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A Checklist of Stenoendemic Angiosperms of Tamil Nadu

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Abstract: Inventory of endemic species is sparse in the country and lacks state-wise assessment and nationwide compilation. Here, we report a comprehensive record of the stenoendemic angiosperms of Tamil Nadu and highlight the priority areas for conservation. A critical perusal of existing literature points out that 272 endemic taxa belonging to 138 genera representing 59 families and ten diverse clades of APG IV. Maximum numbers of endemic taxa are from Cyperaceae and the genus *Impatiens*. Endemic plants are concentrated in the floristically rich Western Ghats of Tamil Nadu, covering the areas of Tirunelveli, Nilgiris, and Coimbatore districts. The vegetation gradient occurring at the Western Ghats hill slopes of Tamil Nadu is a home for many centres of endemism that provide a micro-habitat for speciation. Out of 272 endemic taxa reported, 71 of them are classified under the IUCN threatened category, that include Critically Endangered (33), Endangered (32), Vulnerable (5) and Extinct (1), representing taxa that demand a high priority for conservation. Evaluation of conservation status based on IUCN Red List Categories and Criteria showed that endemic taxa in micro-endemic centres of Tamil Nadu is facing a high risk of extinction due to the decline in population size, area of distribution, habitat fragmentation, and anthropogenic pressures. Therefore, the current study on the inventory of endemic species will be helpful to implement appropriate conservation strategies.

Keywords: Endemics, Western Ghats, Micro Habitat, Threatened Species, Conservation

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Introduction

Despite attempts to halt the extinction crisis, biodiversity loss due to anthropogenic pressure has increased worldwide (Cardinale *et al.*, 2012). Therefore, an inventory of floral diversity to develop conservation strategies is essential to achieve the targets of the Kunming-Montreal Global biodiversity framework as envisioned by the Convention on Biological Diversity. Endemic species are unique to a site or restricted area, biotope, biogeographical region, or a political boundary based on the spatial distribution pattern (Daru *et al.*, 2020). Endemic diversity exploration is therefore, necessary in mega-diversity countries with exceptionally high species richness. The terms "paleoendemic" and "neoendemic" are used to classify endemics based on evolutionary characters and historical biogeography. Paleoendemics are characterized by woody habit, low level of polyploidy, and usually form monotypic genera or families with a disjunct distribution as evidenced in fossil records (Stebbins & Major, 1965; Kruckeberg & Rabinowitz, 1985). Whereas neoendemics are characterized by herbaceous or shrubby habits having a high level of polyploidy that belong to polytypic genera and form a species complex with no clear taxonomic boundaries and related taxa occurring in the same or adjacent region (Kruckeberg, 2002; López-Pujol *et al.*, 2011). Endemism also increases with the increase in size of a homogenous biogeographical area with

the same floristic history and ecological conditions (Peñas *et al*., 2005).

Stenoendemic or local endemic species stand as the biological capital of the country, reflecting the unique species richness (Nayar, 1996). India, a mega-diversity country, comprises 22,108 angiosperm species, including 4036 endemic species distributed in the 12 biogeographical provinces, five biomes, and three bioregion domains (Singh *et al.*, 2015; Mao *et al.,* 2022). Endemism is concentrated in the floristically rich mega centres, namely Eastern Himalayas, Western Ghats, North-eastern India, and Andaman and the Nicobar Islands. These biodiversity hotspots exhibit unique endemic species diversity but also experience habitat loss that resulted in many species being included under the threatened category by IUCN (Marchese, 2015).

The state of Tamil Nadu occurs in the southernmost part of the Indian peninsula and has rich angiosperm diversity due to the varied vegetation types. This region supports an array of habitats such as forests, grasslands, wetlands, and coastal plains with unique endemic species diversity. The Hill ranges of the Western Ghats are considered as a major centre of endemism in Tamil Nadu (Narasimhan & Irwin, 2021). The Western Ghats harbor most of the angiosperms described in India, and the Agasthyamalai Range alone includes more than 50% of the species (Meher-Homji & Pascal, 1996). However, in recent decades, human accelerated habitat fragmentation has increased the species' extinction rate in their natural habitats. Agriculture, monoculture practices, hydroelectric projects, and climate change are the causes of the extinction of endemics (Davidar *et al.*, 2007).

The knowledge on the phytodiversity and phytogeography are essential for implementing conservation strategies. Therefore, this study focuses on the inventory of endemic species to facilitate the conservation measures for species and genetic diversity from extinction. Researchers from all over the world are utilizing the IUCN framework in biodiversity studies to establish conservation methodologies for structuring policies towards the conservation of species through multilateral agreements, as well as to prioritize species for conservation (Betts *et al.,* 2020). Nevertheless, there are several shortfalls or data deficiencies about species taxonomy, distributions, abundance, evolutionary patterns, abiotic tolerances of species, biotic interactions, and limited understanding of species traits that hinder the biodiversity studies (Brown & Lomolino, 1998; Lomolino, 2004; Cardoso *et al.,* 2011; Diniz-Filhom *et al.,* 2013; Hortal et al., 2015). Recent studies also highlighted the shortfalls of species distribution, identification, evolution, and dynamics during the biodiversity assessments (Shaltout & Bedair 2021; Shaltout & Bedair 2023).

Assessment studies in India reported that 2,142 out of 18,532 taxa are red-listed under the category of threatened (432 taxa), near threatened (52 taxa), and extinct (8) (IUCN, 2024, Gowthami *et al.,* 2021). Diversity analysis of narrow endemic angiosperms in different states of India showed that the highest taxa were reported in Tamil Nadu (410 taxa), followed by Kerala (357 taxa) and Maharashtra (278 taxa) (Singh *et al.,* 2015). Likewise, assessment studies of endemic taxa were attempted in different regions of Southern India (Daniels *et al.,* 1995; Narayanasamy & Natesan, 2020). For instance, the Conservation Assessment and Management Prioritization (CAMP) assessment on medicinal plants has listed 256 taxa, 36 of which were designated as endangered (Molur *et al.,* 1995). A study by Ramesh and Pascal (1997) revealed that 70% of endemic trees are home to Agasthyamalai highlands. Another research on developing the Database on Endemic and red-listed species in Agasthyamalai Biosphere Reserve reported 126 out of 2270 taxa were endemic (Narasimhan & Irwin, 2017). However, a consolidated report of endemic and red-listed species taxa of Tamil Nadu is not available, and it is not easy to access data from various sources.

Therefore, a comprehensive survey of endemics was undertaken using existing literature and other field records. This study reports 272 stenoendemics in Tamil Nadu of which 71 taxa were red-listed by IUCN. The current study aims to (i) catalogue the stenoendemic angiosperms of Tamil Nadu, (ii) identify the areas of endemism in Tamil Nadu, with particular reference to Western Ghats, (iii) improve the understanding of the phytogeographic pattern of endemism, and (iv) discovery and rediscovery of endemics in Tamil Nadu.

Materials and Methods

Study Area

Tamil Nadu, the southernmost state of the Indian peninsula, is spread over a 1,30,058 km^2 landmass, accounting for about 4% of the country's total area. The state lies between 8° 5' – 13° 35' N latitude and 76° 14' – 80° 21' E longitude with an elevation ranging from sea level to 2637 MSL (Fig. 1). The Bay of Bengal bounds the state to the east, the Indian Ocean to the south, and the Arabian Sea to the southwest and the state of Kerala to the west, Karnataka to the northwest, Andhra Pradesh to the north, and parts of Puducherry, a Union Territory, along the east-central coast (Fig. 1). The state is administratively subdivided into 38 districts. Topographically, the state is divided into the Western Ghats, Eastern Ghats, Central Plateau, and Coastal Plains. Rainfall varies from 900 mm to 3000 mm, and it benefits from both southwest and northeast monsoons. The state generally enjoys a humid tropical climate and has varied topography and habitats. A recent study by the Forest Survey of India (2021) reported that Tamil Nadu has a forest cover of about 26,419 Km^2 that constitutes 20.31% of the state's total geographical area, and is ranked ninth in the country. Much of the forest is open, whereas very dense and moderately dense account for about 11% of the total forest area. More than 80% of the

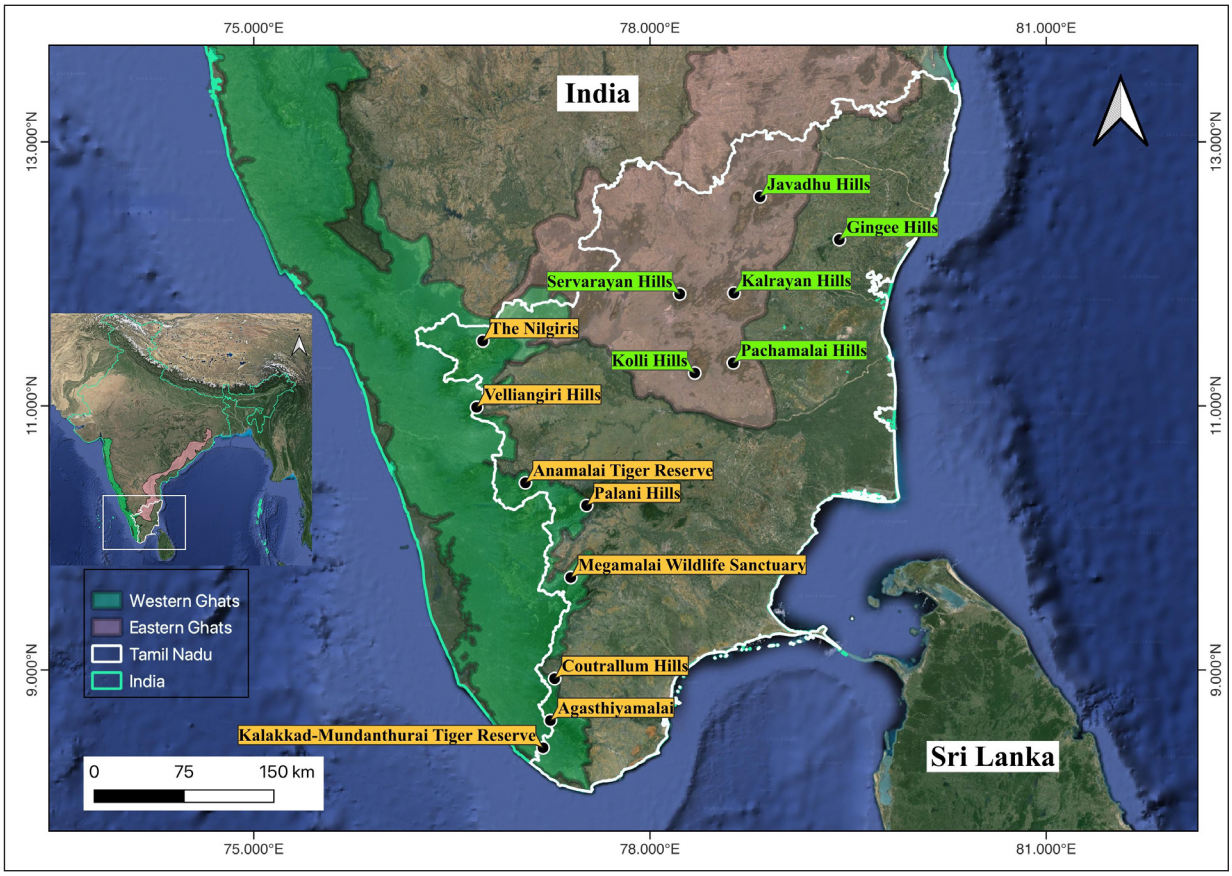

Fig. 1. Distribution of micro-endemic centres of Tamil Nadu. Map drawn with QGIS Firenze v.3.28.0 (QGIS development team, 2024).

