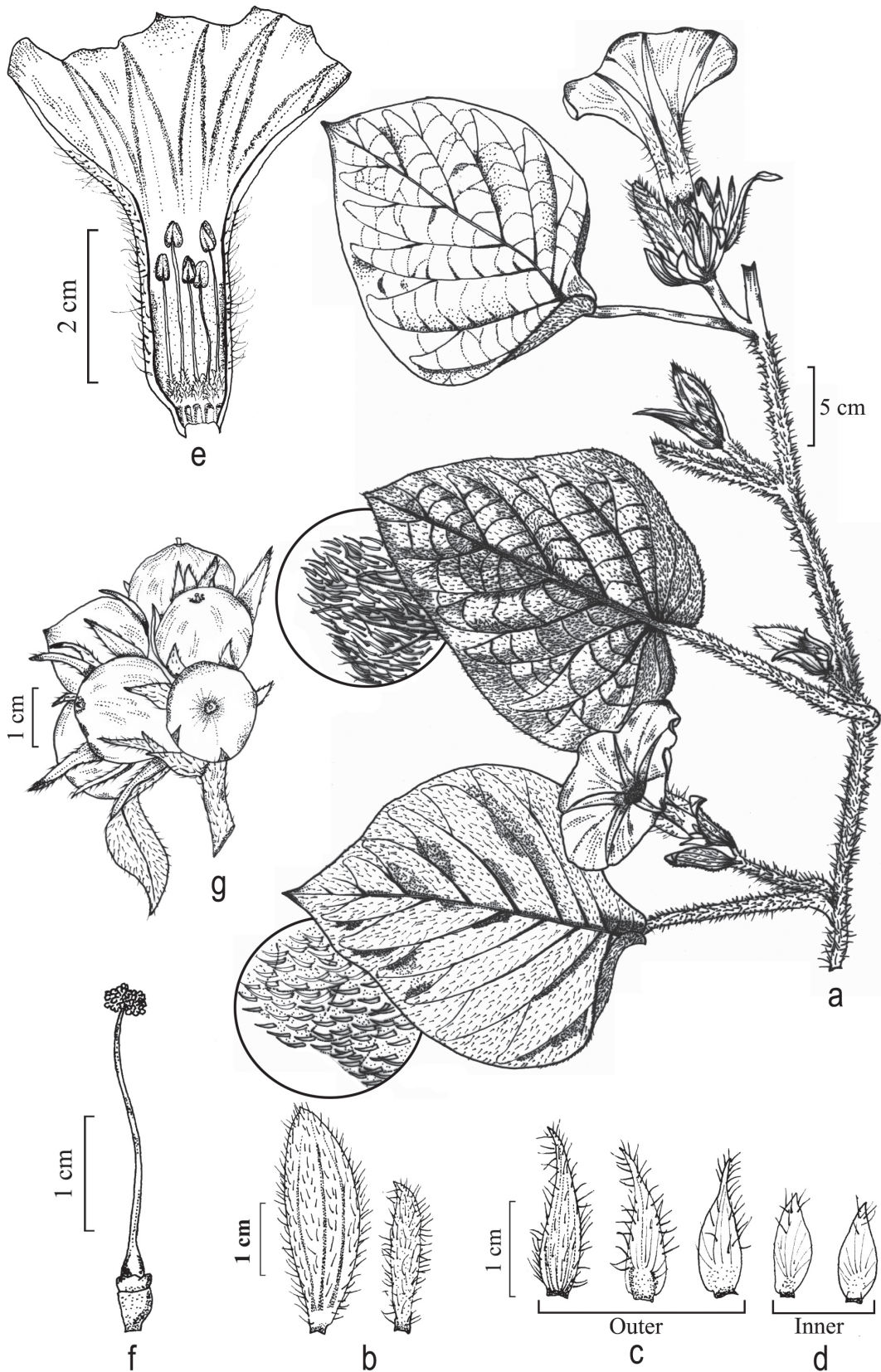


Fig. 2. *Argyreia sharadchandrajii* Lawand & Shimpale: **a.** Flowering twig; **b.** Bracts; **c.** Outer Sepals; **d.** Inner sepals; **e.** Dissected corolla with androecium; **f.** Gynoeceum with disc; **g.** Berries (from *P.R. Lawand 077*; drawn by Pramod Lawand).

