

Revision of genus *Datura* L. (Solanaceae) in Karnataka with a critical notes on the existence of *Datura stramonium* L.

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ABSTRACT

Solanaceae is the family of flowering plants. The genus *Datura*, belonging to the family *Solanaceae*, is widely distributed and known for its diverse therapeutic components and ecological importance. This study focuses on investigating the diversity and distribution of *Datura* species through various ecological zones within Karnataka. Field surveys were conducted and collected five species and two different morphs/variants with many variations in color photoplate, illustrations, and phenology.

Keywords: Karnataka flora, Plant diversity, Morphological variations, Nightshade plant, Spiny fruits.

INTRODUCTION

The *Datura* genus comprises a diversity of plant species that range from taller trees to microscopic fungi in a specific ecosystem, belonging to different species, genotypes, and habitats (31). Among these, the family *Solanaceae* is renowned applications in agriculture, pharmacology, and traditional medicine. 'The nightshade plant', meaning 'quieting', which refers to sedative effects, comprises several important agricultural plants along with many toxic plants such as *Datura*, *Mandragora* etc. The name of the family comes from the Latin *Solanum*, 'the nightshade plant', meaning 'quieting', which refers to sedative effects. The genus *Datura*, belonging to the *Solanaceae* family, comprises several species known for their medicinal and toxic properties due to the presence of their high alkaloid content. These plants hold cultural and pharmacological significance, with applications in traditional medicine across various regions of the world. 'Synopsis of *Datura*' reported four sections among four, two are within the defined scope of work, Section I. *Stramonium gaertner* (*Datura stramonium*); Section II. *Dutra bernhardi* (*Datur ainnoxa*, *Datura metel*, *Datura ferox*, *Datura discolor*) (13).

Flora of the Presidency of Madras (7) documented 21 species under 8 genera, with two *Datura* species i.e., *Datura fastuosa* L. and *Datura stramonium* L. Flora of Presidency of Bombay (5) encompasses 31 *Solanaceae* species under 6 genera with 2 species, *Datura fastuosa* L. and *Datura stramonium* L. Flora of Bangalore District (12) documented 19 *Solanaceae* species under 8 genera, with one species *Datura metel* L. Flora of Hassan District (16) recorded 15 species belonging to *Solanaceae* family, under 8 genera, with *Datura metel* L. & *Datura stramonium* L. Flora of Chikmagalur District, Karnataka, India (22) reported 10 species, under 4 genera belonging to *Solanaceae* family, with one *Datura metel* L. A work, Flora of Karnataka Analysis (20) listed 47 species under 4 genera related to *Solanaceae* family, and the recorded species under genus

Datura are *Datura innoxia* Mill., *Datura stramonium* L., and *Datura metel* L. Flora of Eastern Karnataka (21) holds 5 genera with 17 species under *Solanaceae* family, with 3 species *Datura innoxia* Mill., *Datura metel* L., *Datura stramonium* L.

Flora of Gulbarga District (19) recorded 6 species belonging to 5 genera under *Solanaceae*, with one species *Datura stramonium* L. Flora of Udupi District (2) 5 genera and 11 *Solanaceae* species, with one species *Datura metel* L. Flora of Davangere District, Karnataka, India (11) holds 9 genus and 19 species under *Solanaceae* family, and the mentioned *Datura* species are *Datura metel* L. and *Datura stramonium* L. Flora of South Kanara (3) listed 8 genera and 19 species belonging to family *Solanaceae*, with one *Datura* genus, that is *Datura fastuosa* L. Flora of Gadag District (10) holds 6 genera and 13 species in total under *Solanaceae* and recorded *Datura* species is *Datura metel* L. Flora of Bidar District (18) comprises 5 genera, 10 species and recorded *Datura* species are *Datura stramonium* L., *Datura metel* L. Flora of Karnataka A Checklist, Vol. 2: Gymnosperms & Angiosperms (17) records 14 genera and 60 species under *Solanaceae* family, *Datura* genera holds 5 species – *Datura discolor* Bernh., *Datura ferox* L., *Datura innoxia* Mill., *Datura metel* L., *Datura stramonium* L.

MATERIALS AND METHODS

The research was conducted across various districts. The plants from different localities of Karnataka were collected in different seasons from districts like Gadag, Dharwad, Belagavi, Hassan, and Chikmagalur covering different agro-climatic zones to capture the diversity of *Datura* species (1, 6, 14, 15). GPS coordinates and altitude of collection sites were recorded for geographical mapping. Morphological parameters such as habit, plant height, stem, leaves, petiole length, flowers, pedicel length, calyx, corolla, and fruit were studied and identified using different floras.

These collected specimens are photographed using One Plus Nord CE2 Lite, which offers a resolution of 1080×2412 pixels. The various parts photographed are illustrated on KODAK Tracing paper and using a Rotring pen of various line sizes. The photoplates were prepared using the seventh major version, i.e., Adobe Photoshop 7.0.

Plant samples were collected from natural habitats, including roadsides and agricultural fields. Multiple specimens were collected from each location. Collected specimens were preserved using herbarium sheets for morphological studies, and fresh samples were stored for biosystematic studies. Herbarium are prepared using (4) Standard BSI method; these specimens were deposited in a recognized herbarium, i.e., Karnatak Science College, Dharwad.

Morphological features of the collected specimens were documented, including leaf shape size, and venation patterns. Floral characteristics like corolla shape, color, size and stamen Observations were compared with existing taxonomic keys and literature for identification using following floras ([2],[3],[5],[7],[10],[11],[12],[14], [15],[16],[19],[20],[21],[17],[18]).

Results

During the field survey, a total of seven species of the *Datura* genus were identified and collected in Karnataka, of which three were morphotypes of *Datura metel* L. Significant morphological differences were observed among the species, with variability in leaf size, margin patterns, and venation. Corolla shape ranged from trumpet-like to funnel-shaped, and color varied between white, pale purple, and violet.

Datura metel L. was dominant in both dry and moist regions.

Datura innoxia Mill. thrived in semi-arid zones with sandy soils.

Datura stramonium L. was confined to temperate regions with high soil fertility. All plant species were dissected and taxonomically described along with photoplates and illustrations.

Taxonomic Treatment

Parallel Key to the *Datura* genus in Karnataka

1.	Fruit dehiscent in 4 valves	<i>D. stramonium</i>
1.	Fruit irregularly dehiscent	2
2.	Short herbs	3
2.	Large herbs	4
3.	Flower purely white	<i>D. ferrox</i>
3.	Flower with a purplish tinge at the center	<i>D. discolor</i>
4.	Stem green, pubescent	<i>D. innoxia</i>
4.	Stem purple, not pubescent	5
5.	Flower yellowish white	<i>D. metel</i> (complete white corolla)
5.	Flower purple	6
6.	Anthers single, 5 in number	<i>D. metel</i> (single corolla purple)
6.	Anthers are double, 5 in number, and one is single	<i>D. metel</i> (tri-corolla purple)

Datura discolor Bernh. Neues J. Pharm. Aerzte 26: 149 (1833); Sanjappa & Singeswara, Fl. Karnataka, check. Gymno. &Angio. 2: 730. 2019. (Fig. 1 & Fig. 2)

Herbaceous, annual, sparsely puberulous, low lying shrub, 2-3ft in height; tap root; hairy stem; leaf about 7-12 cm length and 5-9 cm wide, deciduous, opposite, widely ovate, serrate, coarsely toothed leaf margins, monocroate apiculate, oblique base; flower trumpet shape, solitary, erect, pedicellate, hermaphrodite, actinomorphic, hypogynous, axillary, bracts & bracteoles absent, 6-8 cm in diameter, 15-17 cm length along with pedicel, white in the bell with atropurpureous marking in throat; calyx 7-10 cm, valvate aestivation, minutely pappus, connate, gamosepalous; 5-petals, 14-15 cm in length, gamopetalous, 10-toothed, funnel or trumpet shape, valvate aestivation; 5-stamens, epipetalous, 11-11.5 cm in length along with anther & filament, anther 0.5-0.6 cm, basifixed, bilobed, monoadelphous, longitudinal slits; gynoeceum 11.2-12.5 cm, bicarpellary, syncarpous, superior, simple style, bilocular, axile placentation, numerous ovules; Fruit 5-6cm, globose, spinescent capsule, spines 1.3-1.5cm; seed semi-deltoid, 0.3-0.4 cm, rough texture, black when matured, 0.3-0.4 in length.