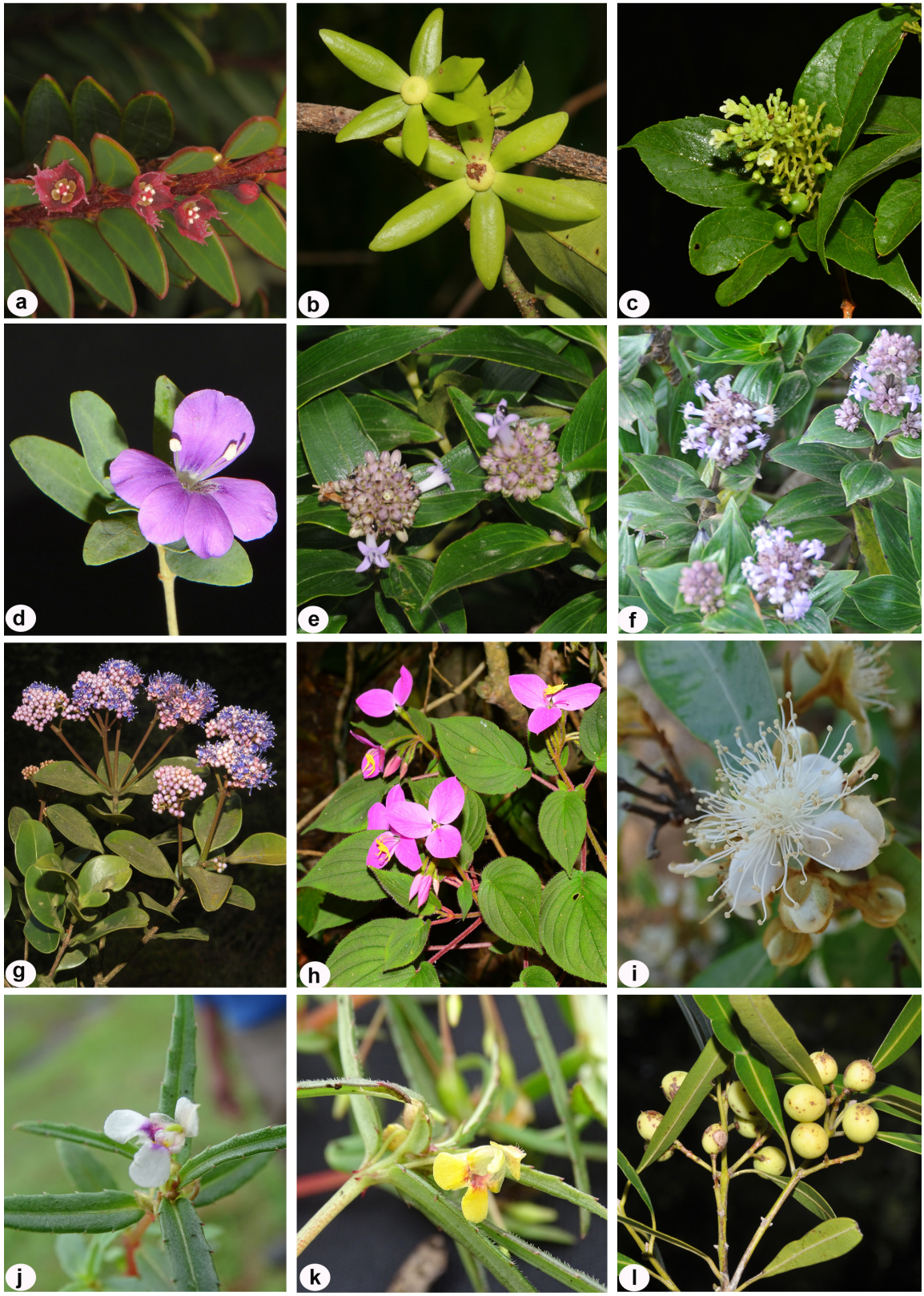

Fig. 2. Some of the endemic and threatened taxa of Tamil Nadu. **a**. *Phyllanthus singampattianus* (Sebast. & A.N. Henry) Kumari & Chandrab.; **b**. *Huberantha senjiana* (R. Mural., D.Naras. & N.Balach.) R.Mural., D.Naras. & N.Balach.; **c**. *Premna mundanthuraiensis* Rajendran & P.Daniel; **d**. *Barleria durairajii* K. Ravik., D.Naras., Devanath. & Gnanasek.; **e**. *Hedyotis rajasekaranii* Karupp. & V.Ravich.; **f**. *Hedyotis shettyi* K.Ravik. & V. Lakshm.; **g**. *Memecylon manickamii* Murugan, Sundaresan & Jothi; **h**. *Sonerila parameswaranii* K.Ravik. & V. Lakshm.; **i**. *Eugenia megamalayana* Murugan & Arum.; **j**. *Impatiens megamalayana* Ramas.; **k**. *I. flavescens* Karupp. & V. Ravich.; **l**. *Calophyllum pascalianum* B.R.Ramesh, Ayyappan & De Franceschi.

total forest cover is distributed between 0 – 1000 m altitude (Narasimhan & Irwin, 2021; FSI, 2021).

Methods

Floras, research articles, reports, and books were referred for the checklist preparation of stenoendemicsangiospermsofTamilNadu(Hooker, 1872-1897; Gamble, 1915-1936; Ahmedullah & Nayar, 1986; Nayar and Sastry 1987-1990; Henry *et al.*, 1987; Henry *et al.*, 1989; Ahmedullah, 2000; Kameswara *et al.*, 2003; Nayar *et al.*, 2014; Singh *et al.*, 2015; Narasimhan and Irwin 2017; Mao & Dash, 2020; Dash & Mao, 2020; Narasimhan & Irwin, 2021). Type information of each taxon was collected from published literature of the 19th, 20th and 21st centuries. Nomenclature of botanical names was confirmed by the Plants of the World Online (POWO) (https://powo.science.kew.org/) and World Flora Online (http://www.worldfloraonline.org/) databases. The checklist on stenoendemics of Tamil Nadu was based on APG IV classification (Table 1) (APG, 2016). The conservation status of each taxon was obtained using the IUCN Red List of Threatened Species database (https://www.iucnredlist.org/), the CAMP assessment using taxon data sheet (Molur *et al.,* 1995; Gopalan and Henry 2000) and other reports based on the existing database and field records.

Results and Discussion

1. Stenoendemic angiosperms of Tamil Nadu

The current study records 272 endemic taxa belonging to 138 genera from 59 families and ten diverse clades of APG IV (Fig. 2). Clade-wise distribution of endemics indicates that 70% of taxa are from Core Eudicots, and the Monocots clade represents 25% of taxa. Eudicots represent 75% of the world's angiosperms (approximately 190,000 described species) as a large monophyletic assemblage (Simpson, 2010). Analysis of species-rich families reveals that the maximum endemic taxa are from Cyperaceae, followed by Poaceae and Balsaminaceae with at least 18 taxa. However, at the generic level, *Impatiens* tops the list with 18 taxa, followed by *Fimbristylis* and *Ceropegia*. Fifty-eight percent of endemic taxa are herbaceous, that occur in diverse habitats such as coastal plains, grasslands, evergreen forests, and deciduous forests. The other life forms, such as shrubs, trees, liana, and climbers, are represented by 21%, 16%, and 5%, respectively. Earlier studies have reported that endemic trees were predominant over herbs (Ganesh *et al.,* 1996) and endemic shrubs were dominant as compared to the trees (Krishnan & Davidar, 1996). However, the present results show the dominance of the herbaceous endemics over the trees, shrubs, and climbers, which is comparable to the study conducted in the Northern Western Ghats and Konkan regions of India (Joshi & Janarthanam, 2004; Gaikwad *et al.,* 2014). Habitat diversity is vital in microevolution as more than 50% are herbaceous taxa, sheltered in specific microhabitats including rock outcrops and grasslands. Specific conservation programs for herbaceous species are challenging to execute; however, the gene pool of herbaceous taxa at higher elevations is well-preserved by microhabitats.

2. Areas of endemism

Several endemic taxa have been reported in the Western Ghats of Tamil Nadu in the last two decades, which calls for attention to conservation (Sarvalingam & Rajendran, 2016; Arya *et al.,* 2021). Therefore, region-wise exploration is essential to document the spatio-temporal distribution of endemics. In the current study, district-wise analysis showed that 30% of endemic taxa are found to occur in Tirunelveli, followed by the Nilgiris (21%) and Coimbatore (18%) districts. High endemic diversity in the Western Ghats of Tamil Nadu occurs in the four micro endemic centers, namely the Agasthyamala Biosphere Reserve, Palani Hills, Anamalai Hills, and Nilgiris-Wayanad-Kodagu Tri-junction (Nayar, 1980). Our study revealed that nearly 80% of endemic taxa were represented within the protected areas

such as Anamalai Tiger Reserve, Kalakkad-Mundanthurai Tiger Reserve, Megamalai Wildlife Sanctuary, Kanyakumari Wildlife Sanctuary, Kodaikanal Wildlife Sanctuary, Courtallum hills, Mahendragiri Hills, and Velliangiri Hills (Fig. 1). These regions represent prioritized locations for the *in-situ* conservation of taxa and regular monitoring of the gene pool in the natural habitat. The unique endemics are much pronounced in the Western Ghats, which capture facets of biodiversity not described elsewhere (Joshi & Karanth, 2013). About 20% of endemic taxa are from the Eastern Ghats and the Coastal plains. Regions like Kolli Hills, Kalrayan Hills, Jawadhu Hills, Pachamalai Hills, Gingee Hills, and Shevaroy Hills represented the areas of micro endemic centers for conservation (Fig. 1). Species such as *Tetrastigma tamilnadense* N.Balach. & K.Ravik., *Zeuxine chowdheryi* Av.Bhattacharjee & Sabap., *Commelina tricolor* E.Barnes, and *Fimbristylis murthyi* Yarrayya & Ratna Kumar occur in both the Eastern and Western Ghats.

The tropical ecosystem faces a high degree of extinction of endemic taxa due to climate change and habitat loss (Kidane *et al.,* 2019). About 26% of endemic taxa in Tamil Nadu are classified under IUCN red-list categories that include Critically Endangered (33), Endangered (32), Vulnerable (5) and Extinct (1) (Table 2). Analysis of the red-listed threatened taxa revealed that the family Melastomataceae (10) holds more threatened taxa, followed by the family Balsaminaceae (8), Fabaceae (6), and Acanthaceae (6). Threatened species often face a high risk of extinction due to a decline in population size and distribution, habitat fragmentation, and anthropogenic pressures. Therefore, implementation of conservation strategies for Indian endemic species requires an understanding of species taxonomy, phenology, distribution, and identification of priority areas rich in endemic taxa. Further, by employing the current biotechnological tools and approaches, we could be able to preserve the genetic pool of the threatened endemic taxa (Coelho *et al.,* 2020).

3. Phytogeographic patterns of endemism

High species richness is one of the characteristic features of a humid tropical ecosystem. The tropical Indian landscape has a heterogeneous climatic history and topography that supports four global biodiversity hotspots from ten different phytogeographic zones (Rodgers & Panwar, 1988). The state of Tamil Nadu harbors complex phytogeographic regions like the Eastern Ghats and Western Ghats. The Western Ghats of Tamil Nadu sustain lineages of ancient tropical vegetation that were once part of Gondwanaland and encountered intense volcanic activity in the late Cretaceous period (Prasad, 2009). Eventually, the percentage of endemism is comparatively high in the Western Ghats as this region is favoured by factors like altitude gradient, unique rainfall pattern, and short dry season length (Joshi & Karanth, 2013).

Our analysis based on the endemics at altitude gradient showed that the maximum numbers of taxa are from the high-elevation regions of Tamil Nadu. Seventy percent of endemics are concentrated in the high-elevation regions of the Eastern and Western Ghats. Our study indicated that 187 taxa are confined to high-elevation areas representing 48 families from 93 genera and 26 orders. The highest number of endemic taxa is from the monocot order Poales representing 40 taxa from 19 genera and three families. The Wet Evergreen Forests supported the higher number of endemics, followed by the Moist Deciduous Forests, Montane Wet Temperate Forests, and Shola Forests. We also observed that the altitude gradient influences the vegetation types in the Agasthyamalai and the Nilgiris massifs that hold the unique vegetation and provide microhabitats for the species. Earlier studies reported that the areas of endemism are associated with high mountain ranges where the degree of endemicity and richness were related to topographic complexity and elevational range (Noroozi *et al.,* 2018; Nerlekar *et al.,* 2022). Conservation of such

endemic species, especially in the Indian savannah, depends on understanding forest ecosystem dynamics and phytogeographic patterns (Nerlekar *et al.,* 2022).

Climatologically, the mid-elevational zone does not exhibit very extreme cold temperatures (Page & Shanker, 2020). In the mid-elevation region (500-1000 msl), about 39 endemic taxa belonged to 22 families from 15 genera, and 14 orders were identified from the Eastern Ghats and the Western Ghats of Tamil Nadu. It was dominated by six taxa belonging to Gentianales, five from Ericales, and four taxa each from the orders Asparagales, Lamiales, and Magnoliales. Vegetation that supports include Dry Deciduous Forests, Moist Deciduous Forests, Evergreen Forests, Semi-Evergreen Forests, Thorn Forests, and Grasslands. Similarly, the lowland zone, including the coastal regions and inland plains, consists of vegetation like Deciduous Forests and Dry forests, which holds 46 endemic taxa belonging to 32 genera from 18 families and eleven orders. Dominating orders are Poales, Lamiales, and Fabales, representing eleven, nine, and seven taxa, respectively. Earlier studies reported the largest number of endemic species from the plateaus, followed by the moist deciduous, semi-evergreen, and evergreen forests (Joshi & Janarthanam, 2004).

