

AN ARBORETUM OF ENDEMIC PLANTS OF WESTERN GHATS AT MANGALORE UNIVERSITY CAMPUS, KARNATAKA, INDIA

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Abstract

Nearly a third of the endemic plant species of the Western Ghats are threatened and are believed to be on the verge of extinction. *In situ* conservation is known to be the best way to preserve a species but sometimes *ex situ* proves to be an effective alternative. An arboretum of about three hectares has been established in Mangalore University Campus, Karnataka for the introduction of endemic taxa of the Western Ghats especially those occurring in Karnataka. Fifty-seven taxa of trees, two species of bamboos, 23 species of shrubs including woody climbers and 16 endemic species of herbs/under shrubs have been introduced in the arboretum, the total number of arborescent endemic plants being 2000. The *ex situ* preservation of these taxa would be a great boon to student community to learn about endemic plants in Western Ghats as well as educate people regarding the need to conserve them. It would also serve as a source material for micro-propagation of rare and threatened plants.

Keywords

Western Ghats, arboretum, Mangalore University Campus, *ex situ* conservation, endemic plants

The Western Ghats represent a rich and varied flora with enormous species diversity abound in endemic taxa and therefore recognised (together with Sri Lanka) as one of the 25 Hot Spots in the world (Mittermeier *et al.*, 2000). There are about 54 genera (of which 44 are monotypic), 1720 species and 135 infraspecific taxa of flowering plants endemic to this region (Ahmedullah & Nayar, 1986; Nair & Daniel, 1986; Shetty & Kaveriappa, 1991; Nayar, 1996). Of these over 80 endemic species of trees and shrubs are confined only to the evergreen forests (Pascal, 1988). Sixteen genera of woody plants have five or more endemic species in the Western Ghats e.g. *Syzygium* (18),

Cinnamomum (12), *Garcinia* (6), etc. (Ahmedullah & Nayar, 1986). Nine of the 21 species of *Dalbergia* reported from the Western Ghats are endemic. Out of about 26 wild species of palms, 22 species, including 18 species of *Calamus* (Renuka, 1992), are endemic. Endemic gymnosperms are represented by *Gnetum contractum* Markgraf and *Negeia wallichiana* (Presl.) Kuntz (= *Podocarpus wallichiana* Presl.), the latter being the only naturally occurring conifer of peninsular India.

Since the endemic plants are found in restricted areas often requiring special niche for survival, many of them, particularly those with very restricted distribution, are extinction prone, especially if their habitats are disturbed. Nearly a third of the endemic plant species of the Western Ghats are rare or threatened and several are believed to be extinct or on the verge of becoming so, including tree species like *Phaeanthus malabaricus* Beddome, *Sageraea grandiflora* Dunn (Annonaceae), *Hopea jacobii* C. Fischer (Dipterocarpaceae), *Buchanania barberi* Gamble, *Nothopegia aureo-fulva* Beddome ex Hook.f. (Anacardiaceae), *Calliandra cynometroides* Beddome, *Cynometra beddomei* Prain, *Dialium travancoricum* Bourd. (Leguminosae), *Eugenia argentea* Beddome, *E. singampattiana* Beddome, *Syzygium bourdillonii* (Gamble) Rathl. & Nair, *S. courtallense* (Gamble) Alston, *S. gambleanum* Rathakr. & Chitra, *S. palghatense* Gamble (Myrtaceae), *Actinodaphne bournae* Gamble (Lauraceae), *Pseudoglochidion anamalanum* Gamble (Euphorbiaceae), etc.

Although *in situ* conservation is the best way to preserve a species, in view of the persisting threats to the flora of the Western Ghats because of the various anthropogenic activities, it may not always be feasible to resort to this course, and *ex situ* preservation may sometimes prove to be an effective alternative. Thanks to the financial assistance from John, D. and Catherine, T. MacArthur Foundation, Chicago, U.S.A. (1992-1994), an arboretum extending over an area of about three hectares has been established in Mangalore University Campus, Karnataka for the introduction of the endemic taxa of the Western Ghats, especially those occurring in the Karnataka region. Introduction of additional taxa in the arboretum is being continued.