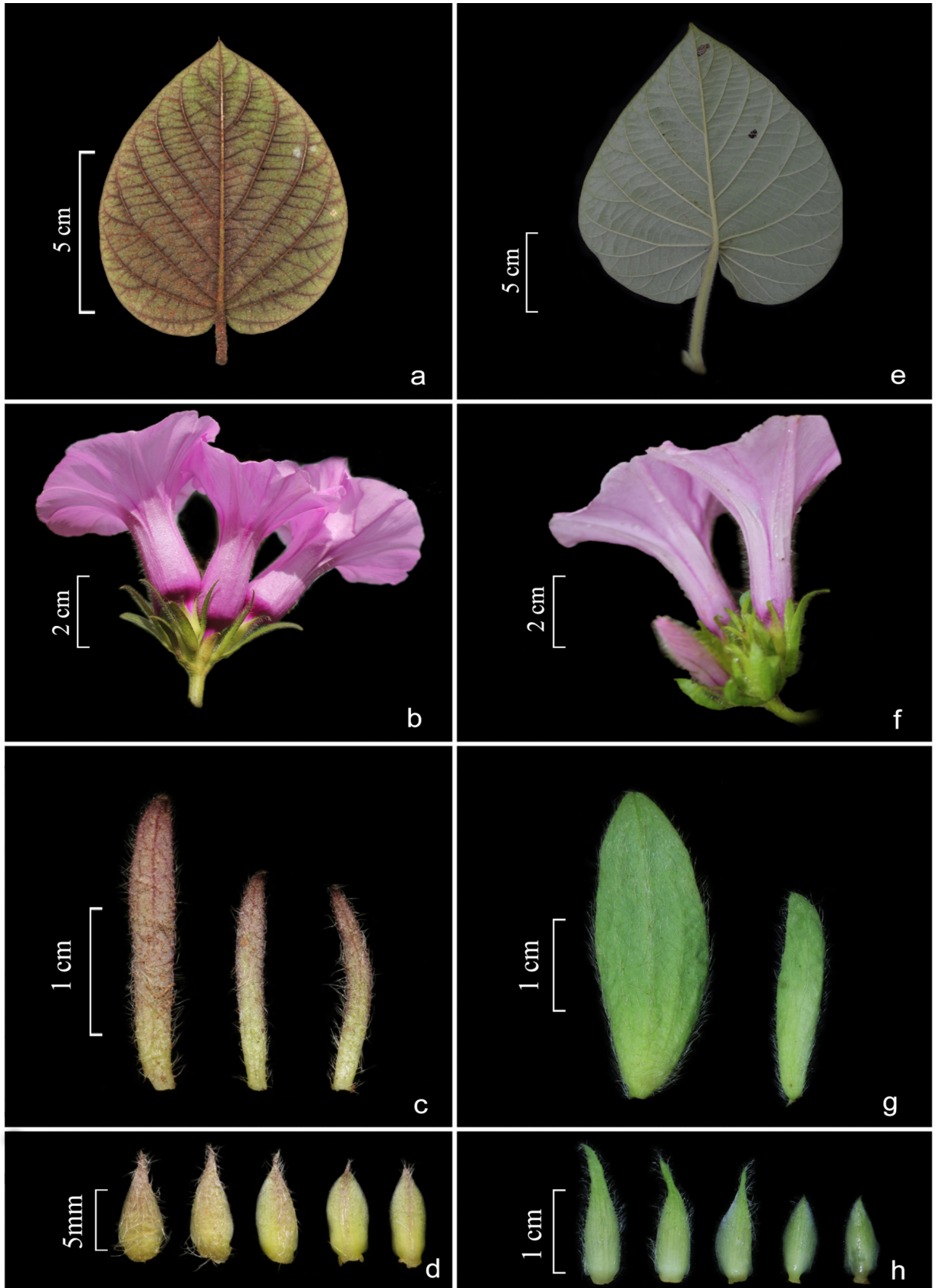


Fig. 3. Comparison between *Argyreia pilosa* Wight & Arn. (a-d) and *Argyreia sharadchandrajii* Lawand & Shimpale (e-h): a & e. Abaxial leaf surface; b & f. Inflorescence; c & g. Bracts; d & h. Sepals (photos by Pramod Lawand).