Based on the Mountain Geo-biodiversity Hypothesis, we can understand that mountain formation and upliftment influence the regional geodiversity patterns (Mosbrugger, 2018). The Western Ghats in Tamil Nadu also show unique geodiversity patterns in Agasthyamalai, Anamalai, Palani Hills, Silent Valley, and the Nilgiris range. The highest peaks of Western Ghats include Doddabeta (2637 m) and Kolaribeta (2629 m), located in the Nilgiris and the Vandaravu Peak (2553 m) in Palani Hills (Narasimhan & Irwin, 2021). These mountain regions provide refugia for several endemics, which experienced an increased chance of allopatric speciation due to environmental gradient followed by the 'species-pump' effect (Doebeli & Dieckmann, 2003). The climatic shifts in these geographical regions lead to low levels of change in species distributions and may allow the survival of ancient lineages that have become extinct elsewhere (Harrison & Noss, 2017; Daru, 2020). However, in the Eastern Ghats, regions such as Kalrayan Hill, Jawadhu Hills, Kolli Hills, and Pachamalai areas could have experienced higher historic temperature changes and tend to harbor fewer endemic species. Phylogenetically derived species often occupy higher altitude in the Eastern Ghats, indicating the elevation-driven isolation of endemics. These observations were comparable to earlier studies that highlighted that elevation-driven isolation had significantly shaped the patterns of endemic species richness (Noroozi *et al.,* 2018; Nerlekar *et al.,* 2022).

4. Discovery and rediscovery of endemics of Tamil Nadu

The Discovery of new species is one of the prime interests of botanical research. Tamil Nadu stands in the top third in India's Discovery of new species (Mao *et al.,* 2022). Systematic investigation of plants presumably started during the 18th century in Tamil Nadu. Nearly nineteen new taxa were reported in the Madras Journal of Literature and Science, Flora of British India, *Icones Plantarum Indiae Orientalis,* and Journal of the Linnean Society Botany. These new taxa were considered endemic to Tamil Nadu because they were not reported elsewhere since then. The oldest endemic species identified was *Semecarpus anacardium* var. *cuneifolia* in 1825 by A.P. de Candolle in *Prodromus Systematis Naturalis Regni Vegetabilis.* Interestingly, three species of the 19th century that were considered extinct such as *Koilodepas calycinum* Bedd., *Aerva wightii* Hook.f., and *Andrographis rothii* C.B. Clarke, were rediscovered after 100 years.

Exploration in Tamil Nadu was more prevalent during the 20th century. Out of 272 taxa that were reported here, about 40% (108) were discovered during this period from the Western Ghats of

Tamil Nadu, which were not reported elsewhere. In the late 1970s, about nineteen new taxa from Cyperaceae were reported by Govindarajulu in the Proceedings of the Indian Academy of Sciences, Journal of the Bombay Natural History Society, and Rheedea that remained as endemic species. Reports on rediscovery of 20th-century taxa such as *Impatiens laticornis* C.E.C. Fisch., *Eriochrysis rangacharii* C.E.C. Fisch., *Senecio kundaicus* C.E.C. Fisch., *Berberis nilghiriensis* Ahrendt, *Elaeocarpus blascoi* Weibel, *Dalbergia tinnevelliensis* Thoth., *Andrographis rotundifolia* (Sreem.) Sreem., *Indotristicha tirunelveliana* Sharma, Karthik. & Shetty and *Hiptage nayarii* R.C. Srivast., highlighted the intensive field studies during recent decades.

The floristic exploration was remarkable in the last three decades of the 21st century, and about 145 new endemic taxa were identified from Tamil Nadu. Discovery of new endemic species in the 21st century increased many folds compared to the 19th and 20th centuries. The availability of regional experts, regular field exploration, funding resources, and e-communication are the primary reasons for the increasing pace of species discovery. This also indicates that a list of endemics in a particular geographic region may vary from time to time and is indefinable. Recent technological advancements greatly support taxonomic exploration by providing quick access to online databases, botanical literature, and resources, including type specimens for rapid confirmation and unambiguous identification. Further, the evolving DNA sequencing methodology could speed up plant identification by complementing the traditional taxonomic approaches (Bhavisha and Thaker, 2017; de Boer *et al.,* 2022). In the upcoming years, a lot newer new species may be discovered utilizing the emerging molecular techniques which are crucial for functional taxonomic research in India.

5. Conclusion

Exploration of endemic taxa is essential for *in-situ* and *ex-situ* conservation and to regulate conservation policies. The current study enlisted 272 endemic taxa of Tamil Nadu, representing 138 genera and 59 families. Herbaceous endemics dominated the trees, shrubs, and climbers. The vegetation gradient occurring at hill slopes of the Western Ghats acts as a microhabitat for speciation. About 26% of endemics are threatened, which indicates the high risk of extinction of these taxa. Furthermore, many endemic taxa attract medicinal and timber value, which could be over-extracted from the wild, leading to extinction. In addition, loss of habitat, decline in population, and anthropogenic pressure severely affect the population status of endemics. Therefore, the current study reinforces the need to assess all the endemics based on IUCN guidelines. The comprehensive data on threatened endemic taxa enlisted from this study could help to implement conservation strategies and to preserve the unique endemic taxa.

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Table 1: List of endemic taxa of Tamil Nadu

Sl.No	Family	Botanical Name
1	Ranunculaceae	**Clematis gouriana** Roxb. ex DC., var. **mollifolia** W.T. Wang
2	Ranunculaceae	**Clematis theobromina** Dunn
3	Annonaceae	**Huberantha senjiana** (R. Mural., D. Naras. & N. Balach.) R. Mural., D.Naras. & N.Balach.
4	Annonaceae	**Miliusa flaviviridis** N.V. Page, Poti & K. Ravik.
5	Annonaceae	**Miliusa manickamiana** Murugan
6	Annonaceae	**Miliusa tirunelvelica** Murugan, Manickam, Sundaresan & Jothi
7	Annonaceae	**Miliusa velutina** (Dunal) Hook.f. & Thomson, var. **deviyarina** S.M. Rajendran, S.C. Agarwal & H.N. Verma
8	Annonaceae	**Monoon tirunelveliense** (M.B. Viswan. & Manik.) B.Xue & R.M.K. Saunders
9	Berberidaceae	**Berberis nilghiriensis** Ahrendt
10	Capparaceae	**Capparis kollimalayana** M.B. Viswan.
11	Capparaceae	**Capparis danielii** Murugan, R. Manik., S.P. Nithya, B. Karthik & Arisdason
12	Pittosporaceae	**Pittosporum anamallayense** M.P. Nayar & G.S. Giri
13	Polygalaceae	**Polygala arillata** Buch.-Ham. ex D. Don, var. **revoluta** (Mukerjee) G.S. Giri
14	Caryophyllaceae	**Polycarpaea corymbosa** (L.) Lam. var. **diffusa** (Wight & Arn.) S.R.Ramesh & Razi
15	Clusiaceae	**Agasthiyamalaia pauciflora** (Bedd.) S. Rajkumar & Janarth.
16	Calophyllaceae	**Calophyllum pascalianum** B.R. Ramesh, Ayyappan & De Franceschi
17	Malvaceae	**Corchorus tirunelveliensis** Kalaiselvan, Selvak. & Rajakumar
18	Malvaceae	**Grewia kothayarensis** Murugan & Manickam
19	Elaeocarpaceae	**Elaeocarpus blascoi** Weibel
20	Malpighiaceae	**Hiptage nayarii** R.C. Srivast.
21	Oxalidaceae	**Biophytum longibracteatum** Tadul. & K.C. Jacob
22	Oxalidaceae	**Biophytum puliyangudiense** Rajakumar, Selvak., S.Murug. & Chellap.
23	Balsaminaceae	**Impatiens agastyamalayensis** (Bhaskar) A. Joe, Bhaskar & M. Sabu
24	Balsaminaceae	**Impatiens aliciae** C.E.C.Fisch., Bull. Misc. Inform. Kew 1934(9): 389.1934 var. **pandavaramalayensis** Bhaskar
25	Balsaminaceae	**Impatiens aquatica** Bhaskar
26	Balsaminaceae	**Impatiens courtallensis** Ramas. & Pandur.
27	Balsaminaceae	**Impatiens debilis** Turez.
28	Balsaminaceae	**Impatiens dindigulensis** Ramas., Anjana & Chandra
29	Balsaminaceae	**Impatiens flavescens** Karupp. & V. Ravich.
30	Balsaminaceae	**Impatiens kawttyana** Chhabra & Ramneek
31	Balsaminaceae	**Impatiens laticornis** C.E.C. Fisch.
32	Balsaminaceae	**Impatiens megamalayana** Ramas.

Sl.No	Family	Botanical Name
33	Balsaminaceae	**Impatiens neomunronii** L. Joseph & Bhaskar
34	Balsaminaceae	**Impatiens nilgirica** C.E.C. Fisch. var. **nawttyana** Chhabra & Ramneek
35	Balsaminaceae	**Impatiens omissa** Hook.f.
36	Balsaminaceae	**Impatiens palniensis** Ramas.
37	Balsaminaceae	**Impatiens shevaroyensis** Bhaskar
38	Balsaminaceae	**Impatiens tamilnadensis** Ramas.
39	Balsaminaceae	**Impatiens tanyae** R.Kr.Singh, Arigela & Kabeer
40	Balsaminaceae	**Impatiens yercaudensis** Bhaskar
41	Rutaceae	**Glycosmis tirunelveliensis** Murugan & Manickam
42	Ochnaceae	**Campylospermum barberi** (Manickam & Murugan) Karthik. & V.S. Kumar
43	Celastraceae	**Celastrus paniculatus** Willd., subsp. **angladeanus** Britto, B.Mani & Sinj. Thomas
44	Celastraceae	**Euonymus barberi** Murugan & Manickam
45	Celastraceae	**Euonymus kanyakumariensis** Murugan & Manickam
46	Celastraceae	**Microtropis microcarpa** Wight var. **densiflora** (Wight) Meissner Frectn.
47	Rhamnaceae	**Sageretia coimbatorensis** Bhandari & Bhansali
48	Rhamnaceae	**Ziziphus mauritiana** Lam. var. **pubescens** Bhandari & Bhansali
49	Vitaceae	**Cissus subramanyamii** B.V. Shetty & P. Singh
50	Vitaceae	**Tetrastigma tamilnadense** N. Balach. & K. Ravik.
51	Anacardiaceae	**Nothopegia heyneana** (Hook. f.) Gamble, var. **linearifolia** D.Chandra & R.B.Ghosh
52	Anacardiaceae	**Nothopegia sivagiriana** Murugan & Manickam
53	Anacardiaceae	**Nothopegia vajravelui** K. Ravik. & V. Lakshm.
54	Anacardiaceae	**Nothopegia monadelpha** (Roxb.) Forman var. **macrocarpa** (Hook.f.) Karthik. & Moorthy
55	Anacardiaceae	**Semecarpus anacardium** L.f., var. **cuneifolia** (Roxb.) DC.
56	Fabaceae	**Dichrostachys cinerea** (L.) Wight & Arn., var. **indica** Brenan & Brummitt
57	Fabaceae	**Senegalia tanjorensis** (Ragup., Thoth. & A. Mahad.) A .Deshp. & Maslin
58	Fabaceae	**Crotalaria pellita** Bert. ex DC., var. **ramnadensis** (A.A. Ansari) Subraman. & A.K. Pandey
59	Fabaceae	**Dalbergia gardneriana** Benth.
60	Fabaceae	**Dalbergia matthewii** Soosairaj, P.Raja & Britto
61	Fabaceae	**Dalbergia tinnevelliensis** Thoth.
62	Fabaceae	**Derris benthamii** (Thw.) Thw. var. **wightii** (Baker) Thoth.
63	Fabaceae	**Derris gamblei** Soosairaj, P. Raja & Dhatchan.
64	Fabaceae	**Derris matthewii** Kottaim.
65	Fabaceae	**Grona barbata** (L.) H. Ohashi & K. Ohashi, subsp. **saulierei** (Schindl.) H. Ohashi & K. Ohashi