Collector no: 02; Date of collection: 01/02/2024; Place of collection: Gadag; Flowering season: February-October; Habitat: Road side waste ground, sandy, rocky or gravelly soil; IUCN status: NE; Vernacular name: Desert thorn apple, Desert *Datura*, Heilige *Datura*; Nativity: Arizona, California, Colorado, Honduras, Mexico Central, Mexico Gulf, Mexico Northeast, Mexico Northwest, Mexico Southeast, Mexico Southwest; Uses: Pustules are small, blister like sores, inflamed, pus-filled upon surface of skin and cured using leaves of *Datura discolor* by dipping the leaves in gently hot castor oil applied on the spot.



Fig. 1: *Datura discolor* Bernh. A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

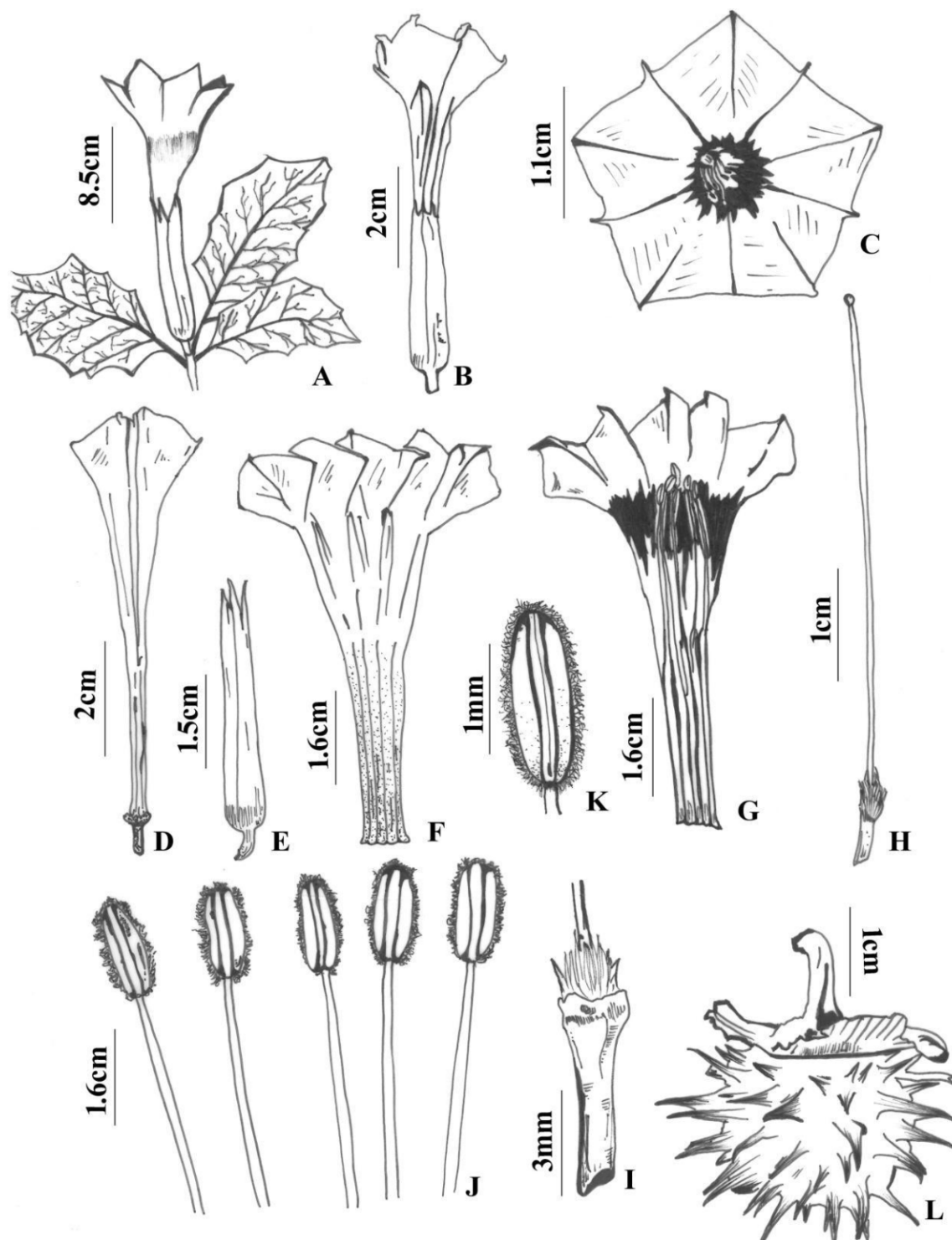


Fig. 2: *Datura discolor* Bernh. A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

Datura ferox L. Demonstr. Pl.: 6 (1753); Nayar *et al.*, Flowering Plants Western Ghats 859. 2014; Sanjappa & Sringeswara, Fl. Karnataka, check. Gymno. & Angio. 2: 730. 2019 (Fig. 3 & Fig. 4)

Erect, annual herb, growing upto 2-3 ft. high; taproot; stems hairless or sparsely hairy, branched; leaves alternate, shape range from broadly ovate to rounded triangular or to rhombic-ovate, 8-14 cm long and 6-16 cm wide, hairless to pubescent, leaf margins are irregularly serrate or sinuate; flowers solitary or axillary, creamy white, actinomorphic, hypogynous, 5-7 cm long with 5 lobes each lobe ending in a point of 1-2 mm in length.; trumpet shape, solitary, erect, pedicellate, hermaphrodite, bracts & bracteoles absent; Calyx, tube like, 5-6 cm length, aestivation-valvate; 5stamens, epipetalous, 4-5cm in length along with anther and stigma, anther lobes 0.2mm-0.3mm, basifixed, bilobed, lateral dehiscence; Gynoecium 5-5.5cm, syncarpous, superior, simple style, bicarpillary, numerous ovules; fruit ovoid to ellipsoid, 8-10cm, spinescent capsule, upto 60 spines, spines vary from small to large about 0.3mm to 4cm long; seeds brown, smooth and shiny in appearance, about 0.5 cm in length;

Collector no: 05; **Date of collection:** 07/06/2024; **Place of collection:** Dharwad; **Flowering season:** May-August; **Habitat:** Waste land; **IUCN status:** NE; **Vernacular name:** Sanna Ummaathi, Fierce thorn apple, long spine thorn apple, False castor-oil; **Nativity:** Mexico Central, Mexico Northeast, Mexico Southwest, Texas; **Uses:** It is notable for its high content of tropane alkaloids which are important for both potential medicinal uses and to understand its toxicity.

