

DECIDUOUS FORESTS OF DEVARAYADURGA, MYSORE STATE

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A B S T R A C T

The present paper gives a preliminary account of the flora of the deciduous forests of Devarayadurga near Tumkur, Mysore State. The general composition of the vegetation which varies considerably from the valleys to the high hill tops has been described. 203 species belonging to 59 families of vascular plants are enumerated, of which families like Fabaceae, Poaceae, Asteraceae and Commelinaceae are well represented.

The forest area under study lies between Lat. $13^{\circ}21'30''$ - $13^{\circ}23'$ N and Long. $77^{\circ}11'$ - $77^{\circ}13'5''$ E and is situated about 16 km east of Tumkur town in Mysore State. The famous temples of Goddess Durga and Lord Narasimha are situated at the top of the hill. The existing fortifications and temples on the hill were built by the Mysore King Chikka-Deva-Raja Wodeyar in the year 1696, and hence the name after him as Devarayadurga or Devarayanadurga. This is one of the famous pilgrim centres in Mysore State.

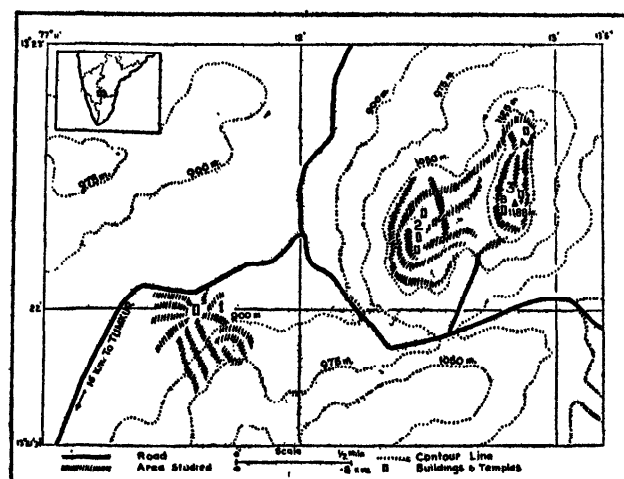
Associated with its historical and spiritual antiquity, these few chains of hillocks surrounding the temples are covered by rich forest growth mainly of the deciduous type. This is one of the isolated hill groupings very close to other such groups in Deccan Plateau like the Nandi hills on one side and the Biligirirangan hills on the other. Hence it is of considerable interest to study the vegetation and flora of this region to evaluate the distribution of species along these isolated groupings of hills, which form the linking chains between the Eastern ghats and the Western ghats through the Nilgiris.

TOPOGRAPHY, GEOLOGY AND CLIMATE

The region under study covered in the present paper includes the hill slopes surrounding Namadachilume forest Rest House and those leading to the upper hilly area of the temples and also the slopes and flat hilly top surrounding the temples and the P.W.D. and Mission Bungalows called 'Banglibetta'. The altitude from the lowest parts of Namadachilume to the top of Banglibetta varies from 850 - 1200 m respectively. (Map)

The area comes under Deccan Plateau, with steep barren rocky slopes, being the characteristic feature of these groups of hills in the State. Hence the rich growth of the forest is merely restricted to the slopes and valleys, whereas the hill tops which are subjected to high winds and erosion remain barren with a few shrubs and grasses. The soil is mainly laterite and gravelly along the slopes, but sometimes mixed with clayey loam and in the valleys it is clayey with good humus mixture. Along the hill top plateau, besides the water tank near the temple

which harbours several aquatics, the rocky crevices with good humus deposits form ideal spots for the growth of interesting herbaceous ferns.



Map of Devarayadurga area (very much enlarged) showing the range of altitude and the area studied. (1) Namadachilume Forest Rest House area ; (2) Temple area ; (3) Banglibetta. Marijudihatta is towards south-west of Namadachilume on way to Tumkur (not shown in the map).

The rainfall in this region ranges from 100-120 cm and it is mainly from south-west monsoon. The maximum and minimum temperatures vary from 27° - 30° C and 13° - 16° C respectively.

VEGETATION

The vegetation of the region can broadly be classified into the deciduous forests surrounding Namadachilume forest Rest House area and along the slopes of the hills, and the scrub on the top of the hills and around the temple area and Banglibetta.

