

## RESEARCH ARTICLE

**TAXONOMIC INVENTORY OF PLANTS CONSERVED IN THE ASSOCIATED  
BOTANIC GARDEN AT THE BOTANICAL SURVEY OF INDIA, CENTRAL  
REGIONAL CENTRE, PRAYAGRAJ**

**Onkar Nath Maurya\*<sup>1</sup>, Neelima A.M.<sup>1</sup>, Anurag Kesharwani<sup>1</sup>, Subodh Kumar<sup>1</sup>, Madhuritu Biswas<sup>1</sup>, Jayanta Kumar Mridha<sup>1</sup>, Saugata Roy<sup>1</sup>, B. Lakshmanudu<sup>1</sup> and Arnab Chatterjee<sup>1</sup>**

*Botanical Survey of India, Central Regional Centre, 10- Chaitham Lines, Prayagraj-211002*

*Email: [onmaurya@bsi.gov.in](mailto:onmaurya@bsi.gov.in)*

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**Abstract:** A botanical garden is a place for botanical research, conservation, education, and display, focusing on the region's native flora. The plants growing in Associated Botanic Garden, Botanical Survey of India, Central Regional Centre, Prayagraj are enumerated with habit and phenology and arranged according to Bentham and Hooker's system of classification. It comprises of about 423 species in total which include 165 species of trees, 120 species of shrubs and 138 species of herbs under 115 families.

**Keywords:** Botanical garden, Prayagraj, plant diversity, Botanical Survey of India, Central Regional centre

## INTRODUCTION

A botanical garden is a place for botanical research, conservation, education, and display, focusing on the region's native flora. Besides, a botanical garden is an establishment where plants are grown for scientific study and display to the public. Botanical Gardens are established to conserve plant species in and out of their natural habitat.

It is estimated that there are around 400,000 plant species in the world, and at least 25% are now threatened with extinction. Currently, about 3,634 botanical institutions are established worldwide (BGCI, 2024). Over 41 percent of known threatened species have been conserved by the 3,269 botanical institutions spread over 180 nations, and at least 30 percent of all plant species' variety is thought to have been preserved. Despite the tropical region being endowed with diverse and abundant plant species, about 93% of species preserved in the botanical garden are from the temperate region (Mounce *et al.*, 2017). Consequently, 76% of species estimated to be disappeared from extant collections are of tropical origin (Mounce *et al.*, 2017). To overcome such challenges the establishment of botanical gardens and organizers such as Botanical Gardens Conservation International (BGCI) are essential to rescue plants globally by providing accessions. Thus, among many other things, botanic gardens offer the opportunity to preserve plant diversity outside of their natural habitats (Ex-situ conservation services) and play a significant part in averting the extinction

of species through coordinated conservation efforts (Krishnan and Novy, 2017).

Thus, Botanical gardens can play a major role in achieving the Global Strategy for Plant Conservation (GSPC) and the Sustainable Development Goals (SDGs) related to biodiversity.

The Botanical Survey of India, Central Regional Centre was established on 31st July 1962, with its history tracing back to 13th April 1954, when the Central Botanical Laboratory was founded in Kolkata. Subsequently on 2th December 1954 the laboratory was shifted to Central Drug Research Institute, Lucknow and continued there till 3rd December 1957. Again, it shifted from Lucknow to Prayagraj in old Commissioner's Office building (a century old mansion) with about 7 acres of land for Experimental Garden. The Central Botanical Laboratory remained at Prayagraj for about 5 years, before permanently shifting to Howrah in 1962. This garden has been involved in conserving important plants of the region since its beginning. Currently, the Associated Botanic Garden, covering an area of about 2.50 hectares, is situated within the compound of main office building of Botanical Survey of India, Central Regional Centre, Prayagraj at 180 mts. altitude, 25°28' North latitude and 81°51' East longitude.

Earlier, some workers have described climbers, trailers and parasitic plant diversity in botanical garden, Botanical Survey of India, Central Regional Centre and they have documented 75 species belonging to 61 genera under 27 families (Singh *et al.*, 2015). Plant diversity has already been

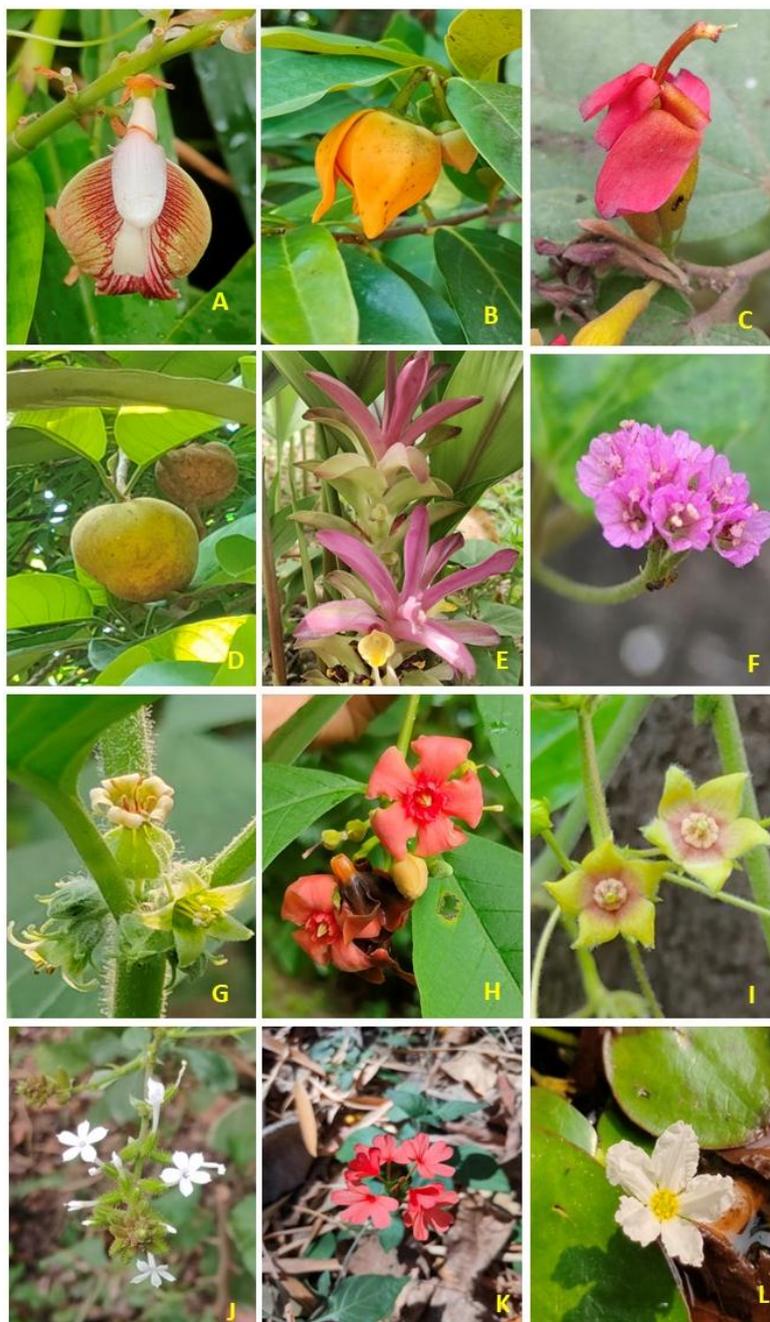
\*Corresponding Author

described with about 663 species in total with 181 species of trees, 168 species of shrubs, 38 species of under shrubs and 276 species of herbs (including 10 aquatic plants) under 116 families from botanical garden of Botanical Survey of India, Central Regional Centre (Singh, 2016) but he has included the plants of residential colony also in the list.

#### MATERIALS AND METHODS

Detailed survey has been conducted regularly in different seasons (March to June-hot summer, July to

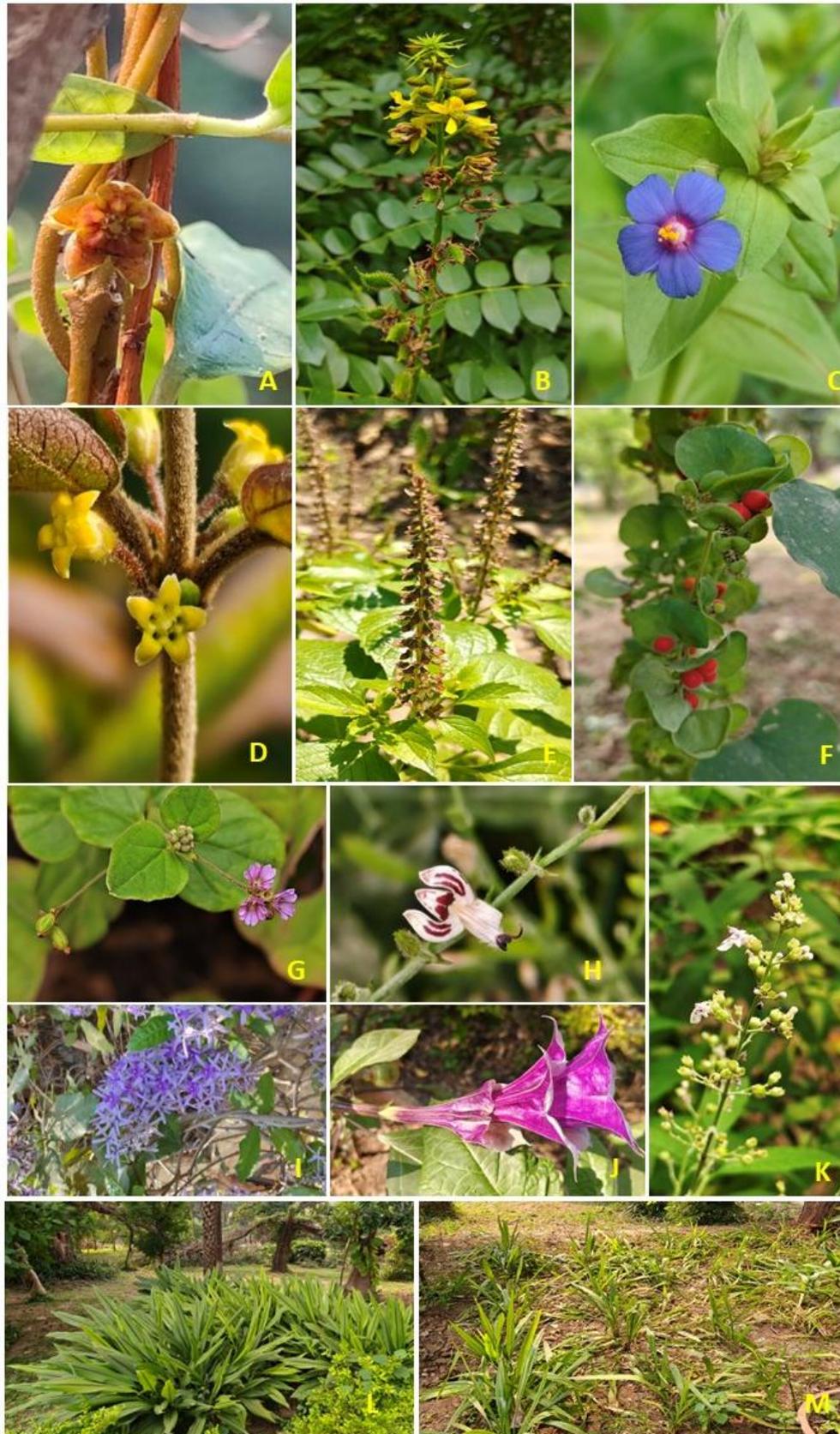
September- Monsoon and October to February-winter) to document the diversity of plants present within the premises of garden of Botanical Survey of India, Central Regional Centre. Habit and Phenological data have also been recorded for each taxon present in the garden. These plant species were identified with the help of relevant floras and herbarium specimens deposited at BSA and CAL. Arrangement of families in the enumeration is in accordance with Bentham and Hooker's system of classification (Tomar *et al.*, 2008; Tomar, 2024).



**Plate No.1** (A) *Alpina zerumbet* (Pers.) B.L.Burt & R.M.Sm. (B) *Amnona muricata* L. (C) *Helectores isora*l. (D) *Artocarpus lacucha* Buch.-Ham. (E) *Curcuma caesia* Roxb. (F) *Boerhavia diffusa* L. (G) *Withania somnifera* (L.) Dunal (H) *Wrightia arborea* (Dennst.) Mabb. (I) *Vincetoxicum indicum* (Burm.f.) Mabb. (J) *Plumbago zeylanica* L. (K) *Crossandra nilotica* Oliv. (L) *Nymphoides hydrophyllum* (Lour.) Kuntze



**Plate no.2** (A) *Commnicarpus chinensis* (L.) Heimerl (B) *Commiphora wightii* (Arn.) Bhandari (C) *Costus pictus* D.Don (D) *Diospyros malabarica* (Desr.) Kostel. (E) *Grewia asiatica* L. (F) *Grewia serrulata* DC. (G) *Justicia adhatoda* L. (H) *Justicia gendarussa* Burm f. (I) *Saraca asoca* (Roxb.) W.J.de Wilde (J) *Zanthoxylum armatum* DC.



**Plate No.3** (A) *Hemidesmus indicus* (L.) R.Br. (B) *Guilandina bonduc* L. (C) *Lysimachia arvensis* (L.) U.Manns & Anderb. (D) *Gymnema sylvestri* (Retz.) R.Br. ex Sm. (E) *Ocimum americanum* L. (F) *Cissampelos pareira* L. (G) *Boerhavia repens* L. (H) *Andrographis paniculata* (Burm.f.) Wall. ex Nees (I) *Petrea volubilis* L. (J) *Datura metel* L. (K) *Vitex negundo* L. (L) *Curcuma caesia* Roxb. (M) *Curculigo orchiooides* Gaertn.



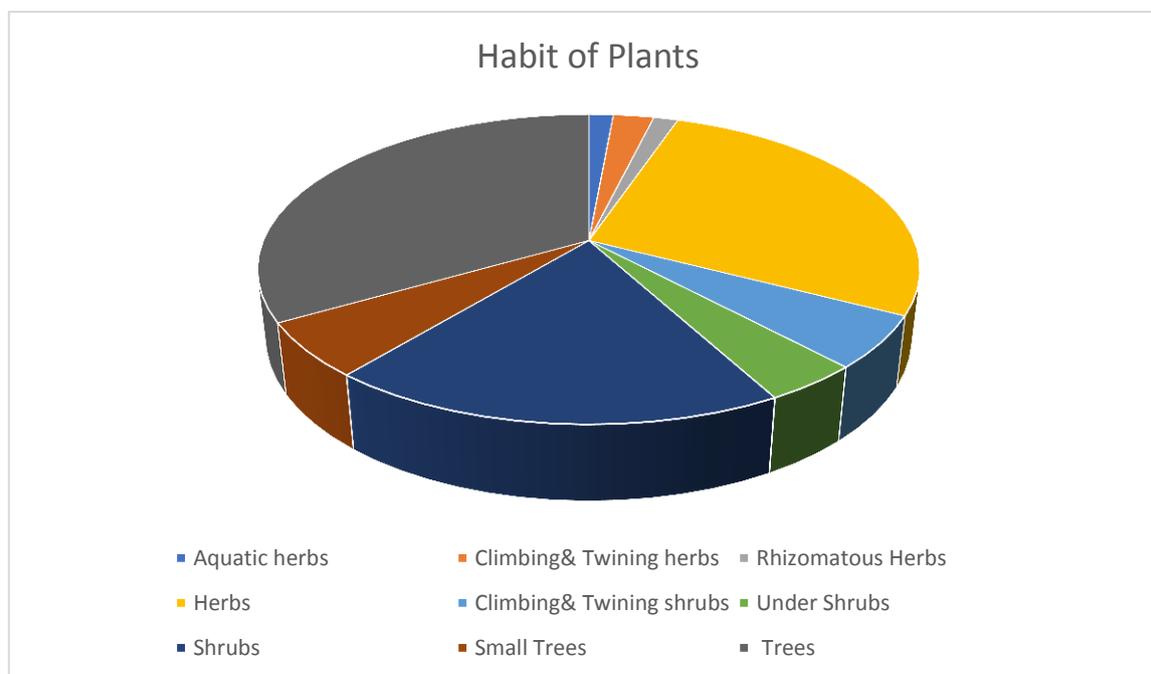
**Plate No.4** (A) *Bauhinia rufescens* Lam. (B) *Madhuca longifolia* var. *latifolia* (Roxb.) A.Chev. (C) *Gmelina arborea* Roxb. ex Sm. (D) *Ochna obtusata* DC. (E) *Tabebuia aurea* (Silva Manso) Benth. & Hookf. ex S.Moore (F) *Terminalia bellirica* (Gaertn.) Roxb. (G) *Butea monosperma* (Lam.) Kuntze (H) *Pterospermum acerifolium* (L.) Willd. (I) *Phyllanthus acidus* (L.) Skeels (J) *Strychnos nux-vomica* L.

## RESULTS AND DISCUSSION

After a through documentation of plants of garden in different seasons, it is found that 423 species are thriving comprising of 165 species of trees, 120 species of shrubs and 138 species of herbs under 115 families having medicinal, economically important,

ornamental values which includes rare and threatened plants. Out of the 423 taxa, 328 species belong to dicotyledons and 95 species belong to monocotyledons. Among these 41 species belongs to the category of shrubby to herbaceous climbers, scandent, stragglers, trailer and twiners. Enumeration of habit of the plants in the garden are as follows:

Sr. No.	Habit of Plants	Minor Habit	Number of plants
1.	Herbs	Aquatic herbs	6
		Climbing& Twining herbs	10
		Rhizomatous Herbs	6
		Herbs	116
2.	Shrubs	Climbing& Twining shrubs	23
		Under Shrubs	17
		Shrubs	80
3.	Trees	Small Trees	24
		Trees	141
	<b>Total</b>		423



The garden is divided into sections viz., Aquatics, Arboretum-cum-mini forest, Bambusetum, Green House, Gymnosperms, Medicinal Plants, Ornamental Plants, Plant Introduction, RET species and Rosery. The medicinal and aromatic plant section is enriched with collections of *Abrus precatorius*, *Aegle marmelos*, *Aloe vera*, *Andrographis paniculata*, *Annona* spp., *Argyrea nervosa*, *Asparagus* spp., *Catharanthus roseus*, *Cocculus hirsutus*, *Hellenia speciosa*, *Curcuma caesia*, *Cymbopogon citratus*, *Diplocyclos palmatus*, *Gloriosa superba*, *Gymnema* spp., *Mimosa pudica*, *Piper* spp., *Ocimum* spp., *Solanum* spp., *Strychnos nux-vomica*, *Rauwolfia* spp., *Terminalia* spp., *Tinospora cordifolia*, *Wrightia* spp., *Zanthoxylum* spp. etc., offers the chance for

both interest and investigation in the fields of taxonomy, economic botany and plant diversity. The species conserved in the garden are enlisted in Table-1 along with their family name, botanical name, habit and phenology as per Benthom and Hooker's system of classification. Photo plates (1-4) of important plants of garden are also given.

RET (Rare, Endangered and Threatened) plant species are also conserved in the garden and propagation of the same is carried out for distribution to public to create awareness on conservation of native plants. Threatened plant species listed in Table-2 falling under the jurisdictional area of BSI, CRC, Prayagraj botanic garden are conserved for future research and multiplication. Annually, garden

attracts more than thousands of visitors comprising mainly students and researchers. Oldest existing tree in the garden is *Ficus bengalensis* L. aged more than

75 years with *ca.* 200 prop roots and 83 roots are already anchored on the earth.