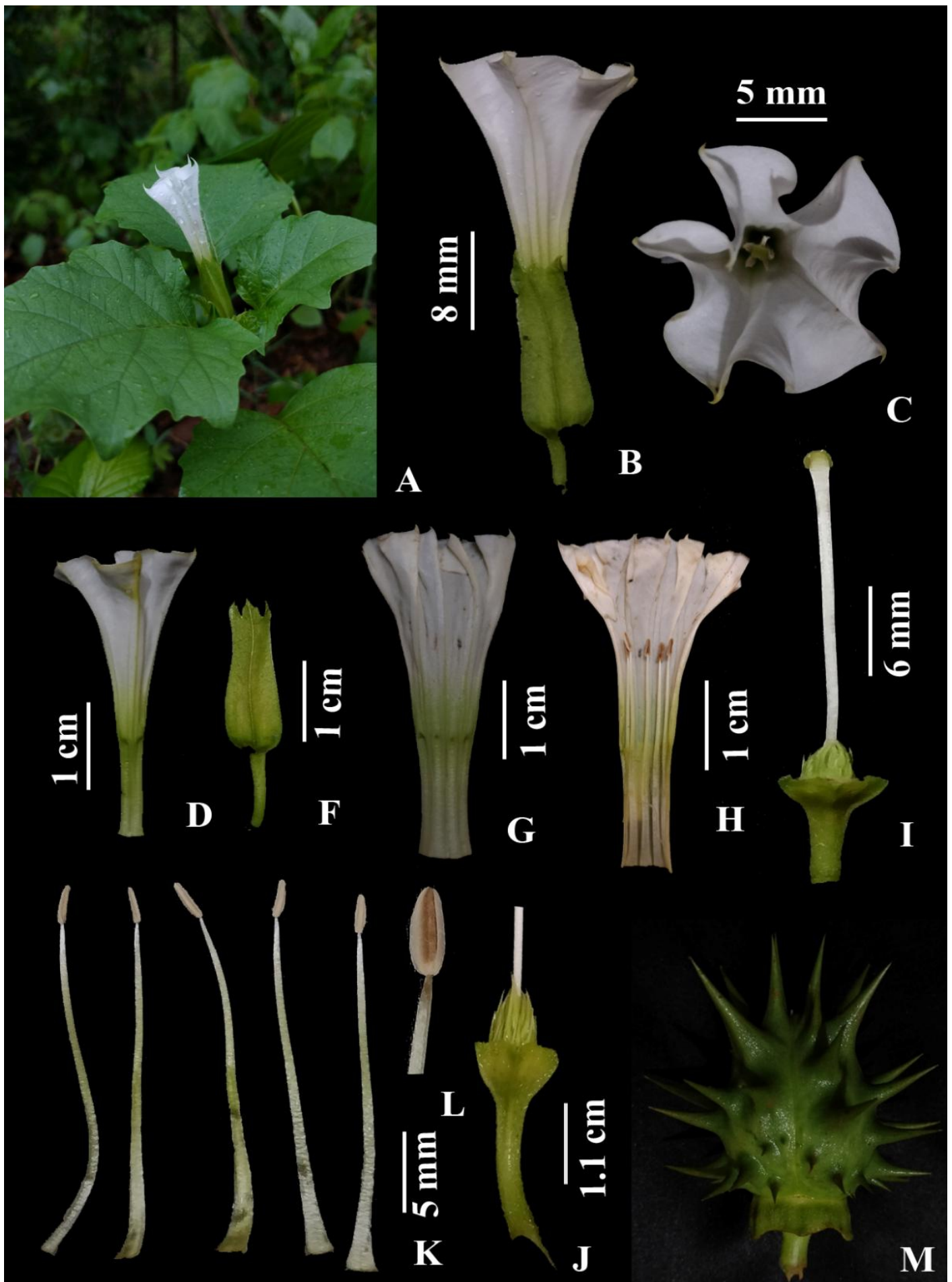


Fig. 3: *Datura ferox* L.A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

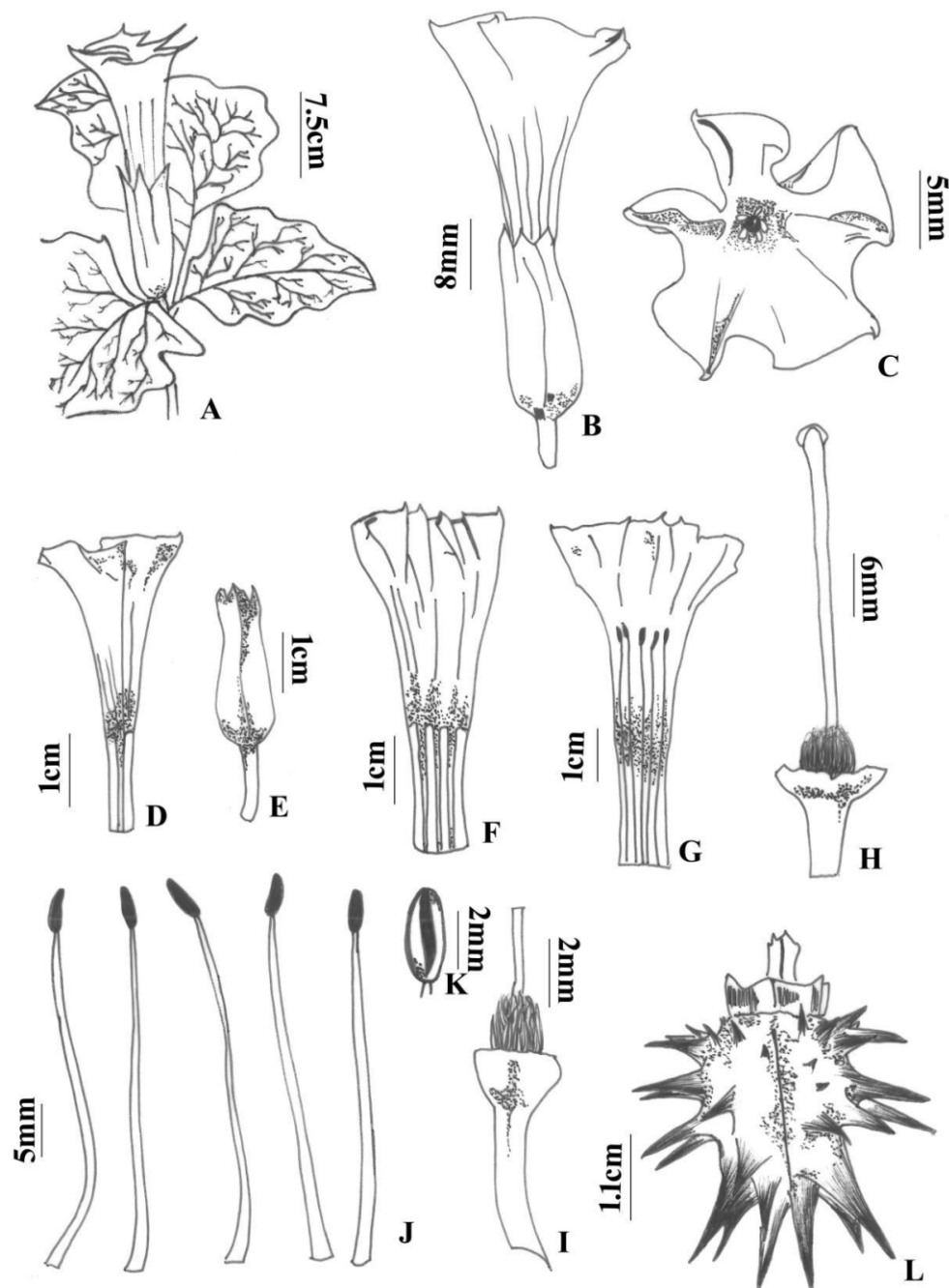


Fig. 4: *Datura ferox* L. A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

***Datura innoxia* Mill.** Gard. Dict., ed. 8.: n. ° 5 (1768), nom. & orth. cons.; Sharma *et al.*, Fl. Karnataka Analy. 186. 1984; N. P. Singh, Fl. Eastern Karnataka 456. 1988; Nayaret *al.*, Flowering Plants of Western Ghats 859. 2014; Yoganarasimhanet *al.*, Fl. Kolar, 283. 2018; Sanjappa & Sringeswara, Fl. Karnataka, check. Gymno. & Angio. 2: 730. 2019. (Fig. 5 & Fig. 6)

Perennial, 2-3 ft height, densely pubescent; tap root system; tomentose stem, woody at the base, much branched; Leaves hairy, broadly ovate, acute, apiculate, unequally rounded, entire or occasionally undulating or sinuate or irregularly lobed towards base, oppositely arranged along the stem; flower solitary, axillary, trumpet shaped, has green veins, hermaphrodite, actinomorphic, hypogynous, 6-7 cm diameter; Calyx thick, 5-sepals, gamosepalous, green, hairy or densely pubescent, 10-12 cm, 3-6-lobed; lobes 1-1.5 cm long, sometimes incompletely separated; Corolla white, gamopetalous, 15-16 cm along with pedicel, 13-14 cm without pedicel, undulating, appearing 10 lobed, reduplicate aestivation; stamens-5, epipetalous, alternate, 15-16 cm along with filament, anther lobes 0.8-1 cm included; style, simple, 12-14 cm long; stigma well below anthers; ovary superior, bilocular, axile placentation, numerous ovules; fruit globose or ovoid, loculicidal spinose capsule, 4-5 cm in diameter, deflexed, spines straight, numerous, slender, equal in length; 1-1.3 cm long, capsule splits when ripe; seeds ovoid, 0.7-0.9 cm in length;

Collector no: 01; **Date of collection:** 16/01/2024; **Place of collection:** Hubballi; **Flowering season:** Through out the year; **Habitat:** Road side waste land; **IUCN status:** NE; **Vernacular name:** Bili Ummaathi, Ummetha (Telugu) **Nativity:** Arizona, Mexico Central, Mexico Gulf, Mexico Northeast, Mexico Northwest, Mexico Southeast, Mexico Southwest, Texas; **Uses:** The seeds along with oils are applied for painful joints. The paste of leaves is used in piles and skin diseases. The seed extract is used for flu, cough, and asthma. Swelling limbs are also cured upon applying leaves externally. It comprises scopolamine, hence used as a pre-anesthetic during surgery. Plant parts such as roots, leaves, and seeds are used in ayurvedic medicine preparations.