The common tree forms of the deciduous forests are *Dalbergia lanceolaria* Linn. f., *Pterocarpus marsupium* Roxb., *Anogeissus latifolia* Wall., *Terminalia arjuna* W. & A., *T. paniculata* Roth, *T. tomentosa* W. & A., and *Semicarpus anacardium* Linn. f. mixed with shrubs like *Lantana camara* Linn. var. *aculeata* (Linn.) Mold., *Acacia concinna* DC., *Ptero-*

lobium indicum A. Rich., *Gardenia gummifera* Linn. f., *Ligustrum perrottetii* A. DC., *Vitex altissima* Linn. f. and *Osyris wightiana* Wall. ex Wt. The forest floor is covered by a rich growth of herbaceous plants belonging to different families, of which *Hibiscus lobatus* (Murr.) O. Ktze., *Alysicarpus vaginalis* DC., *Crotalaria mysorensis* Roth, *C. retusa* Linn., *Indigofera hirsuta* Linn., *Lindernia pusilla* (Thunb.) Bold., *Sopubia delphinifolia* (Linn.) Don var. *parviflora* Benth. and a few moist loving sedges like *Cyperus aristatus* Rottb., *Kyllinga brevifolia* Rottb., *Pycnus odoratus* Urb., and a few grasses like *Alloteropsis cimbina* (Linn.) Stapf, *Apluda mutica* Linn., and *Cymbopogon schoenanthus* (Linn.) Spr. are worth mentioning. A few noteworthy climbers are *Cissampelos pareira* Linn., *Celastrus paniculata* Willd., *Ampelocissus tomentosa* Planch., *Cissus pallida* Planch., *Jasminum auriculatum* Vahl, *Ceropegia tuberosa* Roxb., *Dioscorea oppositifolia* Linn., and *D. pentaphylla* Linn.

On the exposed top of the hill, near and around Banglibetta and Temple areas, the vegetation is sparse with a few shrubs like *Canthium rheedii* DC., *Cipadessa baccifera* Miq., *Dodonaea viscosa* Linn., *Butea monosperma* (Lamk.) Taub., *Mundulea sericea* (Willd.) A. Cheval., *Tephrosia tinctoria* Pers., *Gmelina arborea* Roxb., and *Justicia latispica* Gamble. Interesting species of ferns like *Actinopteris dichotoma* Kuhn, *Adiantum caudatum* Linn., *Hemionitis arifolia* Moore, *Asplenium praemorsum* Sw., and *Pyrrosia longifolia* Morton have been collected from these areas. The moist rocky crevices and the edges of the Tank near the temple harbour several interesting species like *Impatiens balsamina* Linn. var. *rosea* Hook. f., *Aeschynomene indica* Linn., *Zornia diphylla* (Linn.) Pers., *Coronopus didymus* (Linn.) Sm., *Gynura nitida* DC., *Lindernia hyssopoides* (Linn.) Haines, *L. sessiflora* (Benth.) Wettst., *Allmania nodiflora* R. Br., *Chlorophytum laxum* R. Br., *C. tuberosum* Baker, *Commelina ensifolia* R. Br., and *Murdannia semiteres* (Dalz.) Santapau.

The lower elevations on way to Namadachilume are under plantations of *Terminalia arjuna* W. & A., *T. paniculata* Roth, a few species of *Eucalyptus* by the forest department. *Musa paradisiaca* Linn., *Carica papaya* Linn. and *Vitis vinifera* Linn. are under successful cultivation in the adjoining valleys. There is an extensive scope for raising good plantations of species of *Terminalia* and *Pterocarpus*. There is also a wide scope for the systematic cultivation of Ayurvedic medicinal plants growing wild in the area under study. A small Nursery of medicinal plants has been started as an experimental measure by the Forest Department with species of *Sida*, *Toddalia*, *Ruta*, *Artemisia*, *Ocimum*, *Solidago*, *Gloriosa*, *Rauwolfia*, *Zingiber*, *Sarcostemma* and few others. Collection of more useful

data of the drug plants of the area and their demand in the neighbouring Mysore market would help in the expansion of the nursery experiments into a regular cultivation. Teak is common and forms an important component of these deciduous forests, but in the drier tracts the growth of the stem is not uniform and develops into crooked and stunted trunks, thus bringing down the quality and value of the timber.

Due to the intensive work being carried out by the senior author on the family Commelinaceae a little more careful attention on the family has resulted in the collection of 13 species from the region under study. It is interesting to record that three distinct forms of *Cyanotis arachnoidea* C. B. Clarke were collected from different elevations of the area and they have been discussed briefly under the enumeration of species.