**Table 1.** List of plants conserved in BSI, CRC, Prayagraj Garden

Sl. No	Family	Species	Habit	Fl. & Fr.
1.	DILLENACEAE	<i>Dillenia indica</i> L.	Small Tree	Feb.-April
2.	ANNONACEAE	<i>Annona muricata</i> L.	Tree	April - Sept.
3.		<i>Annona squamosa</i> L.	Small Tree	May-Jan.
4.		<i>Annona reticulata</i> L.	Tree	Feb.-April
5.		<i>Monoon longifolium</i> (Sonn.) B.Xue & R.M.K. Saunders	Tree	March - Sept.
6.		<i>Artabotrys hexapetalus</i> (L.f.) Bhandari	Climbing shrub	Sep.- Nov.
7.	MENISPERMACEAE	<i>Cissampelos pareira</i> L.	Climbing shrub	July- Oct.
8.		<i>Cocculus hirsutus</i> (L.) W. Theob	Climbing shrub	Aug. - Oct.
9.		<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Climbing shrub	Jan. - May
10.	NYMPHAEACEAE	<i>Nymphaea nouchali</i> Burm. f.	Aquatic herb	Throughout the year
11.		<i>Nymphaea pubescens</i> Willd.	Aquatic herb	Throughout the year
12.		<i>Nymphaea rubra</i> Roxb. ex Andrews	Aquatic herb	Throughout the year
13.	PAPARVERACEAE	<i>Argemone mexicana</i> L.	Herb	Jan. -April
14.		<i>Papaver rhoeas</i> L.	Herb	April- June
15.	BRASSICACEAE	<i>Rorippa indica</i> (L.) Hiem	Herb	April- June
16.	CAPPARACEAE	<i>Capparis sepiaria</i> L.	Scandent Shrub	March – Nov.
17.		<i>Capparis zeylanica</i> L.	Scandent Shrub	Feb. -Aug.
18.		<i>Crateva magna</i> (Lour.) DC.	Tree	March-Aug.
19.	CLEOMACEAE	<i>Cleome viscosa</i> L.	Herb	Throughout the year
20.	VIOLACEAE	<i>Afrohybanthus enneaspermus</i> (L.) Flicker	Herb	April - Sept.
21.	BIXACEAE	<i>Bixa orellana</i> L.	Small Tree	Aug. - Feb.
22.	FLACOURTIACEAE	<i>Casearia tomentosa</i> Roxb. ex Roxb.	Tree	Dec. - June
23.		<i>Flacourtia indica</i> (Burm. f.) Merr.	Small Tree	Dec. -Aug.
24.	CARYOPHYLLACEAE	<i>Stellaria media</i> (L.) Vill.	Herb	Oct. -April
25.	PORTULACACEAE	<i>Portulaca grandiflora</i> Hook.	Decumbent herb	Throughout the year
26.		<i>Portulaca oleracea</i> L.	Erect or prostrate herb	Throughout the year
27.		<i>Portulaca quadrifida</i> L.	Prostrate herb	Throughout the year
28.	DIPTEROCARPACEAE	<i>Dipterocarpus indicus</i> Bedd.	Tree	Introduced in FY 2025-26
29.	DIPTEROCARPACEAE	<i>Shorea robusta</i> C. F. Gaertn.	Tree	Feb. - July
30.	MALVACEAE	<i>Abelmoschus moschatus</i> Medik.	Undershrub	Oct. - Dec.
31.		<i>Abutilon indicum</i> (L.) Sweet	Undershrub	Sept. -April
32.		<i>Adansonia digitata</i> L.	Tree	April - Oct.
33.		<i>Bombax ceiba</i> L.	Tree	Feb. - May
34.		<i>Dombeya burgessiae</i> Gerrard ex Harv.	shrub	Jan. -April
35.		<i>Gossypium hirsutum</i> L.	Undershrub	Dec. -April
36.		<i>Helicteres isora</i> L.	shrub	April - Jan.

37.		<i>Heritiera fomes</i> Banks	Tree	Introduced in FY 2025-26
38.		<i>Hibiscus rosa-sinensis</i> L.	shrub	Throughout the year
39.		<i>Malvastrum coromandelianum</i> (L.) Garcke	Herb	Throughout the year
40.		<i>Sida acuta</i> Burm. f.	Herb	Sept. - May
41.		<i>Sida cordata</i> (Burm. f.) Borss.	Herb	Sept. - Nov.
42.		<i>Sida cordifolia</i> L.	Herb	Throughout the year
43.		<i>Sida rhombifolia</i> L.	Herb	July- Dec.
44.		<i>Theobroma cacao</i> L.	Tree	Introduced in FY 2025-26
45.		<i>Thepparatia fragrans</i> (Roxb.) Landrein	Shrub	Introduced in FY 2025-26
46.		<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Tree	July- Dec.
47.		<i>Urena lobata</i> L.	Undershrub	Aug. -Dec
48.		<i>Pterospermum acerifolium</i> (L.) Willd.	Tree	March - Dec.
49.		<i>Pterygota alata</i> (Roxb.) R. Br.	Tree	Dec. - March
50.		<i>Sterculia foetida</i> L.	Tree	Feb. -Aug.
51.		<i>Sterculia guttata</i> Roxb.	Tree	Introduced in FY 2025-26
52.		<i>Sterculia urens</i> Roxb.	Tree	Dec. - Sept.
53.	TILIACEAE	<i>Corchorus aestuans</i> L.	Herb	Aug. - Feb.
54.		<i>Grewia asiatica</i> L.	Small tree	Nov. - Sept.
55.		<i>Grewia serrulata</i> DC.	Tree	April- Jan.
56.	ZYGOPHYLLACEAE	<i>Guaiacum officinale</i> L.	Tree	March-May
57.	ELAEOCARPACEAE	<i>Elaeocarpus sphaericus</i> (Gaertn.) K. Schum.	Tree	Aug. - Feb.
58.	OXALIDACEAE	<i>Oxalis corniculata</i> L.	Herb	Throughout the year
59.		<i>Oxalis corymbosa</i> DC.	Herb	Sept. - March
60.		<i>Oxalis dehradunensis</i> Raizada	Herb	June - Nov.
61.	AVERRHOACEAE	<i>Averrhoa carambola</i> L.	Tree	May-Aug.
62.	BALSAMINACEAE	<i>Impatiens balsamina</i> L.	Herb	July- Oct.
63.	RUTACEAE	<i>Aegle marmelos</i> (L.) Correa.	Tree	March- Dec.
64.		<i>Citrus aurantiifolia</i> (Christm.) Swingle		Throughout the year
65.		<i>Citrus limon</i> (L.) Osbeck	Shrub	April - Sept.
66.		<i>Citrus maxima</i> (Burm.) Merr	Small tree	May- Oct.
67.		<i>Limonia acidissima</i> L.	Tree	March- Dec.
68.		<i>Berbera koenigii</i> L. (L.) Spreng	Shrub	March- July
69.		<i>Murraya paniculata</i> (L.) Jack	Shrub	Feb. - July
70.		<i>Naringi crenulata</i> (Roxb.) Nicolson	Tree	March- Aug.
71.		<i>Triphasia trifolia</i> (Burm.f.) P.Wilson	Shrub	Throughout the year
72.		<i>Ravenia spectabilis</i> (Lindi.) Planch. ex Griseb.	Shrub	Feb. - May
73.		<i>Zanthoxylum armatum</i> DC.	Shrub	Aug.-Oct.
74.		<i>Zanthoxylum asiaticum</i> (L.) Appelhans, Groppo & J.Wen	Shrub	Sept. - June
75.	SIMAROUBACEAE	<i>Ailanthus excelsa</i> Roxb.	Tree	Dec. - July
76.	BURSERACEAE	<i>Commiphora wightii</i> (Arn.) Bhandari	Shrub	Feb. - Nov.

77.	MELIACEAE	<i>Azadirachta indica</i> A. Juss.	Tree	Feb. - Sept.
78.		<i>Melia azedarach</i> L.	Tree	May- Dec
79.		<i>Swietenia macrophylla</i> King.	Tree	April - March
80.		<i>Swietenia mahagoni</i> (L.) Jacq.	Tree	April- Nov.
81.	RHAMNACEAE	<i>Ziziphus mauritiana</i> Lam.	Tree	Sept. - Nov.
82.		<i>Ziziphus oenoplia</i> (L.) Mill.	Shurb	Aug. - Dec.
83.	VITACEAE	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Climbing shrub	May-Nov.
84.		<i>Cissus quadrangularis</i> L.	Herbaceous rambler	June - Jan.
85.		<i>Caryatia trifolia</i> (L.) Domin.	Climbing shrub	Throughout the year
86.		<i>Vitis vinifera</i> L.	Climbing shrub	May – Aug.
87.	SAPINDACEAE	<i>Aesculus assamica</i> Griff.	Tree	Feb. -May
88.		<i>Litchi chinensis</i> Sonn.	Tree	May – Aug
89.		<i>Sapindus emarginatus</i> Vahl	Tree	Oct.-May
90.		<i>Sapindus laurifolius</i> Vahl.	Tree	Sept. - March
91.		<i>Schleichera oleosa</i> (Lour.) Oken.	Tree	Feb. - Nov.
92.	ANACARDIACEAE	<i>Buchanania lanzan</i> Spreng.	Tree	Jan. - May
93.		<i>Mangifera indica</i> L.	Tree	Feb. - May
94.		<i>Spondias pinnata</i> (L. f.) Kurz	Tree	April - Dec.
95.	MORINGACEAE	<i>Moringa oleifera</i> Lam.	Tree	Feb. -June
96.		<i>Abrus precatorius</i> L.	Climbing undershrub	Aug. - March
97.		<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	Tree	Aug.-May
98.		<i>Adenanthera pavonina</i> L.	Tree	March-Aug.
99.		<i>Albizia lebbek</i> (L.) Benth.	Tree	April-June
100.		<i>Albizia procera</i> (Roxb.) Benth.	Tree	May-Aug.
101.		<i>Bauhinia acuminata</i> L.	Tree	March-Sept.
102.		<i>Bauhinia purpurea</i> L.	Tree	Oct.-Feb.
103.		<i>Bauhinia racemosa</i> Lam.	Tree	April-June
104.		<i>Bauhinia variegata</i> L.	Tree	Jan.-March
105.		<i>Brownea coccinea</i> Jacq.	Tree	Introduced in FY 2025-26
106.		<i>Butea monosperma</i> (Lam.) Taub	Tree	Jan. -May
107.		<i>Caesalpinia pulcherrima</i> (L.) Sw.	Shrub	Feb.-Nov.
108.		<i>Calliandra haematocephala</i> Hassk.	Shrub	Throughout the year
109.		<i>Cassia fistula</i> L.	Tree	April-May
110.		<i>Clitoria ternatea</i> L.	Climbing herb	July- March
111.		<i>Crotalaria spectabilis</i> Roth.	Undershrub	Nov. - June
112.	<i>Dalbergia coromandeliana</i> Prain	Shrub	Introduced in FY 2025-26	
113.	FABACEAE	<i>Bauhinia rufescens</i> Lam.	Tree	Jan. - June
114.		<i>Dalbergia lanceolaria</i> L. f.	Tree	April - Jan.
115.		<i>Dalbergia latifolia</i> Roxb.	Tree	Jan.- March
116.		<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Tree	April-Aug.
117.		<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Tree	June -Aug.
118.		<i>Erythrina suberosa</i> Roxb.	Tree	March -April
119.		<i>Erythrina variegata</i> L.	Tree	April - Sept.
120.		<i>Hardwickia binata</i> Roxb.	Tree	Oct.-April

121.		<i>Lathyrus odoratus</i> L.	Climbing herb	Jan. - March
122.		<i>Lysiloma latisiliquum</i> (L.) Benth.	Tree	Aug.-Feb.
123.		<i>Melilotus alba</i> Medik.	Herb	Jan. -April
124.		<i>Millettia peguensis</i> Ali	Tree	Feb. -April
125.		<i>Mimosa pudica</i> L.	Herb	Aug.-March
126.		<i>Mucuna pruriens</i> (L.) DC.	Climbing undershrub	Sept.- May
127.		<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne	Tree	Jan.-June
128.		<i>Pterocanus santalinus</i> Blanco	Tree	Introduced in FY 2025-26
129.		<i>Phanera vahlii</i> (Wight & Arn.) Benth.	Woody Shrub	Sept.-Jan.
130.		<i>Pithecellobium dulce</i> (Roxb.) Benth.	Tree	Jan.-June
131.		<i>Pongamia pinnata</i> (L.) Pierre	Tree	July- Feb.
132.		<i>Prosopis cineraria</i> (L.) Druce	Tree	Dec.-May
133.		<i>Pterocarpus marsupium</i> Roxb.	Tree	July- March
134.		<i>Samanea saman</i> (Jacq.) Merr.	Tree	March-June
135.		<i>Saraca asoca</i> (Roxb.) W.J.de Wilde	Tree	Dec.-July
136.		<i>Senna alata</i> (L.) Roxb	Shrub	Oct.-March
137.		<i>Senna occidentalis</i> (L.) Link	Herb	Sept.-May
138.		<i>Sesbania grandiflora</i> (L.) Pers	Tree	Sept. - March
139.		<i>Tamarindus indica</i> L.	Tree	April-Aug.
140.		<i>Vachellia nilotica</i> subsp. <i>indica</i> (Benth.) Kyal. & Boatwr.	Tree	Aug.-April
141.	ROSACEAE	<i>Rosa</i> × <i>burboniana</i> (Thory) N.H.F.Desp.	Shrub	Oct.-April
142.		<i>Rosa</i> × <i>odorata</i> (Andrews) Sweet	Shrub	March-June
143.	CRASSULACEAE	<i>Kalanchoe blossfeldiana</i> Poelln.	Herb	Jan.-March
144.	COMBRETACEAE	<i>Combretum indicum</i> (L.) DeFilipps	Undershrub	March-July
145.		<i>Terminalia anogeissiana</i> Gere & Boatwr.	Tree	June-Sept.
146.		<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Tree	April-Nov.
147.		<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Tree	April-Dec.
148.		<i>Terminalia chebula</i> Retz.	Tree	March-Oct.
149.		<i>Terminalia elliptica</i> Willd.	Tree	March-Aug.
150.		<i>Terminalia muelleri</i> Benth.	Small Tree	May-June
151.	MYRTACEAE	<i>Eucalyptus tereticornis</i> Sm.	Tree	April-Aug.
152.		<i>Melaleuca citrina</i> (Curtis) Dum.Cours.	Shrub	Feb.-June
153.		<i>Psidium friedrichsthalianum</i> (O.Berg) Nied.	Small Tree	Nov.-Feb.
154.		<i>Psidium guajava</i> L.	Small Tree	April-Sept.
155.		<i>Syzygium caryophyllatum</i> (L.) Alston	Shrub	Introduced in FY 2025-26
156.		<i>Syzygium cumini</i> (L.) Skeels	Tree	Introduced in FY 2025-26
157.		<i>Syzygium salicifolium</i> J.Graham	Tree	Introduced in FY 2025-26
158.		<i>Syzygium stocksii</i> (Duthie) Gamble	Shrub	Introduced in FY 2025-26
159.	LECYTHIDACEAE	<i>Careya arborea</i> Roxb.	Tree	March-July
160.	LYTHRACEAE	<i>Lagerstroemia speciosa</i> (L.) Martyn	Tree	April-Sept.

161.		<i>Lawsonia inermis</i> L.	Shrub	April-Sept.
162.		<i>Punica granatum</i> L.	Shrub	Throughout the year
163.	MELASTOMATACEAE	<i>Memecylon intermedium</i> Blume	Tree	Introduced in FY 2025-26
164.	CARIACEAE	<i>Carica papaya</i> L.	Tree	Throughout the year
165.	CUCURBITACEAE	<i>Diplocyclos palmatus</i> (L.) C.Jeffrey	Climbing Herb	July -Nov.
166.		<i>Coccinia grandis</i> (L.) Voigt	Climbing Shrub	March-Dec.
167.		<i>Cucumis sativus</i> L.	Climbing Herb	March-Oct.
168.		<i>Cucumis melo</i> L.	Climbing Herb	June-Dec.
169.		<i>Trichosanthes cucumerina</i> subsp. <i>cucumerina</i>	Climbing Herb	May-Aug.
170.	CACTACEAE	<i>Opuntia elatior</i> Mill.	Succulent Shrub	March-Sept.
171.	APIACEAE	<i>Centella asiatica</i> (L.) Urb.	Trailing Herb	Feb.-Nov.
172.	RUBIACEAE	<i>Coffea arabica</i> L.	Shrub	March-Dec.
173.		<i>Gardenia gummifera</i> L.f.	Shrub	March-Nov.
174.		<i>Gardenia latifolia</i> Aiton	Tree	March-Dec.
175.		<i>Hamelia patens</i> Jacq.	Shrub	Throughout the year
176.		<i>Hymenodictyon orixense</i> (Roxb.) Mabb.	Tree	July-Feb.
177.		<i>Ixora barbata</i> Roxb. ex Sm.	Shrub	April-Dec.
178.		<i>Ixora chinensis</i> Lam.	Shrub	Feb.-Dec.
179.		<i>Ixora coccinea</i> L.	Shrub	Feb.-April
180.		<i>Mussaenda philippica</i> A.Rich.	Shrub	April-Sept.
181.		<i>Paederia foetida</i> L.	Twining Shrub	Aug.-Sept.
182.	ASTERACEAE	<i>Ageratum conyzoides</i> L.	Herb	Throughout the year
183.		<i>Blainvillea acmella</i> (L.) Philipson	Herb	Aug.-May
184.		<i>Blumea lacera</i> (Burm.f.) DC.	Herb	Jan.-April
185.		<i>Chrysanthemum indicum</i> L.	Herb	Sept.-Dec.
186.		<i>Cyanthillium cinereum</i> (L.) H.Rob.	Herb	Throughout the year
187.		<i>Eclipta prostrata</i> (L.) L.	Herb	Throughout the year
188.		<i>Elephantopus scaber</i> L.	Herb	Aug.-Jan.
189.		<i>Gamochaeta pensylvanica</i> (Willd.) Cabrera	Herb	Dec.-March
190.		<i>Launaea procumbens</i> (Roxb.) Ramayya & Rajagopal	Herb	Sept.-Jan.
191.		<i>Parthenium hysterophorus</i> L.	Herb	Throughout the year
192.		<i>Sonchus asper</i> (L.) Hill	Herb	March-Sept.
193.		<i>Sonchus oleraceus</i> L.	Herb	March-Dec.
194.		<i>Tagetes erecta</i> L.	Herb	Dec.-April
195.		<i>Tridax procumbens</i> L.	Herb	Throughout the year
196.	MENYANTHACEAE	<i>Nymphoides hydrophyllum</i> (Lour.) Kuntze	Herb	Throughout the year
197.	PLUMBAGINACEAE	<i>Plumbago zeylanica</i> L.	Undershrub	Aug.-Jan.
198.	PRIMULACEAE	<i>Bonellia nervosa</i> (C.Presl) B.Ståhl & Källersjö	Shrub	Feb.-April
199.		<i>Lysimachia arvensis</i> (L.) U.Manns & Anderb.	Herb	Nov.-April
200.	SAPOTACEAE	<i>Madhuca longifolia</i> (L.) J.F.Macbr.	Tree	Feb.-July
201.		<i>Manilkara hexandra</i> (Roxb.) Dubard	Tree	Oct.-May
202.		<i>Mimusops elengi</i> L.	Tree	April-Oct.