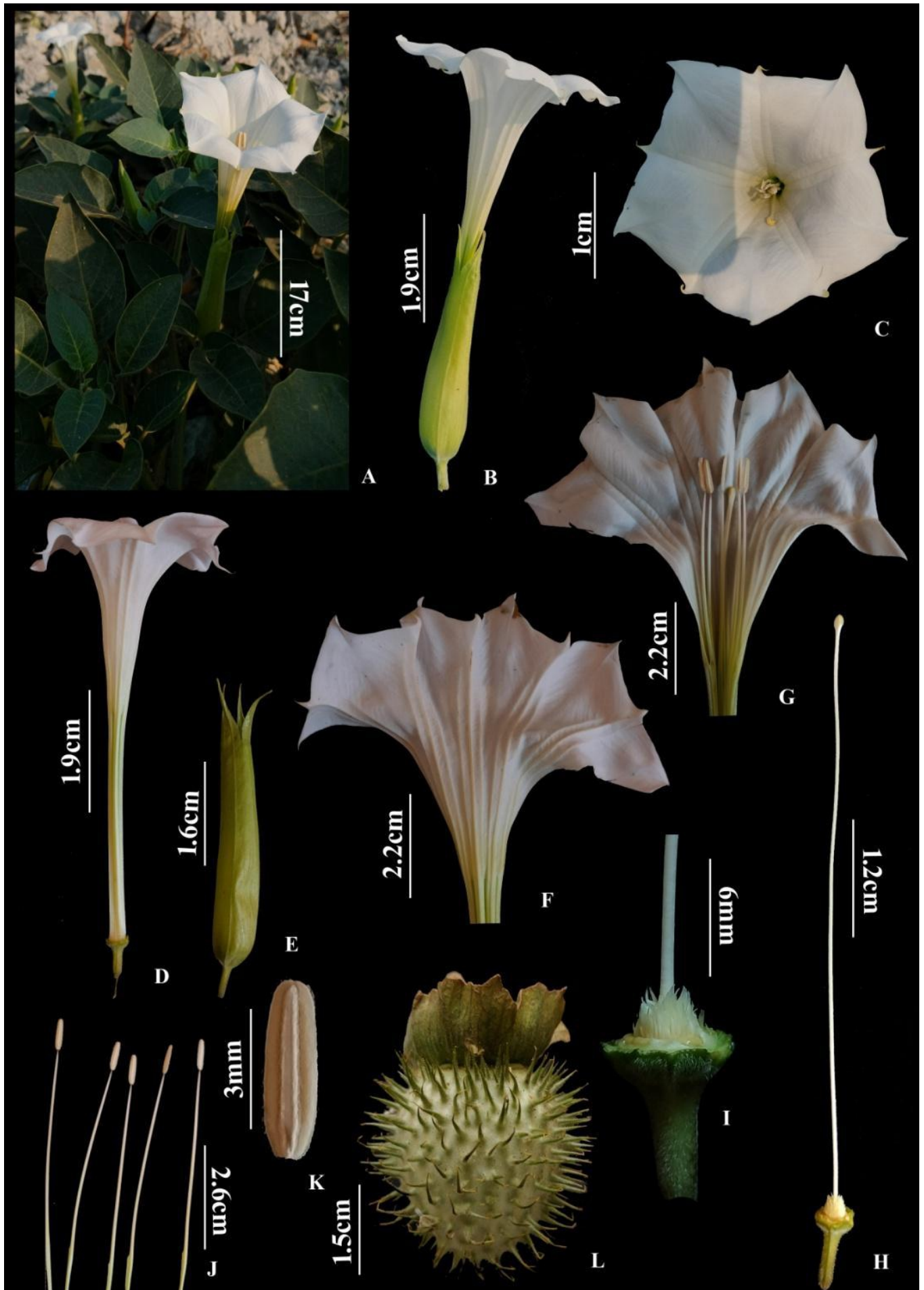


Fig. 5: *Datura innoxia* Mill. A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

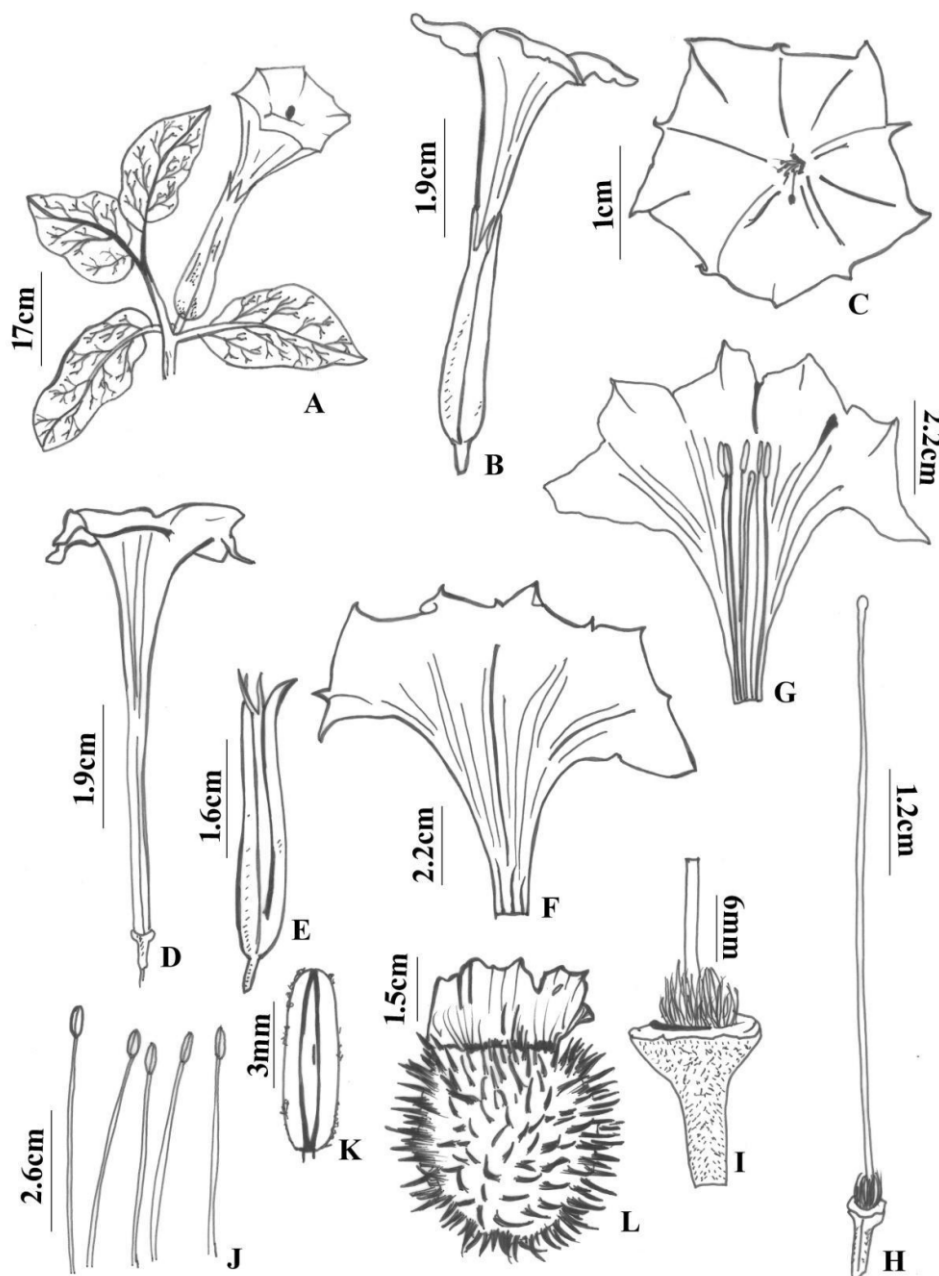


Fig. 6: *Datura innoxia* Mill. A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

***Datura metel* L.** Sp. Pl.: 79 (1753); Ramaswamy & Razi, Fl. Bangalore 522. 1973; Saldanha & Nicolson, Fl. Hassan, 458. 1976; Rao & Razi, Fl. Mysore 498. 1981; Yoganarasimhan *et al.*, Fl. Chikmagalur 231,232. 1981; Sharma *et al.*, Fl. Karnataka Anal. 186. 1984; Singh, Fl. Eastern Karnataka 456. 1988; Keshavamurthy & Yoganarasimhan, Fl. Coorg, 303. 1990; Ramaswamy *et al.*, Fl. Shivamogga 407. 2001; Bhat, Fl. Udupi, 416. 2003; Manjunath *et al.*, Fl. Davanagere 277. 2004; Bhatt, Fl. South Canara, 718. 2014; Nayaret *et al.*, Flowering Plants Western Ghats 859. 2014; Kotresha & Kambhar, Fl. Gadag, 227. 2016; Seetharam *et al.*, Fl. Bidar, 200. 2018; Sanjappa & Sringeswara, Fl. Karnataka, check. Gymno. & Angio. 2: 730. 2019; *Datura fastuosa* L. Syst. Nat., ed. 10. 2: 932 (1759); Gamble, Fl. Of Presidency Madras 2, 941. 1921; *Datura fastuosa* L. Syst. Nat., ed. 10. 2: 932 (1759); Cooke, Fl. Pres.. of Bombay, 343. 1967.