A few interesting species which have been recorded as new to this isolated hilly region are found helpful for a better understanding of their distribution. Most of these new records from this area have been reported in the Western ghats, in the Eastern ghats and in the Nilgiris, but not from this region and other isolated hills such as the Nandi hills, the Biligirirangan hills and the Chamundi hills which are in close proximity to this region; as a result of such records from this region their continuity in their distribution from the Western ghats and the Nilgiris to the Eastern ghats through this region is established. *Phyllanthus scabrifolius* Hook. f. which was considered by Cooke (*Flora of Bombay*, 3, 85: ed. 1958) to be endemic to Konkan has been recorded from this area; such record extends the distribution of the species further east of the Deccan Plateau.

In all 203 species representing 59 families of vascular plants have been collected and studied. Of these, families like Fabaceae, Poaceae, Asteraceae, Commelinaceae and Euphorbiaceae are well represented with species numbering to 21, 20, 14, 13 and 11 respectively under each family. Every attempt has been made in bringing out the correct and up-to-date nomenclature of the species.

The present paper is based on the preliminary study of the area which has now turned out to be a good area for a further detailed study in ensuing years particularly for understanding of the distribution of several species on the isolated hills of Deccan Plateau.

ACKNOWLEDGEMENT

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ENUMERATION OF SPECIES

* New records for the hills of Mysore area.

The name of the collector for all the field numbers and below is R. S. Rao (senior author).

MENISPERMACEAE

Cissampelos pareira Linn.

Flowering. Fairly common. Marigudihalla, 73404; Namadachilume Forest Rest House area, 73446A.

Cocculus hirsutus (Linn.) Diels (= *C. villosus* DC.)

Flowering. Rare. Marigudihalla, 73411.

PAPAVERACEAE

Argemone maxicana Linn.

Flowering. Rare. Banglibetta, 73386.

BRASSICACEAE (= CRUCIFERAE)

* **Coronopus didymus** (Linn.) Sm. (= *Lepidium didymum* Linn.)

Flowering. Rare. Banglibetta, 73385. This interesting weed, though reported as common in Nilgiris, has so far not been recorded from the hills of Mysore area.

POLYGALACEAE

Polygala elongata Klein ex Willd.

Flowering. Rare. Namadachilume Forest R. H. area, 73447A; Temple are, 73293.

MALVACEAE

* **Hibiscus lobatus** (Murr.) O. Ktze. (= *H. solandra* L'Herit.)

Flowering. Fairly common. Marigudihalla, 73408; Namadachilume Forest R. H. area, 73272. The record of this species from this area links up the distribution of the species from East coast to the West coast.

Malvastrum coromandelianum Garcke

Flowering. Common. Banglibetta, 73373.

Pavonia zeylanica Cav.

Flowering. Rare. Namadachilume Forest R. H. area, 73464.

Sida acuta Burm. (= *S. carpinifolia* Linn. f.)

Flowering. Rare. Banglibetta, 73351.

S. cordifolia Linn.

Flowering. Common. Namadachilume Forest R. H. area, 73276.

BOMBACACEAE

Bombax ceiba Linn. [= *Salmaalina malabarica* (DC.) Sch. & Endl.]

Rare. Namadachilume Forest R. H. area, 73429.

STERCULIACEAE

Waltheria indica Linn.

Flowering. Common. Namadachilume Forest R. H. area, 73284.

TILIACEAE

Grewia hirsuta Vahl

Flowering. Common. Marigudihalla, 73405A.

Triumfetta rhomboidea Jacq.

Flowering. Rare. Banglibetta, 73315.

ZYGOPHYLLACEAE

Tribulus terrestris Linn.

Flowering. Common. Banglibetta, 73374.

GERANIACEAE

Impatiens balsamina Linn. var. *rosea* Hook. f.

Flowering. Common. Banglibetta, 73321.

RUTACEAE

Ruta graveolens Linn.

Flowering. Cultivated. Medicinal plants Nursery area, 73418.

Toddalia asiatica (Linn.) Lamk. var. *gracilis* Gamble (= *T. aculeata* Pers.)

Fruiting. Common. Medicinal Plants Nursery area, 73416.

MELIACEAE

Cipadessa baccifera (Roth) Miq.

Fruiting. Common. Banglibetta, 73304.