203.	EBENACEAE	<i>Diospyros malabarica</i> (Desr.) Kostel.	Tree	Throughout the year
204.		<i>Diospyros melanoxylon</i> Roxb.	Tree	Throughout the year
205.	OLEACEAE	<i>Jasminum arborescens</i> Roxb.	Shrub	March-May
206.		<i>Jasminum grandiflorum</i> L.	Shrub	Nov.-Feb.
207.		<i>Jasminum sambac</i> (L.) Aiton	Shrub	March-July
208.		<i>Nyctanthes arbor-tristis</i> L.	Small Tree	Sept.-Feb.
209.	APOCYNACEAE	<i>Alstonia scholaris</i> (L.) R.Br.	Tree	Dec.-March
210.		<i>Alstonia venenata</i> R.Br.	Tree	Introduced in FY 2025-26
211.		<i>Boucerosia frerei</i> (G.D.Rowley) Meve & Liede	Herb	Sept.-Jan.
212.		<i>Calotropis gigantea</i> (L.) W.T.Aiton	Shrub	Oct.-July
213.		<i>Calotropis procera</i> (Aiton) W.T.Aiton	Shrub	March-Aug.
214.		<i>Cascabela thevetia</i> (L.) Lippold	Shrub	Throughout Year
215.		<i>Catharanthus roseus</i> (L.) G.Don	Herb	Throughout Year
216.		<i>Cryptolepis buchananii</i> R.Br. ex Roem. & Schult.	Twining Shrub	May-Feb.
217.		<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	Twining Shrub	Oct.-Dec.
218.		<i>Hemidesmus indicus</i> (L.) R.Br.	Twining Shrub	Aug.-Jan.
219.		<i>Holarrhena pubescens</i> Wall. ex G.Don	Tree	May-Feb.
220.		<i>Nerium oleander</i> L.	Shrub	April-Jan.
221.		<i>Plumeria alba</i> L.	Small Tree	March-Sept.
222.		<i>Plumeria rubra</i> L.	Small Tree	March-Nov.
223.		<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Undershrub	May-Sept.
224.		<i>Rauwolfia tetraphylla</i> L.	Undershrub	April-June
225.		<i>Stephanotis volubilis</i> (L.f.) S.Reuss, Liede & Meve	Climbing Shrub	June-Feb.
226.		<i>Tabernaemontana divaricata</i> (L.) R.Br. ex Roem. & Schult.	Shrub	Throughout the year
227.		<i>Vincetoxicum hirsutum</i> (Wall.) Kuntze	Twining Shrub	April-July
228.		<i>Vincetoxicum indicum</i> (Burm.f.) Mabb.	Twining Undershrub	June-Sept.
229.	<i>Wrightia arborea</i> (Dennst.) Mabb.	Tree	March-June	
230.	<i>Wrightia tinctoria</i> (Roxb.) R.Br.	Tree	March-Oct.	
231.	LOGANIACEAE	<i>Strychnos nux-vomica</i> L.	Tree	March-Jan.
232.		<i>Strychnos potatorum</i> L.f.	Tree	Oct.-March
233.	BORAGINACEAE	<i>Cordia dichotoma</i> G.Forst.	Tree	March-Aug.
234.		<i>Cordia macleodii</i> (Griff.) Hook.f. & Thomson	Tree	Feb.-June
235.	CONVOLVULACEAE	<i>Argyrea nervosa</i> (Burm.f.) Bojer	Climbing Shrub	Aug.-April
236.		<i>Cuscuta reflexa</i> Roxb.	Twining Herb	Oct.-April
237.		<i>Evolvulus alsinoides</i> (L.) L.	Decumbent Herb	July-Jan.
238.	SOLANACEAE	<i>Cestrum nocturnum</i> L.	Shrub	Throughout the year
239.		<i>Nicotiana plumbaginifolia</i> Viv.	Herb	Sept.-May
240.		<i>Solanum nigrum</i> L.	Herb	Throughout the year
241.		<i>Withania somnifera</i> (L.) Dunal	Undershrub	Oct.-May
242.	PLANTAGINACEAE	<i>Scoparia dulcis</i> L.	Herb	July-Dec.
243.	BIGNONIACEAE	<i>Fernandoa adenophylla</i> (Wall. ex G.Don) Steenis	Tree	Aug.-April
244.		<i>Handroanthus impetiginosus</i> (Mart. ex DC.) Mattos	Tree	March-May

245.		<i>Kigelia africana</i> (Lam.) Benth.	Tree	April-Dec.
246.		<i>Oroxylum indicum</i> (L.) Kurz	Tree	June-March
247.		<i>Parmentiera cereifera</i> Seem.	Tree	
248.		<i>Tecoma stans</i> (L.) Juss. ex Kunth	Shrub	Feb.-Oct.
249.	MARTYNIACEAE	<i>Martynia annua</i> L.	Herb	Aug.-Dec.
250.	ACANTHACEAE	<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees	Herb	Dec.-July
251.		<i>Barleria cristata</i> L.	Undershrub	Oct.-March
252.		<i>Barleria prionitis</i> L.	Shrub	Oct.-May
253.		<i>Crossandra infundibuliformis</i> (L.) Nees	Undershrub	July-Oct.
254.		<i>Crossandra nilotica</i> Oliv.	Undershrub	July-Oct.
255.		<i>Elytraria acaulis</i> (L.f.) Lindau	Herb	Oct.-Jan.
256.		<i>Eranthemum pulchellum</i> Andrews	Shrub	Dec.-May
257.		<i>Justicia adhatoda</i> L.	Shrub	Dec.-March
258.		<i>Justicia gendarussa</i> Burm.f.	Shrub	March-Aug.
259.		<i>Ruellia tuberosa</i> L.	Herb	Aug.-April
260.	EUPHORBIACEAE	<i>Acalypha indica</i> L.	Herb	Aug- Feb
261.		<i>Croton bonplandianus</i> Baill.	Herb	May- March
262.		<i>Euphorbia antiquorum</i> L.	Shrub	Nov-Jan
263.		<i>Euphorbia hirta</i> L.	Herb	Throughout the year
264.		<i>Euphorbia tithymaloides</i> L.	Shrub	March-June
265.		<i>Jatropha curcas</i> L.	Shrub	May-Jan
266.		<i>Jatropha gossypifolia</i> L.	Shrub	Feb-Jun
267.		<i>Jatropha integerrima</i> Jacq.	Shrub	Throughout the year
268.		<i>Mallotus philippensis</i> (Lam.) Müll.Arg	Tree	Oct-March
269.		<i>Ricinus communis</i> L.	Shrub	Sept.-June
270.	OCHNACEAE	<i>Ochna obtusa</i> DC.	Tree	Feb.- March
271.	CLUSIACEAE	<i>Garcinia indica</i> (Thouars) Choisy	Tree	Introduced in FY 2025-26
272.		<i>Garcinia dhanikhariensis</i> S.K.Srivast.	Tree	Introduced in FY 2025-26
273.	ACHARIACEAE	<i>Hydnocarpus pentandrus</i> (Buch.-Ham.) Oken	Tree	Introduced in FY 2025-26
274.	CALOPHYLLACEAE	<i>Calophyllum inophyllum</i> L.	Tree	Introduced in FY 2025-26
275.	MALPIGHIACEAE	<i>Hiptage benghalensis</i> (L.) Kurz	Tree	Introduced in FY 2025-26
276.	PUTRANJIVACEAE	<i>Putranjiva roxburghii</i> Wall.	Tree	March- Oct
277.	PHYLLANTHACEAE	<i>Phyllanthus acidus</i> (L.) Skeels	Tree	May-July
278.		<i>Phyllanthus amarus</i> Schumach. & Thonn.	Herb	July-Dec
279.		<i>Phyllanthus emblica</i> L.	Tree	Feb-Dec
280.		<i>Phyllanthus urinaria</i> L.	Herb	July-Nov.
281.	CANNABACEAE	<i>Trema orientale</i> (L.) Blume	Shrub	Nov.-April

282.		<i>Cannabis sativa</i> L.	Herb	March-Nov.
283.	ULMACEAE	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Tree	Feb.-May
284.	MORACEAE	<i>Artocarpus heterophyllus</i> Lam.	Tree	Dec. - July
285.		<i>Artocarpus lacucha</i> Buch.-Ham.	Tree	Dec.-Aug.
286.		<i>Ficus benghalensis</i> L.	Tree	April-July
287.		<i>Ficus elastica</i> Roxb. ex Hornem.	Small Tree	Jan.-June
288.		<i>Ficus krishnae</i> C.DC.	Tree	Oct.-Jan.
289.		<i>Ficus hispida</i> L.f.	Small Tree	March-July
290.		<i>Ficus racemosa</i> L.	Tree	Feb.-June
291.		<i>Ficus religiosa</i> L.	Tree	March- Sept.
292.		<i>Ficus virens</i> Aiton	Tree	Dec.-June
293.		<i>Ficus benamina</i> L.	Tree	July-Dec.
294.		<i>Ficus maclellandii</i> King	Tree	May-June
295.		<i>Morus alba</i> L.	Small Tree	Jan.-May
296.		<i>Broussonetia papyrifera</i> (L.) L'Hér. Ex Vent.	Small Tree	Dec.-May
297.		LAMIACEAE	<i>Coleus amboinicus</i> Lour.	Herb
298.	<i>Mesosphaerum suaveolens</i> (L.) Kuntze		Undershrub	Oct.-Jan.
299.	<i>Ocimum basilicum</i> L.		Herb	Aug.-Feb.
300.	<i>Ocimum tenuiflorum</i> L.		Herb	Throughout the year
301.	<i>Salvia spinosa</i> subsp. <i>spinosa</i>		Undershrub	Sept.-Dec.
302.	<i>Clerodendrum indicum</i> (L.) Kuntze		Shrub	April-Dec.
303.	<i>Rotheca serrata</i> (L.) Steane & Mabb.		Shrub	July-Nov.
304.	<i>Gmelina arborea</i> Roxb. ex Sm.		Tree	Feb.-July
305.	<i>Tectona grandis</i> L.f.		Tree	Aug.-Jan.
306.	<i>Vitex negundo</i> L.		Shrub	June-Dec.
307.	<i>Vitex rotundifolia</i> L.f.		Shrub	June-Aug.
308.	VERBENACEAE	<i>Duranta erecta</i> L.	Shrub	Throughout the year
309.		<i>Lantana camara</i> L.	Shrub	Throughout the year
310.		<i>Petrea volubilis</i> L.	Climbing shrub	Feb.-April
311.	AMARANTHACEAE	<i>Achyranthes aspera</i> L.	Herb	Aug.-April

312.		<i>Aerva lanata</i> (L.) Juss. ex Schult.	Herb	Nov.-March
313.		<i>Alternanthera sessilis</i> (L.) DC.	Herb	Throughout the year
314.	NYCTAGINACEAE	<i>Boerhavia diffusa</i> L.	Herb	Aug.-March
315.		<i>Commicarpus chinensis</i> (L.) Heimerl	Herb	Aug.-April
316.		<i>Mirabilis jalapa</i> L.	Herb	Throughout the year
317.	BASELLACEAE	<i>Basella alba</i> L.	Herb	March-Dec.
318.	PETIVERIACEAE	<i>Rivina humilis</i> L.	Herb	Aug.-Jan.
319.	POLYGONACEAE	<i>Antigonon leptopus</i> Hook. & Arn.	Climbing undershrub	July- Dec.
320.		<i>Persicaria decipiens</i> (R.Br.) K.L.Wilson	Herb	Sept.-Feb.
321.	PIPERACEAE	<i>Piper longum</i> L.	Herb	June-Sept.
322.		<i>Piper nigrum</i> L.	Climbing undershrub	July- March
323.		<i>Piper retrofractum</i> Vahl	Scandent undershrub	Sept.-March
324.	LAURACEAE	<i>Beilschmiedia roxburghiana</i> Nees	Tree	March- May
325.		<i>Cinnamomum tamala</i> (Buch.-Ham.) T.Nees & C.H.Eberm.	Tree	May- Oct.
326.		<i>Cinnamomum verum</i> J.Presl	Tree	Introduced in FY 2025-26
327.		<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Small Tree	March-Nov.
328.	LORANTHACEAE	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	Parasitic shrub	Nov.-April
329.	SANTALACEAE	<i>Santalum album</i> L.	Small Tree	Oct.-April
330.	AMARYLLIDACEAE	<i>Allium tuberosum</i> Rottler ex Spreng.	Herb	Aug.-Sept.
331.	ASPHODELACEAE	<i>Aloe vera</i> (L.) Burm.f.	Succulent herb	Nov.- May
332.	ASPARAGACEAE	<i>Asparagus gonocladus</i> Baker	Straggling spiny undershrub	July-Nov.
333.		<i>Asparagus setaceus</i> (Kunth) Jessop	Herb	Oct.-Feb.
334.		<i>Asparagus racemosus</i> Willd.	Straggling spiny undershrub	June-Nov.
335.		<i>Chlorophytum arundinaceum</i> Baker	Herb	June-Sept.
336.		<i>Chlorophytum tuberosum</i> (Roxb.) Baker	Herb	May-Dec.
337.	COLCHICACEAE	<i>Gloriosa superba</i> L.	Climbing Herb	July-Nov.
338.	COMMELINACEAE	<i>Commelina benghalensis</i> L.	Herb	July-Dec.
339.		<i>Commelina caroliniana</i> Walter	Herb	Aug.-Nov.
340.		<i>Tradescantia spathacea</i> Sw.	Herb	Almost throughout the year
341.	ARECACEAE	<i>Adonidia merrillii</i> (Becc.) Becc.	Tree	Introduced in FY 2025-26

342.		<i>Areca triandra</i> Roxb. ex Buch.-Ham.	Small Tree	Introduced in FY 2025-26
343.		<i>Bentinckia condapanna</i> Berry ex Roxb.	Tree	Introduced in FY 2025-26
344.		<i>Bentinckia nicobarica</i> (Kurz) Becc.	Tree	Introduced in FY 2025-26
345.		<i>Borassus flabellifer</i> L.	Tree	March-Oct.
346.		<i>Calamus tenuis</i> Roxb	Shrub	July- Dec.
347.		<i>Caryota urens</i> L.	Tree	April-Oct.
348.		<i>Chrysalidocarpus lutescens</i> H.Wendl.	Shrub	Sept.-Jan.
349.		<i>Livistona chinensis</i> (Jacq.) R.Br. ex Mart.	Tree	Dec.-June
350.		<i>Phoenix acaulis</i> Roxb.	Small Tree	Feb.-July
351.		<i>Phoenix sylvestris</i> (L.) Roxb.	Tree	Jan.-Oct.
352.		<i>Roystonea regia</i> (Kunth) O.F.Cook	Tree	Sept.-June
353.	PANDANACEAE	<i>Pandanus leram</i> Jones ex R.Millar	Tree	Introduced in FY 2025-26
354.		<i>Pandanus utilis</i> Bory	Shrub	April-Aug.
355.	ACORACEAE	<i>Acorus calamus</i> L.	Rhizomatous Herb	Feb.June
356.	ARACEAE	<i>Colocasia esculenta</i> (L.) Schott	Herb	Aug.-Nov.
357.		<i>Monstera deliciosa</i> Liebm.	Straggling shrub	Sept.-Dec.
358.		<i>Pistia stratiotes</i> L.	Herb	Nov.-Jan.
359.		<i>Typhonium trilobatum</i> (L.) Schott	Herb	April-Sept.
360.		<i>Lemna gibba</i> L.	Tiny aquatic herb	Sept.-Dec.
361.		<i>Wolffia arrhiza</i> (L.) Horkel ex Wimm.	Small aquatic herb	July-Nov.
362.	CYPERACEAE	<i>Cyperus alternifolius</i> L.	Herb	July-Oct.
363.		<i>Cyperus compressus</i> L.	Herb	July-Oct.
364.		<i>Cyperus difformis</i> L.	Herb	Aug.-Dec.
365.		<i>Cyperus rotundus</i> L.	Rhizomatous herb	June-Dec.
366.		<i>Fimbristylis dichotoma</i> (L.) Vahl	Herb	May-Oct.
367.		<i>Cyperus mindorensis</i> (Steud.) Huygh	Herb	June- Aug.
368.		<i>Cyperus dubius</i> Rottb.	Herb	Aug.- Oct.
369.	ORCHIDACEAE	<i>Vanda tessellata</i> (Roxb.) Hook. ex G.Don	Herb	March-Oct.
370.		<i>Rhynchostylis retusa</i> (L.) Blume	Herb	May-Aug.
371.	POACEAE	<i>Acrachne racemosa</i> (B. Heyne ex	Herb	July-Dec

		Roem. &Schult.) Ohwi		
372.		<i>Apluda mutica</i> L.	Herb	Oct-March
373.		<i>Aristida adscensionis</i> L.	Herb	Aug. -Jan.
374.		<i>Bambusa bambos</i> (L.) Voss	Shrub	Flowering not reported under cultivation
375.		<i>Bambusa nutans</i> Wall. ex Munro	Shrub	Flowering not reported under cultivation
376.		<i>Bambusa tulda</i> Roxb	Shrub	Flowering not reported under cultivation
377.		<i>Bambusa vulgaris</i> Schrad. ex J.C. Wendi.	Shrub	Flowering not reported under cultivation
378.		<i>Bothriochloa bladhii</i> (Retz.) S. T. Blake	Herb	Sept. - Jan
379.		<i>Chloris barbata</i> Sw.	Herb	Sept. - Dec.
380.		<i>Cymbopogon citratus</i> (DC.) Stapf	Herb	Oct.-Dec.
381.		<i>Cynodon dactylon</i> (L.) Pers.	Herb	Oct.-Dec.
382.		<i>Dactyloctenium aegyptium</i> (L.) Willd.	Herb	Almost throughout the year
383.		<i>Dendrocalamus strictus</i> (Roxb.) Nees	Herb	Nov.-June
384.		<i>Digitaria abludens</i> (Roem. & Schult.) Veldkamp	Herb	Sept.-Nov
385.		<i>Digitaria ciliaris</i> (Retz.) Koeler	Herb	Aug.-Nov
386.		<i>Digitaria sanguinalis</i> (L.) Scop.	Herb	Sept. - Dec
387.		<i>Echinochloa colona</i> (L.) Link	Herb	July- Dec.
388.		<i>Eragrostis ciliaris</i> (L.) R. Br.	Herb	Aug.-Dec.
389.		<i>Paspalidium flavidum</i> (Retz.) A. Camus	Herb	July-Nov
390.		<i>Setaria verticillata</i> (L.) P. Beauv.	Herb	Sept.-Dec.
391.		<i>Vetiveria zizanioides</i> (L.) Nash	Herb	Aug. - Jan.
392.	ZINGIBERACEAE	<i>Alpinia calcarata</i> (Andrews) Roscoe	Herb	Dec.-June
393.		<i>Amomum subulatum</i> Roxb.	Rhizomatous herb	April-Aug.
394.		<i>Curcuma caesia</i> Roxb.	Rhizomatous herb	May-Aug.
395.		<i>Curcuma longa</i> L.	Rhizomatous herb	Aug.-Dec.
396.		<i>Globba marantina</i> L.	Herb	May-Aug.
397.		<i>Hedychium coronarium</i> J. Koenig	Herb	May-Oct.
398.		<i>Kaempferia angustifolia</i> Roscoe	Herb	July-Nov.
399.		<i>Zingiber roseum</i> (Roxb.) Roscoe	Herb	Aug.-Nov.
400.		<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm.	Herb	Aug.-Oct.
401.	COSTACEAE	<i>Costus pictus</i> D.Don	Herb	May-Nov.
402.		<i>Hellenia speciosa</i> (J.Koenig) S.R.Dutta	Herb	Aug.-Jan.
403.	MUSACEAE	<i>Musa × paradisiaca</i> L.	Shrub	March-Sept.
404.	STRELITZIACEAE	<i>Ravenala madagascariensis</i> Sonn.	Tree	Aug.-Dec.
405.	CANNACEAE	<i>Canna indica</i> L.	Herb	Throughout the year