var. I complete white corolla (Fig. 7, Fig. 8 & Fig. 15)

Branched, odorous undershrub, 4-5ft height; tap root; stem semi-woody, minutely hairy; leaves, alternate, simple, elliptically to broadly ovate, acute, slightly sinuate, upto 20x16cm, slightly pubescent, angled or irregularly toothed, tip acute or acuminate, unequal-sided at the base, petiole up to 10 cm long; calyx tubular, slightly pubescent, greenish, tubular, herbaceous, valvate aestivation, 5-lobed, 7 cm long, circumsessile around the base; flowers actinomorphic, solitary in axils, white, solitary, trumpet or funnel shaped, broad corolla mouth; pedicels 1-2cm long corolla about 18-20cm long, 6-7 cm in diameter; Stamens 5, attached at the base of corolla tube, included, epipetalous, 15-16cm in length including anther and filament, anther lobe, dithecous hairy, oblong, 1.5-2cm in length, linear, dehiscent longitudinally, basifixed; gynoecium 16-18cm in length, stigma 2-lobed, style filiform, bicarpellary, syncarpous, axile placentation; Ovary superior, 2 or spuriously 4-celled; fruit a spinescent globose capsule, pendulous, dehiscent irregularly, spines depectoid, 0.5-0.7cm in length; ovules numerous; seeds brown, compressed, rugose, 0.6 cm long;

Collector no:04; **Date of collection:**12/02/2024; **Place of collection:** Belagavi; **Flowering season:** **Habitat:** Waste and degraded dry land;



Fig.7: *Datura metel* L. var. I (complete white corolla) A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

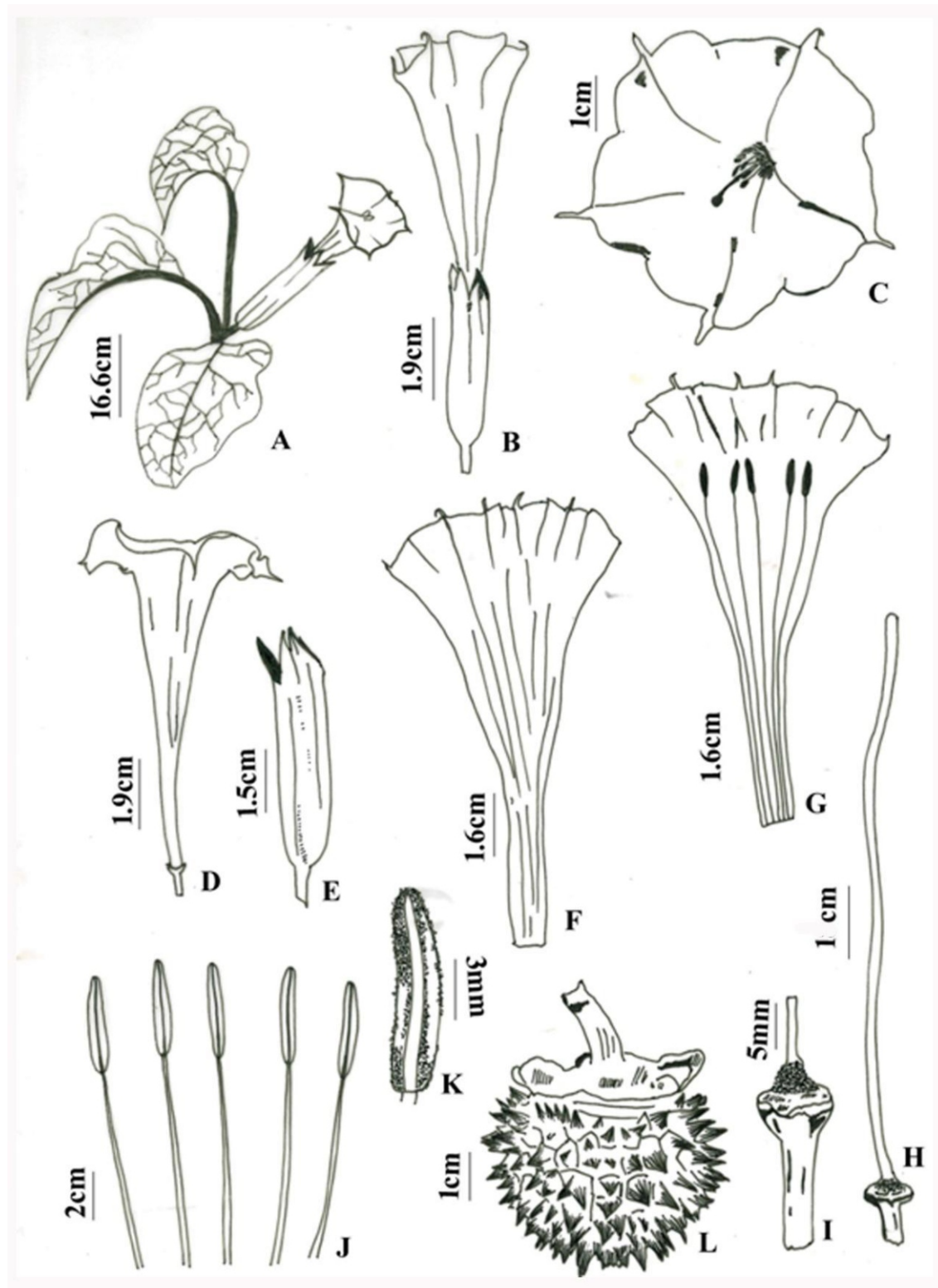


Fig.8: *Datura metel* L. var. I (complete white corolla) A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

var. II single corolla purple (Fig. 9, Fig. 10 & Fig. 16)

Perennial, undershrub, erect, much branched, about 6-7 ft height, tinged with purple, herbaceous, semi-woody, hairless; tap root; leaf simple, ovate, obliquely cuneate, sinuate to dentate, opposite, acute, exstipulate, 15-18cm long, 10-12 cm wide, petiole 7-10cm with purple tinge, un-equal at the base; flower actinomorphic, hypogynous, solitary in branching axils, often whitish inside and purplish outside, 6-7 cm diameter, 18-20 cm length, funnel shaped, pedicel about 0.5-1cm in length; calyx tubular, slightly pubescent, greenish to purplish in colour, aestivation valvate, 5-lobed, 9-10cm in length; Stamens 5, attached at the base of corolla tube, 15-16cm long including anther and filament, anther lobes 1.5-2cm, ditheous, oblong, basifixed; gynoecium 13-15cm long, style simple, syncarpous, axile placentation; superior ovary, ovules numerous; fruit globose capsule, dehiscent regularly, pendulous, diploid spines, 0.3-0.5 cm long; seeds ovoid, shiny 0.3-0.5cm long;

Collector no: 02; **Date of collection:** 25/01/2024; **Place of collection:** Haveri; **Flowering season:** **Habitat:** Waste and degraded-dry area.



Fig. 9: *Datura metel* L. var. II (single corolla purple) A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

