



RESEARCH ARTICLE

Pentatropis nivalis (J. F. Gmel.) D. V. Field & J. R. I. Wood (Apocynaceae): A new distribution record from Raigad District, Maharashtra, India

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ABSTRACT

Pentatropis nivalis (J.F. Gmel.) D.V. Field & J.R.I. Wood (Apocynaceae) is reported here for the first time from Raigad District, Maharashtra, India, based on recent field collections from Revas Creek, Alibag taluka. This record extends the known distribution of the species within the state. The identification was confirmed through critical examination of diagnostic morphological characters and comparison with authentic taxonomic literature. Notes on habitat, associated plant species, and ecological conditions are provided.

Keywords: Apocynaceae, coastal flora, new distribution record, *Pentatropis nivalis*, Raigad, Revas, Maharashtra

INTRODUCTION

The genus *Pentatropis* R.Br. ex. Wight & Arn. (Apocynaceae) comprises six species distributed across Africa, Madagascar, Arabia, India, Pakistan, Sri Lanka, and Australia (Jagtap & Singh, 1999). In India, the genus is represented by two species, *Pentatropis capensis* (L.f.) Bullock and *P. nivalis* (Singh et al., 2001). Within Maharashtra, *P. nivalis* was historically recorded from a limited number of districts, namely Ahmednagar, Aurangabad, Beed, Jalna, Mumbai, and Thane (Singh et al., 2001) (Figure 1). More recently, Kale et al. (2025) reported *P. nivalis* from Nashik district as a new district-level record, indicating that its distribution within Maharashtra is still being refined.

Members of the genus are slender twining herbs or undershrubs characterized by semi-succulent leaves and small purplish to cream-yellow flowers arranged in axillary umbels. The flowers possess a rotate corolla and a distinctive corona composed of five erect, laterally compressed lobes, each bearing an upcurved basal spur (Gamble & Fischer, 1936; Ambika et al., 2021). The generic name is derived from the Greek *penta* (five) and *tropis* (keel), referring to this characteristic five-lobed corona (Jagtap & Singh, 1999; POWO, 2025b).

Pentatropis nivalis has been documented in Indian traditional medicine for the treatment of piles, inflammation, leucoderma, biliousness, gonorrhoea, kapha-related disorders, and as an emetic (Kirtikar & Basu, 1987). During recent floristic surveys of coastal creek systems in Raigad District, Maharashtra, a population of *P. nivalis* was encountered at Revas, Alibag taluka. Critical examination of regional floras and relevant literature revealed no previous record of this species from Raigad District. The present communication therefore reports a new district-level distribution record of *P. nivalis* and contributes to refining its known geographical range in Maharashtra.

Key to the species of *Pentatropis* in India

Flowers 3-4 per umbel, buds sub-globose, corolla-lobes 3.5-6 mm long, deltoid, not tailed; corona-lobes acute at base, which curves outwards.....*P. capensis*

Flowers 5-7 per umbel, buds acuminate, corolla-lobes 8-13 mm long, with linear tail; corona-lobes rounded at base *P. nivalis*

TAXONOMIC TREATMENT

Pentatropis nivalis (J. F. Gmel.) D.V. Field & S.R.I. Wood in Kew Bull. 38: 215. 1983; Jagtap et al. N.P. Singh in Fasc. Fl. India 24: 39. 1999. *Asclepias nivalis* J.F. Gmel. in Linn. Syst.

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Herbaceous twiners. Stem slender, glabrous, greenish-purple. Leaves simple, decussate, super posed at old stem, stipulate, ovate, lanceolate, (1-4 cm width and 2- 5.5 cm length), base cordate, margin entire, smooth, apex mucronate, glabrous, semi-succulent, petiole 3 – 11 mm long. Flowers in axillary umbels, 3-6 flowers per umbel, cream-yellow colour, buds sub-globose (10-13 mm and 5 mm); pedicel filiform, 10-20 mm long. Calyx 5-partite, lobe elliptic-lanceolate, 15 mm long, hyaline at margin, acute at apex, glabrous, purple at apex. Corolla rotate, cream to yellowish, each with a faint to distinct purplish median line, lobe 5 deltoid, 1.5 to 2 cm across, 8 to 1 mm long, recurved at margin, apex acute, hairy, purple. Corona single, 5 erect laterally compressed processes with an upcurved spur at base. Pollinia pendulous, obovate, ca. 0.2 mm long, pollen-masses waxy, opaque without pellucid margin, glabrous, brown. Follicles 3-angled, 8 cm long, lanceolate, beaked at apex, persistent with calyx. Seeds brown, compressed, ovoid-oblong, whitish at margin, with a distinct thickened marginal rim, 5-6 mm long; coma white, silky, 12–18 mm long, arising from the apical end, facilitating wind dispersal.

Specimen examined: India, Maharashtra, Raigad District, Alibag taluka, Revas Creek, creek-side roadside vegetation, 18°48'46"N, 72°56'24"E, 11th Oct 2025, Preeti V. Phate, PVP 01/2025, voucher specimen deposited at BSI, Pune

Vernacular name: English-white milkweed, Hindi-Aakari-bel, Sanskrit-Kakanasika, Marathi – Parparam, Shingrota

Phenology: Flowering- January to October, Fruiting- May to October

Ecology: The species was observed distributed roadside of Revas creek in association with *Volkameria inermis* (synonyms: *Clerodendrum inerme*) and mangrove species *Excoecaria agallocha*.