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In all 57 taxa of trees, two species of bamboos (Table 1) and 23 species of shrubs, including woody climbers (Table 2) have so far been introduced in the arboretum, the total number of arborescent endemic plants in the arboretum being over 2000. In addition, 16 endemic species of herbs/under shrubs (Table 3) are also being maintained in the arboretum. Of the above, the following species are reported to be rare/threatened.

Trees

Holigarna grahamii (Wight) Kurz (Anacardiaceae)
Hopea canarensis Hole (Dipterocarpaceae)
Myristica fatua Houtt. var. *magnifica* (Beddome) Sinclair (Myristicaceae)
M. malabarica Lam. (Myristicaceae)
Pterospermum reticulatum Wight & Arn. (Sterculiaceae)
Vepris bilocularis (Wight & Arn.) Engl. (Rutaceae)

Scandent shrubs

Aspidopteris canarensis Dalz. (Malpighiaceae)
Grewia heterotricha Masters (Tiliceae)
Rubus fockei Gandhi (Rosaceae)

Herbs

Crotalaria lutescens Dalz. (Papilionaceae)
Paracautleya bhatii R.M. Smith (Zingiberaceae)

It is also of interest to note that the following monotypic genera, endemic to the Western Ghats, are represented in the arboretum. The name of the solitary species under each genus is mentioned against the respective genus:

Blepharistemma Wallich ex Benth. (Rhizophoraceae)
 – *B. mambranifolia* (Miq.) Ding Hou
Moullava Adans. (Caesalpiniaceae)
 – *M. spicata* (Dalz.) Nicolson
Otonephelium Radlk. (Sapindaceae)
 – *O. stipulaceum* (Beddome) Radlk.
Paracautleya R.M. Smith (Zingiberaceae)
 – *P. bhatii* R.M. Smith

In addition, *Poeciloneuron* Beddome (Guttiferae), a genus endemic to the Western Ghats with two species, is represented in the arboretum by *P. indicum* Beddome.

Several endemic species in the arboretum are of economic importance and include timber yielding plants e.g. *Artocarpus hirsutus* Lam., *Dipterocarpus indicus* Beddome, *Hopea parviflora* Beddome, *Kingiodendron pinnatum* (Roxb. ex DC.) Harms., *Poeciloneuron indicum* Beddome, *Vateria indica* L., etc.; plants used for weaving baskets, for making furniture and in handicrafts e.g. *Calamus nagabettai* Fernandez & Dey, *Ochlandra scriptoria* (Dennst.) C. Fischer, *O. travancorica* Gamble etc.; plants yielding gums and resins e.g. *Garcinia*

gummi-gutta (L.) N. Robson, *Holigarna ferruginea* Marchand, *H. grahamii* (Wight) Kurz, *H. nigra* Bourd., *Vateria indica* L. etc.; plants yielding paper pulp e.g. *Garcinia indica* Choisy, *Ochlandra travancorica* Gamble, *Vateria indica* L., etc., plants yielding edible fruits, e.g. *Artocarpus hirsutus* Lam., *Baccaurea courtallensis* Muell.-Arg., *Flacourtia montana* Graham, *Garcinia gummi-gutta* (L.) N. Robson, *G. indica* Choisy, etc; and plants of medicinal importance e.g. *Calophyllum apetalum* Willd., *Hydnocarpus pentandra* (Buch.-Ham.) Oken, *Hymenodictyon obovatum* Wallich, *Memecylon malabaricum* (C.B. Clarke) Cogn., etc.

The *ex situ* preservation of some of the endemic, rare and threatened plants of the Western Ghats of Karnataka in the arboretum will not only help in educating the people, particularly the student community, about the diversity of plants in the Western Ghats and the need to conserve them but can also serve as a source material for micro-propagation of rare and threatened plants. In this connection it may be noted that successful micropropagation of some endemic species has been undertaken in the laboratory using the material from the arboretum.

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Table 1. List of endemic tree taxa in the Mangalore University arboretum.