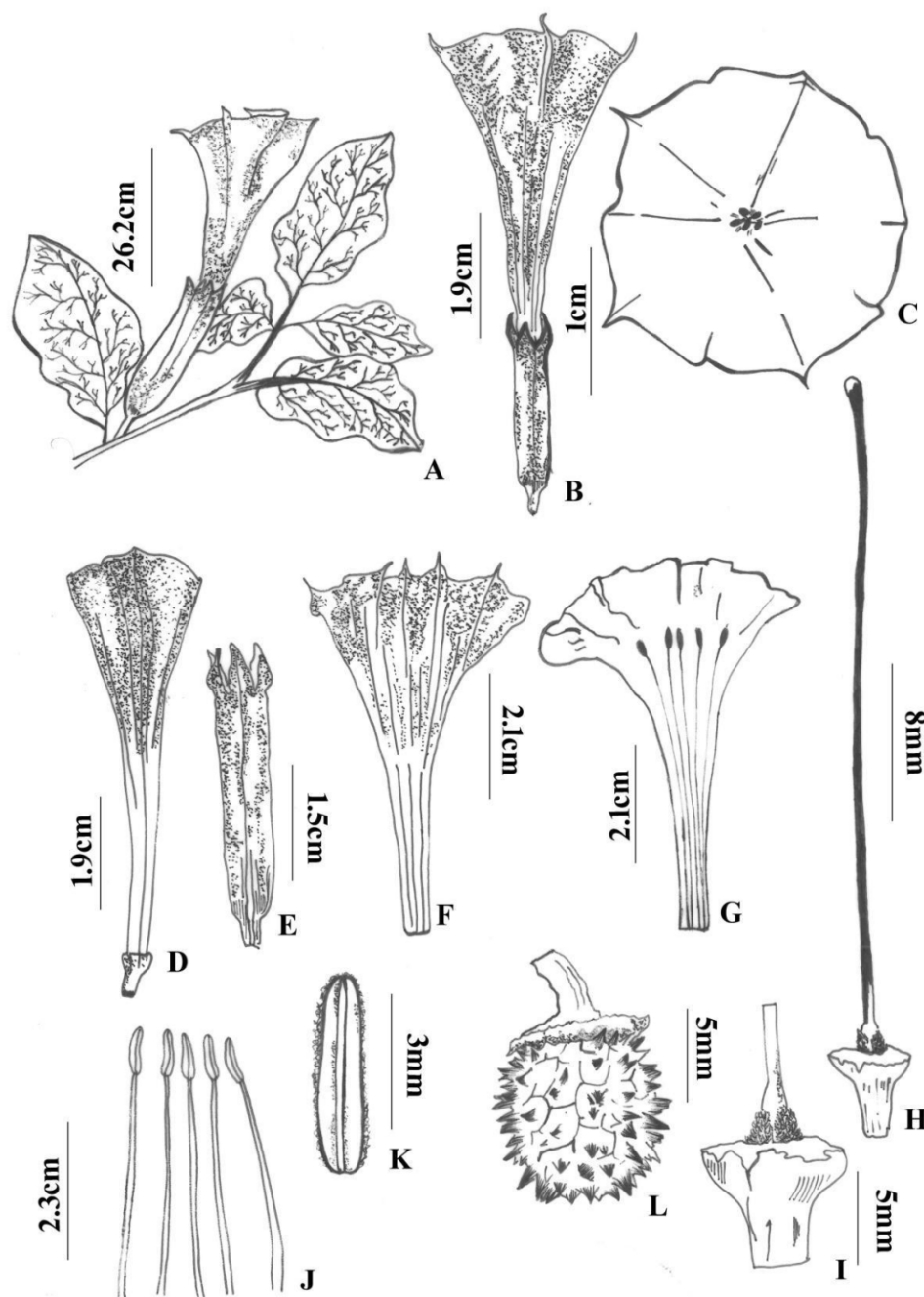


Fig.10: *Datura metel* L. var. II (single corolla purple) A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

var. III tripetal purple (Fig. 11, Fig. 12 & Fig. 17)

Perennial, undershrub, erect, much branched, about 6-7 ft height, tinged with purple color, semi-woody, herbaceous, hairless; tap root system; leaf simple, ovate, obliquely cuneate at the base, sinuate to dentate, opposite, acute, exstipulate, 25-30cm long, 15-20cm width, petiole 7-10cm with purple tinge, un-equal at the base; hypogynous flower, zygomorphic, 3 layered, solitary in branching axils, often whitish inside and purplish outside, outer layer 7-8cm in diameter corolla mouth often increasing towards base, trumpet shaped or funnel shaped, pedicel about 1-1.5cm long, solitary in branching axils; calyx tubular, slightly pubescent, greenish to purplish in colour, aestivation valvate, 5-lobed, 9-10cm in length; corolla about 25-39 cm in length, outer surface of all the 3 layers of corolla are purplish in colour, Stamens count vary from 5-6, attached at the base of corolla tube, 15-18cm long, if 6-paired, polydelphous, including anther and filament, anther lobes 2.5cm long, ditheous, basifixed, oblong; gynoecium 14-16cm long, style simple, axile placentation, syncarpous; superior ovary, ovules numerous; fruit globose capsule, dehiscent regularly, pendulous, diploid spines, 0.2-2.4 cm long; seeds shiny, ovoid, 0.3-0.5cm long;

Collector no:07; Date of collection: 16/06/2024; **Place of collection:** Korlalli-Mundargi Gadag; **Flowering season:** Throughout the year; **Habitat:** Wasteland and degraded-dry area; **IUCN status:** NE; **Vernacular name:** Kari Ummaathi; Purple Thorn apple; Devil's Weed; Jimpson Weed; Purple moonflower, Kala Dhatura; Sadah *Datura* (Hindi); Karumadagunike; **Nativity:** Colombia, Costa Rica, Honduras, Mexico Central, Mexico Northeast, Mexico Southeast, Mexico Southwest, Panama, Texas; **Uses:** The plant is narcotic, antispasmodic, intoxicant and emetic, and is useful in asthma, skin diseases cough fever, ulcers, bites from rabid dogs are also treated using its roots. The juice of the leaves is used in the treatment of epilepsy, cephalalgia, and dandruff. The paste from seeds is used for decaying teeth, piles, fistula, tumors, and parasitic skin diseases.

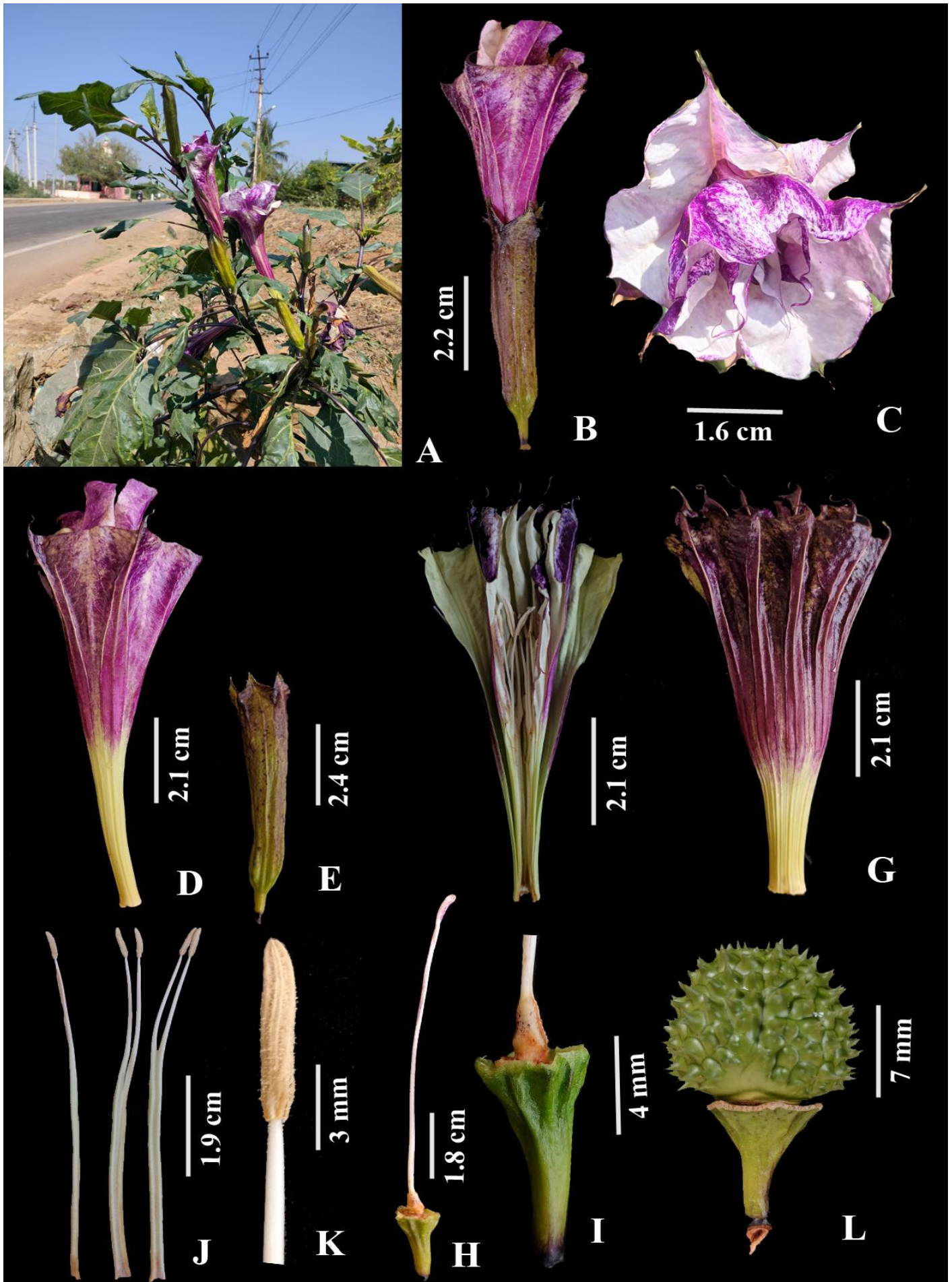


Fig. 11: *Datura metel* L. var. III (tri-corolla purple) A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

