

## ***Drimia jeevae* (Asparagaceae), a new species from southern Western Ghats of Tamil Nadu, India**

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**ABSTRACT.** *Drimia jeevae* Karupp. & V.Ravich. (Asparagaceae) is described as a new species from the Alamparai Hills, Kanyakumari District, which is a part of the southern Western Ghats of Tamil Nadu, India. A detailed description, illustration, phenology, and relevant ecological notes are provided, along with a comparison to the morphologically similar species *Drimia razii* Ansari and *Drimia wightii* Lakshmin.

**Keywords.** Alamparai Hills, *Drimia razii*, *Drimia wightii*, Kanyakumari, plant endemism

### **Introduction**

*Drimia* Jacq. ex Willd., with 91 accepted species (POWO, 2019), belongs to the family Asparagaceae and is for the most part dispersed in Africa, Madagascar, the Mediterranean Basin and in Asia from the Arabian Peninsula through Southwest Asia to the Indian Subcontinent and continental Southeast Asia (POWO, 2019; Saha & Jha, 2019; Yadav et al., 2019). Species diversity is highest in Africa. Currently, a total of eight species of *Drimia* are recorded for India, of which all except *D. indica* (Roxb.) Jessop are endemic (Lekhak et al., 2014; Saha & Jha, 2019; Yadav et al., 2019). However, the taxonomic delimitation of the genus is ill-defined. Roxburgh (1832) included two Indian species (*Scilla coromandeliana* Roxb. and *S. indica* Roxb.) in the genus *Scilla* L. Later, Hooker (1892) added five species in *Urginea* Steinh., a genus which was synonymised into *Drimia* by Jessop (1977). However, many Indian taxonomists have not accepted the synonymisation of these two genera (Deb & Dasgupta, 1981; Yadav & Dixit, 1990). Furthermore, Speta (2001) proposed a new generic name *Indurgia* Speta for Indian *Drimia*. Several morpho-taxonomic revisions of Indian *Drimia* have been published but morphological characters alone may not be sufficient to delimit the Indian *Drimia* due to vegetative similarities among the species (Lekhak et al., 2014). Cytotaxonomic, karyological, palynological and molecular studies have also been undertaken, along with interspecific hybridisation studies, in attempts to better understand species delimitations and relationships (Lekhak et al., 2017; Yadav et al., 2019). However, all of these earlier studies have concluded that the interspecific relationships of Indian *Drimia* still remain unclear (Saha & Jha, 2019).