406.	AMARYLLIDACEAE	<i>Crinum asiaticum</i> L.	Herb	June-Dec.
407.	HYPOXIDACEAE	<i>Curculigo orchioides</i> Gaertn.	Rhizomatous herb	June-Sept.
408.	ASPARAGACEAE	<i>Agave americana</i> L.	Shrub	Feb.-May
409.		<i>Dracaena fragrans</i> (L.) Ker Gawl.	Shrub	June-Sept.
410.		<i>Dracaena angolensis</i> (Welw. ex Carrière) Byng & Christenh.	Herb	Dec.-March
411.		<i>Yucca gloriosa</i> L.	Shrub	Aug.-Jan.
412.	DIOSCOREACEAE	<i>Dioscorea bulbifera</i> L.	Climbing herb	Aug.-Dec.
413.		<i>Dioscorea hispida</i> Dennst.	Spiny climbing undershrub	June-Nov.
414.	CASUARINACEAE	<i>Casuarina equisetifolia</i> L.	Tree	Feb.-July
415.	ARAUCARIACEAE	<i>Agathis robusta</i> (C.Moore ex F.Muell.) F.M.Bailey	Tree	Flowering not reported under cultivation
416.	ARAUCARIACEAE	<i>Araucaria cunninghamii</i> Mudie	Tree	Flowering not reported under cultivation
417.	CUPRESSACEAE	<i>Platycladus orientalis</i> (L.) Franco	Shrub	Aug.- Dec.
418.	CYCADACEAE	<i>Cycas riuminiana</i> M.Porte ex Regel	Small Tree	Dec.-June
419.		<i>Cycas revoluta</i> Thunb.	Small Tree	April-June
420.		<i>Cycas rumphii</i> Miq.	Small Tree	April-June
421.	ZAMIACEAE	<i>Zamia integrifolia</i> L.f.	Shrub	Throughout the year
422.		<i>Zamia pumila</i> L.	Shrub	Throughout the year
423.		<i>Zamia furfuracea</i> L.f. ex Aiton	Shrub	Throughout the year

**Table 2.** Threatened plants of CRC garden

1.	<i>Abrus precatorius</i> L. - Near Threatened in MP& CG
2.	<i>Acorus calamus</i> L.- Endangered in Chhattisgarh& MP
3.	<i>Andrographis paniculata</i> (Burm.f.)Nees - Vulnerable in CG & MP
4.	<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. - Near Threatened in MP
5.	<i>Asparagus racemosus</i> Willd. - Near Threatened in MP& CG
6.	<i>Borassus flabellifer</i> L.- Vulnerable in entire India
7.	<i>Buchanania lanzan</i> Spreng- Near Threatened in MP
8.	<i>Careya arborea</i> Roxb. - Vulnerable in MP
9.	<i>Chlorophytum tuberosum</i> (Roxb.) Baker
10.	<i>Commiphora wightii</i> (Arn.) Bhandari- Critically Endangered in MP
11.	<i>Cordia macleodii</i> Hook.f. & Thomson-Endangered in MP
12.	<i>Dalbergia latifolia</i> Roxb. - Vulnerable in MP
13.	<i>Dichrostachys cinerea</i> Wight& Arn. - Vulnerable in MP
14.	<i>Garcinia indica</i> (Thouars) Choisy- Vulnerable in India
15.	<i>Gloriosa superba</i> L. – Vulnerable in Chhattisgarh& MP
16.	<i>Gmelina arborea</i> Roxb. - Vulnerable in MP

17.	<i>Grewia asiatica</i> L.- Critically Endangered in MP
18.	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm. - Vulnerable in MP &CG
19.	<i>Hydnocarpus pentandrus</i> (Buch.-Ham.) Oken- Vulnerable in India
20.	<i>Hymenodictyon orixense</i> (Roxb.) Mabb- Near Threatened in MP
21.	<i>Oroxylum indicum</i> (L.) Kurz - Vulnerable in MP
22.	<i>Phyllanthus emblica</i> L. - Vulnerable in MP &CG
23.	<i>Piper longum</i> L. - Vulnerable in CG
24.	<i>Plumbago zeylanica</i> L. - Vulnerable in MP &CG
25.	<i>Pterocarpus marsupium</i> Roxb. - Vulnerable in MP
26.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz- Vulnerable in MP &CG
27.	<i>Santalum album</i> L.- Vulnerable in entire India
28.	<i>Saraca asoca</i> (Roxb.) Willd.- Vulnerable
29.	<i>Schleichera oleosa</i> (Lour.) Merr- Near Threatened in MP
30.	<i>Spondias pinnata</i> (L.f.) Kurz- Near Threatened in MP
31.	<i>Sterculia urens</i> Roxb. - Vulnerable in MP
32.	<i>Terminalia anogeissiana</i> Gere & Boatwr. - Near Threatened in MP& CG
33.	<i>Terminalia chebula</i> Retz- Near Threatened in MP
34.	<i>Wrightia arborea</i> (Dennst.) Mabb.
35.	<i>Wrightia tinctoria</i> (Roxb.) R.Br.- Vulnerable in MP
36.	<i>Xanthoxylum armatum</i> DC.– Endangered for Central India

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## RESEARCH ARTICLE

### CHECKLIST OF IUCN REDLISTED THREATENED PLANTS OF KERALA

Shareef S. M.<sup>1\*</sup> and Santhosh Kumar E.S.<sup>2</sup>

Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Karimancode P.O.,  
Thiruvananthapuram, Kerala – 695 562  
Email: smshariftbgri@gmail.com

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**Abstract:** Threatened plants are species at high risk of extinction due to habitat loss and fragmentation, overexploitation, environmental change, invasive species, and other anthropogenic pressures, and are classified as Critically Endangered, Endangered, or Vulnerable under the Red List framework of the IUCN. This study presents a comprehensive state-level synthesis of IUCN-listed threatened plant species in Kerala based on the latest global assessments (version 2025-2). A total of 273 threatened species were documented, comprising 267 angiosperms, 4 gymnosperms, and 2 pteridophytes, with Lauraceae, Myrtaceae, and Rubiaceae as the most represented families. Of these, 45 species are Critically Endangered, 109 Endangered, and 118 Vulnerable, with 52 species endemics to Kerala, providing an updated baseline for conservation prioritisation in the state.

**Keywords:** Threatened plants, Extinction Risk, IUCN Red List, Kerala

#### INTRODUCTION

Threatened plants are species that face a high risk of extinction in the wild owing to factors such as habitat loss and fragmentation, overexploitation, restricted geographic distribution, environmental change, pollution, disease, invasive alien species and other anthropogenic pressures. These species are classified under the threatened categories of the IUCN Red List—Critically Endangered, Endangered, and Vulnerable—based on rigorous, standardised scientific assessments of population trends, distribution, and extinction risk.

The International Union for Conservation of Nature and Natural Resources (IUCN), established in 1948, is a global conservation organisation that brings together governments, non-governmental organisations (NGOs), scientists, and other experts. It aims to conserve nature and biodiversity through scientific assessments, policy guidance, the promotion of sustainable resource use and international cooperation. The organisation is best known for publishing the IUCN Red List of Threatened Species, the world's most comprehensive inventory of the global conservation status of animal, fungal and plant species.

The first formal documentation of threatened plant species by the IUCN was “The IUCN Plant Red Data Book 1978” (published in 1980), as loose-leaf data sheets covering 250 threatened species. This publication included four indigenous Indian plant species, among them, *Paphiopedilum druryi*, marking the first inclusion of a plant species from

Kerala within the IUCN Red List framework. Subsequently, the IUCN published a global compendium of Threatened Plants entitled “1997 IUCN Red List of Threatened Plants”, based on the pre-1994 IUCN categories. This list covered 33,798 vascular plant species of under different threat categories from different parts of the world, including 1236 threatened plants from India, excluding 19 Indian species ‘Extinct’ (IUCN, 1998). By 2000, the IUCN shifted from printed version toward annual digital Red List updates through its online platform (<https://www.iucnredlist.org>), which provides comprehensive global coverage of assessed species, the latest version was released in 2025 (IUCN Red List, 2025). The IUCN Red List of Threatened Species strives to provide up-to-date conservation status assessments for species worldwide. At present, the IUCN Red List includes over 172,600 assessed species, of which more than 48,600 are threatened with extinction. As of 2025, more than 76,441 plant species have been assessed (IUCN, 2025), representing only a fraction of the world's documented plant diversity.

Between 1980 and 2003, several Indian botanists published authoritative studies on the endemic and threatened flora of India, notably *Threatened Plants of India* (Jain & Sastry, 1980, 1983, 1984) and the *Red Data Book of Indian Plants*, Volumes 1–3 (Nayar & Sastry, 1987, 1988, 1990). Subsequently, the Botanical Survey of India published the *Red List of Threatened Vascular Plants of India*, based on the 1997 IUCN Red List of Threatened Plants, which

\*Corresponding Author

documented 1,236 threatened vascular plant species from India (Rao *et al.*, 2003).

India is recognised as one of the richest and most biologically diverse countries in the world, ranking among the 17 mega-diverse nations globally and harbouring approximately 14% of the world's known plant species. A recent enumeration revealed that India's plant diversity comprises approximately 56,177 species, including 22,368 angiosperms, 15,986 fungi, 9,117 algae, 2,850 bryophytes, 3,151 lichens, 1,297 microbes, 1,325 pteridophytes and 83 gymnosperms (Mao *et al.*, 2025), all occurring within 2.4% of the global landmass. Several additional species were added to this list in 2025, including *Begonia nyishiorum*, *Hoya dawodiensis*, *Koenigia arunachalensis*, *Chlorophytum vanapushpam*, *Crassicaulis middletonii*, *Ophiorrhiza mizoramensis*, *Portulaca bharat*, *Townsendia hirtella*, etc.

In the absence of a recent comprehensive national Red List for India, scientists and conservationists generally rely on the online version of the IUCN Red List of Threatened Species to determine the current conservation status of Indian taxa. In this context, Kumar *et al.* (2021) published a brief analysis of IUCN Red listed threatened plants of India based on the 2020 update (version 2020-2) which documented 416 angiosperms, 12 Gymnosperms, 2 Pteridophytes, 7 Bryophytes and 1 fungal species. This work prompted the present study to compile a state-wise IUCN Red Listed threatened plants of Kerala based on the most recent IUCN Red List update (version 2025-2) focusing on the threatened angiosperms, gymnosperms, and pteridophytes occurring in the state.

Kerala, a south-western state of Peninsular India, lies between the Arabian Sea and the Western Ghats along the western coast. The state is endowed with dense tropical rainforests that support an exceptionally rich and distinctive flora with a high degree of endemism. Comprehensive floristic studies have documented approximately 4,681 species of flowering plants within the political boundaries of

Kerala, including 4,176 indigenous species (Sasidharan, 2004; Nayar *et al.*, 2006). Building on these floristic accounts, Nayar *et al.* (2008) reported that, of the 4,176 indigenous angiosperms recorded from Kerala, 163 species were categorised as 'threatened' and four as 'extinct' according to the IUCN Red List categories then in use.

Since these assessments, accelerating habitat loss, land-use change, overexploitation, biological invasions, and climate change have increasingly threatened the state's plant diversity, resulting in the inclusion of additional species in the threatened categories of the IUCN Red List in subsequent assessments. Furthermore, continued botanical exploration in Kerala has led to the discovery and description of several additional plant species, including *Humboldtia pomudiana*, *Buchanania palodensis*, *B. abrahamiana*, *Madhuca balakrishnani*, *Syzygium abrahamianum*, *Uniyala keralensis*, *Fimbristylis agasthyamalaensis*, *Peperomia vellarimalica*, *Ophiorrhiza echinata*, *O. sasidhaniana*, *Chlorophytum vanapushpam*, *Arundinella pradeepiana*, *Rungia longifolia* subsp. *keralensis*, *Syzygium sasidharanii*, *Eugenia kalamii*, *E. sphaerocarpa*, *E. cruciformis*, etc.

## MATERIALS AND METHODS

The list was prepared based on the analysis of IUCN Red Listed threatened plants of India by Kumar *et al.* (2021). Each species included in the list was re-examined, and its conservation status and distribution were verified and updated using the online IUCN Red List of Threatened Species (version 2025-2). Recently assessed species were also incorporated in the present list. Species distributions were further validated with standard floristic references, including "Biodiversity Documentation for Kerala: Part 6 – Flowering Plants" (Sasidharan, 2004), "Flowering Plants of Kerala" (Nayar *et al.*, 2006), "Flowering Plants of the Western Ghats" (Nayar *et al.*, 2014), and other relevant recent publications.

**Table 1:** Threatened Plants of Kerala According to the IUCN Red List (Version 2025-2)

Sl. No.	Scientific Name	Family	Distribution	IUCN category	Red list criteria	Criteria version	Assessment Year
<b>Angiosperms</b>							
1.	<i>Strobilanthes ciliata</i> Nees*	Acanthaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	A2cd	3.1	2014
2.	<i>Strobilanthes kunthiana</i> (Nees) T.Anderson ex Benth.*	Acanthaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	A2c	3.1	2024
3.	<i>Hydnocarpus alpinus</i> Wight*	Achariaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu)	VU	D1	3.1	2020
4.	<i>Hydnocarpus macrocarpus</i> (Bedd.) Warb.*	Achariaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	3.1	1998
5.	<i>Hydnocarpus pentandrus</i> (Buch. -Ham.) Oken*	Achariaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu, Karaikal, Goa)	VU	A2cd	3.1	2014
6.	<i>Crinum malabaricum</i> Lekhak & S.R.Yadav*	Amaryllidaceae	India (Kerala)	CR	B1ab(iii,v)+2ab(iii,v)	3.1	2015

7.	<i>Buchanania barberi</i> Gamble*	Anacardiaceae	India (Kerala)	CR	B2ab(iii,v); C2a(i,ii); D	3.1	2022
8.	<i>Buchanania lanceolata</i> Wight*	Anacardiaceae	India (Kerala)	VU	B1+2c.	2.3	1998
9.	<i>Gluta travancorica</i> Bedd. *	Anacardiaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii,v)+ 2ab(iii,v)	3.1	2023
10.	<i>Nothopegia aureofulva</i> Bedd. ex Hook.f.*	Anacardiaceae	India (Tamil Nadu, Kerala)	EN	B1ab(i,ii,iii) + 2ab(i,ii,iii)	3.1	2025
11.	<i>Nothopegia beddomei</i> var. <i>wynaadica</i> J.L.Ellis & V.Chandras.	Anacardiaceae	India (Kerala)	EN	B1+2c	2.3	1998
12.	<i>Goniothalamus rhynchantherus</i> Dunn*.	Annonaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2022
13.	<i>Milusa nilagirica</i> Bedd.	Annonaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
14.	<i>Milusa wayanadica</i> Sujanapal <i>et</i> <i>al.</i>	Annonaceae	India (Kerala)	VU	D2	3.1	2023
15.	<i>Monoon shendurunii</i> (Basha & Sasidh.) B.Xue & R.M.K.Saunders*	Annonaceae	India (Kerala)	EN	B1+2c	2.3	1998
16.	<i>Orophea thomsonii</i> Bedd. *	Annonaceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii)+ 2ab(iii)	3.1	2020
17.	<i>Orophea zeylanica</i> Hook.f. & Thomson*	Annonaceae	India (Karnataka, Kerala), Sri Lanka	VU	B2ab(iii)	3.1	2023
18.	<i>Polyalthia rufescens</i> Hook.f.	Annonaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
19.	<i>Popowea beddomeana</i> Hook.f. & Thomson*	Annonaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
20.	<i>Bouceosia indica</i> (Wight & Arn.) Plowes	Apocynaceae	India (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu), Sri Lanka	VU	B2ab(iii)	3.1	2023
21.	<i>Decalepis hamiltonii</i> Wight & Arn. *	Apocynaceae	India (Andhra Pradesh, Kerala, Kerala, Tamil Nadu)	EN	A2cd	3.1	2014
22.	<i>Decalepis salicifolia</i> (Bedd. ex Hook.f.) Bruyns	Apocynaceae	India (Laccadive Islands, Tamil Nadu, Kerala)	CR	B2ab(ii,iii)	3.1	2014
23.	<i>Ilex gardneriana</i> Wight	Aquifoliaceae	India (Tamil Nadu, Kerala)	CR	D	3.1	2019
24.	<i>Amorphophallus smithsonianus</i> Sivadasan	Araceae	India (Kerala)	VU	D2	3.1	2024
25.	<i>Cryptocoryne sivadasanii</i> Bogner	Araceae	India (Karnataka, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2021
26.	<i>Aralia malabarica</i> Bedd.	Araliaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
27.	<i>Heptapleurum bourdillonii</i> (Gamble) Lowry & G.M. Plunkett	Araliaceae	India (Kerala)	EN	B1+2c	2.3	1998
28.	<i>Arenga wightii</i> Griff*	Arecaceae	India (Karnataka, Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
29.	<i>Bentinckia condapanna</i> Berry ex Roxb. *	Arecaceae	India (Tamil Nadu, Kerala)	EN	B2ab (iii, v)	3.1	2025
30.	<i>Anaphalis beddomei</i> Hook.f.	Asteraceae	India (Tamil Nadu, Kerala)	VU	B1ab(ii,iii)	3.1	2010
31.	<i>Anaphalis leptophylla</i> DC.	Asteraceae	India (Tamil Nadu, Kerala)	VU	B2ab(ii,iii)	3.1	2010
32.	<i>Anaphalis wightiana</i> DC.	Asteraceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B2ab(ii,iii)	3.1	2010
33.	<i>Impatiens parasitica</i> Bedd.	Balsaminaceae	India (Tamil Nadu, Kerala)	VU	A2c	3.1	2024
34.	<i>Ehretia wightiana</i> Wall. ex G.Don	Boraginaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B2ab(iii)	3.1	2023
35.	<i>Calophyllum apetalum</i> Willd. *	Calophyllaceae	India (Karnataka, Kerala, Maharashtra, Tamil Nadu)	VU	A2cd	3.1	2014
36.	<i>Valeriana leschenaultii</i> DC.	Caprifoliaceae	India (Tamil Nadu, Kerala)	CR	B2ab(iii)	3.1	2014
37.	<i>Euonymus acutangulus</i> Wight	Celastraceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c	2.3	1998
38.	<i>Microtropis densiflora</i> Wight	Celastraceae	India (Kerala)	EN	B1+2c	2.3	1998
39.	<i>Salacia oblonga</i> Wall*	Celastraceae	India (Andhra Pradesh, Goa, Karnataka, Kerala, Tamil Nadu)	VU	A2cd	3.1	2014
40.	<i>Atuna travancorica</i> (Bedd.) Kosterm. *	Chrysobalanacea e	India (Tamil Nadu, Kerala)	CR	A2c; C2a(i)	3.1	2023
41.	<i>Poeciloneuron pauciflorum</i> Bedd. *	Clusiaceae	India (Tamil Nadu,	CR	B1+2c	2.3	1998