Sl.No	Family	Botanical Name
66	Fabaceae	**Indigofera kudiraimozhiensis** Selvak. & Rajakumar
67	Fabaceae	**Indigofera tirunelvelica** Sanjappa
68	Fabaceae	**Millettia pseudoracemosa** Thoth. & S. Ravik.
69	Fabaceae	**Rhynchosia ganesanii** Kottaim. & Vasud.
70	Rosaceae	**Alchemilla madurensis** (Rothm.) Panigrahi & K.M. Purohit
71	Rosaceae	**Alchemilla panigrahiana** K.M. Purohit & G.Panigrahi
72	Rosaceae	**Alchemilla parijae** Panigrahi & K.M. Purohit
73	Myrtaceae	**Eugenia bolampattiana** V.Ravich., Murug. & Murugan
74	Myrtaceae	**Eugenia manickamiana** Murugan
75	Myrtaceae	**Eugenia megamalayana** Murugan & Arum.
76	Myrtaceae	**Eugenia velliangiriana** Murug., V.Ravich., Murugan & Arum.
77	Myrtaceae	**Eugenia seithurensis** Gopalan & S.R. Sriniv.
78	Myrtaceae	**Syzygium agastyamalayanum** M.B.Viswan. & Manik.
79	Myrtaceae	**Syzygium bharathii** Ramas.
80	Myrtaceae	**Syzygium microphyllum** Gamble
81	Melastomataceae	**Memecylon courtallense** Manickam, Murugan, Jothi & Sundaresan
82	Melastomataceae	**Memecylon manickamii** Murugan, Sundaresan & Jothi
83	Melastomataceae	**Memecylon mundanthuraianum** M.B.Viswan. & Manik.
84	Melastomataceae	**Memecylon nervosum** Vadhyar, J.H.F.Benj. & Sujana
85	Melastomataceae	**Memecylon tirunelvelicum** Murugan, Manickam & Sundaresan
86	Melastomataceae	**Osbeckia tirunelvelica** Manickam & Murugan ex Kottaim. & Gnanasek.
87	Melastomataceae	**Sonerila coimbatorensis** Murug., V.Ravich. & Murugan
88	Melastomataceae	**Sonerila coriacea** Lundin & B.Nord.
89	Melastomataceae	**Sonerila inaequalis** Murugan & Manickam
90	Melastomataceae	**Sonerila kanniyakumariana** Gopalan & A.N.Henry
91	Melastomataceae	**Sonerila nayariana** Murug. & V.Balas.
92	Melastomataceae	**Sonerila parameswaranii** K.Ravik. & V. Lakshm
93	Melastomataceae	**Sonerila sadasivanii** Nayar, var. **kanniyakumariensis** G.S. Giri & M.P.Nayar
94	Cucurbitaceae	**Zehneria hookeriana** (Wight & Arn.) Arn.
95	Araliaceae	**Schefflera agasthiyamalayana** Manickam, Murugan, Sundaresan & Jothi
96	Araliaceae	**Schefflera maduraiensis** K.Ravik. & V.Lakshm.
97	Rubiaceae	**Galium javanicum** Blume, Bijdr. Fl. Ned. Ind. 16: 943.1826 var. **pulneyense** R. Bhattacharjee
98	Rubiaceae	**Hedyotis kottangathattiensis** M.B.Viswan. & Manik.
99	Rubiaceae	**Hedyotis rajasekaranii** Karupp. & Ravichandran
100	Rubiaceae	**Hedyotis sithiravaraiensis** S. Muruganandam, Devanath., S. Ravikumar & D. Naras. sp. nov.

Sl.No	Family	Botanical Name
101	Rubiaceae	**Hedyotis shettyi** K. Ravik. & V. Lakshm.
102	Rubiaceae	**Hedyotis nairii** Murug. & V. Balas.
103	Rubiaceae	**Ixora saulierei** Gamble
104	Rubiaceae	**Neurocalyx bremeri** M.B. Viswan., Manik. & Tangav.
105	Rubiaceae	**Ophiorrhiza tirunelvelica** A.N. Henry & Subram.
106	Rubiaceae	**Psychotria gopalanii** S.Samboor.
107	Rubiaceae	**Psychotria henryana** Murugan & Gopalan
108	Rubiaceae	**Psychotria nudiflora** Wight & Arn. var. **latifolia** Deb & M. Gangop.
109	Caprifoliaceae	**Dipsacus leschenaultii** Coult. ex DC.
110	Asteraceae	**Acilepis nayarii** (Uniyal) H.Rob. & Skvarla
111	Asteraceae	**Acilepis pothigaiana** (Chellad. & Gopalan) Kottaim.
112	Asteraceae	**Carpesium nepalense** Less. var. **nilagiricum** (Clarke) Sarv.Kumar
113	Asteraceae	**Cissampelopsis calcadensis** (Ramaswami) C. Jeffrey & Y.L. Chen
114	Asteraceae	**Cissampelopsis vivekananthanii** Gopalan & Chithra
115	Asteraceae	**Kleinia shevaroyensis** (Fyson) Uniyal
116	Asteraceae	**Monosis kannikattiensis** (Rajakumar, Selvak., S.Murug. & Chellap.) Kottaim.
117	Asteraceae	**Monosis shevaroyensis** (Gamble) H.Rob. & Skvarla
118	Asteraceae	**Senecio kundaicus** C.E.C. Fishch.
119	Asteraceae	**Sonchus jainii** Chandrab., V.Chandras. & N.C.Nair
120	Ericaceae	**Gaultheria fragrantissima** Wall., var. **obovata** S. Panda & Sanjappa
121	Primulaceae	**Ardisia ramaswamii** Nazarudeen, Rajkumar & Prakashkumar
122	Symplocaceae	**Symplocos authilingomii** A.N. Henry & R. Gopalan
123	Symplocaceae	**Symplocos complanata** Brand
124	Symplocaceae	**Symplocos huegeliana** Brand
125	Symplocaceae	**Symplocos kothayarensis** Sundaresan, Jothi, S. Rajkumar & Manickam
126	Apocynaceae	**Ceropegia adscendens** (Roxb.) Bruyns, var. **carinata** (Gravely & Mayur.) Kottaim.
127	Apocynaceae	**Ceropegia bhupinderiana** (Sarkaria) Bruyns
128	Apocynaceae	**Ceropegia bourneae** (Gamble) Bruyns
129	Apocynaceae	**Ceropegia brevitubulata** Bedd.
130	Apocynaceae	**Ceropegia mahajanii** (Kambale & S.R.Yadav) Bruyns
131	Apocynaceae	**Ceropegia mannarana** P. Umam. & P. Daniel
132	Apocynaceae	**Ceropegia matthewiana** (Bruyns & Britto) Bruyns
133	Apocynaceae	**Ceropegia megamalayana** (Karupp.) Kottaim.
134	Apocynaceae	**Ceropegia muruganii** Kottaim.
135	Apocynaceae	**Ceropegia rapinatiana** (Britto & Bruyns) Bruyns

Sl.No	Family	Botanical Name
136	Apocynaceae	**Ceropegia ravikumariana** Kambale & Gnanasek.
137	Apocynaceae	**Ceropegia saldanhae** (Britto & Bruyns) Bruyns
138	Apocynaceae	**Ceropegia sarkariae** (Lavranos & R. Frandsen) Bruyns var. **longipedicellata** (Aditya) Kottaim.
139	Apocynaceae	**Ceropegia sarkariae** (Lavranos & R. Frandsen) Bruyns, var. **sarkariae** Lavranos & R. Frandsen
140	Apocynaceae	**Hoya kanyakumariana** Henry & Swamin.
141	Apocynaceae	**Hoya wightii** Hook.f. subsp. **palniensis** K.T. Matthew
142	Gentianaceae	**Exacum klackenbergii** Gopalan
143	Boraginaceae	**Cordia ramanujamii** N.Balach. & Rajendiran
144	Convolvulaceae	**Convolvulus rufescens** Choisy
145	Linderniaceae	**Lindernia minima** (Benth.) Mukerjee
146	Orobanchaceae	**Christisonia saulierei** Dunn
147	Orobanchaceae	**Striga indica** K.M.P. Kumar, P. Jayanthi, A. Rajendran & M. Sabu
148	Orobanchaceae	**Striga musselmanii** Omalsree & V.K.Sreenivas
149	Gesneriaceae	**Henckelia gambleana** (C.E.C. Fisch.) A. Weber & B.L. Burtt
150	Gesneriaceae	**Henckelia lyrate** (Wight) A. Weber & B.L. Burtt var. **prostrata** (C.B. Clarke) D. Naras. et Sheeba *comb nov.*
151	Gesneriaceae	**Henckelia sivagiriensis** (Rajakumar, Selvak., S.Murug. & Chellap.) E.S.S.Kumar
152	Acanthaceae	**Andrographis lobelioides** Wight
153	Acanthaceae	**Andrographis rotundifolia** (Sreem.) Sreem.
154	Acanthaceae	**Andrographis rothii** C.B. Clarke
155	Acanthaceae	**Barleria durairajii** K. Ravik., D. Naras., Devanath. & Gnanasek.
156	Acanthaceae	**Hygrophila madurensis** (N.P. Balakr. & Subram.) Karthik. & Moorthy
157	Acanthaceae	**Justicia tamilnadensis** P.Raja & Soosairaj, sp. nov
158	Acanthaceae	**Lepidagathis gandhii** Gnanasek., A.F.J.King, S.M.Kasim & Arisdason
159	Acanthaceae	**Neuracanthus neesianus** (Wight ex T. Anderson) C.B. Clarke
160	Acanthaceae	**Rungia anamalayana** (Chandrab. & V. Chandras.) A. Nazarudeen & G. Rajkumar
161	Acanthaceae	**Strobilanthes bolumpattiana** Bedd.
162	Acanthaceae	**Strobilanthes matthewiana** R.W. Scotland
163	Acanthaceae	**Strobilanthes tricostata** S. Thomas, B. Mani, Britto & Pradeep
164	Lamiaceae	**Anisomeles tirunelveliensis** Rajakumar, Selvak. & S. Murug.
165	Lamiaceae	**Coleus bishopianus** (Gamble) Smitha & A.J.Paton
166	Lamiaceae	**Coleus bourneae** (Gamble) Smitha & A.J.Paton
167	Lamiaceae	**Coleus kanyakumariensis** (Shinoj & Sunojk.) Smitha

Sl.No	Family	Botanical Name
168	Lamiaceae	**Leucas anandaraoana** P.Umam. & P.Daniel
169	Lamiaceae	**Leucas ciliata** Benth. var. **sericostoma** (Hook.f.) Sunojk.
170	Lamiaceae	**Platostoma menthoides** (L.) A.J.Paton, var. **longiracemosum** (Ramam. & Sebastine) Kottaim.
171	Lamiaceae	**Platostoma palniense** (Mukerjee) A.J.Paton
172	Lamiaceae	**Pogostemon hedgei** V.S.Kumar & B.D.Sharma
173	Lamiaceae	**Pogostemon hirsutus** Benth.
174	Lamiaceae	**Pogostemon raghavendranii** R.Murugan & Livingst.
175	Lamiaceae	**Premna balakrishnanii** Rajendran & P.Daniel
176	Lamiaceae	**Premna mundanthuraiensis** Rajendran & P.Daniel
177	Lamiaceae	**Pogostemon speciosus** Benth., var. **filiformis** V.S.Kumar & B.D.Sharma
178	Lamiaceae	**Teucrium plectranthoides** Gamble
179	Lamiaceae	**Teucrium ramaswamii** M.B.Viswan. &Manik.
180	Amaranthaceae	**Aerva wightii** Hook.f.
181	Podostemaceae	**Indotristicha tirunelveliana** Sharma, Karthik. & Shetty
182	Piperaceae	**Piper obtusistigmum** C.DC.
183	Piperaceae	**Piper pykarahense** C.DC.
184	Lauraceae	**Beilschmiedia tirunelvelica** Manickam, Murugan, Jothi & Sundaresan
185	Lauraceae	**Litsea kakkachensis** R.Ganesan
186	Loranthaceae	**Dendrophthoe sarcophylla** (Wight &Arn.) Danser
187	Euphorbiaceae	**Euphorbia balakrishnanii** Binojk. & Gopalan
188	Euphorbiaceae	**Euphorbia heyneana** Spreng. subsp. **nilagirica** (Miq.) Panigrahi
189	Euphorbiaceae	**Jatropha maheshwarii** Subram. & Nayar
190	Euphorbiaceae	**Koilodepas calycinum** Bedd.
191	Euphorbiaceae	**Micrococca wightii** (Hook.f.) Prain, var. **wightii** Hook.f.
192	Euphorbiaceae	**Micrococca wightii** (Hook.f.) Prain, var. **angustata** (S.R.M. Susila Rani & N.P. Balakr.) Radcl. -Sm. & Govaerts
193	Euphorbiaceae	**Micrococca wightii** (Hook.f.) Prain, var. **glabrata** (S.R.M. Susila Rani & N.P. Balakr.) Radcl. -Sm. & Govaerts
194	Phyllanthaceae	**Meineckia calycina** G.L. Webster
195	Phyllanthaceae	**Phyllanthus anamalayanus** (Gamble) G.L. Webster
196	Phyllanthaceae	**Phyllanthus fimbriatus** (Wight) Müll. -Arg.
197	Phyllanthaceae	**Phyllanthus macraei** Mull.Arg. var. **hispida** Gamble
198	Phyllanthaceae	**Phyllanthus rangachariarii** Murugan, Kabeer & G.V.S.Murthy
199	Phyllanthaceae	**Phyllanthus singampattianus** (Sebast. & A.N. Henry) Kumari & Chandrab.
200	Urticaceae	**Pouzolzia bennettiana** Wight var. **macrophylla** Hook.f.
201	Moraceae	**Ficus anamalayana** Sudhakar & G.V.S. Murthy