## Materials and methods

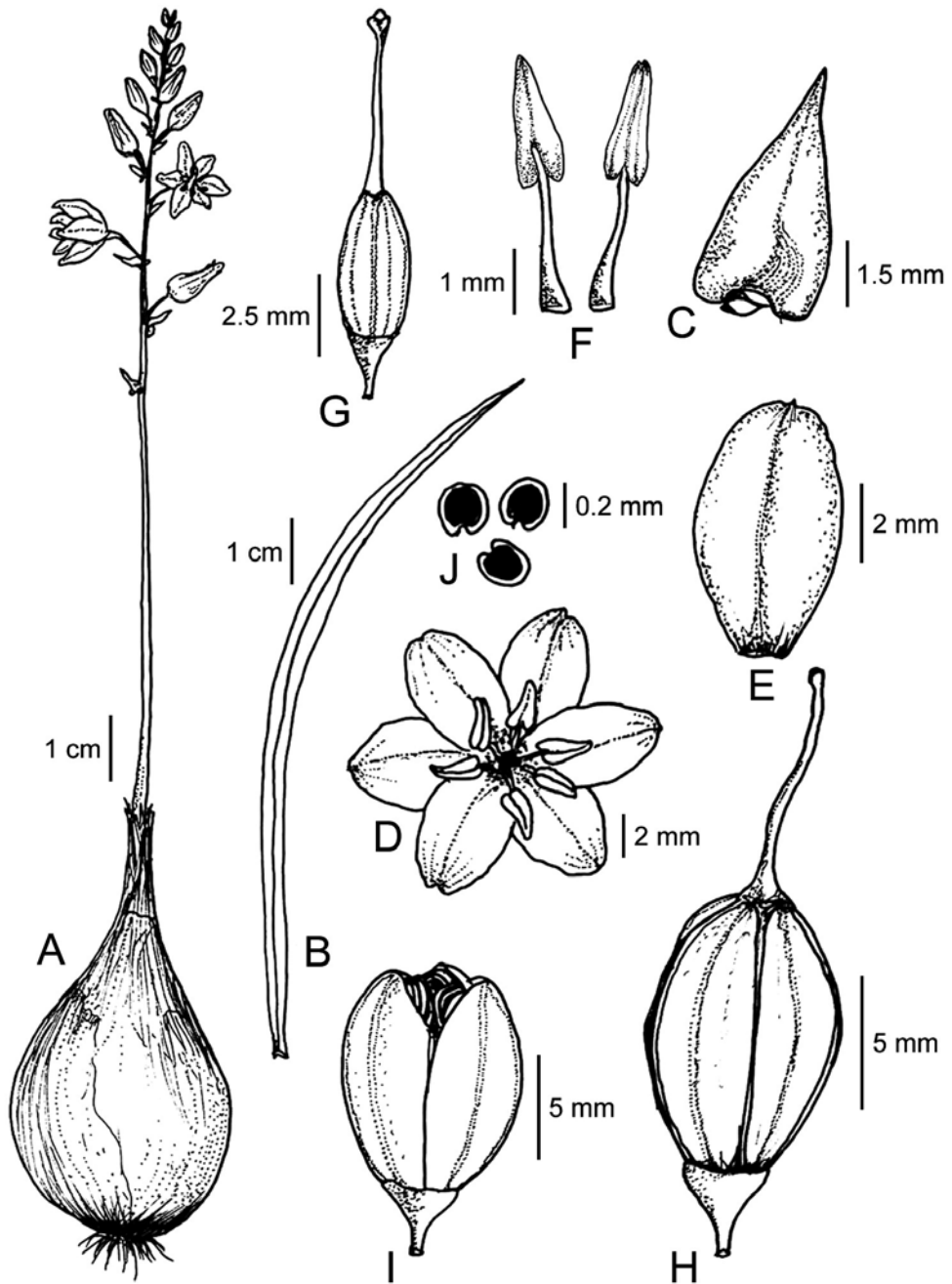
During a botanical exploration in 2012 in the Alamparai Hills in the Kanyakumari District of the southern Western Ghats, Tamil Nadu, India, the authors came across unusual specimens of a *Drimia* species. Critical examination and perusal of the relevant literature (Hooker, 1892; Deb & Dasgupta, 1974, 1981; Ansari, 1981; Lakshminarasimhan, 2003; Yadav et al., 2016, 2019), together with consultation of images of type specimens at BLAT, BSI, CAL and K (herbarium acronyms follow Thiers, continuously updated), led to the conclusion that the specimens do not belong to any known species. We therefore conclude it is a new species and describe it here.

## Taxonomic treatment

### *Drimia jeevae* Karupp. & V.Ravich., **sp. nov.**

The new species is closely allied to *Drimia razii* Ansari, but it differs in the bulb having a neck to 4 cm long (vs bulb without neck in *D. razii*), floral bracts persistent, ovate-lanceolate (vs floral bracts caducous, deltoid), inflorescence 10-flowered (vs inflorescence 15-flowered), and tepals rounded at apex, yellowish green (vs tepals obtuse at apex, dull brownish). It is also allied to *Drimia wightii* Lakshmin. but can be distinguished by the bulb being ovoid to conical (vs bulb ovoid to subglobose), leaves linear, dry when flowering (vs leaves linear-lanceolate, present when flowering), floral bracts persistent, ovate-lanceolate (vs floral bracts caducous, deltoid), tepals elliptic-oblong, rounded at apex, yellowish green (vs tepals lanceolate, acute at apex, brownish green), and capsule oblong-elliptic, 3-winged (vs capsule subglobose, angles not winged). – TYPE: India, Tamil Nadu, Kanyakumari District, Alamparai Hills, 600 m, 9 March 2012, *S. Karuppusamy & V. Ravichandran 874* (holotype MH; isotypes Sri Ganesan Herbarium, Department of Botany, The Madura College, Madurai). (Fig. 1; Table 1).

