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Taxonomic notes on *Vincetoxicum cissoides* (Blume) Kuntze (Apocynaceae)

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Abstract

Vincetoxicum cissoides (Blume) Kuntze (Apocynaceae) grows primarily in the wet tropical biome of Andaman Islands to New Guinea which has probably led to confusion and misidentification in floristic records of India. Reports from global floras documented the occurrence of *V. cissoids* in India from Andaman group of Islands. We described morphology of vegetative and reproductive characters of this species here in great details that are not documented from India particularly characters of fruit and seeds. A detailed description, images of live plants and herbarium sheet of newly collected plant sample, illustrations and distribution map are provided for easy identification.

Key words: *: Andaman Islands; New Guinea; Tylophorinae; Taxonomy; Vincetoxicum.*

Introduction

Vincetoxicum Wolf, a genus in the subtribe Tylophorinae K. Schum. of Asclepiadoideae, Apocynaceae, comprises 264 species distributed across tropical and subtropical regions worldwide (POWO, 2025) From the taxonomic viewpoint, *Vincetoxicum* is commonly considered a difficult genus, and has been confused by several authors (Wight, 1834; Hooker, 1883; Parker, 1956; Kitamura, 1960; Forster, 1994; Li *et al.*, 1995; Liede-Schumann and Meve, 2018; Kidyoo *et al.,* 2023). The genus has gained attention during the past two decades along with its allies by various workers. The genus is native to Europe, NW. Africa, Socotra, Asia to SW. Pacific. Many Asian species of *Vincetoxicum* have been treated periodically in different floristic and taxonomic accounts (e.g. Wight, 1834; Decaisne, 1844; Wight, 1850; Boissier, 1879; Hooker, 1883; Rechinger, 1970; Hara *et al.,* 1982; Endress and Bruyns, 2000; Endress *et al.*, 2019).

In India, 32 species are currently recognized and distributed throughout country including Andaman and Nicobar Islands (ANI), a well recognized phytogeographical region for a rich and unique plant diversity with high endemism in India (Singh *et al.,* 2014, 2021a, b., Singh and Misra, 2020, Singh and Ranjan, 2021).

During field surveys in the ANIs, an interesting specimen of *Vincetoxicum* were collected by one of the author (SK) between 2023 to 2024 from reserve forest of Krishna Nalah, Little Andaman. After an extensive review of literature and comparative study with herbarium specimens held in Indian herbaria and with digital herbaria, and critical examination based on morphological characters the identity of plant was confirmed as *Vincetoxicum cissoides* (Blume) Kuntze. It was first collected from Mt. Salak, Jakarta and described as *Tylophora cissoides* Blume in 1826 as mentioned in Revis. Gen. Pl. 2: 424 (1891). Thereafter, itwas collected by Dr. King in 1891 from Cadell-gunj hill jungle, South Andaman, ANI of India and described as *T. perakensis* (25.7.1891, Dr. King *s.n.* CAL!) and followed by various workers but documented with different names viz. *Tylophora kenejiana* Schltr. in Bot. Jahrb. Syst. 50: 154 (1913), *Tylophora perakensis* King and Gamble in J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 74: 555 (1908), *Tylophora perakensis* subsp. *andamanica* Rasingam and J. Swamyin Bangladesh J. Pl. Taxon. 25:51 (2018), *Tylophora treubiana* Schltr. in Beibl. Bot. Jahrb. Syst. 92:5 (1908). These names are treated as synonyms of *V. cissoides* (POWO, 2025). Currently known distributional range of this species is Andaman Islands to New Guinea. It grows primarily in the wet tropical biome. Also, all the names in *Tylophora* including this species now considered

synonymous with *Vincetoxicum* (Liede-Schumann and Meve, 2018).

Field explorations of the present study have resulted in comprehensive collections that include morphology of vegetative and reproductive characters documented here in great detail for the first time from India. While previous publications from India including protologue referenced this species, they lacked information on fruit and seeds with herbarium evidence and often involved misidentification- a gap this study aims to address and rectify.