Name of the species	Family	Source	# Plants	Remarks
<i>Actinodaphne malabarica</i> Balakr.	Lauraceae	Gersoppa and Kaiga, Uttara Kannada, Karnataka	38	Endemic to Western Ghats – In semi-evergreen forests up to 900m. Karnataka, Kerala and Tamil Nadu.
<i>Aglaiia lawii</i> (Wight) Saldanha	Meliaceae	Kudremukh, Chickamagalur, Karnataka	41	Endemic to Western Ghats – Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Arenga wightii</i> Griffith	Plamae	Gersoppa, Uttara Kannada, Karnataka	21	Endemic to Western Ghats – In evergreen forests between 150-900m. Karnataka, Kerala and Tamil Nadu.
<i>Artocarpus hirsutus</i> Lam.	Moraceae	Mangalore, Dakshina Kannada, Karnataka	56	Endemic to Western Ghats /western coast – In moist deciduous to semi evergreen forests up to 1100m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Baccaurea courtallensis</i> Muell. – Arg.	Euphorbiaceae	Puttur, Dakshina Kannada, Karnataka	64	Endemic to Western Ghats – In evergreen forests. Karnataka, Kerala and Tamil Nadu.
<i>Blepharistemma membranifolia</i> (Miq.) Ding Hou	Rhizophoraceae	Udupi, Dakshina Kannada, Karnataka	3	Endemic to Western Ghats /western coast – Karnataka and Kerala. The genus <i>Blepharistemma</i> Wallich ex Benth. is monotypic and is endemic to the Western Ghats region.
<i>Calophyllum apetalum</i> Willd.	Guttiferaceae	Gersoppa and Kaiga, Uttara Kannada, Karnataka	55	Endemic to Western Ghats – along river banks in semi-evergreen forests at low altitudes, up to 600m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Cinnamomum malabarum</i> (Burm. f.) Blume	Lauraceae	Gersoppa, Uttara Kannada, Karnataka	47	Endemic to southern Western Ghats – In moist deciduous to evergreen forests. Karnataka, Kerala and Tamil Nadu.
<i>Cleistanthus malabaricus</i> (Muell.– Arg.)	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	32	Endemic to Western Ghats – near river banks in evergreen forests between 900-1300m. Karnataka, Kerala and Tamil Nadu
<i>Croton malabaricus</i> Beddome	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	9	Endemic to Western Ghats – In semi-evergreen to evergreen forests between 900-1300m. Karnataka, Kerala and Tamil Nadu
<i>Diospyros paniculata</i> Dalz.	Ebenaceae	Gersoppa, Uttara Kannada, Karnataka	43	Endemic to Western Ghats – In evergreen forests up to 900m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu
<i>Diospyros pruriens</i> Dalz.	Ebenaceae	Gersoppa, Uttara Kannada, Karnataka	4	Endemic to Western Ghats – In semi-evergreen to evergreen forests up to 900m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu
<i>Diospyros saldanhae</i> Kosterm.	Ebenaceae	Gersoppa, Uttara Kannada, Karnataka	12	Endemic to Western Ghats – In moist deciduous to semi-evergreen forests. Karnataka and Kerala
<i>Dipterocarpus indicus</i> Beddome	Dipterocarpaceae	Gersoppa, Uttara Kannada, Karnataka Sampaje, Kodagu, Karnataka	48	Endemic to Western Ghats – In evergreen to semi-evergreen forests up to 1000m. Karnataka, Kerala and Tamil Nadu.
<i>Drypetes confertiflora</i> (Hook.f.) Pax & Hoffm.	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	18	Endemic to Western Ghats – In evergreen forests. Karnataka and Kerala
<i>Epiprinus mallotiformis</i> (Muell. –Arg.) Croizat	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	43	Endemic to Western Ghats – In semi-evergreen and evergreen forests up to 1000m. Karnataka, Kerala and Tamil Nadu.
<i>Euonymus indicus</i> Heyne ec Wallich	Celastraceae	Sringeri, Chickamagalur, Karnataka	5	Endemic to Western Ghats – In moist deciduous to evergreen forests up to 1300m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.