Herb; bulbs 4–6 × 3–4 cm, ovoid to conical with neck to 4 cm long, scales dull white. **Leaves** 3–4, dry when flowering, linear, canaliculate, 8–10 × 0.4–0.8 cm, apex acute, glabrous. **Scapes** solitary, slender, 10–15 cm long, cylindrical, greenish yellow, glabrous. **Inflorescence** a raceme, dense in bud, lax at anthesis, 8–10 cm long, 10-flowered; bracts persistent, ovate-lanceolate, c. 5 mm long, base auriculate, apex acute; pedicels erect, 4–7 mm long, cylindrical, stout, brownish green, glabrous. **Flowers** diurnal, yellowish green; tepals connate at base, apically spreading, not reflexed, single-veined, veins greenish yellow, outer tepals elliptic-oblong, 6–8 × 1.5–3 mm, inner tepals similar to the outer ones, equal, margins entire, apex rounded to slightly emarginate. **Stamens** filamentose; filaments gradually tapering, up to 3 mm long, cylindrical, glabrous, yellowish white; anthers dorsifixed, 1–2 mm long, bright yellow. **Ovary** ovoid-oblong, 1–2 × 0.5–1 cm, green; style obconic, 5–8 mm long, persistent in fruit; stigma subglobose, trilobed, greenish or white, papillose. **Capsule** oblong-elliptic, 0.9–1.5 × 0.5–1 cm, 3-winged, greenish, wing margins purplish brown, glabrous. **Seeds** broadly ovoid, 0.2–0.5 × 0.2–0.3 mm, black, flat, winged, glabrous.



**Fig. 1.** *Drimia jeevae* Karupp. & V.Ravich. **A.** Habit. **B.** Leaf. **C.** Bract. **D.** Flower, front view. **E.** Perianth. **F.** Stamens. **G.** Pistil. **H.** Fruit. **I.** Dehiscent fruit. **J.** Seeds. From Karuppusamy & Ravichandran 874. Drawn by S. Karuppusamy.

**Table 1.** Selected diagnostic differences between *Drimia jeevae* and the morphologically similar species *D. razii* and *D. wightii*.

| Character     | <i>Drimia razii</i>  | <i>Drimia wightii</i>                                  | <i>Drimia jeevae</i>                                     |
|---------------|--|--|--|
| Bulb          | Ovoid to subglobose, without neck                                | Ovoid to subglobose, neck 2–4 cm long                  | Ovoid to conical, neck to 4 cm long                      |
| Leaves        | Linear, 4–9, dry when flowering                                  | Linear-lanceolate, 2–5, present when flowering         | Linear, 3–4, dry when flowering                          |
| Scape         | Solitary, up to 20 cm long, greenish brown                       | Solitary, rarely two, up to 15 cm long, greenish brown | Solitary, up to 15 cm long, greenish yellow              |
| Floral bracts | Caducous, deltoid  | Caducous, deltoid                                      | Persistent, ovate-lanceolate                             |
| Inflorescence | Lax, up to 15-flowered   | Compact, up to 10-flowered                             | Lax, 10-flowered   |
| Tepals        | Elliptic-oblong, slightly unequal, obtuse at apex, dull brownish | Lanceolate, equal, acute at apex, brownish green       | Elliptic-oblong, equal, rounded at apex, yellowish green |
| Capsule       | Ovoid-elliptic, 3-winged   | Subglobose, angles not winged                          | Oblong-elliptic, 3-winged                                |

*Distribution and ecology.* Endemic to the southernmost part of the Western Ghats in Tamil Nadu, on rocky hill slopes below 700 m elevation. The associated plants are *Henckelia gambleana* (C.E.C.Fisch.) A. Weber & B.L.Burt (Gesneriaceae), *Decalepis arayalpathra* (J. Joseph & V. Chandras.) Venter (Apocynaceae), *Oldenlandia corymbosa* L. var. *corymbosa* (Rubiaceae), *Arundina graminifolia* (D. Don) Hochr. (Orchidaceae), *Cymbopogon martini* (Roxb.) Will. Watson (Poaceae), *Themeda cymbaria* Hack. (Poaceae), *Tripogon* sp. (Poaceae) and *Phyllocephalum scabridum* (DC.) K. Kirkman (Asteraceae).

*Phenology.* Flowering from February to March and fruiting from March to May (flowers are diurnal, opening in the morning and fading by afternoon).

*Etymology.* The specific epithet honours Dr Solomon Jeeva, Assistant Professor, Department of Botany, Scott Christian College, Nagercoil, for helping the authors to locate the species.

*Provisional IUCN conservation assessment.* Further work is necessary to establish the distribution and population size of *Drimia jeevae* and until this can occur, it is assessed here as Data Deficient (DD) (IUCN Standards and Petitions Committee, 2019).

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