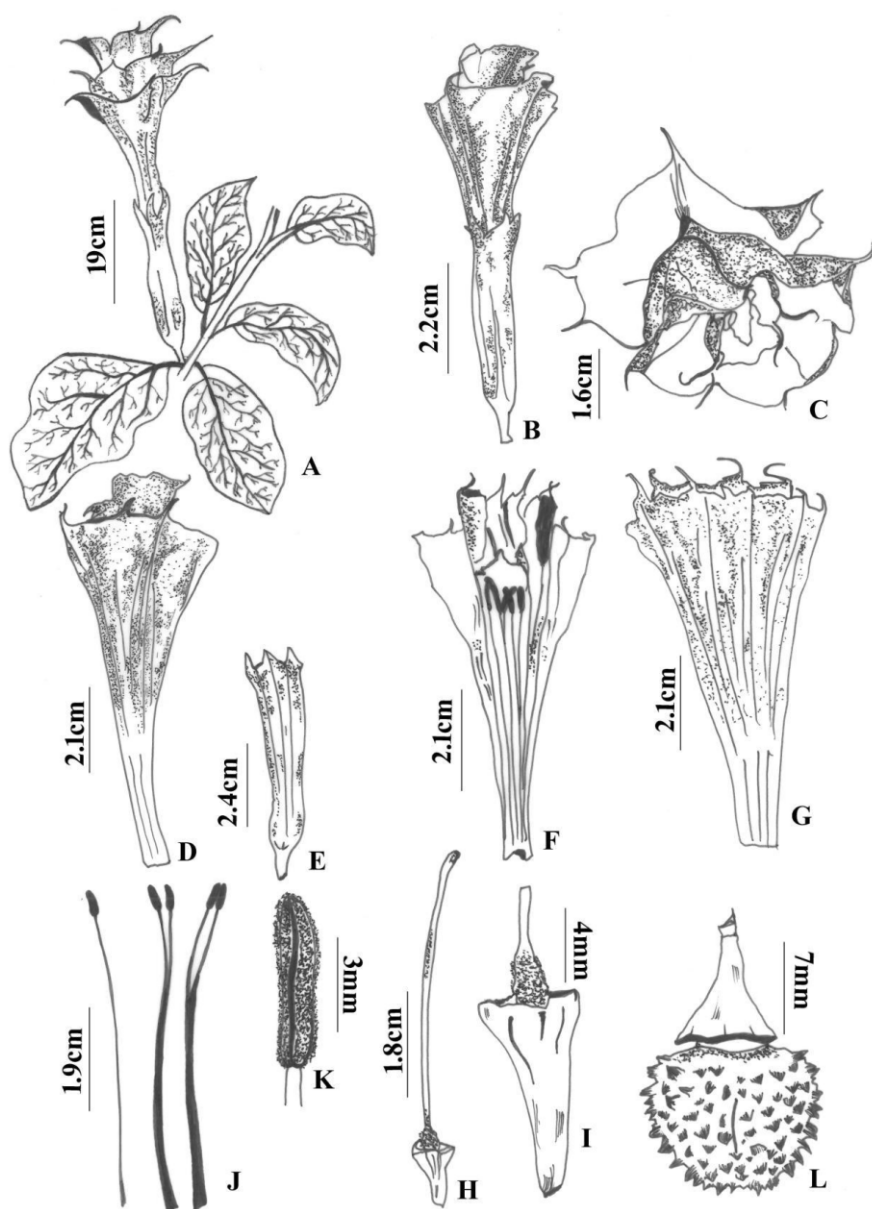


Fig.12: *Datura metel* L. var. III (tri-corolla purple) A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla; E. Calyx; F. Open corolla-outer view; G. Open corolla-inner view; H. Pistil; I. Ovary; J. Stamen; K. Anther; L. Fruit.

***Datura stramonium* L.** Sp. Pl.: 179(1753); Saldanha & Nicolson, Fl. Hassan, 459. 1976; Rao & Razi, Fl. Mysore 498. 1981; Sharma *et al.*, Fl. Karnataka Anal. 186. 1984; Singh, Fl. Eastern Karnataka 456. 1988; Manjunath *et al.*, Fl. Davanagere 277. 2004; Seetharam *et al.*, Fl. Bidar, 200. 2018; Yoganarasimhan *et al.*, Fl. Kolar, 283. 2018 (**Fig. 13, Fig. 14 & Fig. 18**)

Annual or short-lived perennial erect herb up to 2 m tall, often much-branched; stem sparsely hairy to glabrous. Leaves alternate, simple, minutely hairy; stipules absent; petiole up to 9.5 cm long; blade ovate to rhombic-ovate or elliptical, 3–20 cm × 1–15 cm, base cuneate, rounded, truncate or cordate, apex acute to acuminate or obtuse, margins sharply toothed with irregular teeth or almost entire, pinnately veined. Flowers axillary, solitary, rarely paired, bisexual, regular, 5-merous; pedicel 5–15 mm long, up to 30 mm long in fruit; calyx tubular, 2.5–5 cm long, lobes unequal, 0.5–1 cm long; corolla trumpet-shaped to tubular, 6–10 cm long, white or faintly tinged purple, sometimes violet or purplish in the tube; stamens inserted above the middle of the corolla tube, included, filaments short and thick, anthers yellow; ovary superior, 2–4 celled, style slender, 3.5–7 cm long, stigma large, 2-lobed. Fruit is an upright, almost globose to ovoid capsule up to 5 cm × 4.5 cm, yellowish to brown, with spines, few to many, slender, stiff, up to 16 mm long, many-seeded. Seeds almost D-shaped, flattened, 3.5–4.5 mm × 2.5–3.5 mm × c. 1 mm, dark brown to black. Seedling with epigeal germination; cotyledons thin, leafy.

Collector no: 07; **Date of collection:** 12/11/2024; **Place of collection:** Hassan; **Flowering season:** Throughout the year; **Habitat:** Roadside waste land, man-made or disturbed lands; **IUCN status:** NE; **Vernacular name:** Duddura, Ummati, Thorn-apple; **Nativity:** Mexico Central, Mexico Gulf, Mexico Northeast, Mexico Northwest Mexico Southeast, Mexico Southwest; **Uses:** Due to its anti-inflammatory property, it helps in stimulation of CNS, respiratory decongestion, treatment of skin infections, treatment of toothache. **Note:** After 57 years, the same plant, i.e., *Datura stramonium* L., originally documented by C. J. Saldhana in 1967, has been rediscovered at the identical locality. This species has been consistently misidentified with *Datura metel* L. in Bidar, Gulbarga, and Haveri districts of Karnataka. The recent investigation has confirmed that its actual occurrence is confined to the southern part of Karnataka, particularly within Hassan district and the surrounding adjacent area, which was also the locality cited by C. J. Saldhana in his Flora of Hassan District.