Distribution: Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, Gujarat and Maharashtra- On hedges of cultivated fields, Ahmednagar, Aurangabad, Beed, Jalna, Mumbai, Thane, Nashik, Raigad (on roadside of Revas Creek, reported here).

Habitat and ecological notes

The population of *Pentatropis nivalis* was recorded from the creek-shore zone of Revas, Alibag taluka, Raigad District. Plants were observed twining over adjacent shrubs along the margins of a tidal creek, indicating tolerance to coastal and periodically inundated habitats. The site is characterized by moist, saline-influenced alluvial soil and fluctuating water levels governed by tidal activity. The species occurred sparsely in localized patches and was associated mainly with *Volkameria inermis* (syn. *Clerodendrum inerme*) and the mangrove species *Excoecaria agallocha*. Such ecologically dynamic creek-side habitats are highly sensitive to both natural disturbances and anthropogenic pressures, which may influence the long-term persistence of the population. The present record highlights the importance of coastal floristic surveys for documenting overlooked taxa and refining regional plant distribution patterns.

DISCUSSION

The present record of *Pentatropis nivalis* from Revas Creek, Alibag taluka, Raigad District, constitutes a new district-level addition and extends the documented intra-state distribution of the species in Maharashtra. Although *P. nivalis* has been reported earlier from several districts of the state (Singh et al., 2001, Kale et al. 2025), its occurrence in Raigad had not been documented, thereby filling an important distributional gap along the western coastal belt.

Ecologically, the occurrence of *P. nivalis* along the margins of a tidal creek is noteworthy. The species is generally reported from hedges, open scrublands, and cultivated field margins (Singh et al., 2001); its presence in a saline-influenced, periodically inundated habitat indicates a broader ecological amplitude. Its association with mangrove-associated plant *Volkameria inermis* and the mangrove species *Excoecaria agallocha* suggests tolerance to coastal environmental stressors, including fluctuating moisture regimes and saline substrates, which may partly explain its scattered yet wide distribution in peninsular India.

Coastal and estuarine transitional zones of Maharashtra remain comparatively underexplored in relation to inland plateaus and forested regions (Gokhale et al., 2011; Rajbhar & Bapat, 2018). The discovery of *P. nivalis* in Raigad District highlights the floristic significance of such habitats and the need for systematic surveys, as they often support overlooked or localized populations. The sparse and

restricted population observed at Revas further suggests potential vulnerability to habitat modification associated with coastal development.

Given the ethnomedicinal importance of *P. nivalis*, accurate documentation of its distribution is essential for floristic assessment as well as conservation planning. Continued botanical exploration along the Konkan coast is likely to yield additional distributional records and improve understanding of plant diversity and biogeographic patterns in this ecologically dynamic region.

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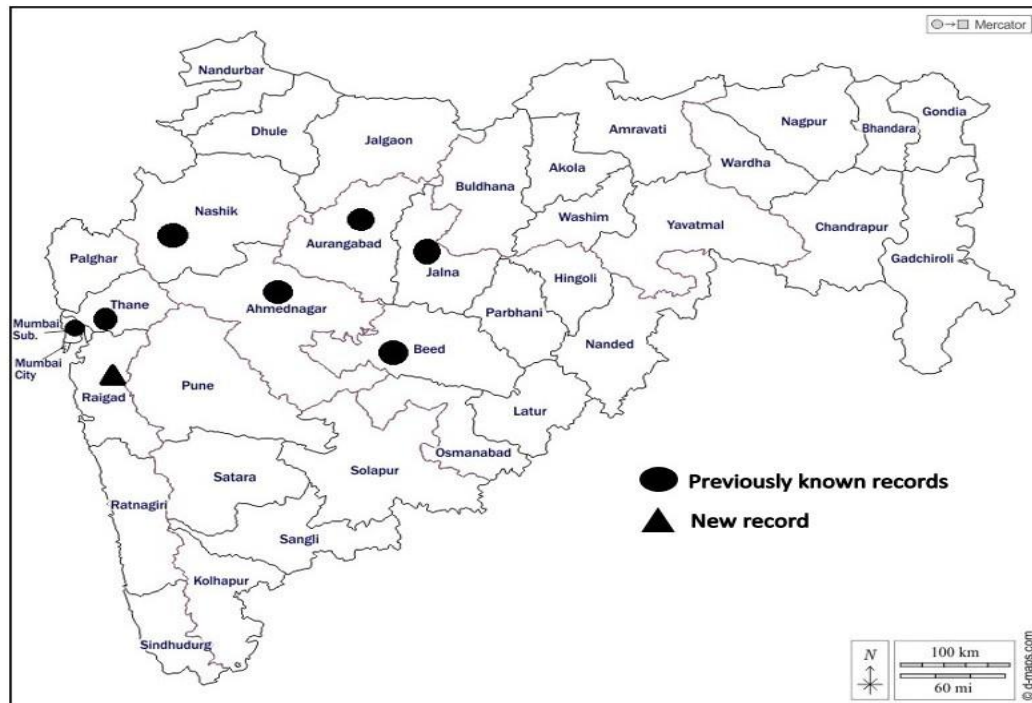


Figure 1. District-wise distribution of *Pentatropis nivalis* in Maharashtra, India.



Figure 2. *Pentatropis nivalis* (J.F.Gmel.) D.V.Field & J.R.I.Wood from Revas, Alibag, Raigad district, Maharashtra, India. A. Habit, B. Leaves, C. Flower bud, D. Front view of Corolla E. Lateral view of corolla, F. Mature follicle, G. Rare paired follicles, H. Dehiscent follicle with seeds.