CELASTRACEAE

Celastrus paniculata Willd.

Fruiting. Rare. Namadachilume Forest R. H. area, 7349A.

RHAMNACEAE

Zizyphus mauritiana Lamk. (= *Z. jujuba* Lamk.)

Flowering. Rare. Marigudihalla, 73407.

Z. xylopyrus Willd.

Fruiting. Rare. Namadachilume Forest R. H. area, 73439.

VITACEAE

Ampelocissus tomentosa Planch. (= *Vitis tomentosa* Heyne).

Flowering. Rare. Namadachilume Forest R. H. area, 73461.

Cissus pallida (W. & A.) Planch. (= *Vitis pallida* W. & A.)

Fruiting. Rare. Namadachilume Forest R. H. area, 73461.

SAPINDACEAE

Cardiospermum halicacabum Linn.

Flowering, fruiting. Rare. Banglibetta, 73381.

Dodonaea viscosa Linn.

Fruiting. Few. Banglibetta, 73322.

ANACARDIACEAE

Semecarpus anacardium Linn. f.

Fruiting. Rare. Namadachilume Forest R. H. area, 73471.

FABACEAE (= PAPILIONACEAE)

Aeschynomene indica Linn.

Flowering. Rare. Temple area, 73394.

Alysicarpus bupleurifolius DC.

Flowering. Rare. Banglibetta, 73367.

Alysicarpus vaginalis DC.

Fruiting. Common. Namadachilume Forest R. H. area, 73269.

Alysicarpus sp.

Flowering. Rare. Banglibetta, 73354.

Butea monosperma (Lamk.) Taub. (= *B. frondosa* Koenig ex Roxb.)

Vegetative. Common. Banglibetta, 73342.

Crotalaria mysorensis Roth.

Flowering. Common. Namadachilume Forest R. H. area, 73285.

C. prostrata Roxb.

Fruiting. Rare. Banglibetta, 73349.

C. retusa Linn.

Flowering. Rare. Namadachilume Forest R. H. area, 73283.

Dalbergia lanceolaria Linn. f.

Fruiting. Rare. Namadachilume Forest R. H. area, 73463.

Desmodium trifolium DC.

Flowering. Common. Banglibetta, 73318.

Indigofera enneaphylla Linn.

Flowering. Rare. Temple area, 73295.

I. hirsuta Linn.

Flowering. Common. Namadachilume Forest R. H. area, 73251.

I. wightii Grah.

Fruiting. Rare. Namadachilume Forest R. H. area, 73433.

Mundulea sericea (Willd.) A. Cheval. (= *M. suberosa* Benth.)

Flowering. Common. Banglibetta, 73341.

Pseudarthria viscida W. & A.

Flowering. Rare. Temple area, 73294; Namadachilume Forest R. H. area, 73443A.

Pterocarpus marsupium Roxb.

Fruiting. Rare. Namadachilume Forest R. H. area, 73444.

Rhynchosia suaveolens DC.

Flowering. Rare. Namadachilume Forest R. H. area, 73458.

Rothia trifoliata Pers.

Flowering. Rare. Temple area, 73399.

Tephrosia purpurea Pers.

Flowering. Very common. Banglibetta, 73352.

T. tinctoria Pers.

Flowering. Rare. Banglibetta, 73317.

Zornia diphylla (Linn.) Pers.

Flowering. Common. Temple area, 73396.

CAESALPINIACEAE

Cassia fistula Linn.

Fruiting. Rare. Namadachilume Forest R. H. area, 73438A.

C. montana Heyne

Flowering. Rare. Marigudihalla, 73410.

C. occidentalis Linn.

Flowering. Very common. Banglibetta, 73371.

C. tora Linn.

Flowering. Common. Banglibetta, 73378.

Delonix regia (Boj.) Raf.

Fruiting. Rare. Namadachilume Forest R. H. area, 73426.

Pterolobium indicum A. Rich.

Fruiting. Common. Namadachilume Forest R. H. area, 73438.

Tamarindus indica Linn.

Fruiting. Rare. Namadachilume Forest R. H. area, 73427.

MIMOSACEAE

Acacia concinna DC.

Flowering. Common. Namadachilume Forest R. H. area, 73449.

A. leucophloea Willd.

Flowering. Rare. Marigudihalla, 73409.

Albizia lathamii Hole

Fruiting. Rare. Namadachilume Forest R. H. area, 73470.