Material and Methods

To verify the validity of the species, the authors undertook morphological comparisons on specimens collected during various field excursions, housed in Indian herbaria (CAL, PBL) and digital herbaria (eFloras, 2008; WCSP, 2012; The Plant List, 2013; GBIF, 2020; JSTOR, 2020; The Herbarium Catalogue, 2021; POWO, 2025) and consulted the relevant literature. Olympus SZ 61 binocular microscope was used to study the micro morphology of the specimens. All collected herbarium specimens deposited at PBL (Little Andaman, Krishna Nalah, 27.07.2024, Sagarika Kumari 33376 PBL; Fig. 5).

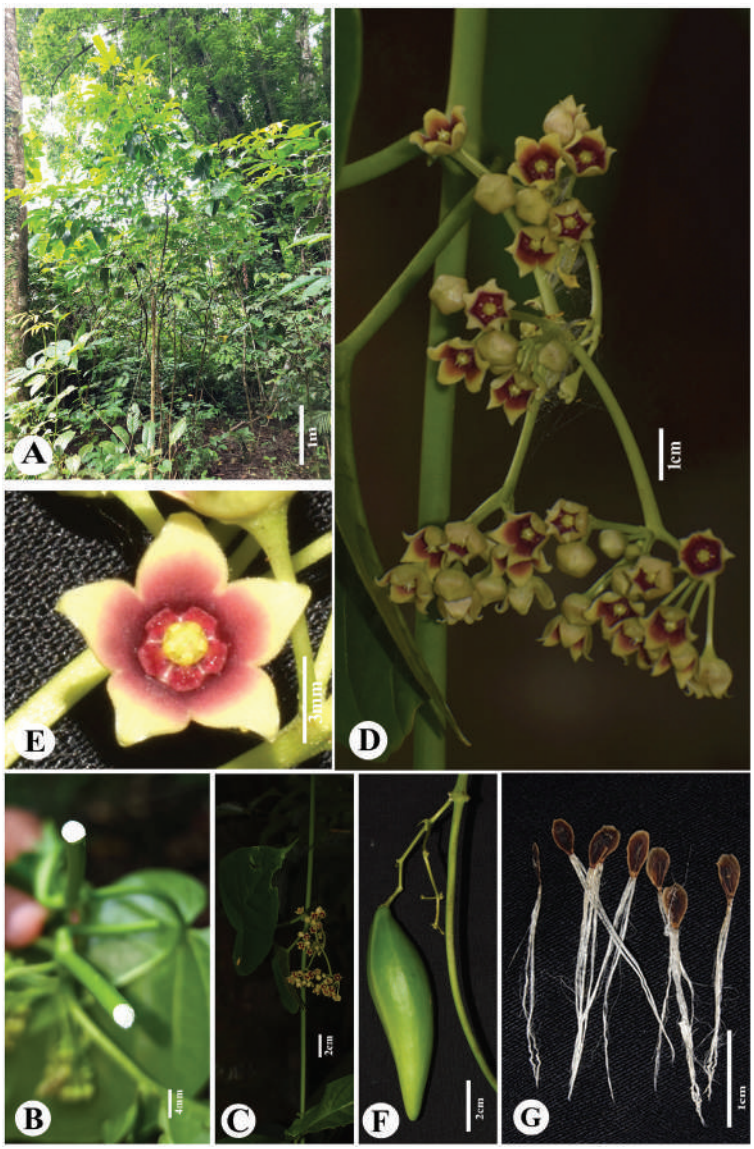

Fig. 1: *Vincetoxicum cissoides* (Blume) Kuntze A. Habit, B. Latex, C.-D. Inflorescence, E. Flower, F. Fruit, G. Seeds.