Name of the species	Family	Source	# Plants	Remarks
<i>Flacourtia montana</i> Graham	Flacourtiaceae	Mangalore, Dakshina Kannada, Karnataka	44	Endemic to Western Ghats – In moist deciduous to semi-evergreen forests up to 1000m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Garcinia gummi-gutta</i> (L.) N. Robson	Guttiferae	Gersoppa, Uttara Kannada, Karnataka	42	Endemic to Western Ghats – In semi-evergreen, evergreen and shola forests up to 1830m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Garcinia indica</i> (Thouars) Choisy	Guttiferae	Mangalore, Dakshina Kannada, Karnataka Gersoppa, Uttara Kannada, Karnataka	45	Endemic to Western Ghats – In evergreen and deciduous forests up to 400m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Glochidion ellipticum</i> Wight	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	36	Endemic to Western Ghats – In evergreen forests up to 1300m. Karnataka, Kerala and Tamil Nadu.
<i>Glochidion johnstonei</i> Hook.f.	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	16	Endemic to Western Ghats/W.coast – In moist forests up to 600m. Maharashtra, Karnataka and Kerala.
<i>Glochidion neilgherrense</i> Wight	Euphorbiaceae	Gersoppa, Uttara Kannada, Karnataka	28	Endemic to Western Ghats – In shola and evergreen forests up to 2300m. Karnataka, Kerala and Tamil Nadu.
<i>Gordonia obtusa</i> Walich ex Wight & Arn.	Theaceae	Kudremukh, Chickamagalur, Karnataka	37	Endemic to Western Ghats – In shola and evergreen forests between 500-2100m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu .
<i>Gymnacranthera farquhariana</i> (Hook.f. ex Thomson) Warb.	Myristicaceae	Madikeri, Kodagu, Karnataka Gersoppa, Uttara Kannada, Karnataka	25	Endemic to Western Ghats – In semi-evergreen to evergreen forests. Karnataka and Kerala.
<i>Holigarna arnottiana</i> Hook.f.	Anacardiaceae	Gersoppa, Uttara Kannada, Karnataka	7	Endemic to Western Ghats/W. coast – In semi-evergreen forests. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
* <i>Holigarna ferruginea</i> Marchand	Anacardiaceae	Mangalore, Dakshina Kannada, Karnataka	31	Endemic to Western Ghats – In semi-evergreen to evergreen forests. Goa, Karnataka, Kerala and Tamil Nadu.
<i>Holigarna grahamii</i> (Wight) Kurz	Anacardiaceae	Gersoppa, Uttara Kannada, Karnataka Kaiga, Uttara Kannada, Karnataka	37	Endemic to Western Ghats – In moist deciduous to evergreen forests. Maharashtra, Karnataka, Kerala and Tamil Nadu. Rare (Ahmedullah & Nayar, 1986).
<i>Holigarna nigra</i> Bourd.	Anacardiaceae	Kudremukh, Chickamagalur, Karnataka	35	Endemic to Western Ghats – In evergreen forests between 650-1250m. Karnataka, Kerala and Tamil Nadu.
<i>Hopea canarensis</i> Hole	Dipterocarpaceae	Kudremukh, Chickamagalur, Karnataka	16	Endemic to Western Ghats – Karnataka. Rare and threatened (Ahmedullah & Nayar, 1986).
<i>Hopea parviflora</i> Beddome	Dipterocarpaceae	Gersoppa, Uttara Kannada, Karnataka Kundapur, Dakshina Kannada, Karnataka	59	Endemic to Western Ghats – In wet forests up to 1100m. Karnataka, Kerala and Tamil Nadu
<i>Hopea ponga</i> (Dennst.) Mabb.	Dipterocarpaceae	Gersoppa, Uttara Kannada, Karnataka	32	Endemic to Western Ghats /western Coast – In semi-evergreen to evergreen forests up to 1500m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Hydnocarpus pentandra</i> (Buch.-Ham.) Oken	Flacourtiaceae	Mangalore, Dakshina Kannada, Karnataka Kaiga and Gersoppa, Uttara Kannada, Karnataka	42	Endemic to Western Ghats – In moist deciduous and semi-evergreen forests up to 850m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu
<i>Hyphaene dichotoma</i> (White) Furtado	Palmae	Goa	6	Endemic to Diu, Daman, coast of Gujarat, northern Maharashtra and Goa.