A. lebbbeck Benth.

Fruiting. Rare. Namadachilume Forest R. H. area, 73425.

COMBRETACEAE

Anogeissus latifolia Walli.

Flowering. Rare. Namadachilume Forest R. H. area, 73467.

Terminalia arjuna W. & A.

Fruiting. Frequent. Marigudihalla, 73402.

T. paniculata Roth

Flowering. Rare. Namadachilume Forest R. H. area, 73466.

T. tomentosa W. & A.

Fruiting. Rare. Namadachilume Forest R. H. area, 73463.

LYTHRACEAE

Lagerstroemia parviflora Roxb.

Fruiting. Rare. Namadachilume Forest R. H. area, 73457.

ONAGRACEAE

Jussiaea suffruticosa Linn.

Flowering. Rare. Namadachilume Forest R. H. area, 73250.

CUCURBITACEAE

Bryonopsis laciniosa (Linn.) Naud. (= *Bryonia laciniosa* Linn.)

Flowering. Rare. Banglibetta, 73358.

Melothria maderaspatana (Linn.) Cogn.

Flowering. Rare. Banglibetta, 73357.

Momordica charantia Linn.

Flowering. Rare. Marigudihalla, 73405.

MOLLUGINACEAE

Mollugo pentaphylla Linn. (= *M. stricta* Linn.)

Flowering. Common. Namadachilume Forest R. H. area, 73274.

RUBIACEAE

Borreria hispida (Linn.) Schum.

Flowering. Common. Namadachilume Forest R. H. area, 73253.

Borreria stricta (Linn.) Schum.

Flowering. Common. Namadachilume Forest R. H. area, 73291.

Canthium rheedii DC.

Flowering. Common. Banglibetta, 73328.

Gardenia gummifera Linn. f.

Fruiting. Rare. Namadachilume Forest R. H. area, 73459.

Oldenlandia herbacea Roxb.

Flowering. Common. Temple area, 73393; Namadachilume Forest R. H. area, 73455.

Xeromphis spinosa (Thunb.) Keay. (= *Randia brandisii* Gamble)

Fruiting. Rare. Marigudihalla, 73412.

ASTERACEAE (= COMPOSITAE)

Acanthospermum hispidum DC.

Fruiting. Rare. Banglibetta, 73353.

Ageratum conyzoides Linn.

Flowering. Rare. Banglibetta, 73305.

Artemisia vulgaris Linn.

Flowering. Namadachilume Forest R. H. area, 73250A.

Bidens biternata (Lour.) Merr. & Sherff

Flowering. Frequent. Namadachilume Forest R. H. area, 73263; Banglibetta, 73311.

Blainvillea acmella (Linn.) Philip. [= *B. latifolia* (Linn. f.) DC. ex Wt.]

Flowering. Common. Namadachilume Forest R. H. area, 73289.

Cosmos diversifolius Otto

Flowering. Rare. Marigudihalla, 73403.

Eclipta prostrata Linn.

Flowering. Common. Temple area, 73387.

Galinsoga parviflora Cav.

Flowering. Common. Banglibetta, 73368.

Gynura nitida DC.

Flowering. Rare. Banglibetta, 73333.

Lagascea mollis Cav.

Flowering. Common. Namadachilume Forest R. H. area, 73287.

Senecio tenuifolius Burm. f.

Flowering. Very common. Namadachilume Forest R. H. area, 73268.

Tridax procumbens Linn.

Flowering. Common. Namadachilume Forest R. H. area, 73288.

Vernonia cinerea Less.

Flowering. Rare. Banglibetta, 73309; Medicinal Plants Nursery area, 73415.

Zinnia elegans Jacq.

Flowering. Abundant. Namadachilume Forest R. H. area, 73286; Banglibetta, 73331.

PRIMULACEAE

Anagallis arvensis Linn.

Flowering. Rare. Temple area, 73388.

SAPOTACEAE

Achras zapota Linn.

Flowering. Rare. Namadachilume Forest R. H. area, 73430.

OLEACEAE

Jasminum auriculatum Vahl

Flowering. Rare. Namadachilume Forest R. H. area, 73446.

Ligustrum perrottetii A. DC.

Fruiting. Rare. Namadachilume Forest R. H. area, 73424.

APOCYNACEAE

Holarrhena antidysenterica Wall.

Fruiting. Common. Namadachilume Forest R. H. area, 73450A.