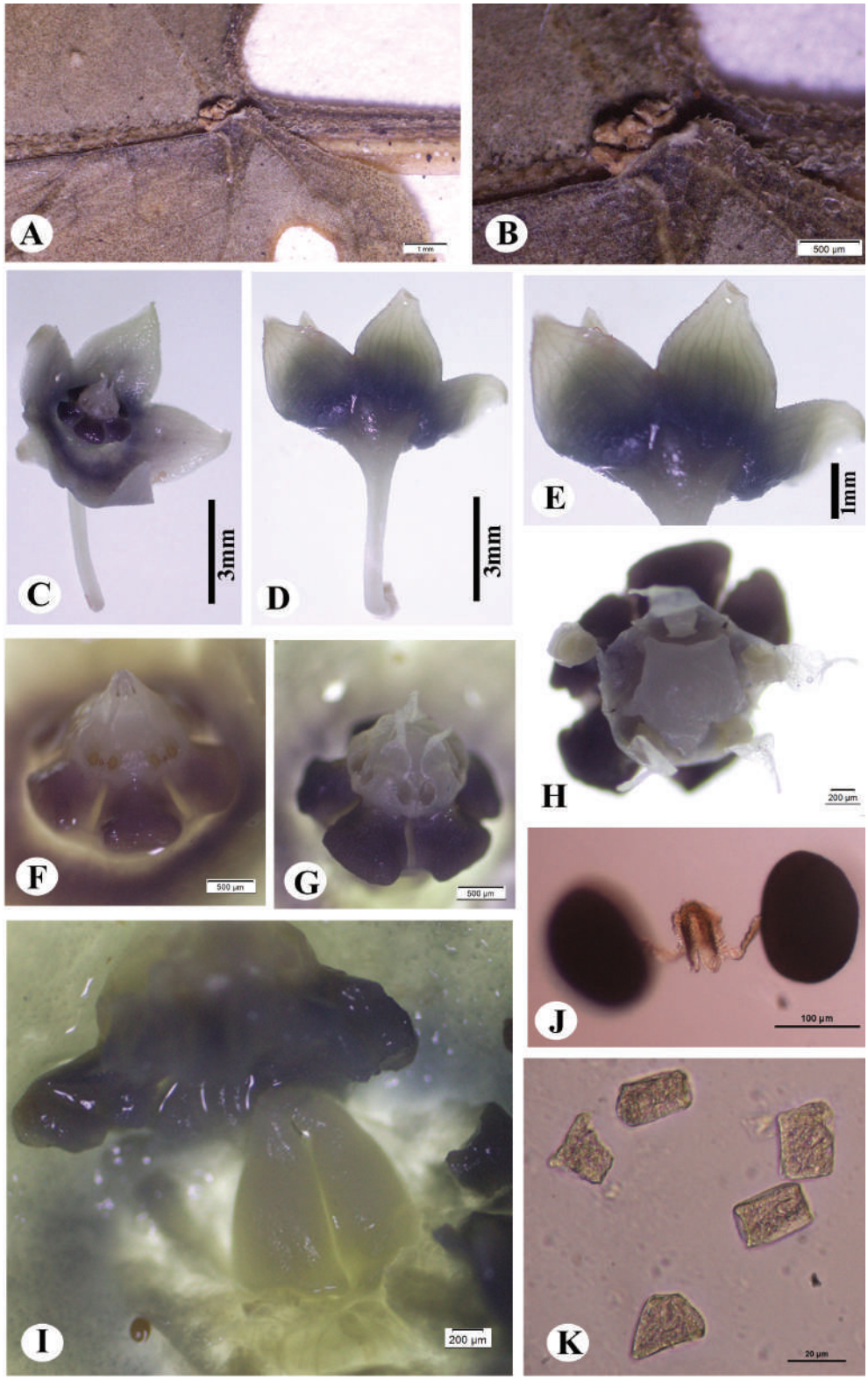

Fig. 2: *Vincetoxicum cissoides* (Blume) Kuntze A-B. Magnified view of colleter at leaf base and hairs at midrib and petiole, C.-E. Flowers, F-H. Gynostegium, I. Ovary, J. Pollinia, K. Pollen grains.