Name of the species	Family	Source	# Plants	Remarks
<i>Hymenodictyon orixense</i> (Roxb.) Mabberty (= <i>Hymenodictyon obovatum</i> Wallich)	Rubiaceae	Udupi, Dakshina Kannada, Karnataka	5	Endemic to Western Ghats – In deciduous forests up to 1200m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu
<i>Ilex malabarica</i> Beddome	Aquifoliaceae	Gersoppa, Uttara Kannada, Karnataka	3	Western Ghats - Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Ixora brachiata</i> Roxb.	Rubiaceae	Gersoppa, Uttara Kannada, Karnataka	37	Western Ghats - Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Kingiodendron pinnatum</i> (Roxb. ex DC.) Harms	Caesalpiniaceae	Sampaje, Kodagu, Karnataka	40	Endemic to Western Ghats – In evergreen forests up to 900m. Karnataka, Kerala and Tamil Nadu
<i>Knema attenuata</i> (Hook.f. & Thomson) Warb.	Myristicaceae	Gersoppa, Uttara Kannada, Karnataka	25	Endemic to Western Ghats – In semi-evergreen and evergreen forests between 1000m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Lagerstroemia microcarpa</i> Wight	Lythraceae	Gersoppa, Uttara Kannada, Karnataka	43	Endemic to Western Ghats – In moist deciduous to semi-evergreen forests up to 1000m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Mastixia arborea</i> (Wight) Beddome	Cornaceae	Gersoppa and Kaiga, Uttara Kannada, Karnataka	30	Endemic to Western Ghats – In evergreen forests. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu
* <i>Memecylon malabaricum</i> (C.B. Clarke) Cogn.	Melastomataceae	Mangalore and Udupi, Dakshina Kannada Karnataka	25	Endemic to Western Ghats /western coast – In moist deciduous to evergreen forests up to 1800m. Karnataka, Kerala and Tamil Nadu.
* <i>Memecylon talbotianum</i> Brandis	Melastomataceae	Mangalore, Dakshina Kannada, Karnataka Gersoppa, Uttara Kannada, Karnataka	25	Endemic to Western Ghats /western coast – In moist deciduous to evergreen forests up to 1800m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Myristica fatua</i> Houtt. var. <i>magnifica</i> (Beddome) Sinclair	Myristicaceae	Gersoppa, Uttara Kannada, Karnataka	50	Endemic to Western Ghats – In swampy areas of evergreen forests. Karnataka, Kerala and Tamil Nadu. Rare and threatened (Ahmedullah & Nayar, 1986)
<i>Myristica malabarica</i> Lam.	Myristicaceae	Gersoppa, Uttara Kannada, Karnataka Hosmata, Dakshina Kannada, Karnataka	31	Endemic to W. Ghats – In evergreen forests up to 800m. Maharashtra, Karnataka and Kerala. Rare and threatened (Ahmedullah & Nayar, 1986).
<i>Ochreinauclea missionis</i> (Wallich ex G. Don) Ridsd.	Rubiaceae	Udupi, Dakshina Kannada, Karnataka	14	Endemic to Western Ghats /western coast – on river banks up to 450m. Goa, Karnataka, Kerala and Tamil Nadu.
<i>Otonephelium stipulaceum</i> (Beddome) Radlk.	Sapindaceae	Karikeri, Kodagu, Karnataka	30	Endemic to Western Ghats – In evergreen forests. Karnataka, Kerala and Tamil Nadu.
<i>Pandanus unipapillata</i> Warb.	Pandanaceae	Udupi, Dakshina Kannada, Karnataka	4	Endemic to western coast.
<i>Pinanga dicksonii</i> (Roxb.) Blume	Palmae	Gersoppa, Uttara Kannada, Karnataka	17	Endemic to Western Ghats – In evergreen forests. Karnataka, Kerala and Tamil Nadu
<i>Poeciloneuron indicum</i> Beddome	Guttiferae	Kudremukh, Chickamagalur, Karnataka	35	Endemic to southern Western Ghats – In evergreen forests up to 1200m. Karnataka, Kerala and Tamil Nadu
<i>Polyalthia fragrans</i> (Dalz.) Beddome	Annonaceae	Gersoppa, Uttara Kannada, Karnataka	45	Endemic to Western Ghats – In semi-evergreen to evergreen forests up to 1200m. Maharashtra, Karnataka, Kerala and Tamil Nadu
<i>Pterospermum reticulatum</i> Wight & Arn.	Sterculiaceae	Gersoppa, Uttara Kannada, Karnataka	46	Endemic to Western Ghats – In evergreen forests at low elevations. Karnataka, Kerala and Tamil Nadu. Rare and threatened (Ahmedullah & Nayar, 1986)
<i>Syzygium laetum</i> (Buch.-Ham.) Gandhi	Myrtaceae	Gersoppa, Uttara Kannada, Karnataka	21	Endemic to Western Ghats – In evergreen forests between 200-900m.