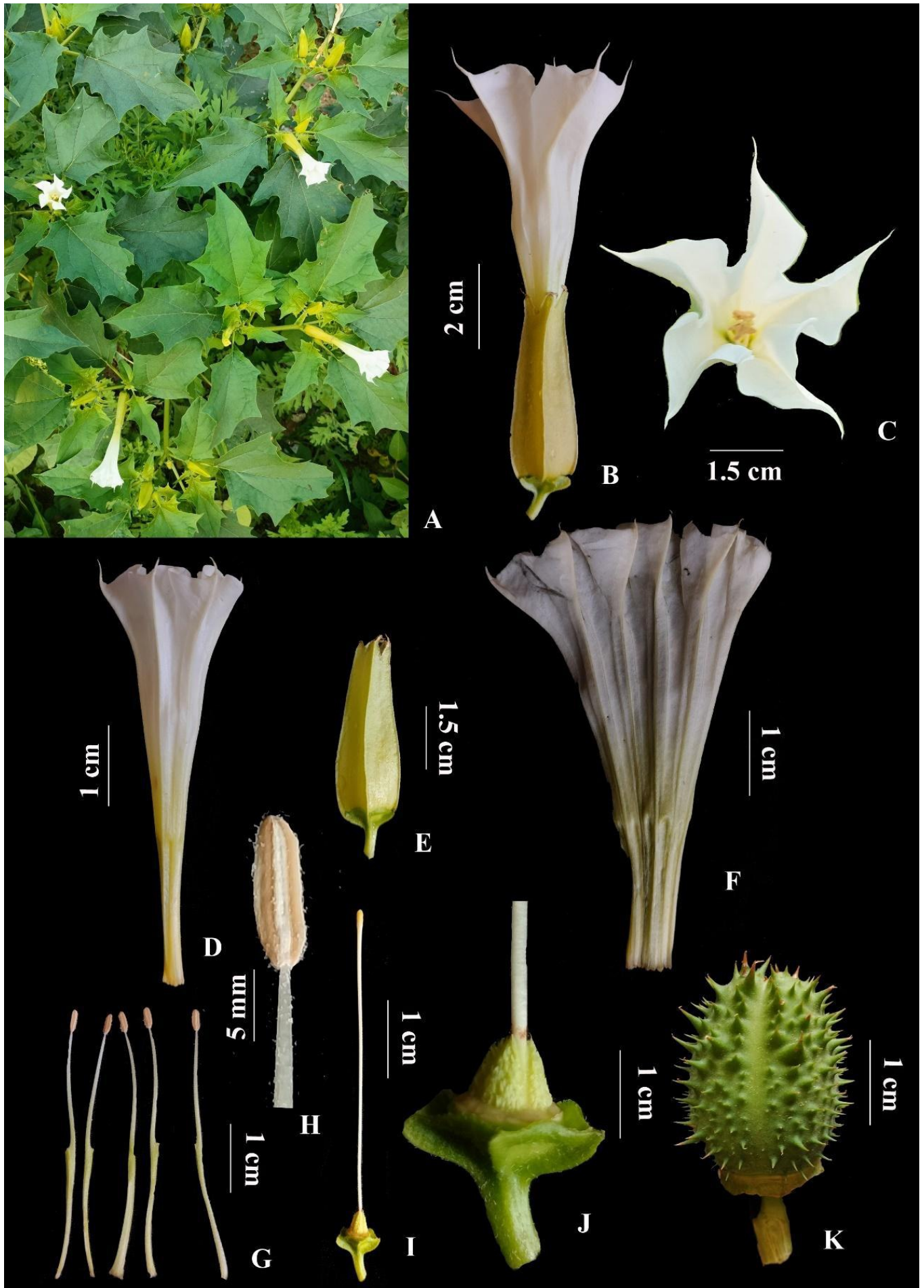


Fig. 13: *Daturas tramonium* L. A. Habit; B. Corolla with calyx; C. Flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Stamen; H. Anther; I. Pistil; J. Ovary; K. Fruit.

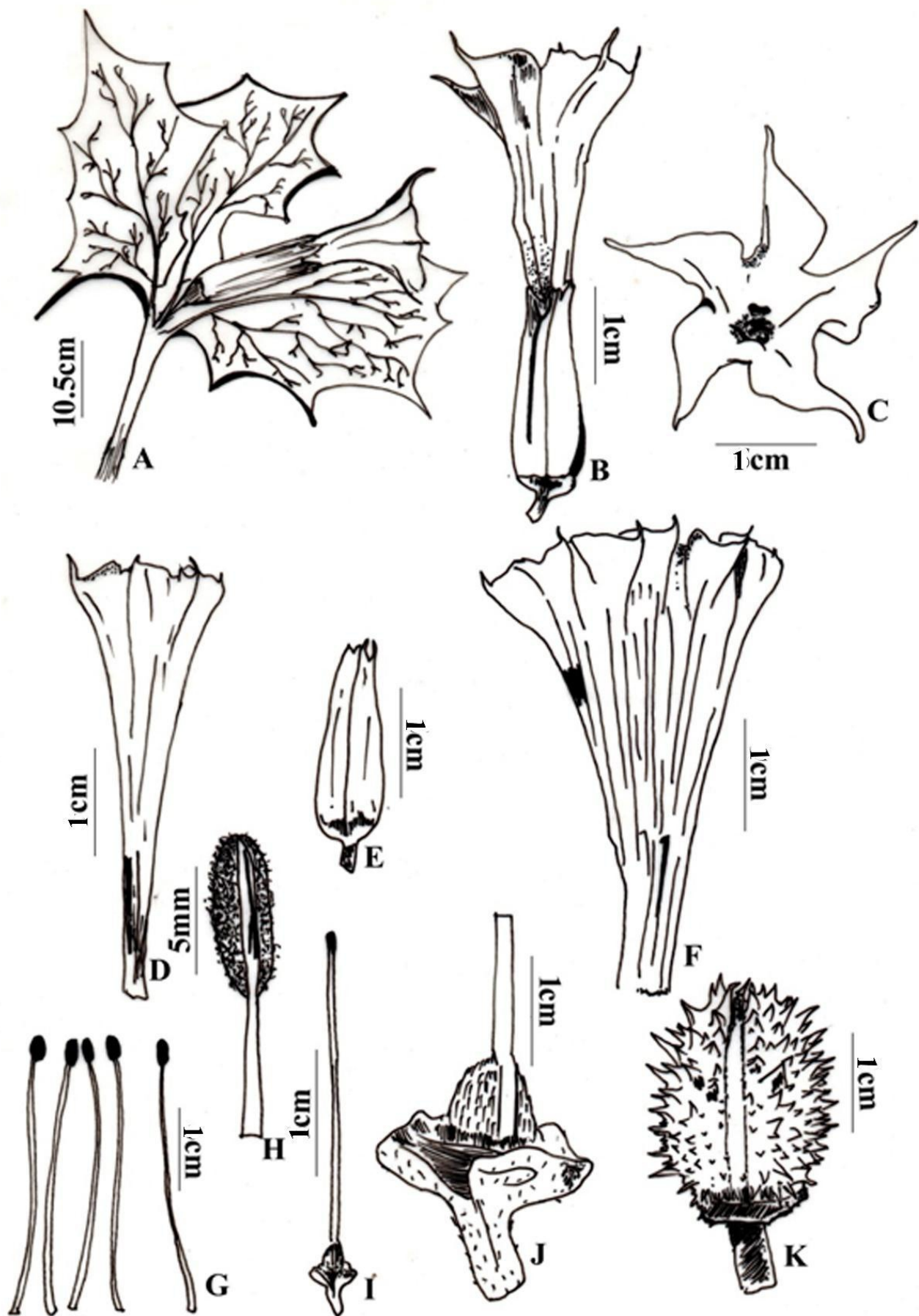


Fig. 14: *Datura stramonium* L. A. Habit; B. Corolla with calyx; C. flower top view; D. Corolla E. Calyx; F. Open corolla-outer view; G. Stamen; H. Anther; I. Pistil; J. Ovary; K. Fruit.

Below are the herbarium sheets, displaying three distinct morphotypes of *Datura metel* L., along with *Datura stramonium* L., highlighting the variations and key morphological differences between *Datura metel* L. and *Datura stramonium* L.

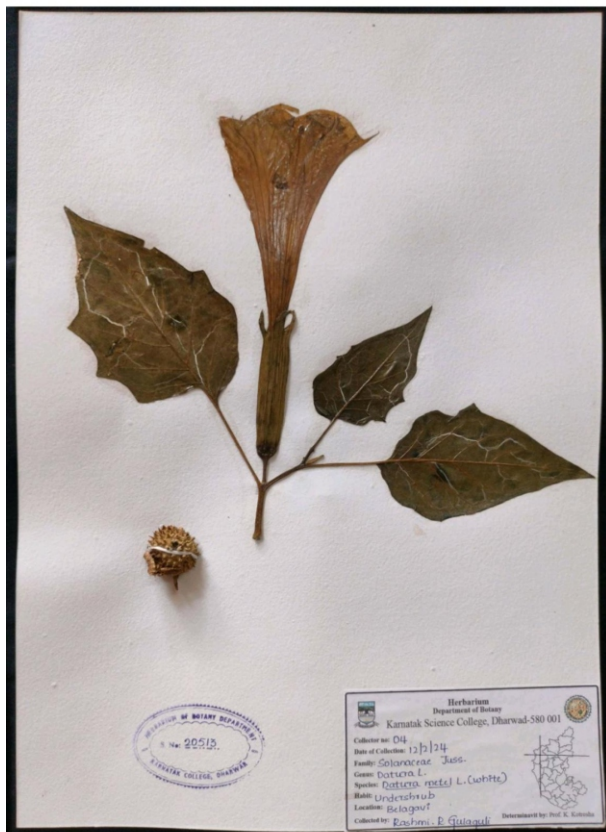


Fig. 15. Herbarium sheet of *Datura metel* L. deposited in Herbarium of Karnatak Science College, Dharwad (HKSCD)



Fig. 17. Herbarium sheet of *Datura metel* L. tripetal purple deposited in Herbarium of Karnatak Science College, Dharwad (HKSCD)



Fig. 16. Herbarium sheet of *Datura metel* L. single-petalled purple, deposited in the Herbarium of Karnatak Science College, Dharwad (HKSCD)



Fig. 18. Herbarium sheet of *Datura stramonium* L. deposited in Herbarium of Karnatak Science College, Dharwad (HKSCD)

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