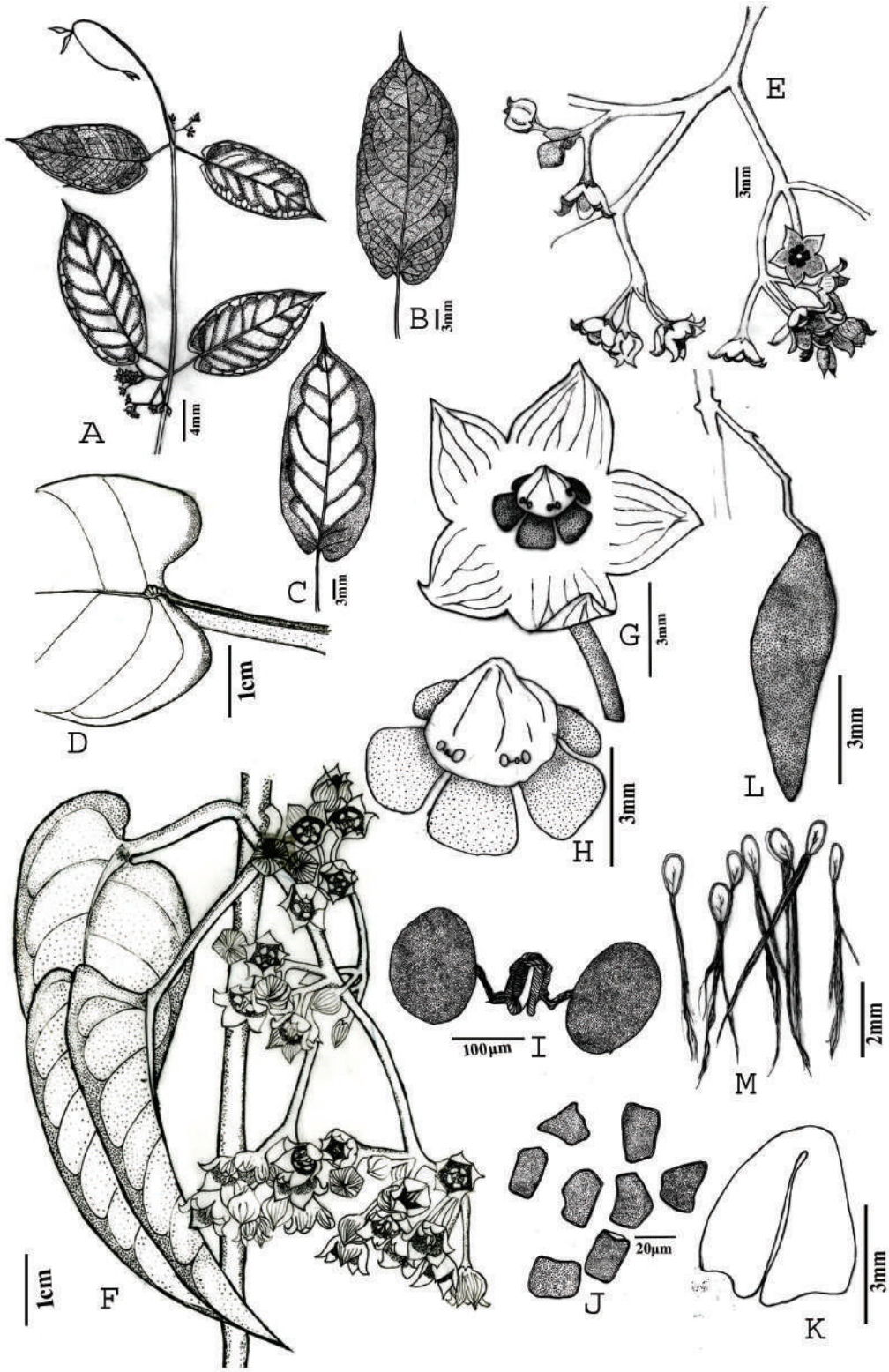

Fig. 3: ***Vincetoxicum cissoides*** **(Blume) Kuntze A. A portion of twig, B-C. Magnified view of leaf, D. Magnified view of colleter at leaf base and hairs at midrib and petiole, E-F. Inflorescence, G. Flower, H. Gynostegium, I. Pollinia, J. Pollen grains, K. Ovary, L. Fruit, M. Seeds.**

Taxonomic Treatment

Vincetoxicum cissoides (Blume) Kuntze; Revis. Gen. Pl. 2: 424 (1891) – **Figs. 1-5.**

Type: [Indonesia], Java, s.d., *C.L. Blume 2170/b* (lectotype, L [L0360066], designated by Liede-Schumann *and* Meve (2018); isolectotypes L. [L0360065, L0360067]). (Additional synonyms are published in Liede-Schumann and Meve, 2018); *Tylophora cissoides* Blume. Bijdr. 1061 (1826); Bakhf.,Blumea 6: 374 (1950). *Type*: Java (unlocalised and undated), Blume (B0112992, 112993) (iso: BO!).