Name of the species	Family	Source	# Plants	Remarks
<i>*Tabernaemontana heyneana</i> Wallich	Apocynaceae	Mangalore, Dakshina Kannada, Karnataka	20	Maharashtra, Karnataka, Kerala and Tamil Nadu. Endemic to Western Ghats /western coast– In open forests up to 900m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Trewia polycarpa</i> Benth.	Euphorbiaceae	B.C. Road, Dakshina Kannada, Karnataka	20	Endemic to Western Ghats /western coast – along river banks and streams at low altitudes. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>*Vateria indica</i> L.	Dipterocarpaceae	Hosmata and Mangalore, Dakshina Kannada, Karnataka	35	Endemic to Western Ghats /western coast– usually in evergreen forests up to 1300m. Karnataka, Kerala and Tamil Nadu.
<i>Vepris bilocularis</i> (Wight & Arn.) Engl.	Rutaceae	Gersoppa, Uttara Kannada, Karnataka	50	Endemic to Western Ghats – In semi-evergreen forests up to 1300m. Karnataka, Kerala and Tamil Nadu. Rare (Ahmedullah & Nayar, 1986).
Bamboos				
<i>Ochlandra scriptoria</i> (Dennst.) C. Fischer	Graminae	Udupi, Dakshina Kannada, Karnataka	10	Endemic to Western Ghats /western coast – on river and stream banks at low elevations. Karnataka and Kerala.
<i>Ochlandra travancorica</i> Benth. ex Gamble	Graminae	Gersoppa, Uttara Kannada, Karnataka	14	Endemic to southern Western Ghats – gregarious in evergreen forests up to 1500m. Karnataka, Kerala and Tamil Nadu.

* Plants of these species also occur naturally in the arboretum area.

Table 2. List of endemic shrub taxa (including scandent shrubs) in the Mangalore University arboretum.

Name of the species	Family	Source	# Plants	Remarks
<i>Ancistrocladus heyneanus</i> Wallich ex Grah.	Anistrocladaceae	Gersoppa, Uttara Kannada, Karnataka	5	Endemic to Western Ghats – In evergreen forests. Maharashtra, Karnataka, Kerala and Tamil Nadu
<i>Aspidopteris canarensis</i> Dalz.	Malpighiaceae	Udupi, Dakshina Kannada, Karnataka	5	Endemic to Western Ghats/Deccan – In moist deciduous to semi-evergreen forests. Maharashtra, Karnataka, Kerala and Tamil Nadu. Rare and threatened (Ahmedullah & Nayar, 1986).
<i>Atylosia lineata</i> Wight & Arn.	Papilionaceae	Gersoppa, Uttara Kannada, Karnataka	20	Endemic to Western Ghats – In moist deciduous forests between 900-1500m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Calamus dransfieldii</i> Renuka	Palmae	Forest nursery, Subramanya, Dakshina Kannada, Karnataka	10	Endemic to Western Ghats - In evergreen forests between 300-700m. Karnataka, Kerala and Tamil Nadu.
<i>Calamus hookerianus</i> Becc.	Palmae	K.F.R.I., Peechi, Kerala	4	Endemic to Western Ghats - In evergreen forests up to 1000m. Kerala and Tamil Nadu.
<i>Calamus lakshmanae</i> Renuka	Palmae	Forest nursery, Sampaje, Dakshina Kannada, Karnataka	5	Endemic to Western Ghats – In evergreen forests at about 85m. Karnataka.
<i>Calamus nagabettai</i> Fernandez & Dey	Palmae	Forest nursery, Subramanya, Dakshina Kannada, Karnataka	42	Endemic to Western Ghats – In evergreen forests. Karnataka and Kerala.