			Kerala)				
42.	<i>Garcinia gamblei</i> Shameer <i>et al.</i>	Clusiaceae	India (Kerala)	CR	B1ab(iii,v)+ 2ab (iii,v); C2a(i,ii); D	3.1	2025
43.	<i>Garcinia imbertii</i> Bourd. *	Clusiaceae	India (Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2020
44.	<i>Garcinia indica</i> (Thouars) Choisy*	Clusiaceae	India (Karnataka, Kerala)	VU	A2cd	3.1	2014
45.	<i>Garcinia rubroechinata</i> Kosterm.	Clusiaceae	India (Tamil Nadu, Kerala)	EN	D	3.1	2020
46.	<i>Garcinia travancorica</i> Bedd.	Clusiaceae	India (Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2020
47.	<i>Garcinia wightii</i> T.Anderson*	Clusiaceae	India (Tamil Nadu, Kerala)	EN	D	3.1	2020
48.	<i>Murdannia lanceolata</i> (Wight) Kammathy	Commelinaceae	India (Tamil Nadu, Kerala)	VU	D2	3.1	2010
49.	<i>Dipterocarpus bourdillonii</i> Brandis*	Dipterocarpaceae	India (Karnataka, Kerala, Tamil Nadu)	CR	C2a(i)	3.1	2020
50.	<i>Dipterocarpus indicus</i> Bedd. *	Dipterocarpaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	C2a(i)	3.1	2020
51.	<i>Hopea erosa</i> (Bedd.) Slooten*	Dipterocarpaceae	India (Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2020
52.	<i>Hopea glabra</i> Wight & Arn.	Dipterocarpaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	C2a(i); D	3.1	2021
53.	<i>Hopea ponga</i> (Dennst.) Mabb.*	Dipterocarpaceae	India (Karnataka, Kerala, Tamil Nadu, Goa, Maharashtra)	VU	A2c	3.1	2020
54.	<i>Hopea racophloea</i> Dyer*	Dipterocarpaceae	India (Karnataka, Kerala)	EN	C2a(i)	3.1	2021
55.	<i>Hopea utilis</i> (Bedd.) Bole	Dipterocarpaceae	India (Tamil Nadu, Kerala)	EN	B1ab(ii,iii,v) +2ab(ii,iii,v); C2a(i); D	3.1	2021
56.	<i>Vateria indica</i> L.*	Dipterocarpaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu.)	VU	A2cd	3.1	2019
57.	<i>Vateria macrocarpa</i> B.L. Gupta	Dipterocarpaceae	India (Kerala)	CR	B1ab(iii,v)	3.1	2021
58.	<i>Vatica chinensis</i> L.*	Dipterocarpaceae	Karnataka, Kerala	EN	A2c+3c	3.1	2020
59.	<i>Diospyros atrata</i> (Thwaites) Alston	Ebenaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
60.	<i>Diospyros barberi</i> Ramaswami	Ebenaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
61.	<i>Diospyros candolleana</i> Thwaites*	Ebenaceae	India (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Goa, Maharashtra, Orissa)	VU	A2cd	3.1	2014
62.	<i>Diospyros crumenata</i> Thwaites*	Ebenaceae	India (Andaman & Nicobar Islands, Maharashtra, Karnataka, Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2022
63.	<i>Diospyros paniculata</i> Dalzell*	Ebenaceae	India (Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu)	VU	A2cd	3.1	2014
64.	<i>Diospyros trichophylla</i> Alston	Ebenaceae	India Andaman-Nicobar Islands, Kerala), Sri Lanka	VU	A1c, B1+2c.	2.3	1998
65.	<i>Elaeocarpus gausenii</i> Weibel	Elaeocarpaceae	India (Tamil Nadu, Kerala)	CR	B1ab(iii)+ 2ab(iii); D	3.1	2021
66.	<i>Elaeocarpus recurvatus</i> Corner	Elaeocarpaceae	India (Tamil Nadu, Kerala)	EN	A2c	3.1	2024
67.	<i>Elaeocarpus venustus</i> Bedd.	Elaeocarpaceae	India (Tamil Nadu, Kerala)	CR	B1ab(iii,v)	3.1	2022
68.	<i>Elaeocarpus weibelii</i> (Zmarzty) Shareef <i>et al.</i> *	Elaeocarpaceae	India (Karnataka, Kerala)	EN	B2ab(iii)	3.1	2023
69.	<i>Eriocaulon pectinatum</i> Ruhland	Eriocaulaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2010
70.	<i>Eriocaulon richardianum</i> (Fyson) R.Ansari & N.P. Balakr.	Eriocaulaceae	India (Karnataka, Kerala)	EN	B2ab(ii,iii)	3.1	2010
71.	<i>Eriocaulon sivarajanii</i> R.Ansari & N.P. Balakr.	Eriocaulaceae	India (Kerala)	CR	B1ab(iii)+ 2ab(iii)	3.1	2010
72.	<i>Tritaxis beddomei</i> Benth.	Euphorbiaceae	India (Tamil Nadu, Kerala)	EN	B1ab(i,iii)	3.1	2019
73.	<i>Euphorbia santapau</i> A.N.Henry	Euphorbiaceae	India (Tamil Nadu, Kerala)	EN	B1+2cd	2.3	1998

74.	<i>Euphorbia vajravelui</i> Binojk. & N.P. Balakr. *	Euphorbiaceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii)+2ab(iii); D	3.1	2021
75.	<i>Archidendron bigeminum</i> (L.) I.C.Nielsen*	Fabaceae	Indian Subcontinent, Nicobar Islands	VU	B1+2c	2.3	1998
76.	<i>Cynometra beddomei</i> Prain*	Fabaceae	India (Karnataka, Kerala)	EN	D	3.1	2018
77.	<i>Cynometra bourdillonii</i> Gamble*	Fabaceae	India (Karnataka, Kerala)	EN	B2ab(iii)	3.1	2023
78.	<i>Cynometra travancorica</i> Bedd. *	Fabaceae	Tamil Nadu, Kerala, Karnataka	EN	B1+2c	2.3	1998
79.	<i>Dalbergia latifolia</i> Roxb. *z	Fabaceae	India (Uttar Pradesh, Tamil Nadu, Sikkim, Karnataka, Kerala, Andhra Pradesh), Indonesia (Jawa), Myanmar, Nepal	VU	A1cd	3.1	2020
80.	<i>Dalbergia sissoides</i> Graham ex Wight & Arn.	Fabaceae	India (Karnataka, Kerala, Tamil Nadu), Indonesia (Jawa)	VU	A4bcd	3.1	2021
81.	<i>Dialium travancoricum</i> Bourd.	Fabaceae	India (Kerala)	CR	B2ab (i,ii,iii,iv,v); C2a(i,ii); D	3.1	2023
82.	<i>Humboldtia bourdillonii</i> Prain*	Fabaceae	India (Tamil Nadu, Kerala)	VU	A2c;B1ab(iii)+2ab(iii)	3.1	2024
83.	<i>Humboldtia sanjappae</i> Sasidh. & Sujanapal*	Fabaceae	India (Kerala)	CR	B1ab(iii)+2ab(iii); D	3.1	2024
84.	<i>Humboldtia unijuga</i> var. <i>trijuga</i> J.Joseph & V.Chandras*	Fabaceae	India (Kerala)	CR	B1+2c	2.3	1998
85.	<i>Humboldtia unijuga</i> Bedd. var. <i>unijuga</i>	Fabaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
86.	<i>Humboldtia vahliana</i> Wight*	Fabaceae	India (Tamil Nadu, Kerala)	EN	B2ab(i,ii,iii,v)	3.1	2014
87.	<i>Prioria pinnata</i> (Roxb. ex DC.) Breteler*	Fabaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	A1acd	3.1	2022
88.	<i>Pterocarpus santalinus</i> L.f.*	Fabaceae	India (Andhra Pradesh): introduced to Kerala	EN	A2cd	3.1	2020
89.	<i>Coleus idukkianus</i> (J.Mathew, Yohannan & B.J.Conn) Smitha	Lamiaceae	India (Kerala)	EN	B1ab(iii)+2ab(iii)	3.1	2023
90.	<i>Actinodaphne bourneae</i> Gamble	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+2ab(iii)	3.1	2019
91.	<i>Actinodaphne campanulata</i> Hook.f. var. <i>campanulata</i>	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
92.	<i>Actinodaphne campanulata</i> var. <i>obtusata</i> Gamble	Lauraceae	India (Kerala)	EN	B1+2c	2.3	1998
93.	<i>Actinodaphne lanata</i> Meisn.	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+2ab(iii)	3.1	2019
94.	<i>Actinodaphne lawsonii</i> Gamble	Lauraceae	Karnataka, Kerala, Tamil Nadu	VU	B1ab(iii)+2ab(iii)	3.1	2020
95.	<i>Actinodaphne salicina</i> Meisn.	Lauraceae	India (Tamil Nadu, Kerala)	VU	B2ab(iii)	3.1	2019
96.	<i>Actinodaphne shendurunii</i> Robi & Udayan*	Lauraceae	India (Kerala)	EN	B1ab(iii)+2ab(iii)	3.1	2019
97.	<i>Beilschmiedia dalzellii</i> (Meisn.) Kosterm.	Lauraceae	India (Maharashtra, Karnataka, Kerala)	VU	B2ab(i,ii,iii,iv)	3.1	2019
98.	<i>Cinnamomum chemungianum</i> M.Mohanani & A.N. Henry	Lauraceae	India (Kerala)	CR	D	3.1	2016.
99.	<i>Cinnamomum filipedicellatum</i> Kosterm. *	Lauraceae	India (Tamil Nadu, Kerala)	EN	D	3.1	2019
100.	<i>Cinnamomum gamblei</i> Geethakum. et al.	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	EN	C2a(i)	3.1	2018
101.	<i>Cinnamomum goaense</i> Kosterm.	Lauraceae	India (Goa, Kerala)	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2019
102.	<i>Cinnamomum keralaense</i> Kosterm.	Lauraceae	India (Tamil Nadu, Kerala)	EN	C2a(i)	3.1	2019
103.	<i>Cinnamomum litsaeifolium</i> Thwaites	Lauraceae	India (Tamil Nadu, Kerala), Sri Lanka	VU	B2ab(i,ii,iii)	3.1	2019
104.	<i>Cinnamomum macrocarpum</i> Hook.f.	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	VU	A2cd; D1	3.1	2019
105.	<i>Cinnamomum perottetii</i> Meisn.	Lauraceae	India (Tamil Nadu, Kerala)	EN	C2a(i)	3.1	2019
106.	<i>Cinnamomum riparium</i> Gamble*	Lauraceae	India (Tamil Nadu, Karnataka, Kerala)	EN	D	3.1	2019
107.	<i>Cinnamomum sulphuratum</i> Nees*	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	VU	A2cd	3.1	2014

108.	<i>Cinnamomum travancoricum</i> Gamble	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	CR	D	3.1	2019
109.	<i>Cinnamomum walaiwarens</i> Kosterm.	Lauraceae	India (Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2019
110.	<i>Cinnamomum wightii</i> Meisn.	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	EN	B1ab(i,ii,iii,iv)	3.1	2014
111.	<i>Cryptocarya anamalayana</i> Gamble	Lauraceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii)+2ab(iii)	3.1	2019
112.	<i>Cryptocarya lawsonii</i> Gamble	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	VU	C2a(i)	3.1	2019
113.	<i>Cryptocarya praetervis</i> M. Gangop. et al	Lauraceae	India (Tamil Nadu, Kerala)	VU	B2ab(iii)	3.1	2019
114.	<i>Cryptocarya stocksii</i> Meisn.	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	VU	B1+2c	2.3	1998
115.	<i>Litsea beddomei</i> Hook.f.	Lauraceae	India (Tamil Nadu, Kerala)	EN	B2ab(i,ii,iii)	3.1	2020
116.	<i>Litsea ghatica</i> C.J.Saldahna	Lauraceae	India (Maharashtra, Kerala, Karnataka, Goa)	VU	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2019
117.	<i>Litsea keralana</i> Kosterm.	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2019
118.	<i>Litsea mysorensis</i> Gamble	Lauraceae	India (Tamil Nadu, Kerala, Karnataka)	VU	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2019
119.	<i>Litsea nigrescens</i> Gamble*	Lauraceae	India (Tamil Nadu, Kerala)	VU	B2ab(i,ii,iii)	3.1	2019
120.	<i>Litsea oleoides</i> (Meisn.) Hook.f.	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+2ab(iii)	3.1	2020
121.	<i>Litsea travancorica</i> Gamble*	Lauraceae	India (Kerala, Karnataka, Tamil Nadu)	VU	B2ab(i,ii,iii)	3.1	2020
122.	<i>Litsea udayanii</i> Robi	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+2ab(iii)	3.1	2023
123.	<i>Neolitsea fischeri</i> Gamble*	Lauraceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+2ab(iii)	3.1	2020
124.	<i>Lindernia manilaliana</i> Sivar.	Linderniaceae	India (Kerala)	EN	B1ab(ii,iii)	3.1	2010
125.	<i>Utricularia cecilii</i> P.Taylor	Linderniaceae	India (Kerala, Karnataka)	EN	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2010
126.	<i>Utricularia wightiana</i> P.Taylor	Linderniaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)	3.1	2020
127.	<i>Hugonia belli</i> Sedgw.	Limnanthaceae	India (Kerala, Karnataka, Tamil Nadu)	VU	B1ab(i,ii,iii,iv)+2ab(i,ii,iii,iv)	3.1	2025
128.	<i>Rotala cookii</i> K.T. Joseph & Sivar.	Lythraceae	India (Kerala)	EN	B1ab(i,iii)+2ab(i,iii)	3.1	2010
129.	<i>Rotala malabarica</i> Pradeep et al.	Lythraceae	India (Kerala)	CR	B1ab(i,ii,iii)+2ab(i,ii,iii)	3.1	2010
130.	<i>Rotala ritchiei</i> Koehne	Lythraceae	India (Maharashtra, Tamil Nadu, Kerala, Karnataka,)	EN	B1ab(ii,iii)+2ab(ii,iii)	3.1	2010
131.	<i>Magnolia nilagirica</i> (Zenker) Figlar	Magnoliaceae	India (Karnataka, Kerala, Tamil Nadu), Sri Lanka	VU	A2cd	3.1	2014
132.	<i>Julostylis ampumalensis</i> Pradeep & Sivar.	Malvaceae	India (Kerala)	CR	B1ab(iii,v); C2a(i); D	3.1	2023
133.	<i>Julostylis polyandra</i> Ravi & Anil Kumar*	Malvaceae	India (Kerala)	EN	B1+2c	2.3	1998
134.	<i>Pterospermum reticulatum</i> Wight & Arn.*	Malvaceae	India (Tamil Nadu, Kerala, Karnataka)	VU	B1+2c	2.3	1998
135.	<i>Medinilla anamalaiana</i> Sasidh. & Sujanapal	Melastomataceae	India (Kerala)	EN	D	3.1	2023
136.	<i>Memecylon flavescens</i> Gamble*	Melastomataceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
137.	<i>Memecylon grande</i> Retz.	Melastomataceae	India (Karnataka, Kerala, Tamil Nadu), Sri Lanka, Java, Singapore	VU	A1c, B1+2c	2.3	1998
138.	<i>Memecylon lawsonii</i> Gamble*	Melastomataceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
139.	<i>Memecylon macrocarpum</i> Thwaites*	Melastomataceae	India (Karnataka, Kerala, Tamil Nadu), Sri Lanka	VU	A1c, B1+2c	2.3	1998
140.	<i>Memecylon rostratum</i> Thwaites	Melastomataceae	India (Karnataka, Kerala, Tamil Nadu), Sri Lanka	VU	A1c	2.3	1998

141.	<i>Memecylon sivadasanii</i> N. Mohanan <i>et al.</i> *	Melastomataceae	India (Kerala)	VU	D2	3.1	2023
142.	<i>Memecylon subramanii</i> A.N.Henry	Melastomataceae	Tamil Nadu, Kerala	EN	B1+2c	2.3	1998
143.	<i>Memecylon sylvaticum</i> Thwaites *	Melastomataceae	India (Tamil Nadu, Kerala), Sri Lanka	VU	A1c	2.3	1998
144.	<i>Memecylon varians</i> Thwaites	Melastomataceae	India (Tamil Nadu, Kerala); Sri Lanka	VU	A1c	2.3	1998
145.	<i>Aglaiia apiocarpa</i> Hiern	Meliaceae	India (Tamil Nadu, Kerala)	VU	A1c	2.3	1998
146.	<i>Aglaiia bourdillonii</i> Gamble	Meliaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
147.	<i>Aglaiia malabarica</i> Sasidh. *	Meliaceae	India (Kerala)	EN	B1ab (ii, iii) + 2ab (ii, iii)	3.1	2021
148.	<i>Dysoxylum beddomei</i> Hiern	Meliaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
149.	<i>Dysoxylum ficiforme</i> Gamble	Meliaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
150.	<i>Dysoxylum malabaricum</i> Bedd. ex C. DC. *	Meliaceae	India (Tamil Nadu, Maharashtra, Kerala, Karnataka)	EN	A2cd	3.1	2014
151.	<i>Reinwardtiidendron anamalaiense</i> (Bedd.) Mabb.*	Meliaceae	India (Tamil Nadu, Maharashtra, Kerala, Karnataka)	VU	A2c	3.1	2023
152.	<i>Nymphoides macrosperma</i> K.V. Nair	Menyanthaceae	India (Kerala)	CR	B2ab(iii)	3.1	2011
153.	<i>Nymphoides krishnakasara</i> K.T. Joseph & Sivr.	Menyanthaceae	India (Kerala)	EN	B1ab (ii, iii) +2ab (ii, iii)	3.1	2011
154.	<i>Nymphoides sivarajanii</i> K.T. Joseph	Menyanthaceae	India (Kerala)	CR	B2ab (i, ii, iii)	3.1	2011
155.	<i>Ficus beddomei</i> King*	Moraceae	India (Karnataka, Kerala, Tamil Nadu)	EN	A2c	3.1	2022
156.	<i>Gymmacranthera canarica</i> (Bedd. ex King) Warb.*	Myristicaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c, D2	2.3	1998
157.	<i>Myristica magnifica</i> Bedd. *	Myristicaceae	India (Tamil Nadu, Maharashtra, Kerala, Karnataka), Sri Lanka	VU	A2c	3.1	2023
158.	<i>Myristica malabarica</i> Lam.*	Myristicaceae	India (Maharashtra, Goa, Kerala, Karnataka), Sri Lanka	VU	A2c	3.1	2023
159.	<i>Ardisia amplexicaulis</i> Bedd.	Myrsinaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
160.	<i>Ardisia blatteri</i> Gamble	Myrsinaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
161.	<i>Ardisia sonchifolia</i> Mez	Myrsinaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
162.	<i>Maesa velutina</i> Mez*	Myrsinaceae	India (Kerala, Karnataka)	EN	B1+2c	2.3	1998
163.	<i>Eugenia argentea</i> Bedd.	Myrtaceae	India (Tamil Nadu, Kerala)	CR	D	3.1	2019
164.	<i>Eugenia discifera</i> Gamble	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
165.	<i>Eugenia floccosa</i> Bedd.	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
166.	<i>Eugenia indica</i> (Wight) Chithra	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
167.	<i>Eugenia rotleriana</i> Wight & Arn. *	Myrtaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
168.	<i>Eugenia singampattiana</i> Bedd.	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii)	3.1	2019
169.	<i>Eugenia terpnophylla</i> Thwaites	Myrtaceae	India (Kerala), Sri Lanka	EN	B1+2c	2.3	1998
170.	<i>Eugenia wynadensis</i> Bedd.	Myrtaceae	India (Karnataka, Kerala, Tamil Nadu)	CR	B1+2c	2.3	1998
171.	<i>Syzygium beddomei</i> (Duthie) Chithra	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
172.	<i>Syzygium benthamianum</i> (Wight & Duthie) Gamble	Myrtaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
173.	<i>Syzygium bourdillonii</i> (Gamble) Rathakr. & N.C.Nair*	Myrtaceae	India (Tamil Nadu, Kerala)	EN	A2c; B2ab (i,ii,iii,iv,v); C2a(i)	3.1	2023
174.	<i>Syzygium calophyllifolium</i> Walp.	Myrtaceae	India (Tamil Nadu, Kerala)	EN	C2a(i)	3.1	2022
175.	<i>Syzygium caryophyllatum</i> (L.)	Myrtaceae	India (Maharashtra, Goa,	VU	C2a(i)	3.1	2023