Synonyms

=*Tylophora cissoides* Blume; Bijdr. Fl. Ned. Ind. 1061 (1826)

=*Tylophora kenejiana* Schltr.; Bot. Jahrb. Syst. 50: 154 (1913)

=*Tylophora perakensis* King and Gamble; J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 74: 555 (1908)

=*Tylophora perakensis* subsp. *andamanica* Rasingam and J. Swamy; Bangladesh J. Pl. Taxon. 25(1): 51 (2018)

=*Tylophora treubiana* Schltr.; Bot. Jahrb. Syst. 30 (Beibl. 92): 5 (1908).

Description

Plants slender twinner/climber up to 5 m. Latex milky white. Stems 4 mm thick, glabrous; internodes 12-20 cm long. Leaves simple, opposite, fleshy, petiolate; lamina ovate-oblong, 11-12.5 x 4.3-6 cm; base cordate, margin entire, acuminate apex; apex 1.2-1.5 cm long, glabrous, prominent midrib with lateral veins 7-8 pairs, veins glabrous, dark green on upper surface and light green on lower surface; colleters5-8 at lamina base; petiole 3.0-4.5 cm long, dimorphic; abaxially glabrous, adaxially pubescent with normal hairs and slightly ridged often with a long narrow furrow towards colleters; ridged margin densely covered with hairs. Inflorescence axillary **pendant (drooping)** cymes, pedunculate, peduncle 2.0-3.0 cm long, glabrous; flower bud ovate, citrine (dull greenish yellow). Flowers c. 36 on each node, pentamerous, pedicellate; pedicels glabrous, 0.5 cm. Calyx 5, glabrous, ovate-lanceolate with attenuate apex, citrine (dull greenish yellow) 0.2 x 0.1 cm long. Corolla ovate-lanceolate, dimorphic, glabrous, inner side claret (deep purple) and towards periphery its buff (dull yellow-brown) with sparsely haired margin, 5-lobed, 0.3-0.25 cm long, fleshy; outside citrine (dull greenish yellow), lobes orbicular, 2.5-3.5 mm long, 2.0-2.5 mm wide. Corona staminal up to 1.2 mm long, 2.0-2.5 mm in diameter, deep purple; each lobe narrow towards the base, 1.0-2.0 mm long, 1.0-1.2 mm wide. Gynostegium cylindraceous, 0.1-1.5 mm long. Staminal column 2.0-2.5 mm long, 1.0-1.5 mm wide; anther appendages lanceolate, tapering towards apex or acuminate, 0.1-0.3 mm long, 0.2-0.5 mm wide Style-head short not exceeds staminal column, 0.5 mm in diameter, disciform, yellow. Ovary bicarpellate, yellow;style cylindraceous yellow. Pollinaria 5, pollinia 2 per pollinarium, corpusculum inverted u- shaped, densely pubescent; retinacula (translator arm) horizontally attached with corpusculum and holding pollinium, pollinium elliptic-oval. Fruit follicle, single follicle per pedicel, spindle lanceolate, obtuse at apex, 8.5 cm long, 2.5 cm wide, glossy, green. Seed 0.6 cm long, 2.2 cm wide, brown, comose; apex with tufts of white hairs; hairs 2-3 cm long.

Phenology: July to September

*Distribution***:** India, Andaman and Nicobar Islands, Andaman group of Islands, Little Andaman., peninsular Malaysia (Kedah, Perak); Moluccas; New Guinea (Irian Jaya, Papua New Guinea) 41 AND 42 MLY MOL NWG

Habitat and Ecology: Inland forest near water stream on sandy soil, at ± 23 m altitude.

Discussion

In our taxonomic study on *Vincetoxicum cissoids,* we described morphology of vegetative and reproductive characters here in great detail including characters of fruit and seeds that are not documented earlier from India This species was originally described as *Tylophora cissoides* Blume in Bijdr. Fl. Ned. Ind.: 1061 (1826). It is now treated as a homotypic synonym because the genus Tylophora R.Br. (Fl. Nov. Holland: 460, 1810) is currently

considered synonymous with the genus *Vincetoxicum* (Liede-Schumann and Meve 2018).

Herbarium specimens (Acc. No. 39041-39044) of this species collected during the present study have been deposited at PBL, the national repository of herbarium maintained by Botanical Survey of India, Andaman and Nicobar Regional Centre. This repository of herbarium situated in one of the native ranges of this species, ANI.