Sl.No	Family	Botanical Name
202	Hydrocharitaceae	**Halophila ovalis** (R. Br.) Hook.f., subsp. **ramamurthiana** K.Ravik. & R.Ganesan
203	Zingiberaceae	**Hedychium forrestii** Diels var. **palaniense** Sanoj & M.Sabu
204	Zingiberaceae	**Kaempferia evansii** Blatt.
205	Asparagaceae	**Dipcadi coimbatorensis** V.Ravich., R.Kr.Singh & Murugan
206	Commelinaceae	**Commelina tricolor** Barnes
207	Araceae	**Arisaema jethompsonii** Thiyagaraj & P.Daniel
208	Araceae	**Cryptocoryne tambraparaniana** Rajakumar, P.Daniel, Selvak., S.Murug. & Chellap.
209	Araceae	**Pothos tirunelveliensis** Sasikala & Reema Kumari
210	Eriocaulaceae	**Eriocaulon panagudianum** R.Ansari & N.P.Balakr.
211	Cyperaceae	**Bulbostylis swamyi** Govind.
212	Cyperaceae	**Carex eluta** Nelmes
213	Cyperaceae	**Carex kotagirica** Maji and V.P. Prasad
214	Cyperaceae	**Carex panduranganii** Kalidass
215	Cyperaceae	**Carex pseudoaperta** Boeckeler ex Kuek., Engler
216	Cyperaceae	**Carex thanikaimoniana** Govind.
217	Cyperaceae	**Cyperus coonoorensis** Viji, Pandur., Deepu & G.C.Tucker
218	Cyperaceae	**Cyperus palianparaiensis** Govind.
219	Cyperaceae	**Cyperus polyanthelus** Govind.
220	Cyperaceae	**Cyperus pseudoalatus** (Wad.Khan & R.D.Taur) Kottaim.
221	Cyperaceae	**Cyperus pyramidalis** (Govind.) V.P.Prasad & Govaerts
222	Cyperaceae	**Cyperus raynalianus** (Govind.) Bauters
223	Cyperaceae	**Cyperus rubriglumosus** Govind.
224	Cyperaceae	**Fimbristylis amplocarpa** Govind.
225	Cyperaceae	**Fimbristylis crystallina** Govind.
226	Cyperaceae	**Fimbristylis latiglumifera** Govind.
227	Cyperaceae	**Fimbristylis latinucifera** Govind.
228	Cyperaceae	**Fimbristylis longistigmata** Govind.
229	Cyperaceae	**Fimbristylis matthewii** Murug., V.Balas. & Nagarajan
230	Cyperaceae	**Fimbristylis murthyi** Yarrayya & Ratna Kumar
231	Cyperaceae	**Fimbristylis mycosa** Govind.
232	Cyperaceae	**Fimbristylis pandurata** Govind.
233	Cyperaceae	**Fimbristylis rectifolia** Govind.
234	Cyperaceae	**Fimbristylis rigidiuscula** Govind.
235	Cyperaceae	**Fimbristylis rugosa** Govind.
236	Cyperaceae	**Fimbristylis scabrisquama** Govind.

Sl.No	Family	Botanical Name
237	Cyperaceae	**Fimbristylis sivarajanii** W. Khan & R.D. Taur
238	Cyperaceae	**Fimbristylis strigosa** Govind.
239	Cyperaceae	**Fimbristylis tortifolia** Govind.
240	Cyperaceae	**Fimbristylis velliangiriensis** Murug., V.Balas. & Nagarajan
241	Cyperaceae	**Fuirena pubescens** (Poir.) Kunth var. **pergamentacea** C.E.C.Fisch.
242	Cyperaceae	**Scleria swamyi** Govind.,
243	Orchidaceae	**Habenaria denticulata** Rchb.f.
244	Orchidaceae	**Habenaria pallideviridis** Seidenf. ex K.M. Mathew
245	Orchidaceae	**Habenaria polyodon** Hook.f.
246	Orchidaceae	**Liparis beddomei** Ridl.
247	Orchidaceae	**Luisia megamalaiana** Karupp. & V.Ravich
248	Orchidaceae	**Oberonia balakrishnanii** R. Ansari
249	Orchidaceae	**Polystachya seidenfadeniana** Mytnik & Baranow
250	Orchidaceae	**Tropidia hegderaoi** S.Misra
251	Orchidaceae	**Zeuxine chowdheryi** Av.Bhattacharjee & Sabap.
252	Poaceae	**Acrachne henrardiana** (Bor) S. M. Phillips.
253	Poaceae	**Agrostis schmidii** (Hook.f.) Fischer.
254	Poaceae	**Andropogon longipes** Hack.
255	Poaceae	**Brachiaria nilagirica** Bor
256	Poaceae	**Chloris wightiana** Nees ex Steud.
257	Poaceae	**Chrysopogon copei** Mohanan & Ravi
258	Poaceae	**Dimeria jayachandranii** Arisdason & P. Daniel
259	Poaceae	**Dimeria kollimalayana** Mohanan & Rao
260	Poaceae	**Enteropogon coimbatorensis** K K. N. Nair, Jain & Nayar
261	Poaceae	**Eragrostis rottleri** Stapf
262	Poaceae	**Eriochrysis rangacharii** Fischer
263	Poaceae	**Helictotrichon polyneurum** (Hook. f.) Henrard.
264	Poaceae	**Isachne deccanensis** Bor
265	Poaceae	**Ischaemum koenigii** (Hook. f.) Stapf ex Fischer.
266	Poaceae	**Polypogon nilgiricus** Kabeer & V.J.Nair
267	Poaceae	**Trachys copeana** Kabeer & V.J. Nair
268	Poaceae	**Trachys narasimhanii** Ravich.
269	Poaceae	**Tripogon ashihoi** Murug., Arum. & Kabeer
270	Poaceae	**Tripogon borii** Kabeer, V.J.Nair & G.V.S.Murthy
271	Poaceae	**Tripogon copei** Newmaster, V.Balas., Murug. & Ragup.
272	Poaceae	**Tripogon ravianus** Sunil & Pradeep

Table 2: . List of IUCN red-listed threatened taxa of Tamil Nadu.

Sl.No	Botanical Name	Family	Conservation Status	References
1	**Neuracanthus neesianus** (Wight ex T. Anderson) C.B. Clarke	Acanthaceae	Extinct. Only two herbarium sheets of this species collected from Tami Nadu: Paloor, Palayankottai is available in the Hooker Herbarium at Kew.	Kameswara *et al.* (2003)
2	**Justicia tamilnadensis** P.Raja & Soosairaj, sp. nov	Acanthaceae	Critically Endangered. The Area of Occupancy (AOO) is c. 0.5 km² and the distribution is limited to the type locality and total population is less than 20 individuals. This species is classified in criterion B (AOO) under B2a and B2b and criterion D (number of mature individuals is less than 20) as well to meet the criteria for the Critically Endangered B2ab (ii,iii,v); D.	Raja *et al.* (2023)
3	**Lepidagathis gandhii** Gnanasek., A.F.J.King, S.M.Kasim & Arisdason	Acanthaceae	Critically Endangered. The EOO and AOO for this species are 21.2 km2 and 16 km2 respectively. Severe decline of mature individuals was observed in the field. The species is evaluated provisionally here as 'Critically Endangered' [CR B1b(i,iii,v)c(i) + 2b(ii,iii,v)c(ii)] following the IUCN Red List Categories and Criteria version 15.1.	Gnanasekaran *et al.* (2023)
4	**Strobilanthes tricostata** S. Thomas, B. Mani, Britto & Pradeep	Acanthaceae	Critically Endangered. The extent of occurrence (EOO) is less than 100 km2 (B1) and the area of occupancy (AOO) is less than 10 km2 (B2). It is found in only one location (B2a) and the number of mature individuals is less than 250 (C). The habitat is severely fragmented and decline observed in the area and quality of habitat (B2biii). Based on above criterion the species is assessed as critically endangered (CR).	Thomas *et al.* (2019)

Sl.No	Botanical Name	Family	Conservation Status	References
5	**Andrographis rotundifolia** (Sreem.) Sreem.	Acanthaceae	Critically Endangered. The species is assessed as 'Critically Endangered' [CR B1a+B2a] in Boluvampatti hills, Coimbatore District, using the IUCN Red List Categories and Criteria version 3.1.	Gnanasekaran & Murthy (2015)
6	**Barleria durairajii** K. Ravik., D. Naras., Devanath. & Gnanasek.	Acanthaceae	Critically Endangered. The species is known only from the type locality, where it is very common. However, more explorations in similar habitats are required to know its population size, area of occupancy and extent of occurrence and threats, if any, to assess the exact threat category.	Ravikumar *et al.* (2016)
7	**Andrographis rothii** C.B. Clarke	Acanthaceae	Endangered. The species is very poorly represented in national and international herbaria by less than 10 collections and all of them have been collected from the Western Ghats of Tirunelveli district in Tamil Nadu. Therefore, the species is assessed as 'Endangered' [EN (B1ab(iii)+B2ab(iii)] using IUCN Red List Categories and Criteria Version 3.1.	Gnanasekaran *et al.* (2015)
8	**Nothopegia vajravelui** K. Ravik. & V. Lakshm.	Anacardiaceae	Endangered. Known from only Kudamparai Estate, Megamalai, High Wavy's Mountains, Pachakumatetu Hills	Lakshmanan & Ravikumar (1988)
9	**Monoon tirunelveliense** (M.B. Viswan. & Manik.) B.Xue & R.M.K.Saunders	Annonaceae	Critically Endangered. Steno-endemic and critically endangered species distributed in the Kalakkad Mundanthurai Tiger Reserve (KMTR) in India	Xue *et al.* (2018)
10	**Ceropegia rapinatiana** (Britto & Bruyns) Bruyns	Apocynaceae	Vulnerable. Known from only type location Tamil Nadu, Pudukkottai District, Narthamalai.	Rajasekar *et al.* (2023)
11	**Hoya kanyakumariana** Henry & Swamin.	Apocynaceae	Critically Endangered.	Gopalan & Henry (2000)
12	**Ceropegia matthewiana** (Bruyns & Britto) Bruyns	Apocynaceae	Vulnerable.	Gopalan & Henry (2000)

Sl.No	Botanical Name	Family	Conservation Status	References
13	**Ceropegia saldanhae** (Britto & Bruyns) Bruyns	Apocynaceae	Vulnerable.	Gopalan & Henry (2000)
14	**Schefflera maduraiensis** K.Ravik. & V.Lakshm.	Araliaceae	Endangered. Known from only two location i.e., Way to Suruli falls, Theni district and Megamalai Wildlife Sanctuary, Tamil Nadu.	Ravichandran (2016)
15	**Schefflera agasthiyamalayana** Manickam, Murugan, Sundaresan & Jothi	Araliaceae	Endangered.	Devika & Amitha Bachan 2023.
16	**Cissampelopsis vivekananthanii** Gopalan & Chithra	Asteraceae	Critically Endangered.	Gopalan & Henry (2000)
17	**Impatiens tanyae** R.Kr.Singh, Arigela & Kabeer	Balsaminaceae	Endangered. Known from only type locality Kodaikanal Wildlife Sanctuary. Species is represented by about 195 mature individuals	Arigela *et al.* (2019)
18	**Impatiens tamilnadensis** Ramas.	Balsaminaceae	Endangered. Known from only type locality Megamalai Wildlife Sanctuary.	Raju (2020)
19	**Impatiens aliciae** C.E.C.Fisch. var.	Balsaminaceae	Critically Endangered. Known from only type locality pandavaramalai	Bhaskar (2012)
20	**Impatiens flavescens** Karupp. & V. Ravich.	Balsaminaceae	Critically Endangered. Known only from a small area in Megamalai hills, Theni District, Tamil Nadu. The habitat is exposed to forest fire, cattle grazing and tourism impact, hence it is assessed as Critically Endangered (CR).	Subbiah & Vellingiri (2019)
21	**Impatiens megamalayana** Ramas.	Balsaminaceae	Critically Endangered. Rare species occurring on hill tops Megamalai Hills, Theni District, Tamil Nadu, India. Therefore, the species is assessed as Critically Endangered (CR B1ab(i,ii,v); 2ab(i,ii,iv); D) in accordance with the IUCN guidelines.	Ramasubbu *et al.* (2017)