Table 1. Morphological comparison between *A. pilosa* and *A. sharadchandrajii*

Character	<i>A. pilosa</i> Wight & Arn.	<i>A. sharadchandrajii</i> Lawand & Shimpale
Habit	Twining or initially prostrate	Always prostrate
Leaves	Ovate, 11–16 × 7–12 cm, base shallowly cordate, strigose on both surfaces	Widely ovate or orbicular, 15–24 × 12–25 cm, base deeply cordate, hirsute adaxially, white sericeous abaxially
Petioles	Dorsally grooved	Dorsally not grooved
Peduncles	Always more than half length of petiole	Always shorter than half length of petiole
Bracts	Linear, 1.5–2.5 × 0.2–0.4 cm, 1-nerved, strigose on both surfaces	Oblong, 2–3.5 × 0.5–1.2 cm, 3-nerved, hirsute on both surfaces
Sepals	Sub-equal, outer three 1 – 1.1 cm long; inner two c. 0.9 cm long	Unequal, outer three 1.2–1.3 cm long, inner two c. 1 cm long
Berries	0.7–1.5 cm across	2–2.5 cm across

13.08.2017, P.R. Lawand 078 (SUK); *Ibid.*, 850 m,
28.09.2018, P.R. Lawand 079 (SUK); *Ibid.*,
03.10.2019, P.R. Lawand 089 (SUK).

Conservation status: At the type locality we could locate c. 100 mature individuals of this species occupying an area of 1.25 km². In the presence of little data on the distribution range, an IUCN

category, Data Deficient (DD) is assigned, according to IUCN Categories and Criteria (IUCN, 2019).

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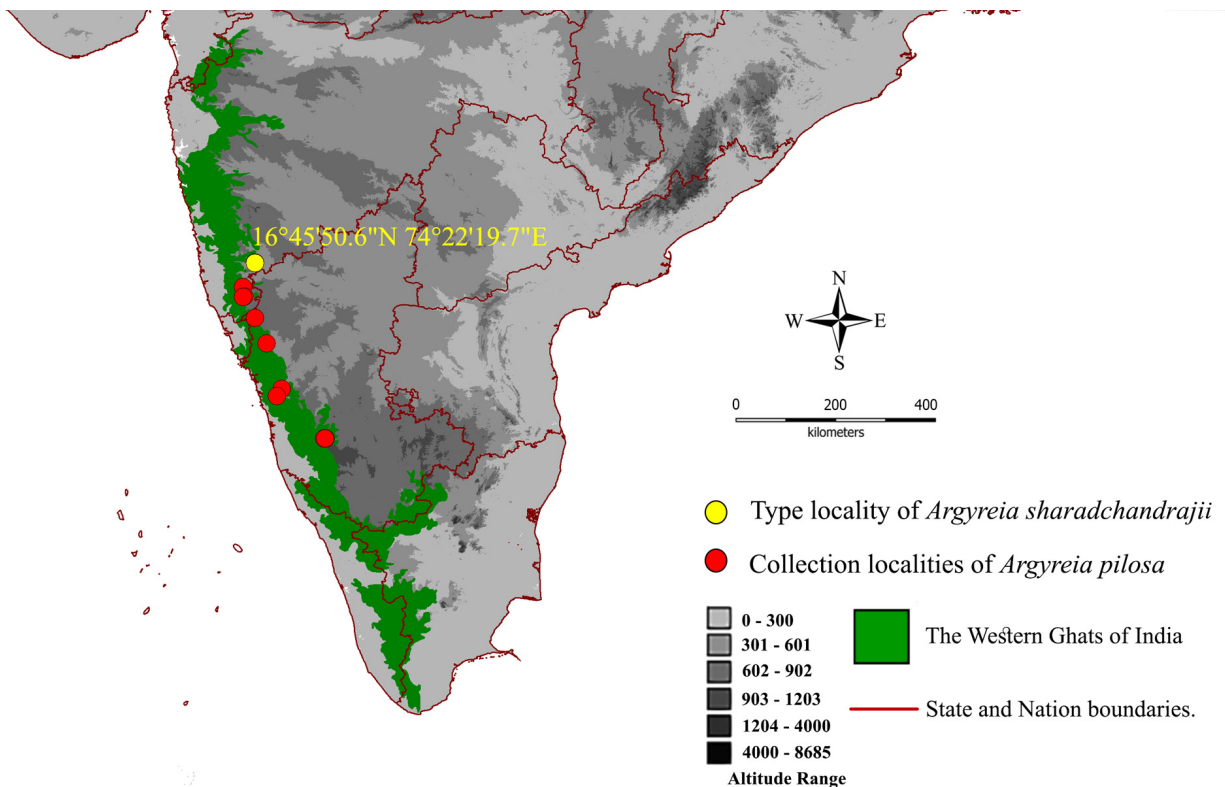


Fig. 4. Distribution map of *Argyreia sharadchandrajii* Lawand & Shimpale and *Argyreia pilosa* Wight & Arn. (map prepared in DIVA GIS, Hijmans *et al.*, 2004).

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