ASCLEPIADACEAE

Ceropegia tuberosa Roxb.

Flowering, fruiting. Rare. Namadachilume Forest R. H. area, 73447.

Dregea volubilis Benth. ex Hook. f. (= *Marsdenia volubilis* T. Cooke)

Flowering. Rare. Namadachilume Forest R. H. area, 73462.

LOGANIACEAE

Strychnos potatorum Linn. f.

Flowering, fruiting. Rare. Namadachilume Forest R. H. area, 73474.

BORAGINACEAE

Cynoglossum meeboldii Brand (= *C. denticulatum* A. DC. var. *zeylanicum* C. B. Clarke)

Fruiting. Rare. Banglibetta, 73372.

Heliotropium scabrum Retz.

Flowering. Rare. Namadachilume Forest R. H. area, 73454A.

Trichodesma indicum R. Br.

Flowering. Rare. Banglibetta, 73366.

CONVOLVULACEAE

Argyrea sericea Dalz.

Flowering. Common. Banglibetta, 73307.

Evolvulus alsinoides Linn.

Flowering. Rare. Banglibetta, 73332.

Merremia tridentata (Linn.) Hall. f.

Flowering. Rare. Temple area, 73397.

SOLANACEAE

Datura stramonium Linn.

Flowering. Rare. Banglibetta, 73384.

Nicandra physaloides Gaertn.

Flowering. Rare. Banglibetta, 73380.

Physalis minima Linn.

Flowering, fruiting. Rare. Banglibetta, 73370.

Solanum indicum Linn.

Flowering. Rare. Banglibetta, 73319.

S. nigrum Linn.

Flowering. Rare. Banglibetta, 73369.

SCROPHULARIACEAE

Lindernia hyssopioides (Linn.) Haines. (= *Ilysanthes hyssopioides* Benth.)

Flowering. Common. Temple area, 73292.

**Lindernia pusilla* (Thunb.) Bold. (= *Vandellia scabra* Benth.)

Flowering. Rare. Namadachilume Forest R. H. area, 73423. The record of this species extends its distribution further east along the Deccan Plateau.

**L. sessiflora* (Benth.) Wetst. (= *Vandellia sessiflora* Benth.)

Flowering. Rare. Temple area, 73395. Occurrence of this species in the area under study indicates the extension of its distribution further north from the Nilgiris along Deccan Plateau to comparatively drier parts.

Sopubia delphinifolia (Linn.) Don var. *parviflora* Benth. (= *Gerardia delphinifolia* Linn. var. *parviflora* Benth.) (= *G. heyneana* Benth.)

Flowering. Common. Namadachilume Forest R. H. area, 73422.

The variety *parviflora* by Bentham was based on the length of the corolla as 11-12 mm. Though Hooker in *Flora of British India*, 4:302, 1884, does not mention the variety and Blatter in *J. Bombay nat. Hist. Soc.* 25(3): 428, 1918 argues for its suppression, Father C. J. Saldanha (personal communication to senior author) on the basis of the study of abundant material of the species proper and the variety, is of opinion that there is a clear cut difference in flower size and that the smaller flowered variety is abundant and even exclusive in the laterite tracts of Ratnagiri, North and South Kanara and Kerala. With this background, occurrence of this variety further east in Deccan Plateau in the laterite belt of the Devarayadurga hills is of considerable interest in understanding the distribution of the variety. *Striga euphrasoides* Benth.

Flowering. Rare. Namadachilume Forest R. H. area, 73441.

S. lutea Lour.

Flowering. Rare. Banglibetta, 73301.

LENTIBULARIACEAE

**Utricularia arcuata* Wt.

Flowering. Rare. Namadachilume Forest R. H. area, 73440. This interesting record extends the distribution of this species in the drier hilly tracts of Mysore area east of Bababudan hills.

BIGNONIACEAE

Arrabidaea magnifica Spr. (= *Bignonia magnifica* Bull.)

Flowering. Rare. Namadachilume Forest R. H. area, 73270.

ACANTHACEAE

Andrographis paniculata Nees

Fruiting. Rare. Namadachilume Forest R. H. area, 73451.

A. serpyllifolia Wt.

Flowering. Rare. Namadachilume Forest R. H. area, 73437.

Asystasia lawiana Dalz.

Flowering. Rare. Banglibetta, 73365.

Barleria prionitis Linn.