Sl.No	Botanical Name	Family	Conservation Status	References
22	**Impatiens laticornis** C.E.C. Fisch.	Balsaminaceae	Critically Endangered. The area of occupancy is about 3 km2 with only 18 matured individuals in Bangi Halla, on way to Bangitappal from upper Bhavani. Therefore, the species is provisionally assessed as Critically Endangered (CR).	Tharani *et al.* (2021).
23	**Impatiens courtallensis** Ramas. & Pandur.	Balsaminaceae	Critically Endangered. There were only two populations (32±9 individuals per populations) observed within 0.6 km and the habitat was severally affected by landslide. Therefore, the species is assessed as critically endangered according to the IUCN.	Ramasubbu *et al.* (2015)
24	**Impatiens debilis** Turez.	Balsaminaceae	Critically Endangered.	Narasimhan & Irwin (2021)
25	**Euonymus kanyakumariensis** Murugan & Manickam	Celastraceae	Endangered. Known form only the type locality on the way to Parvathain, Mahendragiri Hills, Kanyakumari district, Tamil Nadu, India	Murugan & Manickam (2005)
26	Euonymus barberi Murugan & Manickam	Celastraceae	Endangered. Known from only the type location Agasthiyamalai, India.	Murugan & Manickam (2006)
27	**Microtropis microcarpa** Wight var. ***densiflora*** (Wight) Meissner Frectn.	Celastraceae	Endangered.	
28	**Agasthiyamalaia pauciflora** (Bedd.) S.Rajkumar & Janarth.	Clusiaceae	Critically Endangered. This species has been assessed as Critically Endangered (CR B1+2c ver. 2.3 (1994) by WCMC under *Poeciloneuron pauciflorum* Bedd.	World Conservation Monitoring Centre (2017)

Sl.No	Botanical Name	Family	Conservation Status	References
29	**Cyperus coonoorensis** Viji	Cyperaceae	Critically Endangered. The extent of occurrence (EOO) is less than 10 km2 and the area of occupancy (AOO) is less than 0.5 km2, and there are less than 250 individuals in the population, which indicates its narrow endemic nature. Therefore, preliminary conservation assessment considered this species as Critically Endangered: CR – B1a; B2a; C2a(ii) (IUCN 2012a & b, 2013).	Viji *et al.* (2015)
30	**Elaeocarpus blascoi** Weibel	Elaeocarpaceae	Critically Endangered. There are only two known mature wild specimens of this large tree species persisting at Vattakanal Shola of Kodaikanal, Palani hills of Western Ghats, Tamil Nadu State. It is threatened with habitat loss as a result of increased forestry and agriculture. The species is assessed as Critically Endangered B1ab(iii)+2ab(iii) (IUCN 2021)	Raveendran (2022)
31	**Eriocaulon panagudianum** R.Ansari & N.P.Balakr.	Eriocaulaceae	Critically Endangered.	Gopalan & Henry (2000)
32	**Euphorbia heyneana** Spreng. subsp. ***nilagirica*** (Miq.) Panigrahi	Euphorbiaceae	Endangered. Known from only the type location the Nilgiri Hills	Panigrahi (1974)
33	**Syzygium microphyllum** Gamble	Myrtaceae	Endangered. Known from only the type locality in the Agastyamalai Hills. More information is needed on the status of the species and direct threats to its populations. Endangered B1+2c.	World Conservation Monitoring Centre (1998a)
34	**Koilodepas calycinum** Bedd.	Euphorbiaceae	Endangered. Species is known from only two collections Panagudi in Kaniyakumari and Sethur Hills in Ramanathapuram District. Therefore, preliminary conservation assessment considered this species as Endangered B1+2c.	World Conservation Monitoring Centre (1998b)

Sl.No	Botanical Name	Family	Conservation Status	References
35	**Micrococca wightii** (Hook.f.) Prain, var. **angustata** (S.R.M. Susila Rani & N.P. Balakr.) Radcl. -Sm. & Govaerts	Euphorbiaceae	Critically Endangered.	Gopalan & Henry (2000)
36	**Derris matthewii** Kottaim.	Fabaceae	Vulnerable. Known from only the type location Alagar Hills, Nupuragangai- Periaaruvi valley.	Kottaimuthu Vasudevan (2016)
37	**Derris benthamii** (Thw.) Thw. var. **wightii** (Baker) Thoth.	Fabaceae	Endangered. Known from only the type location Kalakad-Mundanthurai Tiger Reserve.	Thothathri (1984)
38	**Dalbergia tinnevelliensis** Thoth.	Fabaceae	Endangered. Known from only type locality Kalakad-Mundanthurai Tiger Reserve.	Gopalan & Henry (2000)
39	**Dalbergia gardneriana** Benth.	Fabaceae	Endangered. The extent of occurrence (EOO) and area of occupancy (AOO) are 125 km2 and 28 km2, respectively, and the species is known from four locations. Therefore, the species is assessed as Endangered B1ab(iii)+2ab(iii).	Plummer (2022)
40	**Indigofera tirunelvelica** Sanjappa	Fabaceae	Endangered.	Gopalan & Henry (2000)
41	**Dalbergia tinnevelliensis** Thoth.	Fabaceae	Critically Endangered.	Gopalan & Henry (2000)
42	**Pogostemon hedgei** V.S.Kumar & B.D.Sharma	Lamiaceae	Critically Endangered.	Gopalan & Henry (2000)
43	**Teucrium plectranthoides** Gamble	Lamiaceae	Critically Endangered.	Gopalan & Henry (2000)
44	**Premna mundanthuraiensis** Rajendran & P.Daniel	Lamiaceae	Endangered.	Gopalan & Henry (2000)

Sl.No	Botanical Name	Family	Conservation Status	References
45	**Lindernia minima** (Benth.) Mukerjee	Linderniaceae	Endangered. Known from only two locations with a restricted area of occupancy and extent of occurrence. It has a disjunct distribution, found in Chengalpattu and in Tirunelveli on the east coast. The two known populations are threatened by commercial and residential developments. It is therefore assessed as Endangered B1ab(ii,iii,v)+2ab(ii,iii,v).	Rehel (2013)
46	**Hiptage nayarii** R.C. Srivast.	Malpighiaceae	Endangered. The extent of occurrence (EOO): 6 sq. km (B1) and area of occupancy (AOO): 4 sq. km (B2). Distributed within the ranges of Ambasamudram and Mundanthurai in the Kalakad Mundanthurai Tiger Reserve (KMTR). Therefore, preliminary conservation assessment considered this species as Endangered.	Viswanathan *et al.* (2021)
47	**Osbeckia tirunelvelica** Manickam & Murugan ex Kottaim. & Gnanasek.	Melastomataceae	Endangered. Known form only towards the road below Manjolai, Manjolai hills, Tirunelveli District, India.	Kottaimuthu & Gnanasekaran (2015)
48	**Memecylon tirunelvelicum** Murugan, Manickam & Sundaresan	Melastomataceae	Endangered. Known from only Kalakad Wild Life Sanctuary, Sengaltheri-Kulirati path.	Murugan *et al.* (2001)
49	**Memecylon mundanthuraianum** M.B.Viswan. & Manik.	Melastomataceae	Endangered. Known from only Kalakad- Mundanthurai Tiger Reserve, near Poonkulam.	Viswanathan & Manikandan (2001)
50	**Memecylon manickamii** Murugan	Melastomataceae	Endangered. Known from only Kalakad- Mundanthurai Tiger Reserve.	Narasimhan & Irwin (2021)
51	**Sonerila parameswaranii** K.Ravik. & V.Lakshm	Melastomataceae	Endangered. Known from only type locality Megamalai Wildlife Sanctuary, Theni district	Ravichandran (2016)
	Snerila nayariana Murug. & V.Balas.	Melastomataceae	Endangered. Known from only Velliangiri hills, Coimbatore District, Tamil Nadu, India.	Murugesan & Balasubramaniam (2011)

Sl.No	Botanical Name	Family	Conservation Status	References
53	**Sonerila coriacea** Lundin & B.Nord.	Melastomataceae	Endangered. Species has a very restricted distribution in the area around Mahendragiri Peak in the Tinnevelley Hills. No recent collections have been recorded since it was last collected in 1969. Therefore, its conservation status may be classified as Endangered (EN) according to IUCN Red List criteria.	Lundin & Nordenstam (2009)
54	**Sonerila kanniyakumariana** Gopalan & A.N.Henry	Melastomataceae	Endangered.	Gopalan & Henry (2000)
55	**Sonerila sadasivanii** Nayar var. **kanniyakumariensis** G.S.Giri & M.P.Nayar	Melastomataceae	Vulnerable.	Gopalan & Henry (2000)
56	**Sonerila inaequalis** Murugan & Manickam	Melastomataceae	Endangered.	Narasimhan & Irwin (2021)
57	**Eugenia manickamiana** Murugan	Myrtaceae	Endangered. Known from only the type location Tirunelveli District, Courtallum Hills, way to Attaikkadu from Therkkumalai Estate.	
58	**Eugenia megamalayana** Murugan & Arum.	Myrtaceae	Critically Endangered. Only three individuals were seen in the coffee plantation of dry forest areas, the new taxon is assigned here as a "Critically Endangered" [CR A3c] following the IUCN Red List Categories and Criteria due to preliminary risk of extinction.	Murugan & Arumugam (2019)
59	***Syzygium bharathii*** Ramas.	Myrtaceae	Critically Endangered. The species is known from only one site of Megamalai hills and there were about 30 individuals observed within 4.67 km2. Hence, the species is assessed as Critically endangered (CR; Criterion B1(a), B2 +C2(a)(i),(b)+D)according to the IUCN guidelines (2016).	Raju *et al.* (2018)

Sl.No	Botanical Name	Family	Conservation Status	References
60	**Eugenia bolampattiana** V.Ravich., Murug. & Murugan	Myrtaceae	Critically Endangered. The species is known only from the type locality, where only 18 individuals occur in a forest area of 10 km2. Its distribution has been evaluated under the Red List Categories and Criteria and is assessed here as Critically Endangered (CR B1ab(iii), B2ab(iii)).	Ravichandran *et al.* (2020)
61	**Syzygium agastyamalayanum** M.B.Viswan. & Manik.	Myrtaceae	Critically Endangered. Tree species having two small subpopulations in the Agasthyamalai hills of the Kalakkad Mundanthurai Tiger Reserve. The area of occupancy (AOO) and the extent of occurrence (EOO) of the species are 8 km2 and the number of mature individuals limited to below 50 in severely fragmented subpopulations. The species assessed as Critically Endangered B1ab(iii)+2ab(iii); D as per IUCN guidelines.	Viswanathan & Manikandan (2008)
62	**Striga indica** K.M.P. Kumar, P. Jayanthi, A. Rajendran & M. Sabu	Orobanchaceae	Critically Endangered. The population contains a maximum of c. 300 plants with very restricted distribution. A provisional threat assessment of CR B1ab(i,ii,iv) and 2ab(i,ii,iv) has been assigned as critically endangered	Jayanthi *et al.* (2012)
63	**Striga musselmanii** Omalsree & V.K.Sreenivas	Orobanchaceae	Critically Endangered. The species is found only 15-25 plants distributed in two sub populations in a very small area of 1 km2. The major threat to habitat are due to of tourism development. The conservation status is assessed here as 'Critically Endangered [CR B1a(iii,iv)+2a(iii,iv); D]' (IUCN 2017).	Moolayil & Sreenivas (2018)
64	**Phyllanthus singampattianus** (Sebast. & A.N. Henry) Kumari & Chandrab.	Phyllanthaceae	Critically Endangered.	Gopalan & Henry (2000)

Sl.No	Botanical Name	Family	Conservation Status	References
65	**Eriochrysis rangacharii** Fischer	Poaceae	Endangered. Endemic grass restricted to an area of 2500 km2 at about an elevation of 2000 m in the upper plateau of the Nilgiri Mountains of southern India. Therefore, preliminary conservation assessment considered this species as Endangered.	Puyravaud *et al.* (2003)
66	**Ardisia ramaswamii** Nazarudeen, Rajkumar & Prakashkumar	Primulaceae	Critically Endangered. This species is recorded only from the type locality and less than 25 mature individuals were located after repeated survey. Area of occupancy is less than a 10 km2 area with severely fragmented population. Therefore, the species is assessed as the Critically Endangered (CR) category as per IUCN Red List Categories and Criteria, version 3.1, B2a and D of IUCN.	Nazarudeen *et al.* (2020)
67	**Clematis theobromina** Dunn	Ranunculaceae	Endangered	Kameswara *et a*l. (2003)
68	**Hedyotis sithiravaraiensis** S. Muruganandam, Devanath., S. Ravikumar & D. Naras. sp. nov.	Rubiaceae	Critically Endangered. The extent of occurrence and the area of occupancy of this species has been estimated that the populations are found within 10 km2, and each population consists of one to three mature individuals. Based on field observation and threats the species is designated as Critically Endangered (CR) B1aþ2ab (iii, v) as per International Union for Conservation of Nature (IUCN) Red List Categories and Criteria ver. 3.1.	Muruganandam *et al.* (2020)
69	**Ophiorrhiza tirunelvelica** A.N. Henry & Subram.	Rubiaceae	Critically Endangered.	Gopalan & Henry (2000)
70	**Cissus subramanyamii** B.V. Shetty & P. Singh	Vitaceae	Endangered. Known from only the type location Vilpattivalley R.f., Tamil Nadu, India.	Narasimhan & Irwin (2021)
71	**Indotristicha tirunelveliana** Sharma, Karthik. & Shetty	Podostemaceae	Critically Endangered.	Kottaimuthu & Saravanan (2017)

Literature Cited

AHMEDULLAH M. 2000. Endemism in the Indian Flora. *In*: SINGH N.P., SINGH D.K., HAJRA P.K. & B.D. SHARMA (eds.), *Flora of India, Introductory Volume* 1(2). Botanical Survey of India, Kolkata.