This is the first collection with all morphology of vegetative and reproductive characters from Indian. Although, specimen with all vegetative and reproductive parts including fruit and seeds have been collected from New Guinea by various workers as available on digital herbaria GBIF (2025). Based on field studies and our collections, a detailed description of this species is provided here along with photographs, illustrations, image of herbarium specimens and distribution map for easy identification.

V. cissoidesis is superficially similar can be confused with *V. ventricosum* Kuntze (formerly *Tylophora wallichii* (Wight) Hook.f.) due to its chartaceous elliptic-lanceolate lamina and loose racemose inflorescences branched 1-3 times, about as long as the leaves. While, both taxa are distinguished in the combination of morphology of vegetative and reproductive characters (Rodda *et al*., 2024).

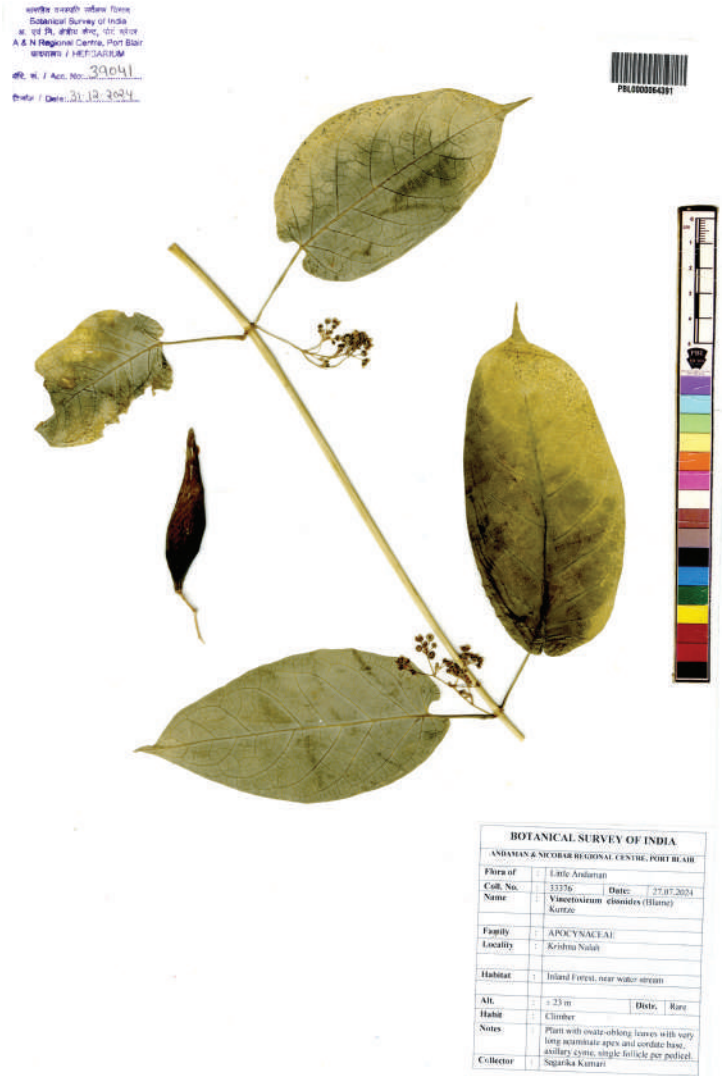

Fig. 4: Image of newly collected Herbarium of *Vincetoxicum cissoides* (Blume) Kuntze