Name of the species	Family	Source	# Plants	Remarks
<i>Calamus prasinus</i> Lakshmana & Renuka	Palmae	Forest nursery, Subramanya, Dakshina Kannada, Karnataka	25	Endemic to Western Ghats – In evergreen forests at about 530m. Karnataka.
<i>Calamus vattayila</i> Renuka	Palmae	Forest nursery, Subramanya, Dakshina Kannada, Karnataka	25	Endemic to Western Ghats – In evergreen forests between 200-750m. Karnataka, Kerala and Tamil Nadu
<i>Dalbergia horrida</i> (Dennst.) Mabb.	Papilionaceae	Udupi, Dakshina Kannada, Karnataka	4	Endemic to Western Ghats/western coast – Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu. Also in Salem of Eastern Ghats
<i>Desmos lawii</i> (Hook.f. & Thomson) Safford	Annonaceae	Gersoppa, Uttara Kannada, Karnataka	10	Endemic to Western Ghats – In evergreen to semi evergreen forests between 500-900m. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
<i>Flemingia nilgheriensis</i> (Baker) Wight ex Cooke	Papilionaceae	Sringeri, Chickamagalur, Karnataka	12	Endemic to Western Ghats/Bababudan Hills – Maharashtra, Karnataka and Kerala
<i>Grewia heterotricha</i> Masters	Tiliaceae	Gersoppa, Uttara Kannada, Karnataka	33	Endemic to Western Ghats – In deciduous to semi evergreen forests. Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu. Rare (Ahmedullah & Nayar, 1986)
<i>Gymnostachyum latifolium</i> T. Anderson	Acanthaceae	Gersoppa, Uttara Kannada, Karnataka	11	Endemic to Western Ghats/Bababudan Hills up to 1250m. – Maharashtra, Karnataka, Kerala and Tamil Nadu.
<i>Humboldtia brunonis</i> Wallich	Caesalpiniaceae	Subramanya, Dakshina Kannada, Karnataka	41	Endemic to Western Ghats – In evergreen forests up to 800m. Karnataka, Kerala and Tamil Nadu.
<i>Ixora polyantha</i> Wight	Rubiaceae	Gersoppa, Uttara Kannada, Karnataka. Udupi, Dakshina Kannada, Karnataka	11	Endemic to Western Ghats/western coast – Maharashtra, Karnataka and Kerala.
<i>Lasianthus parvifolius</i> Wight	Rubiaceae	Sringeri, Chickamagalur, Karnataka	5	Endemic to Western Ghats – Karnataka and Tamil Nadu.
<i>Moullava spicata</i> (Dalz.) Nicolson	Caesalpiniaceae	Gersoppa, Uttara Kannada, Karnataka	5	Endemic to Western Ghats – up to 900m. Karnataka and Kerala. The genus <i>Moullava</i> Adans. is monotypic and is endemic to the Western Ghats.
<i>Psychotria dalzelli</i> Hook.f.	Rubiaceae	Kaiga, Uttara Kannada, Karnataka	4	Endemic to Western Ghats/western coast - Maharashtra, Karnataka and Kerala
<i>Psychotria flavida</i> Talbot	Rubiaceae	Udupi, Dakshina Kannada, Karnataka	25	Endemic to Western Ghats/western coast - Maharashtra, Karnataka, Kerala and Tamil Nadu
<i>Rubus fockei</i> Gandhi	Rosaceae	Sringeri, Chickamagalur, Karnataka	5	Endemic to Western Ghats/Bababudan and Biligirirangan Hills – In evergreen forests. Karnataka and Kerala. Rare and threatened (Ahmedullah & Nayar, 1986).
<i>Spatholobus purpureus</i> Benth. ex Baker	Papilionaceae	Gersoppa, Uttara Kannada, Karnataka	5	Endemic to Western Ghats – In evergreen forests. Maharashtra, Karnataka, Kerala and Tamil Nadu.
<i>Tetrastigma gamblei</i> Shetty & P. Singh	Vitaceae	Gersoppa, Uttara Kannada, Karnataka	12	Endemic to Western Ghats – In evergreen forests. Maharashtra, Karnataka and Kerala.