AHMEDULLAH M. & M.P. NAYAR 1986. *Endemic Plants of the Indian Region.* Volume 1. Peninsular India. Botanical Survey of India, Kolkata.

ARIGELA R.K., SINGH R.KR. & K.A.A. KABEER 2019. *Impatiens tanyae* (Balsaminaceae), a new species from Western Ghats, India. *Kew Bulletin* 74: 1–7.

ARYA S., GOVIND M.G., SURESH V., VISHNU W.K. & V. KUMAR 2021. Three new species of *Impatiens* (Balsaminaceae) from southern Western Ghats, Kerala. *PhytoKeys* 180: 157–171. https://doi.org/10.3897/phytokeys.180.66748

BHASKAR V. 2012. *Taxonomic monograph on Impatiens L. (Balsaminaceae) of Western Ghats, South India. The key genus for endemism.* Centre for Plant Taxonomi Studies, Bangalore.

BHAVISHA P.S & V.S. THAKER. 2017. DNA barcoding and traditional taxonomy: an integrated approach for biodiversity conservation. *Genome* 60(7): 618–628. https://doi.org/10.1139/gen-2015-0167

BROWN J.H. & LOMOLINO M.V. 1998. *Biogeography.* Second edition. Sinauer Associates, Inc.

CARDINALE B.J., DUFFY J.E., GONZALEZ A., HOOPER D.U., PERRINGS C., VENAIL P., NARWANI A., MACE G.M., TILMAN D., WARDLE D.A., KINZIG A.P., DAILY G.C., LOREAU M., GRACE J.B., LARIGAUDERIE A., SRIVASTAVA D.S. & S. NAEEM 2012. Biodiversity loss and its impact on humanity. *Nature* 486(7401): 59–67. https://doi.org/10.1038/nature11148

CARDOSO P., ERWIN T. L., BORGES P.A. & T.R. NEW 2011. The seven impediments in invertebrate conservation and how to overcome them. *Biological Conservation* 144: 2647–2655.

COELHO N., GONÇALVES S. & A. ROMANO 2020. Endemic Plant Species Conservation: Biotechnological Approaches. *Plants (Basel, Switzerland)* 9(3): 345. https://doi.org/10.3390/plants9030345

DANIELS R.J.R., KUMAR N.A. & M. JAYANTHI 1995. Endemic, rare and threatened flowering plants of South India. *Current Science* 68(54): 93–495.

DARU B.H., FAROOQ H., ANTONELLI A. & S. FAURBY 2020. Endemism patterns are scale dependent. *Nature Communications* 11(1): 2115. https://doi.org/10.1038/s41467-020-15921-6

DASH S.S. & MAO A.A. 2020. *Flowering plants of India: An annotated checklist. (Dicotyledons).* Volume 2. Botanical survey of India, Kolkata. pp. 1–705.

DAVIDAR P., ARJUNAN M., MAMMEN P.C., GARRIGUES J.P., PUYRAVAUD J.P. & K. ROESSINGH 2007. Forest degradation in the Western Ghats biodiversity hotspot: Resource collection, livelihood concerns and sustainability. *Current Science* 93(11): 1573–1578.

DE BOER H., RYDMARK M.O., VERSTRAETE B., & B. GRAVENDEEL 2022. Molecular identification of plants: from sequence to species. *Advanced Books.* https://doi.org/10.3897/ab.e98875

DEVIKA, M.A. & AMITHA BACHAN, K.H. 2023. *Syzygium agastyamalayanum.* The IUCN Red List of Threatened Species 2023: e.T222291715A222292384.

DINIZ-FILHOM J.A.F., LOYOLA R.D., RAIA P., MOOERS A.O. & L.M. BINI 2013. Darwinian shortfalls in biodiversity conservation. *Trends in Ecology & Evolution* 28: 689–695.

DOEBELI M. & U. DIECKMANN 2003. Speciation along environmental gradients. *Nature*, 421(6920): 259–264. https://doi.org/10.1038/nature01274

FSI, 2021. *India State of Forest Report* 2021. Forest Survey of India, Ministry of Environment, Forest & Climate Change Government of India.

GAIKWAD S., GORE R., GARAD K. & S. GAIKWAD 2014. Endemic flowering plants of northern Western Ghats (Sahyadri Ranges) of India: A checklist. *Check List* 10(3): 461–472.

GAMBLE J.S. 1915–1936. *Flora of the Presidency of Madras.* Volume 1–3, Adlard & Son Ltd., London.

GANESH T., GANESAN R., SOUBADRA DEVY M., DAVIDAR P. & K.S. BAWA 1996. Assessment of plant biodiversity at a midelevation evergreen forest of Kalakad-Mundanthura Tiger Reserve, Western Ghats, India. *Current Science* 71: 379–391.

GNANASEKARAN G. & G.V.S. MURTHY 2015. Is *Andrographis rotundifolia* (Acanthaceae) Possibly Extinct?. *Nelumbo* 57: 46–49.

GNANASEKARAN G., KOTTAIMUTHU R. & G.V.S. MURTHY 2015. Taxonomy of *Andrographis rothii*: A stenoendemic species from the southern Western Ghats, Tamil Nadu, India with notes on lectotypification and identity of *A. lobelioides* var. *composita* (Acanthaceae).

GNANASEKARAN G., KING A.F.J., KASIM S.M. & W. ARISDASON 2023. *Lepidagathis gandhii* (Barlerieae: Acanthaceae), a new species from Tamil Nadu, India. *Kew Bulletin* 78(2): 203-212.

GOPALAN R. & A.N. HENRY 2000. *Endemic Plants of India* - Endemics of Agasthiyamalai Hills, Bishen Singh Mahendra Pal Singh publications, Dehradun.

GOWTHAMI R., SHARMA N., PANDEY R. & A. AGRAWAL 2021. Status and consolidated list of threatened medicinal plants of India. *Genetic resources and crop evolution* 68(6): 2235–2263. https://doi.org/10.1007/s10722-021-01199-0

HARRISON S. & R. NOSS 2017. Endemism hotspots are linked to stable climatic refugia. *Annals of Botany*, 119(2): 207–214. https://doi.org/10.1093/aob/mcw248

HENRY A.N. CHITHRA V. & N.P. BALAKRISHNAN 1989. *Flora of Tamil Nadu, India. Series 1: Analysis.* Volume 3. Botanical Survey of India, Coimbatore.

HENRY A.N., KUMARI G.R. & V. CHITHRA 1987. *Flora of Tamil Nadu, India. Series 1: Analysis.* Volume 2. Botanical Survey of India, Coimbatore.

HOOKER J.D. (ed.) 1872-1897. *The Flora of British India.* Volumes 1–7. L.Reeve & Co., London.

HORTAL J., DE BELLO F., DINIZ-FILHO J.A.F., LEWINSOHN T.M., LOBO J.M. & R.J. LADLE 2015. Seven shortfalls that beset large-scale knowledge of biodiversity. *Annual Review of Ecology, Evolution, and Systematics* 46: 523–549.

IUCN 2024. *The IUCN Red List of Threatened Species.* Version 2024-1. Available at: https://www.iucnredlist.org. (Accessed on 10.03.2024).

JAYANTHI P., KUMAR K.M.P., RAJENDRAN A., THOMAS B., SABU M. & A.K. PRADEEP 2012. *Striga indica* (Orobanchaceae) – A new parasitic species from Southern Western Ghats of India. *Feddes Repertorium* 123(4): 283–290.

JOSHI J. & P. KARANTH 2013. Did southern Western Ghats of peninsular India serve as refugia for its endemic biota during the Cretaceous volcanism? *Ecology and Evolution* 3(10): 3275–3282. https://doi.org/10.1002/ece3.603

JOSHI V.C. & M.K. JANARTHANAM 2004. The Diversity of Life-Form Type, Habitat Preference and Phenology of the Endemics in the Goa Region of the Western Ghats, India. *Journal of Biogeography* 31(8): 1227–1237. https://doi.org/10.1111/j.1365-2699.2004.01067.x

KAMESWARA C.R., GEETHA B.L., & S. GEETHA 2003. *Red List of threatened vascular plant species in India compiled from the 1997 IUCN Red List of threatened plants.* ENVIS, Botanical Survey of India, Ministry of Environment & Forests.

KIDANE Y.O., STEINBAUER M.J. & BEIERKUHNLEIN C. 2019. Dead end for endemic plant species? A biodiversity hotspot under pressure. *Global Ecology and Conservation* 19: e00670. https://doi.org/10.1016/j.gecco.2019.e00670

KOTTAIMUTHU R. & G. GNANASEKARAN 2015. Validation of the name *Osbeckia tirunelvelica* (Melastomataceae). Phytotaxa 231(3): 300–300.

KOTTAIMUTHU R. & N. VASUDEVAN 2016. A new species of Derris Lour. (Fabaceae: Papilionoideae) from Tamil Nadu, India, *Webbia* 72(1): 97–100.

KOTTAIMUTHU R. & A. SARAVANAN 2017. Rediscovery of *Indotristicha tirunelveliana. Indian Forester* 143(1): 74–75.

KRISHNAN R.M. & P. DAVIDAR 1996. The shrubs of the Western Ghats (South India): floristics and status. *Journal of Biogeography* 23: 783–789. https://doi.org/10.1111/j.1365-2699.1996.tb00039.x

KRUCKEBERG A.R. & D. RABINOWITZ 1985. Biological aspect of endemism in higher plants. *Annual Review of Ecology and Systematics* 16: 447–479. https://doi.org/10.1146/annurev.es.16.110185.002311

KRUCKEBERG A.R. 2002. *Geology and plant life: the effect of land forms and rock type on plants.* University of Washington press, Seattle.

LAKSHMANAN V. & K. RAVIKUMAR 1988. Paratype of *Nothopegia vajravelui* K.Ravikumar & V.Lakshmanan [family Anacardiaceae] (stored under name); Verified by J.L. Ellis BSI Coimbatore. Available at: https://plants.jstor.org/stable/10.5555/al.ap.specimen.k000035652 (Accessed on 06.06.2024).

LOMOLINO M.V. 2004. Conservation Biogeography. *In*: LOMOLINO M.V. & L.R. HEANEY (eds.), *Frontiers of Biogeography: New directions in the geography of nature.* Sinauer Associates, Inc. pp. 293–296.

LÓPEZ-PUJOL J., ZHANG F., SUN H., YING T. & S. GE 2011. Centres of plant endemism in China: Places for survival or for speciation? *Journal of Biogeography* 38: 1267–1280. https://doi.org/10.1111/j.1365-2699.2011.02504.x

LUNDIN R. & B. NORDENSTAM 2009. Two new species of *Sonerila* (Melastomataceae) from South India. Novon 19: 76–79.

MAO A.A. & S.S. DASH 2020. *Flowering Plants of India an Annotated Checklist (Dicotyledons).* Volume 1. Botanical Survey of India. Kolkata. pp. 1–970.

MAO A.A. & S.S. DASH 2020. *Flowering Plants of India an Annotated Checklist (Monocotyledons).* Volume 3. Botanical Survey of India, Kolkata. pp.1–705.

MARCHESE C. 2015. Biodiversity hotspots: A shortcut for a more complicated concept. *Global Ecology and*

Conservation 3: 297–309. https://doi.org/10.1016/j.gecco.2014.12.008

MEHER-HOMJI V.M. & J.P. PASCAL 1996. Ecodiversity in the Western Ghats. *In:* RAMAKRISHNAN P.S., PUROHIT A.N. SAXENA K.G. RAO K.S. & R.K. MAIKHURI *Conservation and Management of Biological Resources in Himalaya*. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, pp. 259–289.

MOLUR S., VED D.K., TANDON N., NAMBOODIRI S. & S. WALKER 1995. *Conservation Assessment and Management Plant for Selected Species of Medicinal Plants of Southern India*. IUCN/SSC Conservation Breeding Specialist Group: Apple Valley, MN.

MOOLAYIL O. & V.K. SREENIVAS 2018. *Striga musselmanii* (Orobanchaceae): A new species of Striga from Western Ghats, India. Phytotaxa 375 (1): 099–103.

MOSBRUGGER V., FAVRE A., MUELLNER-RIEHL A.N., PÄCKERT M. & A. MULCH 2018. Cenozoic evolution of geo-biodiversity in the Tibeto-Himalayan region. *In*: EDS HOORN C., PERRIGIO A. & ANTONELLI A. *Mountains, Climate, and Biodiversity*, Wiley-Blackwell, Chichester. pp. 429–448.