	Alston*		Kerala, Karnataka, Tamil Nadu), Sri Lanka, Malesia				
176.	<i>Syzygium chavaran</i> (Bourd.) Gamble	Myrtaceae	India (Kerala)	EN	B1+2c	2.3	1998
177.	<i>Syzygium courtallense</i> (Gamble) Alston	Myrtaceae	India (Tamil Nadu, Kerala), Sri Lanka	CR	B1ab(iii,v); C2a(i); D	3.1	2023
178.	<i>Syzygium densiflorum</i> Wall. ex Wight & Arn.	Myrtaceae	India (Maharashtra, Kerala, Tamil Nadu)	VU	A2c	3.1	2023
179.	<i>Syzygium fergusonii</i> (Trimen) Gamble	Myrtaceae	India (Tamil Nadu, Kerala), Sri Lanka	EN	B1+2c	2.3	1998
180.	<i>Syzygium makul</i> Gaertn. *	Myrtaceae	India (Kerala), Sri Lanka	VU	A2cd; B2ab (iii, v)	3.1	2024
181.	<i>Syzygium microphyllum</i> Gamble	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
182.	<i>Syzygium myhendrae</i> (Bedd. ex Brandis) Gamble*	Myrtaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
183.	<i>Syzygium neesianum</i> Arn.	Myrtaceae	India (Tamil Nadu, Kerala), Sri Lanka	VU	A2c; B2ab(iii)	3.1	2024
184.	<i>Syzygium occidentale</i> (Bourd.) Gandhi*	Myrtaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	A2c+4c; B2ab (i,ii,iii,iv,v)	3.1	2022
185.	<i>Syzygium palghatense</i> Gamble	Myrtaceae	India (Kerala)	CR	B1ab(iii)+ 2ab(iii); D	3.1	2022
186.	<i>Syzygium parameswaranii</i> M.Mohanan & A.N.Henry	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii,v)+ 2ab(iii,v); C2a(i)	3.1	2022
187.	<i>Syzygium periyarensis</i> Augustine & Sasidh.	Myrtaceae	India (Kerala)	CR	D	3.1	2022
188.	<i>Syzygium ramavarma</i> (Bourd.) Chithra	Myrtaceae	India (Tamil Nadu, Kerala)	EN	B1ab(iii,v)+ 2ab (iii,v); C2a(i)	3.1	2022
189.	<i>Syzygium sasidharanii</i> Sujanapal	Myrtaceae	India (Tamil Nadu, Kerala)	CR	C2a(i)	3.1	2022
190.	<i>Syzygium stocksii</i> (Duthie) Gamble*	Myrtaceae	India (Kerala, Karnataka, Tamil Nadu, Maharashtra)	VU	A2c	3.1	2023
191.	<i>Anacolosia densiflora</i> Bedd. *	Olacaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
192.	<i>Chionanthus mala-elengi</i> subsp. <i>linocieroides</i> (Wight) P.S.Green*	Olacaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
193.	<i>Diplocentrum congestum</i> Wight	Orchidaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	D1	3.1	2024
194.	<i>Fimbristylis dauciformis</i> Govind.	Orchidaceae	India (Karnataka, Kerala, Maharashtra)	EN	B2ab(i,ii,iii)	3.1	2010
195.	<i>Fimbristylis hirsutifolia</i> Govind.	Orchidaceae	India (Kerala)	CR	B1ab(i,ii,iii) + 2ab(i,ii,iii)	3.1	2010
196.	<i>Fuirena swamyi</i> Govind.	Orchidaceae	India (Tamil Nadu, Kerala)	VU	D2	3.1	2010
197.	<i>Paphiopedilum druryi</i> (Bedd.) Stein*	Orchidaceae	India (Tamil Nadu, Kerala)	CR	B1ab(ii,iii,v) + 2ab(ii,iii,v); C1	3.1	2014
198.	<i>Vanda spathulata</i> Spreng.*	Orchidaceae	India (Karnataka, Kerala, Tamil Nadu, Andhra Pradesh); Sri Lanka	VU	A2cd	3.1	2013
199.	<i>Vanda wightii</i> Rchb.f.*	Orchidaceae	India (Karnataka, Kerala, Tamil Nadu), Sri Lanka	VU	B2ab(iii,v)	3.1	2024
200.	<i>Aporosa bourdillonii</i> Stapf	Phyllanthaceae	India (Kerala)	EN	B1ab (iii, v) +2ab (iii, v); C2a(i); D	3.1	2021
201.	<i>Aporosa cardiosperma</i> (Gaertn.) Merr.*	Phyllanthaceae	India (Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu); Sri Lanka	VU	A1c	2.3	1998
202.	<i>Aporosa fusiformis</i> Thwaites	Phyllanthaceae	India, Sri Lanka	CR	B1+2c	2.3	1998
203.	<i>Cleistanthus malabaricus</i> (Müll.Arg.) Müll.Arg.*	Phyllanthaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu)	EN	B2ab(iii)	3.1	2023
204.	<i>Cleistanthus travancorensis</i> Jabl.	Phyllanthaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
205.	<i>Glochidion bourdillonii</i> Gamble	Phyllanthaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c	2.3	1998

206.	<i>Glochidion johnstonei</i> Hook.f.*	Phyllanthaceae	India (Goa, Kerala)	VU	B1+2c	2.3	1998
207.	<i>Phyllanthus indofischeri</i> Bennet	Phyllanthaceae	India (Tamil Nadu, Kerala, Karnataka, Andhra Pradesh)	VU	A2cd	3.1	2014
208.	<i>Piper barberi</i> Gamble*	Piperaceae	India (Tamil Nadu, Kerala)	EN	B1ab(i,ii,iii,v)+ 2ab(i,ii,iii,v)	3.1	2014
209.	<i>Dimeria hohenackeri</i> Hochst. ex Miq.	Piperaceae	India (Kerala, Goa, Maharashtra, Karnataka)	EN	B2ab (ii,iii,iv,v)	3.1	2010
210.	<i>Ischaemum jayachandranii</i> R.Ansari, V.S.Ramach. & Sreek.	Poaceae	India (Kerala)	CR	B1ab(ii,iii)+ 2ab(ii,iii)	3.1	2010
211.	<i>Ischaemum vembnadense</i> R.B. Patil & D'Cruz	Poaceae	India (Kerala)	EN	B1ab(iii)+ 2ab(iii)	3.1	2010
212.	<i>Linnopoa meeboldii</i> (C.E.C. Fisch.) C.E. Hubb.	Poaceae	India (Kerala, Karnataka)	EN	B2ab(iii)	3.1	2010
213.	<i>Oryza malampuzhaensis</i> Krishnasw. & Chandras.	Poaceae	India (Kerala)	VU	B1ab(iii,v)	3.1	2017
214.	<i>Farmeria indica</i> Willis	Podostemaceae	India (Tamil Nadu, Kerala)	EN	B1ab(i,ii,iii) + 2ab(i,ii,iii)	3.1	2010
215.	<i>Farmeria metzgerioides</i> Willis	Podostemaceae	India (Kerala), Sri Lanka	VU	B2ab(iii,v)	3.1	2010
216.	<i>Podostemum munnarensense</i> Nagendran & Arekal	Podostemaceae	India (Kerala)	EN	B1ab(iii)+ 2ab(iii)	3.1	2010
217.	<i>Polypleurum filifolium</i> (Ramam. & J.Joseph) A.S.Rao & Hajra	Podostemaceae	India (Orissa, Kerala)	VU	B1ab(iii,v)+ 2ab(iii,v)	3.1	2010
218.	<i>Willisia selaginoides</i> (Bedd.) Warm. ex Wille	Podostemaceae	India (Tamil Nadu, Kerala)	VU	B1ab(i,ii,iii)	3.1	2010
219.	<i>Drypetes gardneri</i> (Thwaites) Pax & K. Hoffm.*	Putranjivaceae	India (Kerala), Sri Lanka	EN	B1+2c	2.3	1998
220.	<i>Drypetes wightii</i> (Hook.f.) Pax & K.Hoffm.	Putranjivaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
221.	<i>Colubrina travancorica</i> Bedd.*	Rhamnaceae	India (Kerala)	EN	B1ab(iii)+ 2ab(iii)	3.1	2024
222.	<i>Byrsophyllum tetrandrum</i> (Bedd.) Bedd.	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
223.	<i>Canthiumera neilgherrensis</i> (Wight) K.M.Wong	Rubiaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2024
224.	<i>Coffea neobridsoniae</i> A.P.Davis*	Rubiaceae	India (Tamil Nadu, Kerala, Karnataka)	EN	B2ab(iii)	3.1	2017
225.	<i>Coffea arabica</i> L.*	Rubiaceae	India (Cultivated); native to Ethiopia, South Sudan	EN	A3b	3.1	2018
226.	<i>Coffea travancorensis</i> Wight & Arn. *	Rubiaceae	India (Tamil Nadu, Kerala); Sri Lanka	VU	B2ab(i,ii,iii)	3.1	2017
227.	<i>Ixora agasthyamalayana</i> Sivad. & N. Mohanan*	Rubiaceae	India (Kerala)	VU	D2	3.1	2023
228.	<i>Ixora johnsonii</i> Hook.f.*	Rubiaceae	India (Kerala)	CR	B1+2c	2.3	1998
229.	<i>Ixora lawsoni</i> Gamble	Rubiaceae	India (Kerala, Karnataka)	EN	B1+2c	2.3	1998
230.	<i>Ixora malabarica</i> (Dennst.) Mabb.	Rubiaceae	India (Kerala, Karnataka)	VU	B1+2c	2.3	1998
231.	<i>Lasianthus ciliatus</i> Wight	Rubiaceae	India (Tamil Nadu, Kerala)	VU	D2	2.3	1998
232.	<i>Lasianthus rostratus</i> Wight	Rubiaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
233.	<i>Litosanthes capitulatus</i> (Wight) Deb.& M. Gangop.	Rubiaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c	2.3	1998
234.	<i>Nostolachma crassifolia</i> (Gamble) Deb & Lahiri	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
235.	<i>Ochreinauclea missionis</i> (Wall. ex G.Don) Ridsdale*	Rubiaceae	India (Kerala, Karnataka, Tamil Nadu, Goa, Maharashtra)	VU	3.1	3.1	2019
236.	<i>Psychotria beddomei</i> Deb.& M.Gango.	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
237.	<i>Psychotria connata</i> Wall.	Rubiaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2023
238.	<i>Psychotria globicephala</i> Gamble*	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
239.	<i>Psychotria macrocarpa</i> Hook.f.	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
240.	<i>Psychotria nudiflora</i> Wight & Arn.*	Rubiaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2023
241.	<i>Psydrax ficiformis</i> (Hook.f.) Bridson*	Rubiaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
242.	<i>Psydrax pergracilis</i> (Bourd.) Ridsale*	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998

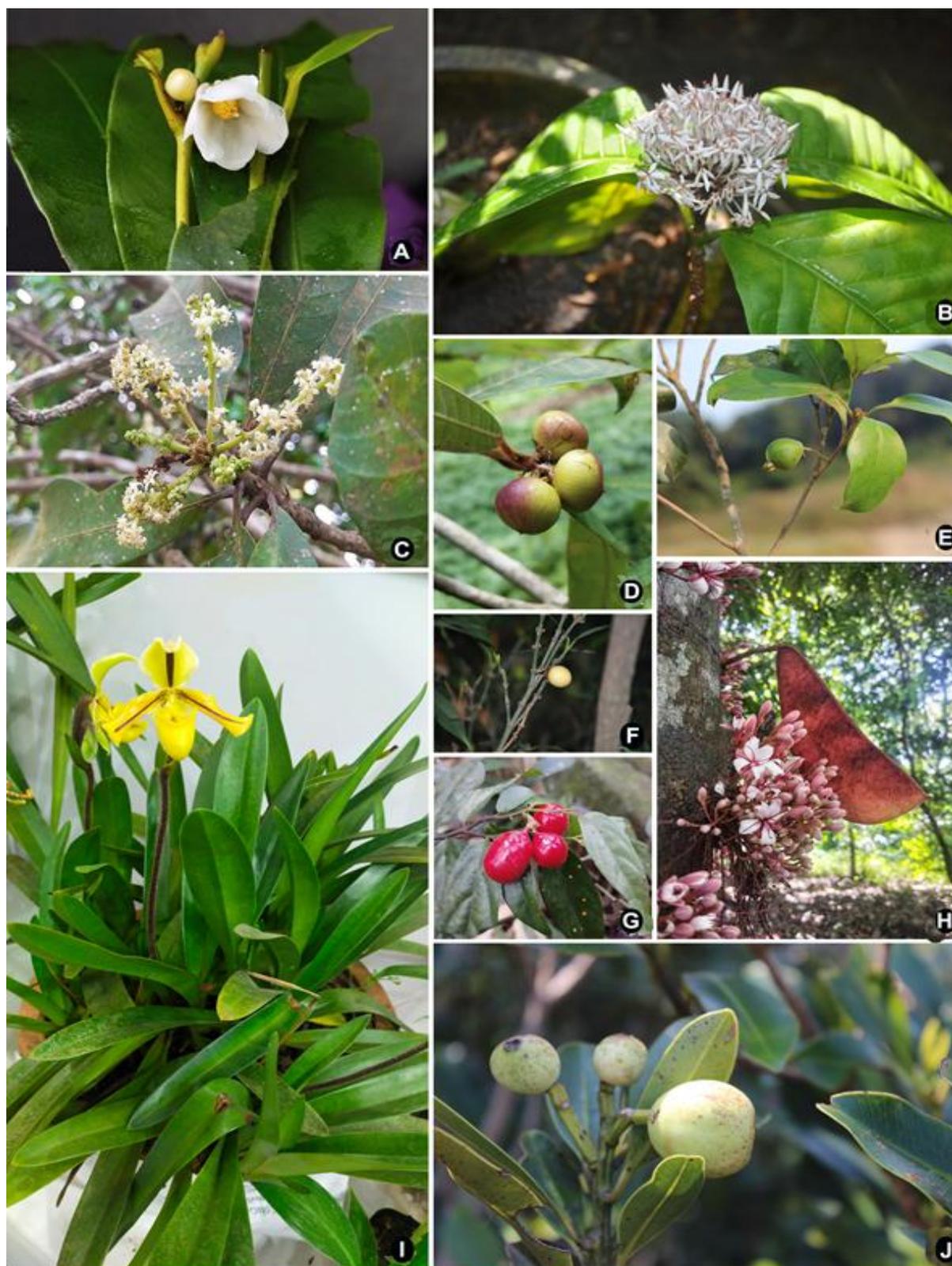
243.	<i>Saprosma fragrans</i> Bedd.	Rubiaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c	2.3	1998
244.	<i>Tarenna monosperma</i> (Wight & Arn.) N.P. Balakr. *	Rubiaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
245.	<i>Tarenna nilagirica</i> (Bedd.) Bremek.	Rubiaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	B1+2c	2.3	1998
246.	<i>Chloroxylon swietenia</i> DC.*	Rubiaceae	India (Tamil Nadu, Kerala, Andhra Pradesh), Sri Lanka	VU	A1c	2.3	1998
247.	<i>Casearia wynadensis</i> Bedd.*	Salicaceae	India (Karnataka, Kerala, Tamil Nadu)	VU	A2c; B1ab(iii)+ 2ab(iii)	3.1	2024
248.	<i>Homalium jainii</i> A.N.Henry & Swamin.	Salicaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
249.	<i>Homalium travancoricum</i> Bedd.	Salicaceae	India (Tamil Nadu, Kerala)	VU	B1+2c	2.3	1998
250.	<i>Santalum album</i> L.*	Santalaceae	India (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu); Indonesia (Maluku, Sumatera, Sulawesi); Sri Lanka; Timor-Leste	VU	A2de	3.1	2018
251.	<i>Isonandra stocksii</i> C.B. Clarke	Sapotaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu)	EN	B1+2c	2.3	1998
252.	<i>Isonandra villosa</i> Wight	Sapotaceae	India (Kerala)	EN	B1+2c	2.3	1998
253.	<i>Madhuca balakrishnani</i> E.S.S. Kumar <i>et al.</i> *	Sapotaceae	India (Kerala)	CR	A2c;B1ab(iii) )+2ab(iii); D	3.1	2022
254.	<i>Madhuca bourdillonii</i> (Gamble) H.J. Lam*	Sapotaceae	India (Karnataka, Kerala)	EN	A1cd+2c	2.3	1998
255.	<i>Madhuca diplostemon</i> (C.B. Clarke) P.Royen*	Sapotaceae	India (Kerala)	CR	D	3.1	2020
256.	<i>Madhuca insignis</i> (Radlk.) H.J. Lam*	Sapotaceae	India (Karnataka, Kerala)	CR	C2a(i); D	3.1	2019
257.	<i>Palaquium bourdillonii</i> Brandis*	Sapotaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)+ 2ab(iii)	3.1	2018
258.	<i>Palaquium ravii</i> Sasidh. & Vink	Sapotaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
259.	<i>Symplocos anamallayana</i> Bedd.	Symplocaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
260.	<i>Symplocos macrocarpa</i> subsp. <i>kanarana</i> (Talbot)Noot.	Symplocaceae	India (Tamil Nadu, Kerala, Karnataka)	VU	B1+2c	2.3	1998
261.	<i>Symplocos nairii</i> A.N. Henry <i>et al.</i>	Symplocaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
262.	<i>Symplocos oligandra</i> Bedd.	Symplocaceae	India (Tamil Nadu, Kerala)	EN	B1+2c	2.3	1998
263.	<i>Cayratia pedata</i> Gangep. *	Vitaceae	Bangladesh; India (West Bengal, Tamil Nadu, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa), Myanmar, Sri Lanka	VU	A2cd	3.1	2014
264.	<i>Cayratia pedata</i> var. <i>glabra</i> Gamble	Vitaceae	India (Tamil Nadu, Kerala)	CR	B2ab(ii,iii,v)	3.1	2014
265.	<i>Curcuma coriacea</i> Mangaly & M. Sabu*	Zingiberaceae	India (Kerala)	EN	B1ab(iii)	3.1	2009
266.	<i>Curcuma pseudomontana</i> J. Graham*	Zingiberaceae	India (Maharashtra, Karnataka, Kerala, Tamil Nadu)	VU	A2cd	3.1	2009
267.	<i>Curcuma vama</i> M. Sabu & Mangaly	Zingiberaceae	India (Tamil Nadu, Kerala)	CR	B2b(iii) c(i,ii,iii)	3.1	2018
<b>Gymnosperms</b>							
268.	<i>Cycas annaikalensis</i> Rita Singh & P. Radha*	Cycadaceae	India (Kerala)	CR	B2ab(iii,v); C2a(ii)	3.1	2020
269.	<i>Cycas circinalis</i> L.*	Cycadaceae	India (Karnataka, Kerala, Tamil Nadu)	EN	A2cd+4Acd	3.1	2020
270.	<i>Cycas nathorstii</i> J. Schust. *	Cycadaceae	India (Kerala, Tamil Nadu); Sri Lanka	VU	A2cd+4Acd	3.1	2020
271.	<i>Gnetum contractum</i> Markgr.	Gnetaceae	India (Tamil Nadu, Kerala)	VU	B1ab(iii)	3.1	2009
<b>Pteridophyte</b>							

272.	<i>Sphaeropteris crinita</i> (Hook.) R.M. Tryon	Cyathiaceae	India (Tamil Nadu, Kerala), Sri Lanka	EN	B1ab(iii)+2ab(iii)	3.1	2011
273.	<i>Elaphoglossum nilgircum</i> Krajina ex Sledge	Polypodiaceae	India (Karnataka, Kerala, Tamil Nadu)	CR	C1+2a(i); D	3.1	2024

\*Plants Conserving at Jawaharlal Nehru Tropical Botanic Garden and Research Institute.