Flowering. Rare. Namadachilume Forest R. H. area, 73432.

**Justicia latispica* Gamble

Flowering. Rare. Banglibetta, 73330. This record indicates the distribution of the species from the Nilgiris to further north to a comparatively drier hills of Mysore area.

VERBENACEAE

Clerodendrum serratum Moon.

Flowering. Common. Banglibetta, 73316.

Gmelina arborea Roxb.

Rare. Banglibetta, 73343.

Lantana camara Linn. var. *aculeata* (Linn.) Mold.

Flowering. Very common. Namadachilume Forest R. H. area, 73290.

Stachytarpheta indica Vahl

Flowering. Common. Banglibetta, 73329.

Tectona grandis Linn.

Flowering, fruiting. Common. Namadachilume Forest R. H. area, 73436.

Vitex altissima Linn. f.

Flowering. Common. Namadachilume Forest R. H. area, 73453.

LAMIACEAE (= LABIATAE)

Leucas urticaefolia R. Br.

Flowering. Very common. Banglibetta, 73303.

Ocimum americanum Linn.

Flowering. Common. Banglibetta, 73379; Medicinal Plants Nursery area, 73417.

Orthosiphon diffusus Benth.

Flowering. Rare. Namadachilume Forest R. H. area, 73436A.

O. viscosus Benth.

Flowering. Common. Banglibetta, 73383.

NYCTAGINACEAE

Boerhavia diffusa Linn.

Flowering. Rare. Banglibetta, 73364.

Mirabilis jalapa Linn.

Flowering. Rare. Banglibetta, 73377.

AMARANTHACEAE

Allmania nodiflora R. Br.

Flowering. Rare. Banglibetta, 73325.

Alternanthera sessilis R. Br.

Flowering. Common. Namadachilume Forest R. H. area, 73273.

Amaranthus spinosus Linn.

Common. Banglibetta, 73375.

A. viridis Linn.

Fruiting. Rare. Marigudihalla, 73411A.

SANTALACEAE

Osyris wightiana Wall. ex Wt.

Flowering, fruiting. Few. Namadachilume Forest R. H. area, 73472.

EUPHORBIACEAE

- Acalypha ciliata** Forsk.
Flowering. Rare. Banglibetta, 73376.
- Bridelia squamosa** Gehrm.
Fruiting. Rare. Namadachilume Forest R. H. area, 73469.
- Euphorbia geniculata** Orteg.
Flowering. Rare. Banglibetta, 73363.
- E. hirta** Linn.
Flowering. Common. Banglibetta, 73310.
- Givotia rottleriformis** Griff.
Fruiting. Rare. Namadachilume Forest R. H. area, 73452.
- Melanthesa rhamnoides** (Retz.) Bl. (= *Breynia rhamnoides* Muell.-Arg.)
Flowering. Common. Banglibetta, 73334; Namadachilume Forest R. H. area, 73434.
- *Phyllanthus scabrifolius** Hook. f.
Flowering. Rare. Banglibetta, 73312. This is an unusually interesting record for this area under study. So far this species has been recorded by Cooke from Konkan area and Ahmednagar. Collections from Poona also are available in Cooke's Herbarium here. With the present record the distribution of the species is further extended to the East of Deccan Plateau.
- P. urinaria** Linn.
Rare. Namadachilume Forest R. H. area, 73262.
- Sebastiania chamaelea** Muell.-Arg.
Fruiting. Rare. Namadachilume Forest R. H. area, 73445.
- Securinega virosa** Pax & Hoff.
Flowering. Rare. Namadachilume Forest R. H. area, 73456.

MORACEAE

- Ficus tsiela** Roxb.
Fruiting. Rare. Namadachilume Forest R. H. area, 73443.

ORCHIDACEAE

- Habenaria longecalcarata** A. Rich.
Flowering. Rare. Banglibetta, 73323.

IRIDACEAE

- Belamcanda chinensis** DC.
Flowering. Namadachilume Forest R. H. area, 73428. Possibly an escape from cultivated plots.

AMARYLLIDACEAE

- Curculigo orchoides** Gaertn.
Flowering. Common. Banglibetta, 73327.

DIOSCOREACEAE

- Dioscorea oppositifolia** Linn.
Flowering. Rare. Namadachilume Forest R. H. area, 73430A, 73435.
- D. pentaphylla** Linn.
Flowering. Rare. Marigudihalla, 73406; Namadachilume Forest R. H. area, 73441A; Banglibetta, 73360.