MURUGAN, 2002. *Eugenia manickamiana* Murugan (Myrtacea). *The Journal of Economic and Taxonomic Botany* 26(2): 414.

MURUGAN C. & V.S. MANICKAM 2005. *Euonymus Kanyakumariensis* - a New Species of Celastraceae From India. *Journal of the Bombay Natural History Society* 102(2): 198–200.

MURUGAN C. & V.S. MANICKAM 2006. *Euonymus barberi* - a new species of Celastraceae from Agasthiyamalai, India. *Indian Journal of Forestry* 29(2): 199–200.

MURUGESAN M. & V. BALASUBRAMANIAM 2011. A new species of *Sonerila* (Melastomataceae) from the Western Ghats – India. *Taprobanica* 3(2): 93–95.

MURUGAN C. & S. ARUMUGAM 2019. *Eugenia megamalayana* sp. nov. (Myrtaceae)- A new species from the Western Ghats, India. *Taiwania* 64(1): 23–27.

MURUGAN C., MANICKAM V.S & V. SUNDARESAN 2001. *Memecylon tirunelvelicum*: a new species from Peninsular India. Novon 11: 197–199.

MURUGANANDAM S., DEVANATHAN K., RAVIKUMAR S. & D. NARASIMHAN 2020. *Hedyotis sithiravaraiensis* (Rubiaceae): a new species from Southern India. *Journal of Asia- Pacific Biodiversity* 13(4): 749–754.

NARASIMHAN D. & S.J. IRWIN 2017. Database on Agasthyamalai Biosphere Reserve Report submitted to Department of Environment, Tamil Nadu. Centre for Floristic Research Department of Botany, Madras Christian College (Autonomous). Available at: http://tnenvis.nic.in/tnenvis_old/PDF/Database%20on%20ABR_compressed.pdf (Accessed on 10.06.2024).

NARASIMHAN D. & S.J. IRWIN 2021. *Flowering Plants of Tamil Nadu – A compendium*. Care Earth Trust, Chennai.

NARAYANASAMY D. & B. NATESAN 2020. Endemic Vascular Plants from the Coromandel Coast of Tamil Nadu, Southern India. IntechOpen. https://doi.org/10.5772/intechopen.94333

NAYAR M.P. 1980. Endemic flora of Peninsular India and its significance. *Bulletin of Botanical Survey of India* 22: 12–23.

NAYAR M.P. 1996. *Hot spots of endemic plants of India, Nepal and Bhutan. Thiruvananthapuram, India.* Tropical Botanic Garden and Research Institute, Thiruvananthapuram.

NAYAR M.P. & A.R.K. SASTRY 1987-90. *Red Data Book of Indian Plants.* Volume 1–3. Botanical Survey of India, Kolkata.

NAYAR T.S., SIBI M. & A.R. BEEGAM 2014. *Flowering plants of the Western Ghats.* Volume 1 & 2. Jawaharlal Nehru Tropical Botanical Garden and Research Institute, Thiruvananthapuram.

NAZARUDEEN A., RAJKUMAR G. & R. PRAKASHKUMAR 2020. A new species of Ardisia (Primulaceae) from the Anamalai Hills of Western Ghats, India. *Annals of Plant Sciences* 9(6): 3892–3898.

NERLEKAR A.N., CHORGHE A.R., DALAVI J.V., KUSOM R.K., KARUPPUSAMY S., KAMATH V., POKAR R., RENGAIAN G., SARDESAI M.M. & S.S. KAMBALE 2022. Exponential rise in the discovery of endemic plants underscores the need to conserve the Indian savannas. *Biotropica* 54(2): 405–417. https://doi.org/10.1111/btp.13062

NOROOZI J., TALEBI A., DOOSTMOHAMMADI M., RUMPF S.B., LINDER H.P. & G.M. SCHNEEWEISS 2018. Hotspots within a global biodiversity hotspot - areas of endemism are associated with high mountain ranges. *Scientific Reports* 8(1): 10345. https://doi.org/10.1038/s41598-018-28504-9

PAGE N.V. & K. SHANKER 2020. Climatic stability drives latitudinal trends in range size and richness of woody plants in the Western Ghats, India. *PloS one* 15(7): e0235733. https://doi.org/10.1371/journal.pone.0235733

PANIGRAHI G. 1974. A Note on *Euphorbia heyneana* (Euphorbiaceae). *Kew Bulletin* 29 (4): 695–697.

PEÑAS J., FRANCISCO J., PÉREZ-GARCÍA & J.F. MOTA 2005. Patterns of endemic plants and

biogeography of the Baetic high mountains (south Spain). *Acta Botanica Gallica* 152(3): 347–360. https://doi.org/10.1080/12538078.2005.10515494

PLUMMER J. 2022. *Dalbergia gardneriana. The IUCN Red List of Threatened Species* 2022.

PRASAD V., FAROOQUI A., TRIPATHI S.K.M., GARG R. & B. THAKUR 2009. Evidence of Late Palaeocene-Early Eocene equatorial rain forest refugia in southern Western Ghats, India. *Journal of Biosciences* 34: 777–797. https://doi.org/10.1007/s12038-009-0062-y

Ravichandran V .& S. Karuppusamy 2016. Check list of Endemic flowering plants of Western Ghats from Megamalai Wildlife Sanctuary, Tamilnadu, India. *Journal of Biological Records* e0042016: 36-51.

MAO A.A., AGRAWALA D. & S. MUKHERJEE 2022. *Plant Discoveries 2022 (including algae, fungi & microbes).* Botanical survey of India, Kolkata.

QGIS DEVELOPMENT TEAM (2024) QGIS Geographic Information System. QGIS v.3.28.0-Firenze 3.24.1. Open Source Geospatial Foundation Project. [http://qgis.osgeo.org]

RAJA P., ARULANANDAM J.P.L., SOOSAIRAJ S. & K.A.A KABEER 2023. A new species of *Justicia* L. (Acanthaceae) from Tamil Nadu, India. *Adansonia*, sér. 3, 45(17): 285-291.

RAJESEKAR C., JAYAGANESH M., KAVITHA J., RAJENDRAN R., & R. KOTTAIMUTHU 2023. New record of *Brachystelma rapinatianum* Britto & Bruyns (Apocynaceae: Ceropegieae) from Eastern Ghats, India. *Species* 24: e38s1530.

RAJU R., SURENDRAN A. & C.P AYYATHURAI 2020. Two new species of *Impatiens* (Balsaminaceae) from the Western Ghats of Tamil Nadu, India. *Phytotaxa* 460(4): 249–258.

RAJU R., SURENDRAN A., CHELLATHURAI D., NAMBI S.K. & M. GURUSAMY 2018. A new species of *Syzygium* (Myrtaceae) from the South Western Ghats of Tamil Nadu, India. *Phytotaxa* 374 (3): 263–267.

RAMASUBBU R., DIVYA C., SASI KALA N., SURENDRAN A. & A.K. SREEKALA 2017. *Impatiens megamalayana*, a new species of Impatiens from the Western Ghats, Tamil Nadu, India. *Phytotaxa* 302(2): 193–197.

RAMASUBBU R., MANIKANDAN F., MEHALINGAM P. & A.G. PANDURANGAN 2015. *Impatiens courtallensis* (Balsaminaceae), a new species of Impatiens from Western Ghats, Tamil Nadu, India. *Phytotaxa* 203(2): 199–204.

RAVEENDRAN L. 2022. *Elaeocarpus blascoi. The IUCN Red List of Threatened Species* 2022: e.T33639A147293871.

Ravichandran V. & S. Karuppusamy 2016. Check list of Endemic flowering plants of Western Ghats from Megamalai Wildlife Sanctuary, Tamilnadu, India. *Journal of Biological Records* e0042016: 36-51.

RAVICHANDRAN V., MURUGESAN M. & C. MURUGAN 2020. *Eugenia bolampattiana* (Myrtaceae), a new species from the Bolampatty Hills of Nilgiri Biosphere Reserve, India. *Gardens' Bulletin Singapore* 72(1): 117–123.

RAVIKUMAR K., NARASIMHAN D., DEVANATHAN K. & G. GNANASEKARAN 2016. *Barleria durairajii* (Acanthaceae): A new species from Tamil Nadu, India. *Rheedea* 26: 136–141.

REHEL S. 2013. *Lindernia minima. The IUCN Red List of Threatened Species* 2013: e.T177197A7387587.

RODGERS W.A. & S.H. PANWAR. 1988. *Planning a Wildlife Protected Area Network in India.* Volume 2. Project FO: IND/82/003, FAO, Dehradun.

SARVALINGAM A. & A. RAJENDRAN 2016. Rare, Endangered and Threatened (RET) climbers of Southern Western Ghats, India. *Revista Chilena de Historia Natural* 89: 9. https://doi.org/10.1186/s40693-016-0058-6

SHALTOUT K. & H. BEDAIR 2022. Diversity, distribution and regional conservation status of the Egyptian tree flora. *African Journal of Ecology* 60 (4): 1155–1183.

SIMPSON M.G. 2010. *Diversity and Classification of Flowering Plants: Eudicots.* In: *Plant Systematics* (Second Edition). Chapter 8. Academic Press, Elsevier. pp. 275–448. http://dx.doi.org/10.1016/B978-0-12-812628-8.50008-0

SINGHP.,KARTHIGEYANK.,LAKSHMINARASIMHAN P. & S.S. DASH 2015. *Endemic vascular plants of India.* Botanical Survey of India, Kolkata. p.300.

STEBBINS G.L. & J. MAJOR 1965. Endemism and speciation in the California Flora. *Ecological Monographs* 35: 1–35. https://doi.org/10.2307/1942216

SUBBIAH K. & R. VELLINGIRI 2019. *Impatiens flavescens* sp. nov. (Balsaminaceae), a first yellow flowered balsam from the southern Western Ghats of India. *Webbia* 74(2): 265–269.

THARANI R., MURUGESAN M., RAVICHANDRAN V., KARTHIK B. & V. ANUSUBA 2021. Rediscovery of *Impatiens laticornis* C.E.C. Fisch. (Balsaminaceae), a stenoendemic and critically endangered species from Nilgiri Biosphere Reserve, southern India. *Nelumbo* 63(2): 32–36.

THOMAS S.B., MANI S., BRITTO J. & A.K. PRADEEP. 2019. *Strobilanthes tricostata*, a new species of Acanthaceae from the Western Ghats, India. *Phytotaxa* 413(3): 244–250.

THOTHATHRI K. 1984. Studies in Leguminosae 30. Further contributions to *Dalbergia* and *Derris*. *The journal of the Bombay Natural History Society* 81: 238–242.

VIJI A.R., PANDURANGAN A.G, DEEPU S. & G.C. TUCKER 2015. *Cyperus coonoorensis* (Cyperaceae), a new species from the Nilgiri Biosphere Reserve, India. *Phytotaxa* 203(2): 178–184.

VISWANATHAN M.B. & MANIKANDAN U. 2008. — A new species of *Syzygium* (Myrtaceae) from the Kalakkad-Mundanthurai Tiger Reserve in Peninsular India. *Adansonia*, sér. 3, 30(1): 113–118.

VISWANATHAN M.B. & U. MANIKANDAN 2001. A new species, *Memecylon mundanthuraianum*, of Melastomataceae from India. *Nordic Journal of Botany* 21: 259–262.

VISWANATHAN M.B., RAJASEKAR C., SAKTHIDHASAN P. & R. RAJESH 2021. *Hiptage nayarii* R.C. Srivast. (Family Malpighiaceae) – Rediscovery and emended description of an endemic and endangered species from Kalakad Mundanthurai tiger reserve in India. *The Journal of the Bombay Natural History Society* 119: 03–06.

WORLD CONSERVATION MONITORING CENTRE 1998a. *Syzygium microphyllum*. *The IUCN Red List of Threatened Species* 1998: e.T37626A10067599.

WORLD CONSERVATION MONITORING CENTRE 1998b. *Koilodepas calycinum*. *The IUCN Red List of Threatened Species* 1998: e.T32008A9673093.

WORLD CONSERVATION MONITORING CENTRE. 2017. *Agasthiyamalaia pauciflora*. *The IUCN Red List of Threatened Species* 2017: e.T31167A120679170.

XUE B., SU Y.C.F., THOMAS D.C. & R.M.K. SAUNDERS 2018. Pruning the polyphyletic genus *Polyalthia* (Annonaceae) and resurrecting the genus *Monoon*. *Taxon* 61: 1021–1039.

THE ANGIOSPERM PHYLOGENY GROUP, CHASE M.W., CHRISTENHUSZ M.J.M., FAY M.F., BYNG J.W., JUDD W.S., SOLTIS D.E., MABBERLEY D.J., SENNIKOV A.N., SOLTIS P.S. & P.F. STEVENS 2016. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV, *Botanical Journal of the Linnean Society* 181(1): 1–20. https://doi.org/10.1111/boj.12385