Table 3. List of endemic herb taxa in the Mangalore University arboretum.

Name of the species	Family	Sources	# Plants	Remarks
<i>Amomum cannicarpum</i> (Wight) Benth.	Zingiberaceae	Jodupala, Kodagu, Karnataka	2	Endemic to Western Ghats – In evergreen forests up to 1800m. Karnataka, Kerala and Tamil Nadu
<i>Amomum ghaticum</i> K.G. Bhat	Zingiberaceae	Sulkirimogru, Dakshina Kannada, Karnataka	5	Endemic to Western Ghats
<i>Amomum muricatum</i> Beddome	Zingiberaceae	Agumbe, Shimoga	2	Endemic to Western Ghats – In evergreen forests between 500-900m. Karnataka, Kerala and Tamil Nadu
<i>Amorphophallus commutatus</i> (Schott) Engl.	Araceae	Udupi, Dakshina Kannada, Karnataka	3	Endemic to Western Ghats – Maharashtra and Karnataka
<i>Andrographis lineata</i> Nees	Acanthaceae	Sringeri, Chickamagalur, Karnataka	>100	Endemic to Western Ghats – Tamil Nadu and Karnataka. Also in Cuddapah, Andhra Pradesh.
<i>Asystasia dalzelliana</i> Santapau	Acanthaceae	Goa	>100	Endemic to Western Ghats – At low altitudes. Goa, Kerala, Tamil Nadu and Karnataka
<i>Bulbophyllum neilgherrense</i> Wight	Orchidaceae	Seethanadi, Dakshina Kannada, Karnataka	10	Endemic to Western Ghats – up to 1800m. Maharashtra, Goa, Kerala, Tamil Nadu and Karnataka
<i>Crotalaria filipes</i> Benth.	Papilionaceae	Gersoppa, Uttara Kannada, Karnataka	10	Endemic to Western Ghats /western coast – Maharashtra and Karnataka
<i>Crotalaria lutescens</i> Dalz.	Papilionaceae	Udupi, Dakshina Kannada, Karnataka	>100	Endemic to Western Ghats /western coast – Maharashtra and Karnataka. Rare and threatened (Ahmedullah & Nayar, 1986)
<i>Ensete superbum</i> (Roxb.) Cheesman	Musaceae	Agumbe, Shimoga, Karnataka. Kaiga, Uttara Kannada, Karnataka	12	Endemic to Western Ghats, extending up to Gujarat, 900-1500m.
<i>Frerea indica</i> Dalz.	Asclepiadaceae	Botany department, Goa University, Goa	6	Endemic to northern Western Ghats of Central Maharashtra. Rare and threatened (Ahmedullah & Nayar, 1986)
<i>Paracaulleya bhattii</i> R.M. Smith	Zingiberaceae	Udupi, Dakshina Kannada, Karnataka	8	Endemic to Western Ghats /western coast – Karnataka. The genus <i>Paracaulleya</i> R.M. Smith is monotypic.
<i>Pouzolzia wightii</i> Bennet	Urticaceae	Sringeri, Chickamagalur, Karnataka	3	Endemic to Peninsular India
<i>Trias stocksii</i> Benth.	Orchidaceae	Sringeri, Chickamagalur, Karnataka	3	Endemic to Western Ghats – Maharashtra, Karnataka, Kerala and Tamil Nadu
<i>Zingiber cernuum</i> Dalz.	Zingiberaceae	Gersoppa, Uttara Kannada, Karnataka. Agumbe, Shimoga, Karnataka.	3	Endemic to Western Ghats – Maharashtra and Karnataka
<i>Zingiber neesanum</i> (Graham) Ramam.	Zingiberaceae	Gersoppa, Uttara Kannada, Karnataka	3	Endemic to Western Ghats – Maharashtra, Kerala and Karnataka