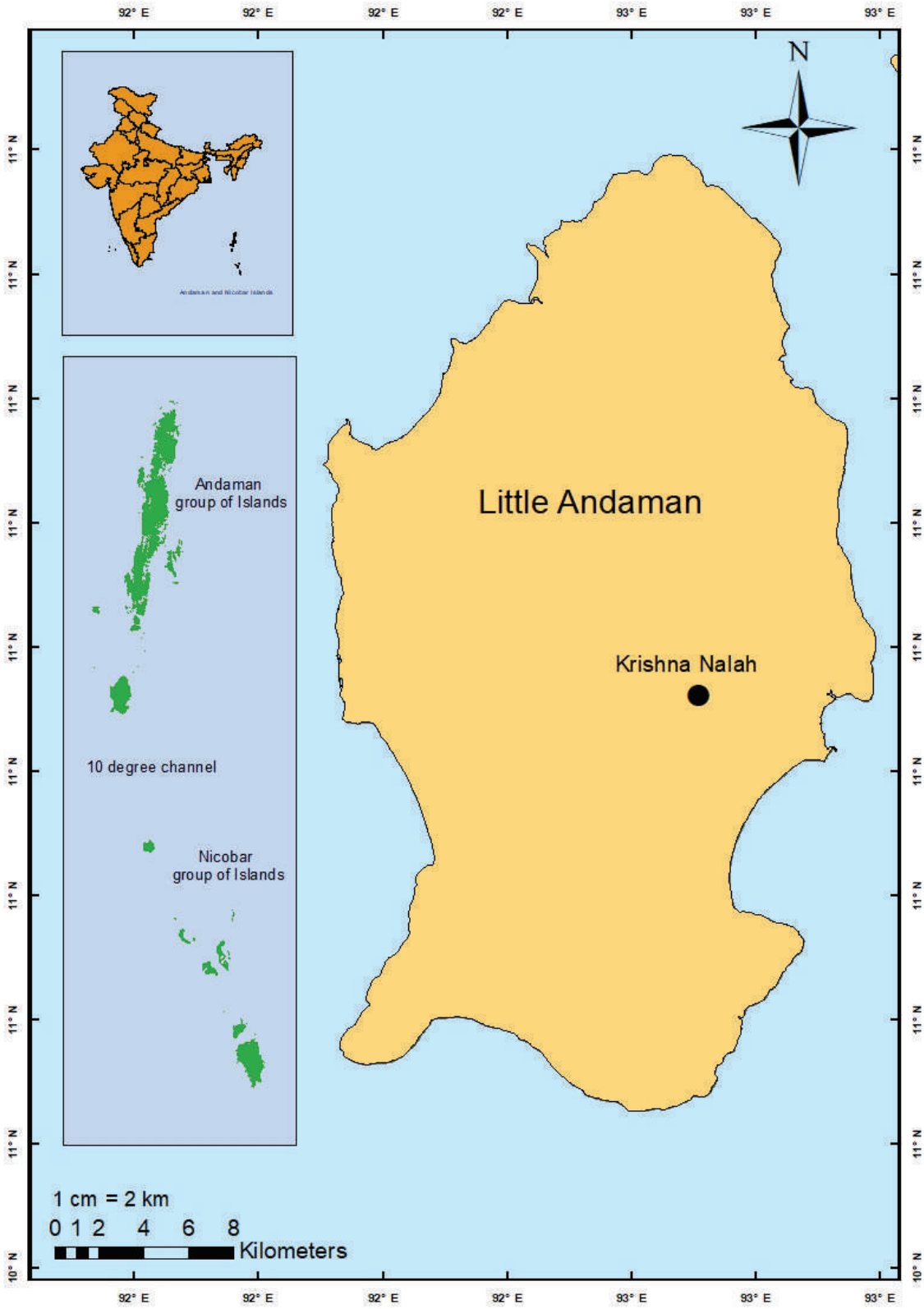

Fig. 5: Distribution of *Vincetoxicum cissoides* (Blume) Kuntze in India

Conclusions

The genus, *Vincetoxicum* in the dogbane family Apocynaceae has received little attention from taxonomists in ANI. Although, ANI is one of the hotspots of biodiversityand recognized as a rich and unique phyto-geographical region with high endemism in India where more systematic explorations will be required to elucidate what species still exist in the wild.The present study revealed that the genus, *Vincetoxicum* is represented by six species viz. *V. carnosum* (R. Br.) Benth., *V. cissoides* (Blume) Kuntze, *V. flexuosum* (R. Br.) Kuntze var. *tenuis* (Blume) Schneidt. Meve and Liede, *V. globiferum* (Hook. f.) Kuntze, *V. indicum* (Burm. f.) Mabb. var. *indicum, V. nicobaricum* (C. Murugan and M.Y. Kamble) Meve and Liedein in the ANI. *V. cissoides* is easily recognized in the field by the stem with very long internodes, lamina glabrous ovate-oblong, with cordate base very long acuminate apex , margin entire and prominent midrib with lateral veins 7-8 pairs, leaf base with colleters, **drooping** cymes.

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