**Figure 1:** A. *Syzygium benthamianum*, B. *Syzygium myhendrae*, C. *Salacia oblonga*, D. *Buchanania lanceolata*, E. *Goniothalamus wynadensis*, F. *Eugenia wynadensis*, G. *Syzygium stocksii*, H. *Impatiens parasitica*, I. *Strobilanthes kunthiana*, J. *Knema attenuata* (Photo:S.M.Shareef)



**Figure 2:** A. *Poecilonueron pauciflorum*, B. *Ixora johnsonii*, C. *Buchanania barberi*, D. *Nothopegia aureofulva*, E. *Eugenia discifera*, F. *Paphiopedilum druryi*, G. *Garcinia wightii*, H. *Popowea beddomeana*, I. *Humboldtia bourdillonii*, J. *Syzygium sasidharanii* (Photo: S.M. Shareef)

## RESULTS AND DISCUSSION

The comprehensive checklist of IUCN Red List–threatened plant species of Kerala documents a total

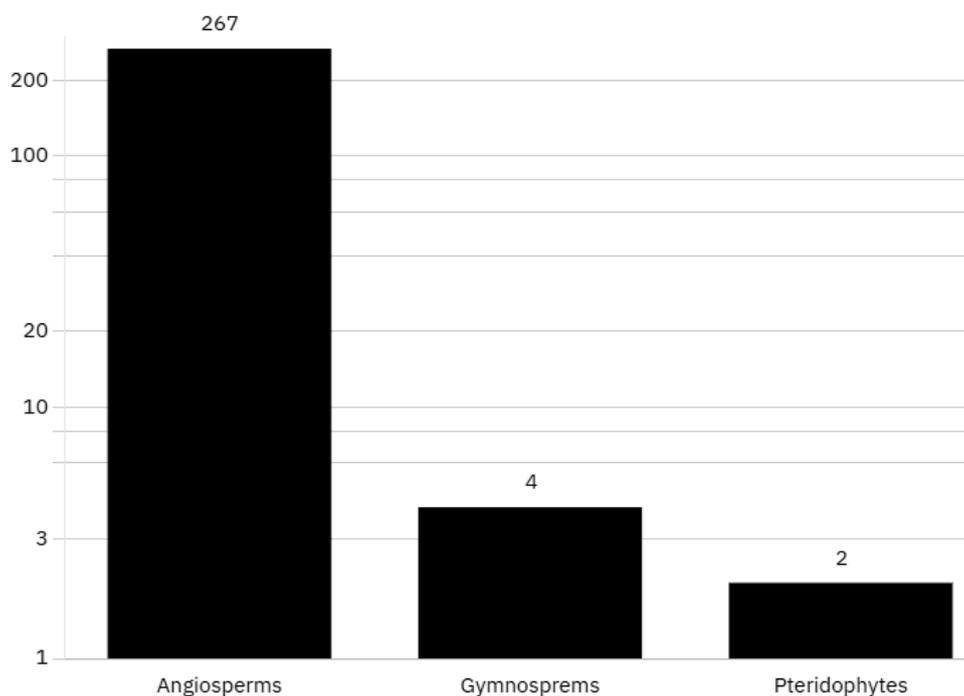
of 273 species, representing 267 angiosperms (Figures 1 and 2), four gymnosperms and two pteridophytes (Table 1; Graph 1). This distribution clearly indicates the overwhelming dominance of

flowering plants among the threatened flora of the state, reflecting both their high species richness and their heightened vulnerability to ongoing anthropogenic pressures and habitat modification. Among angiosperms, the family Lauraceae emerges as the most species-rich in terms of threatened taxa, represented by 6 genera and 34 species. This is followed by Myrtaceae (2 genera and 28 species), Rubiaceae (11 genera and 25 species), Fabaceae (7 genera and 14 species), Dipterocarpaceae (4 genera and 10 species) and Melastomataceae (2 genera and 10 species). The predominance of these families is largely attributable to their ecological significance within the evergreen and semi-evergreen forests of the Western Ghats, where many species exhibit narrow habitat preferences, restricted distributions and low population densities, making them particularly susceptible to extinction. With respect to threat categories, of the 273 species assessed, 45 species are classified as Critically Endangered, 109 species as Endangered, and 118 species as Vulnerable under the IUCN Red List criteria (version 2025-2). The substantial proportion of species in the Critically Endangered and Endangered categories underscores the severity of extinction risk faced by

Kerala's flora and highlights the urgent need for targeted conservation interventions, both *in situ* and *ex situ*. Endemism constitutes a significant component of the threatened flora of Kerala. Of the total 273 species documented, 52 threatened species are exclusively endemic to the state, occurring nowhere else in the world. These taxa are often confined to highly localised habitats within the Western Ghats and are especially vulnerable to habitat degradation, fragmentation and climate-related changes. The high level of endemism among threatened species further emphasises Kerala's global conservation importance and the critical responsibility of the state in safeguarding these unique plant lineages.

Based on the latest IUCN Red List of Threatened Species (version 2025-2), no plant species from the study area are classified under the 'Extinct' category. However, *Euphorbia mayuranathanii* Croizat currently listed as 'Extinct in the Wild' (EW), has an unresolved taxonomic status and is now regarded as a synonym of *Euphorbia antiquorum* L., a widespread species assessed as 'Least Concern' (LC) by the IUCN (POWO, 2026).

**Graph 1:** Threatened plants in Angiosperms, Gymnosperms and Pteridophytes



## CONCLUSION

This study provides the first comprehensive, state-level synthesis of IUCN Red Listed threatened vascular plants of Kerala based on the most recent global assessments (version 2025-2). The documentation of 273 threatened plant species, comprising 267 angiosperms, 4 gymnosperms and 2

pteridophytes, highlights the exceptionally high conservation significance of Kerala within the Western Ghats, one of the world's recognised biodiversity hotspots. The dominance of families such as Lauraceae, Myrtaceae and Rubiaceae among threatened taxa reflects the vulnerability of evergreen and semi-evergreen forest elements of the Western Ghats, where many species are characterised by

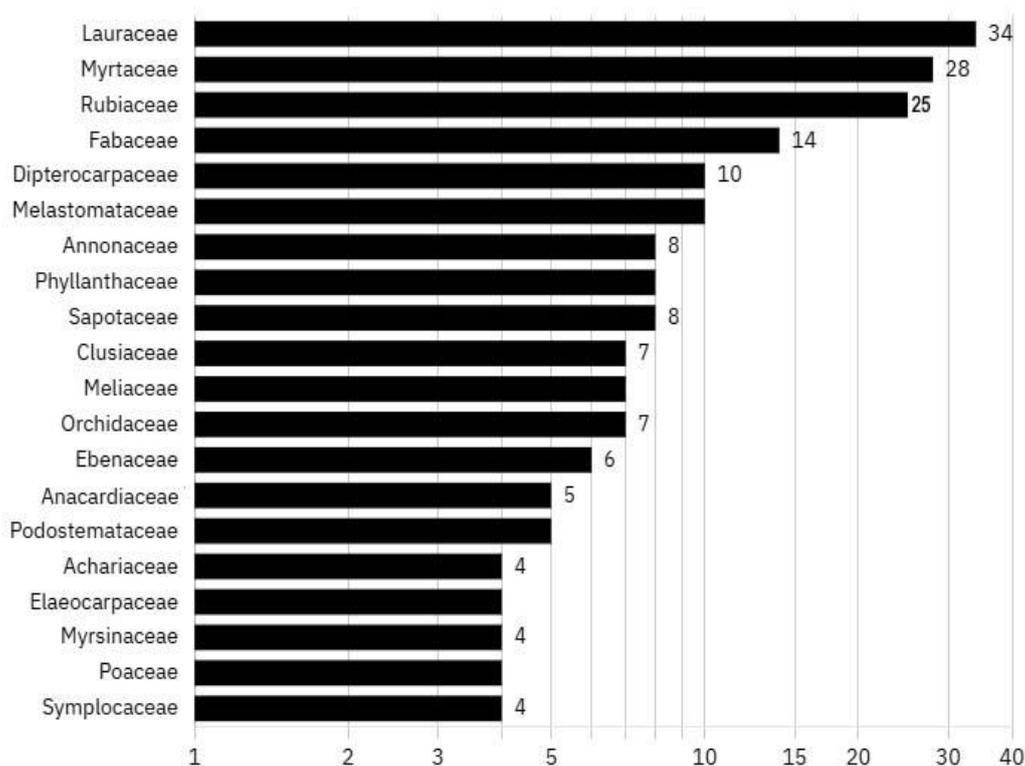
restricted distributions, habitat specificity and small population sizes.

The presence of 45 Critically Endangered, 109 Endangered and 118 Vulnerable species, including 52 species endemic to Kerala, underscores the urgent need for targeted conservation interventions. Many of these taxa are restricted to narrow ecological niches and small, fragmented populations, making them particularly susceptible to ongoing anthropogenic pressures such as land-use change, overexploitation and climate variability. The increasing number of newly described species subsequently assessed as threatened further indicates that extinction risk may be underestimated for poorly known taxa, especially those with limited distributions.

By consolidating updated IUCN Red List information and validating species distributions using

authoritative floristic sources, the present compilation establishes a reliable and current baseline for conservation planning in Kerala. This dataset can support priority setting for *in situ* and *ex situ* conservation, habitat restoration, long-term monitoring and policy formulation at both state and regional levels. Moreover, the study emphasises the need for regular reassessment of plant taxa, strengthened field-based population studies and enhanced integration of taxonomic research with conservation practice. Overall, this work highlights Kerala as a critical centre of threatened plant diversity in India and reinforces the importance of sustained scientific assessment and proactive conservation action to prevent further erosion of its unique and irreplaceable plant heritage.

**Graph 2:** Distribution of threatened species among Angiosperm families in Kerala



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## RESEARCH ARTICLE

### *RAMARIA FLAVA*. A NEW REPORT OF A CLAVARIOID FUNGUS FOR ARUNACHAL PRADESH, INDIA

Arvind Parihar\*

*Botanical Survey of India, Arunachal Pradesh Regional Centre, Itanagar, Arunachal Pradesh,  
India 791111*

*Email: [arvind\\_peace@rediffmail.com](mailto:arvind_peace@rediffmail.com)*

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**Abstract:** The genus *Ramaria* encompasses over 200 coral fungal species globally. During a routine fungal survey in Eastern parts of Arunachal Pradesh, India, few specimens of clavarioid fungi were collected, which were later identified as *Ramaria flava* based on thorough macro- and micro-morphological studies. This marks the first documentation of the genus *Ramaria* in the state. Detailed morphological descriptions and illustrations are presented in this study.

**Keywords:** Arunachal Pradesh, clavarioid fungi, New record, Taxonomy

#### INTRODUCTION

*Ramaria* Fr. ex Bonord. is a genus of coral fungi with more than 200 described species worldwide (Exeter *et al.*, 2006, Ghosh *et al.*, 2020). It is the largest and most complex Genus of clavarioid fungi (Petersen, 1976). Species of the genus *Ramaria* are distributed worldwide and are found growing on living and decayed hardwood, tree trunks, partially decomposed organic matter, and as mycorrhizal fungi under conifers. Commonly referred to as clavarioid fungi, they are characterized by their extensively branched and often coloured basidiomata (Kuo, 2009; Dorjey *et al.*, 2016, Ullah *et al.*, 2022). Among these, *Ramaria flava* (Schaeff.) Quél. and *R. stricta* (Pers.) Quél., are common edible clavarioid fungi (Krupodorova & Sevindik, 2020). In the present communication, *Ramaria flava* (Schaeff.) Quél. is reported as new record from Upper Dibang Valley District of Arunachal Pradesh, India.

#### MATERIALS AND METHODS

A routine macrofungal survey was conducted during the monsoon season (July–August) of 2024 in

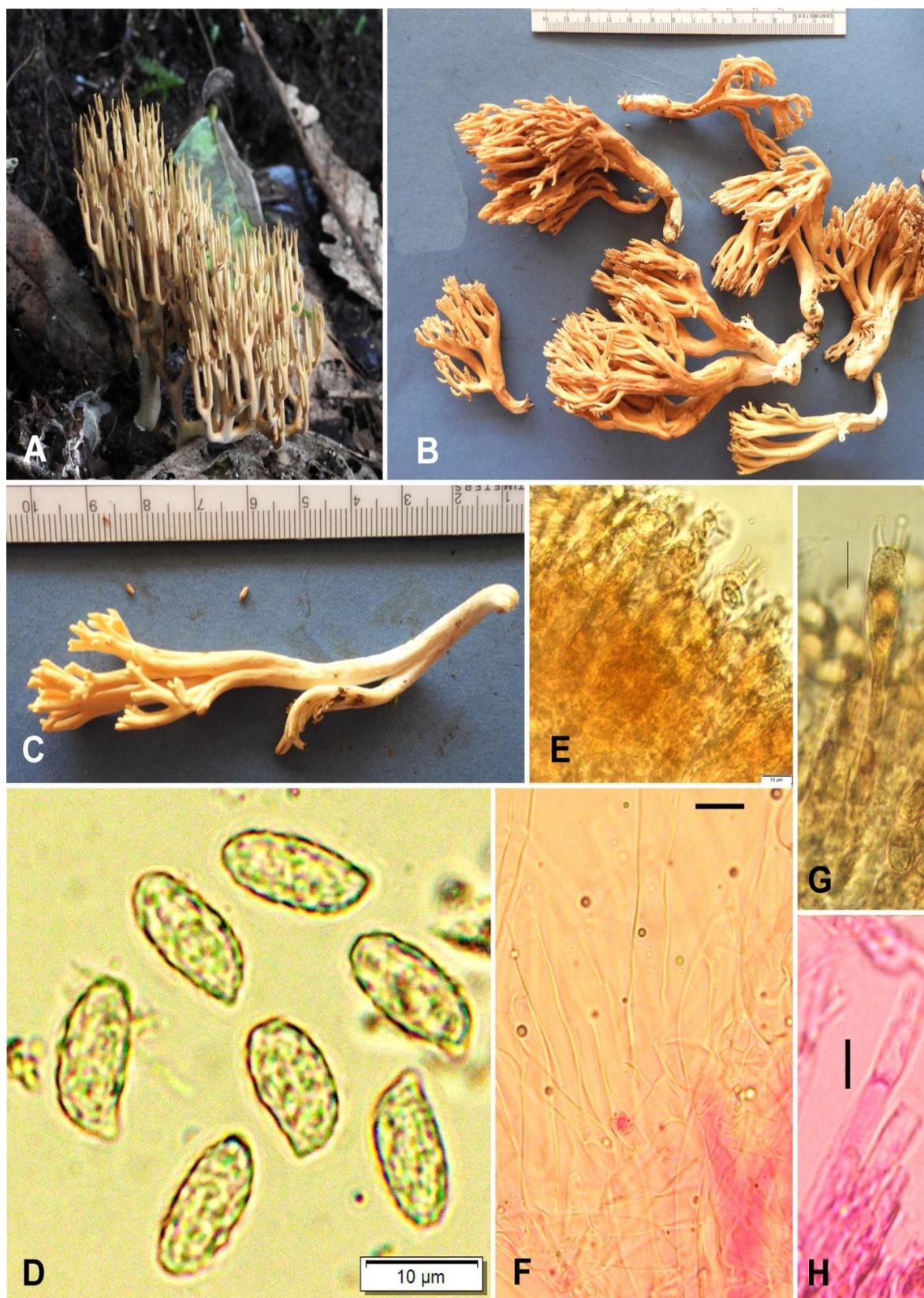
Eastern Arunachal Pradesh, specifically in the Upper Dibang Valley District and macro-fungi specimens were collected. Macro-morphological characterization of fresh basidiomata was performed both in the field and at the base camp. Field photographs of the basidiomata and their habitats were captured using a Nikon P950 camera and also with mobile phone, showing important morphological features. Herbarium materials were prepared and subsequently utilized for macro- and micro-morphological studies. Herbarium codes follow the standard outlined by Thiers, 2010 (continuously updated). Color notations referenced in the descriptions adhere to the system of Kornerup and Wanscher (1978). Standard methods for macro- and micro-morphological analyses were employed as per the protocols established by Das *et al.* (2017) for the identification of specimens.

#### RESULTS

##### *Taxonomy*

*Ramaria flava* (Schaeff.) Quél., *Fl. mycol.* France (Paris): 466 (1888)

\*Corresponding Author



**Figure 1.** *Ramaria flava* (Schaeff.) Quél. A. Habitat of the basidiomata, B. Basidiomata with scale showing Branches and stipe, C. Single branch of basidiomata, D. Basidiospores, E. Hymenium showing basidia and basidioles, F. Tramal hyphae from the stipe, G. Single Basidia, H. Tramal hyphae of upper branches. Scale bars: E-H = 10 µm.



**Figure 1.** *Ramaria flava* (Schaeff.) Quél. A. Basidiospores, B. basidia, C. Tramal hyphae of upper branches, D. Tramal hyphae from the stipe. Scale bars: A-D = 10  $\mu$ m.

Basidiomata solitary, 60–150 mm high, 50–100 mm wide, dichotomously branched in 4–5 ranks, coralloid, pale yellow (4A3); Stipe 20–31  $\times$  5–14 mm, large to medium sized (not massive), smooth, compound to fasciculate in groups of 2–3, yellowish orange (4A2) to pale yellow (4A3) when fresh, light orange (5A5) to orange (5A6) when dry, tapering gradually at the base; Context solid, fleshy, brittle when dry, orange white (5A2), no colour change with KOH and FeSO<sub>4</sub>; Major branches 5–6, ascending, light orange (5A4–5A5); Branches in 4–5 ranks, ascending, internodes diminishing gradually upward,

pale yellow (5A2) at the base; Apices obtuse, orange white (5A2) to pale orange (5A3) to light orange (5A4); Odour mild pleasant, Taste not recorded.

Hyphal system monomitic; Stipe tramal hyphae 4–7  $\mu$ m wide, hyaline, thin- to thick-walled (wall up to 0.5  $\mu$ m thick), tortuous, densely interwoven, not adherent or agglutinated, occasionally clamped; ampulliform occasionally with clamps. Tramal hyphae of upper branches 4–5.5  $\mu$ m wide, thin-walled, parallel, clamped, hyaline; Hymenium all along the basidiomata; Basidia 65–90  $\times$  5.5–7.5  $\mu$ m, clavate, with a basal clamp, multiguttulate when

mature, 2 to 4-spored, sterigmata 3.5–5 µm long; Basidiospores 10–(12.9)–14.5 × 5–(6.4)–7 µm, Q = 1.8 – (2.0) – 2.4, elliptical to ovoid, roughened, 1-several guttulae, hyaline, cyanophilous.

Specimens Examined: India, Arunachal Pradesh, Upper Debang Valley, near Chiku valley, Anini, alt. 1771 m., 28°57'48.20" N, 95°58'15.77"E, 24.07.2024, A. Parihar AP 24-149 (ARUN F 39).

## DISCUSSION

The Macro- and Micro-morphological characteristics of the present specimen align closely with the descriptions provided by Petersen (1969, 1989), Ahmad *et al.* (1997) and Ullah *et al.*, 2022 and confirming its identification as *Ramaria flava*. This species is a well-known edible mushroom (Ullah *et al.*, 2022). However, despite its edibility, it has not gained significant popularity among the local communities of Arunachal Pradesh. This limited acceptance could suggest a lack of awareness or familiarity with the species as a food source within the region. Further studies and community outreach may be necessary to explore the potential culinary and ecological value of *R. flava* in local contexts.

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## RESEARCH ARTICLE

REDISCOVERY OF AN ESCAPED TAXON, *CERATOSTIGMA GRIFFITHII* (PLUMBAGINACEAE), FROM WILD HABITAT AFTER A GAP OF 90 YEARS FROM ARUNACHAL PRADESH, INDIA

Subhajit Lahiri\*, and Monalisa Das

<sup>1</sup>Central National Herbarium, Botanical Survey of India, Howrah - 711 103Email: [lahiribot.bu03@gmail.com](mailto:lahiribot.bu03@gmail.com)

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**Abstract:** *Ceratostigma griffithii* C.B. Clarke (Plumbaginaceae) is recorded from India after a gap of 90 years from wild habitat. The species has also been assessed as "Vulnerable" by applying the IUCN criteria B. A detailed description along with a color photo plate of the species and its dissected flower parts is provided here to facilitate the identification of the species.

**Keywords:** Arunachal Pradesh, *Ceratostigma*, Vulnerable, *Plumbagineae*, recollection, Tawang

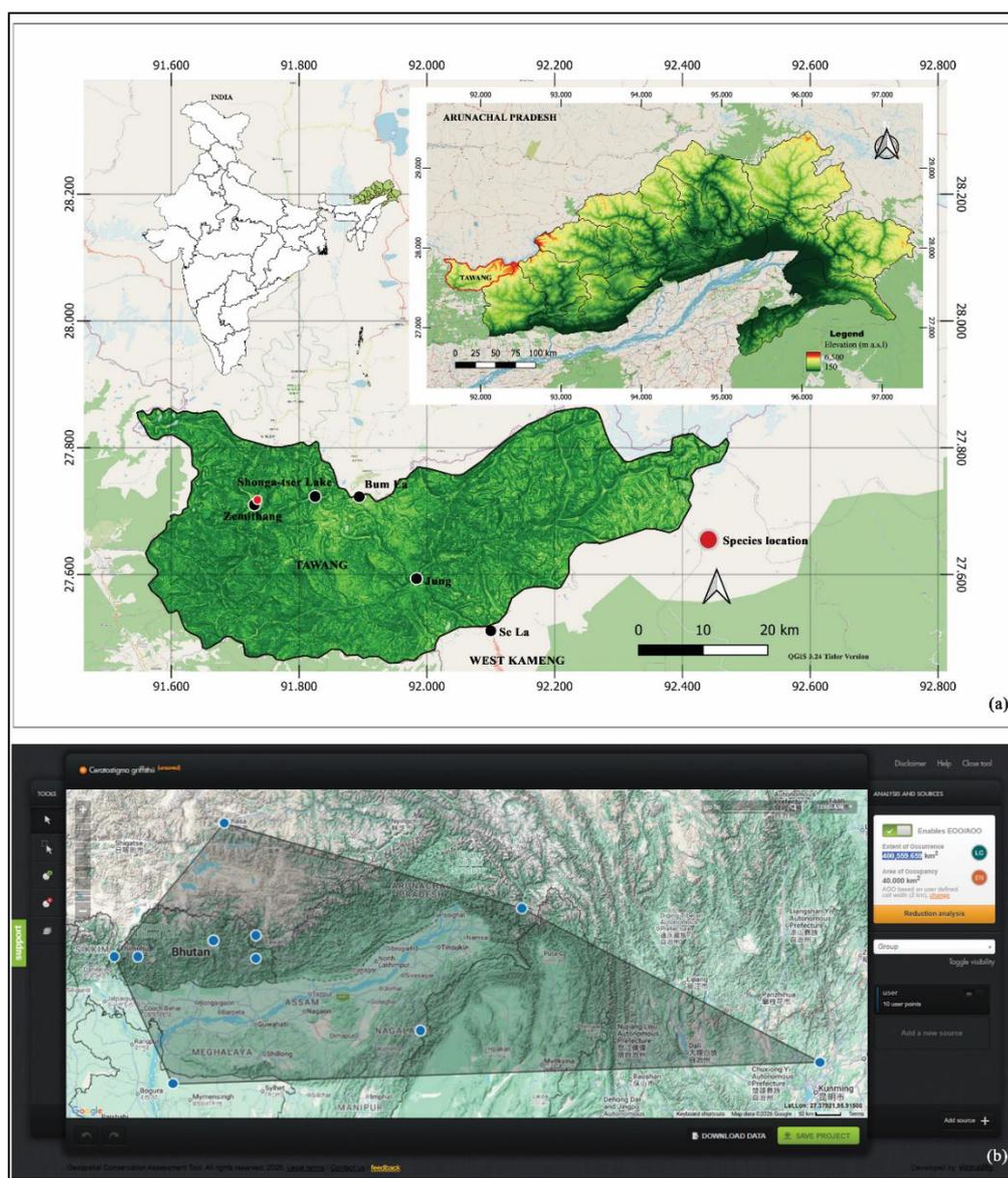
## INTRODUCTION

*Ceratostigma* Bunge is a tiny genus in the *Plumbagineae* tribe (Plumbaginaceae), with seven species scattered over tropical East Africa and East Asia (Peng, *et al.*, 1996; POWO, 2026). Most members of this genus are grown as ornamental garden plants due to their striking appearance. *Ceratostigma griffithii* is an "escaped taxon" often introduced for aesthetic reasons, which has evaded human control and formed self-sustaining, naturalized colonies in the wild. In India, the genus has 2 species distributed in Arunachal Pradesh and Sikkim Himalaya. Members of the genus thrive at altitudes between 1000 and 4000 meters and are commonly found in the temperate, and sub-alpine regions of the Himalayan highlands. The main center of diversity for the genus *Ceratostigma* is the Qinghai-Tibet Plateau (QTP) and North China. Specifically, South Tibet is considered the current primary distribution center for the genus (Zhao, *et al.*, 2023). *Ceratostigma* is characterized by a non-glandular, tubular, 5-ribbed calyx (10-nerved at the base) and a glabrous style (Zhao, *et al.*, 2023), while some species display heterostyly (Hedberg, *et al.*, 2006; Peng, *et al.*, 1996).

In 2025, during floristic research in Arunachal Pradesh, India, as part of the project "Assessing the

*Impact of Climate Change on Floristic and Migration of Vascular Plants in the Alpine Subalpine Landscape of Western Arunachal Pradesh,*" an unidentified *Ceratostigma* species was collected from Zemithang, Tawang district, at an elevation of 2100 meters. Following a thorough investigation of *Ceratostigma* species in India, encompassing protologues, type specimens, additional herbarium specimens, and pertinent literature (Clarke CB, 1882; Peng, *et al.*, 1996), it has been classified as *Ceratostigma griffithii* C.B. Clarke. In India, two species from the genus *Ceratostigma* have been documented viz. *C. griffithii*, and *C. plumbaginoides*. *Ceratostigma griffithii* is known in India, Bhutan, and China; there are only a few herbarium specimens in India. In India, only four old collections are known; among them, the one from Assam of British India collected by N.L. Bor in the year 1935 from Naga Hills, held at DD, was the last collection in the last 90 years. The present collection from Arunachal Pradesh is a rediscovery of this species from India after a lapse of about 90 years, confirming the second locality for this country. This collection offers a comprehensive taxonomic description, habitat information, phenological data, and a color picture plate (Fig. 2).

\*Corresponding Author



**Fig. 1** (a) Present collection site of *Ceratostigma griffithii* C.B. Clarke; (b) Threat assessment showing area of occupancy and extent of occurrence.

## MATERIALS AND METHODS

Flowering specimens were collected from Zemithang, Tawang district of Arunachal Pradesh during post monsoon season. All collected voucher specimens were processed as per standard protocol. Photographs were taken in field with Nikon Z50 camera. A locality map was created by using the software ArcGIS10.5 (Fig. 1). The geographical coordinates of the species were collected with the help of a GPS (Garmin eTrex® 30x, Taiwan) during the survey. Based on the recorded geo-coordinates of the present locality and the type locality, the Extent of Occurrence (EOO) and Area of Occupancy (AOO) of the populations were estimated using the conservation assessment tool extension developed by the Royal Botanic Gardens, Kew (Moat, 2007;

IUCN, 2019) in Arc View. For AOO, a  $2 \times 2$  km grid cell size was used. The preliminary assessments thus generated for EOO and AOO were then subjected for comparison with the IUCN criteria for assigning the threat status of the species.

## RESULTS AND DISCUSSION

***Ceratostigma griffithii* C.B. Clarke** in Hook.f., Fl. Brit. India 3: 481. 1882.

Type:— BHUTAN. East Himalaya: between Woollookka and Lamnoo, Chupeke, 8000 ft., 1862–1863, *Griffith* 4181 (K [K000786678, digital image!]).

**Shrub** evergreen 0.5–1.3 m tall. Stems erect, very branched, without scars at the nodes and with rounded branchlets, densely strigose when young,

with ferruginous or brown hairs of two kinds; axillary shoots with scales. Leaves subsessile, alternate, obovate-spatulate to sub rhombic, 1.5–7.5 × 0.8–3 cm, cuneate or attenuate at base, margin strigose-ciliate, acute at apex, somewhat coarse in texture, matte green with reddish edges, with both surfaces densely and uniformly strigose, making them rough to the touch. Inflorescences terminal and axillary, with heads 1.5–3 cm in diameter bearing 5–20 flowers. Bracts oblong-lanceolate or oblong-ovate foliaceous bracts, 6–7.5 × 2–2.8 mm, ciliate and with reddish tints. Bracteoles lanceolate, 5–7 mm long, strongly keeled and with hyaline margins. Flowers capitate, fine blue. Calyx ciliate between the veins, tube 2–3 mm long and 5 subulate teeth, 7–8 mm long. Corolla 1–1.7 cm, purple or pale pink; lobes deep blue, rarely white, limb with 5 obovate lobes, about 5–7 mm long, emarginate, mucronate at the apex. Stamen adnate to the middle of the corolla-tube, filaments linear, 1.1 cm long; filament 7 mm, glabrous; anthers oblong, blue, c. 2 mm, slightly exerted. Ovary ovoid; style filiform, with 5 stigmatose branches, branches equal in length to anthers. Fruit not seen.

**Specimen Examined.** **BHUTAN.** Between Woollookka and Lamnoo, Chupeke, 2438 m, 1862–1863, *Griffith* 4181 (K000786678); Tsalimape to Simo Sampa, 08 July 1938, *B.J. Gould* 886 (K005545087); Near Khelekha, Tang Chu, 2100 m, 11 October 1984, *I.W.J. Sinclair & D.G. Long* 5641 (K005545095); Thimphu, 2370 m, 04 September 1984, *I.W.J. Sinclair & D.G. Long* 4796 (K005545096). **CHINA.** Yunan, Between Likiang and Talifu, 2286 m, 13 September 1922, *J. Rock* 6414 (US 1511085); Yunan, Tsangshan Range, west of Talifu, 2895 m, August 1922, *J. Rock* 6577 (US 1511086); Yunan, Litiping Range, Mekong-Yangtze divide, east of Weihsi, 2895 m, 1923, *J. Rock* 11578 (US 1511087); Xizang, Lhasa Shi, Langkazi Xian, Gangbala Mountain, Yangzhuoyong Lake, 4170 m, 04 Jul 2009 *MacArthur, J. Wen, Z. Nie, L. Xie, Y. Niu, G. Li, F. Yang, S. Lutz & J. Van De Veire* 3357 (US 3594948). **INDIA.** Sikkim, Chumbi, 21 June 1884, *Dr King's Collector* 349 (K005545089); Sikkim, Chumbi, 21 June 1884, *Dr King's Collector* 450

(K005545090); Arunachal Pradesh, Kahao, Lohit Valley, 1219–1524 m, 16 November 1926, *F. Kingdon Ward* 7651 (K005545091); Assam, Chipoketance, Naga Hills, 31 October 1935, *N.L. Bor* 6670 (K005545088); Naga Hills, 1935, *N.L. Bor* 6670 (DD 76906); Arunachal Pradesh, Zemithang, 2100 m, 25 September 2025, *Subhajit Lahiri* 101433 (CAL0000310720), 101434 (CAL0000310719), 101314 (CAL0000310718).

**Distribution.** India [Arunachal Pradesh (Present report), Sikkim], Bhutan, and China.

**Habitat.** Growing in dry temperate forest edges in sunny open areas at elevation of 2000–2900 m. Found only in two localities with a small population of 7–9 individuals.

**Conservation Status.** The Eastern Himalaya region, which includes India, Bhutan, and China is primary habitat of *Ceratostigma griffithii* C.B. Clarke. No historical data on population size or reduction in population size is provided. Thus, our investigation included eight subpopulations, delineated by the number of collections and the spatial separation between locations. Therefore, no data available on its past population size and decline for application of Criteria A, C, and D. The species was known from four locations in India: Chipoketance, the Naga Hills of Assam, Chumbi of Sikkim, Kahao, the Lohit Valley, and Zemithang of Arunachal Pradesh. During our present study, we have collected the species from Zemithang of the Tawang district, Arunachal Pradesh. Based on the present and past collections, the extent of occurrence (EOO) is calculated to be 400,559.659 km<sup>2</sup>, and the area of occupancy (AOO) is calculated to be 40 km<sup>2</sup> with very limited distribution at less than 5 subpopulations where the habitats are continuously shrinking due to developmental works (Fig. 1 a & b; Table 1). Although the majority of the known habitat of *Ceratostigma griffithii* encounters several threats such as tourism, developmental activities, and natural occurrences including landslides, avalanches, and grazing, there are no documented direct threats to its use or trade. Therefore, the taxon is assessed here as 'Vulnerable' [VU B2ab(iii)] in global level.

**Phenology.** August–January

**Table 1.** Details of subpopulations of *Ceratostigma griffithii* C.B. Clarke

Subpopulations	Country/ Provinces	Locality	Latitude	Longitude
Subpop.-1	India	Assam, Chipoketance, Naga Hills	26 °	94.99°
Subpop.-2	India	Sikkim, Chumbi	27.32°	88.91°
Subpop.-3	India	Arunachal Pradesh, Kahao, Lohit Valley	28.18	97
Subpop.-4	India	Arunachal Pradesh, Zemithang	27.70°	91.72°
Subpop.-5	Bhutan	Thimphu	27.29°	91.72°
	Bhutan	Tsalimape to Simo Sampa	27.32°	89.38°
	Bhutan	Near Khelekha, Tang Chu	27.61°	90.88°
Subpop.-6	China	Yunan, between Likiang and Talifu	25.04°	90.07°

	China	Yunan, Litiping Range, Mekong-Yangtze divide, east of Weihsi	25.43°	102.92°
Subpop.-7	China	Xizang, Lhasa Shi, Langkazi Xian, Gangbala Mountain, Yangzhuoyong Lake	29.67°	91.09°



**Fig. 2** (a) Habitat; (b) flowering twig; (c) adaxial surface of leaves; (d) abaxial surface of leaves; (e) Close-up of upper view of flower; (f) bract (g) flower; (h) corolla split open; (i) stamen; (j) pistil. (Photo credit: *Subhajit Lahiri*).

**Key to the species under the genus *Ceratostigma* Bunge from Eastern Himalaya**

1. Style branches equal in length to anthers ..... *C. griffithii*
- Style branches extending beyond anthers ..... 2
2. Corolla lobes lanceolate-obovate..... *C. ulicinum*
- Corolla lobes obdeltate..... 3
3. Corolla up to 2 cm, tube purple ..... *C. minus*
- Corolla larger than 2 cm, tube red-purple..... 4
4. Stamens  $\pm$  as long as corolla tube; anthers purple..... *C. willmottianum*
- Stamens slightly exserted; anthers blue..... *C. plumbaginoides*

**Note.** Previously, only two regions in India were recognized as habitats for this species (Mastakar, 2023). The herbarium study indicates that the species was initially collected from the Naga Hills of Assam, British India, by *N.L. Bor*, and is preserved at DD and K. No further collections of this species have been documented since *N.L. Bor's* last collection from the Naga Hills, Assam, in 1935 (*N.L. Bor* 6670; DD!, K digital image!). This study serves as the foundation for the rediscovery [*Subhajit Lahiri* 101433 (CAL0000310720!), 101434 (CAL0000310719!), 101314 (CAL0000310718!)] of the species within Indian territory after a period of 90 years. Subsequent to 1935, the species was not collected again. After a 90-year interval, this species has been rediscovered in Zemithang, Tawang District, Arunachal Pradesh.

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## RESEARCH ARTICLE

## MUNTINGIA CALABURA L. (MUNTINGINACEAE): A NEW GENERIC ADDITION TO THE FLORA OF MADHYA PRADESH, INDIA

Sanjay Mishra\*, B. Lakshmanudu, Neelima A.M. and Vinay Ranjan

Botanical Survey of India, Central Regional Centre, Prayagraj- 211002, Uttar Pradesh  
 Email: [sanjayalld74@gmail.com](mailto:sanjayalld74@gmail.com)

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**Abstract:** The present paper deals with the genus *Muntingia* L. reported here as an addition to the Flora of Madhya Pradesh. The paper includes details of nomenclature citation followed by taxonomic descriptions, phenological data, and habitat along with colour photographs.

**Keywords:** Flora, Madhya Pradesh, *Muntingia calabura*

## INTRODUCTION

**M**untingiaceae C.Bayer, M.W.Chase & M.F.Fay is a small family of flowering plants in the order Malvales as per APG IV (2016), comprising three monotypic genera, Dicraspidia Standl. (*D. donnell-smithii*), *Muntingia* L. (*M. calabura*), and Neotessmannia Burret (*N. uniflora*). They were formerly placed in Tiliaceae or Elaeocarpaceae due to shared traits. Muntingiaceae was established for these genera because they possess unique features like leaves with asymmetric base, specific stipule dimorphism and trichomes, not found in those older families, establishing them as distinct within the Rosids (Bayer *et al.*, 1998).

The genus *Muntingia* was named by Carl Linnaeus in 1753 to honour Abraham Munting (1626–1683), a Dutch botanist and botanical artist. It is a monotypic genus with its sole member, *Muntingia calabura* L. native of Mexico to South Tropical America and introduced to tropical countries of Asia and Africa. The species has previously been reported in Indian states of Chhattisgarh, Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu and Uttar Pradesh (Patel *et al.* 2016; Chaurasia *et al.*, 2024; Anand *et al.*, 2024). The authors, while working on the flora of Madhya Pradesh, collected a specimen of *Muntingia calabura* L. from the Jabalpur district of Madhya Pradesh. The identity was confirmed by consulting the relevant literature and authentic herbarium specimens. So far, the species was not reported from Madhya Pradesh (Verma *et al.*, 1993; Samvester 1996; Mudgal *et al.*, 1997; Khanna *et al.*, 2001; Jha & Khanna 2002; Khanna & Kumar 2007; Khanna *et al.*, 2009; Sikarwar *et al.*, 2010; Tiwari *et al.*, 2019), hence, the species is described here as a new generic record to the state flora of Madhya Pradesh with brief

description, phenology, habitat, and ecology along with photographs. The voucher specimens are deposited in the herbarium of Botanical Survey of India (BSA), Central Regional Centre, Prayagraj, Uttar Pradesh, India.

## MATERIALS AND METHODS

The specimens were collected from Gwari Ghat locality in Jabalpur, Madhya Pradesh. Field photographs and GPS location were recorded. The vegetative and reproductive features of the collected specimens were examined through a stereo-zoom binocular microscope (Motic SMZ-161). The identity of the species was confirmed through its protologue, and herbarium specimens. The photo plates were prepared using Adobe Photoshop software (version 7.0). The voucher specimens have been prepared following the protocol of Jain & Rao (1977), and all are deposited at the herbarium of Central Regional Centre, Botanical Survey of India, Prayagraj (BSA).

## TAXONOMIC DESCRIPTION

***Muntingia calabura* L.**, Sp. Pl. 509. 1753; Manilal & Sivar., Fl. Calicut 54. 1982; Babu, Fl. Malappuram Dist. 90. 1990; S.K. Murti in B.D. Sharma & Sanjappa, Fl. India 3: 570. 1993; M. Reema *et al.* in P. Daniel, Fl. Kerala 1: 505. 2005; Sunil & Sivadasan, Fl. Alappuzha Dist. 146. 2009; Ratheesh Narayanan, Fl. Stud. Wayanad Dist. 175. 2009; D.D. Pramanick in A.A. Mao & S.S. Dash, Fl. Pl. India Annot. Checkl. Dicot. 1: 194. 2020. (Fig. 1)

Perennial, shrub or tree, 9–13 m tall. Stems erect, branched; branching horizontal, pendant towards tip, glandular, hairy. Leaves alternate, distichous, simple, petiolate; limana oblong or lanceolate, 3–16 × 1–7

\*Corresponding Author

cm, dentate at margins, hairy and acute at apex, asymmetric at base; stipules 1 linear, ca. 5 mm long. Flowers in 1–3(–5)-flowered, supra-axillary fascicles, bisexual, pedicellate, white; pedicels 2–2.5 cm long. Sepals 5, lanceolate, valvate shortly connate at base, densely hairy, green. Petals 5, imbricate, ovate, obovate or suborbicular, crumpled in bud, white. Stamens many, yellow, ca. 1 cm long; filaments filiform; anthers yellow. Ovary superior, 4–5 mm long, ellipsoid, 5 locular; ovules numerous, minute; styles short; stigmas sessile, thick, capitate, ridged. Fruits berry, subglobular, 1–1.20 cm wide. Seeds ovoid, numerous, red, immersed in pulp.

**Flowering & fruiting:** Throughout the year.

**Habitat:** Disturbed lowland, forest edges, along roadside and waterbody margins.

**Distribution:** Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh (Present report), Maharashtra, Tamil Nadu, and Uttar Pradesh.

**Specimens examined:** Madhya Pradesh, Jabalpur District, On the way to Gwari Ghat. 23.06'18"N, 79.59'06"E. Sanjay Mishra & B Lakshmanudu 82271 (5 sheets), BSA0000072704, 27.12.2024.

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**Fig. 1:** *Muntingia calabura* L. A. Habit; B. Flower; C. Twig; D. Fruiting Cycle.



Fig. 2: Herbarium specimen of *Muntingia calabura* L. at BSA

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