LILIACEAE

- Asparagus plumosus** Baker
Rare. Banglibetta, 73356.
- *Chlorophytum laxum** R. Br.
Rare. Banglibetta, 73338. The record of this species from the hills of Mysore area establishes the continuity of the species from the Western ghats along the Deccan Plateau to the Eastern ghats.
- C. tuberosum** Baker
Flowering. Common. Banglibetta, 73335, 73340.
- Gloriosa superba** Linn.
Flowering. Rare. Namadachilume Forest R. H. area, 73401.

COMMELINACEAE

- Commelina benghalensis** Linn.
Flowering. Rare. Banglibetta, 73313.
- C. ensifolia** R. Br.
Flowering. Rare. Banglibetta, 73302.
- C. kurzii** C. B. Clarke
Flowering. Common. Banglibetta, 73355.
- C. subulata** Roth
Flowering. Rare. Temple area, 73392; Namadachilume Forest R. H. area, 73994.
- Cyanotis arachnoidea** C. B. Clarke
The collections under this species include three distinct forms (1) the species proper which agrees with the description of Clarke with leaves 8 cm long, 6-10 mm broad, and with tender fibrous roots growing on bare rocks in lower parts of the hills around Namadachilume Forest R. H. area (73473); (2) a slender form identical to the species proper in the size of leaves and other parts except the underground part where a distinct bulb is developed on which tender fibrous roots are developed and also growing on bare rocks and rocky crevices in lower hilly areas around Banglibetta (73320). Further it is interesting to record that the chromosome number of this form is $n=11$ (Kammathy and Rolla in *Bull. bot. Surv. India* 3:393-394, 1961) whereas all the other forms of this species including the giant form noted below show $n=12$ which is the usual number of all the species of *Eucyanotis* section of the genus; (3) a giant form with leaves 15-20 cm long; 2.5-3 cm broad, very fleshy, distichous, closely placed resembling an orchid stem of *Vanda* in shape and development of leaves and growing on a distinct habitat along rocks and rocky crevices of barren and exposed hill tops only around Banglibetta hill top area (73296, 73299). This appears to be a distinct species similar to *Cyanotis obtusa* Trimen (*Hand-Book Fl. Ceylon*, 1898) and detailed discussion on this aspect will be published elsewhere.
- C. cristata** (Linn.) Don
Flowering. Common. Banglibetta, 73308, 73361.
- C. fasciculata** (Heyne ex Roth) Schult. f.
Flowering. Abundant. Temple area, 73389.
- C. tuberosa** (Roxb.) Schult. f.
Flowering. Frequent. Banglibetta, 73346A.

Cyanotis tuberosa (Roxb.) Schult. f. var. **adscendens** (Dalz.) C. B. Clarke

Flowering. Rare. Banglibetta, 73344.

Murdannia nudiflora (Linn.) Brenan

Rare. Temple area, 73421.

M. semiteres (Dalz.) Santapau

Flowering. Abundant. Temple area, 73398 ; Namadachilume Forest R. H. area, 73993.

Zygomane axillaris (Linn.) Salisb. [= *Cyanotis axillaris* (Linn.) Schult. f.]

Flowering. Rare. Namadachilume Forest R. H. area, 73298.

Z. cucullata (Roth) Rolla et Kammathy (= *Tradescantia cucullata* Roth Nov. Pl. Sp. 189, 1821 ; = *Cyanotis cucullata* Kunth, Enum. 4: 107, 1843 ; C. B. Clarke in DC. Mon. Phan. 3: 245, 1881).

Flowering. Common. Jogihalli near Tumkur, 73238.

As discussed elsewhere by the senior author the two species noted above of section Ochreaeflora of the genus *Cyanotis* are distinct both by the Taxonomic and Cytological characters and hence considered under a separate genus *Zygomane*.

CYPERACEAE

Cyperus aristatus Rottb.

Common. Namadachilume Forest R. H. area, 73252 ; Temple area, 73391.

Kyllinga brevifolia Rottb.

Common. Namadachilume Forest R. H. area, 73271.

K. triceps Rottb.

Rare. Banglibetta, 73359.

Fimbristylis diphylla (Retz.) Vahl

Common. Namadachilume Forest R. H. area, 73259.

Pycnus odoratus Urb.

Common. Namadachilume Forest R. H. area, 73261, 73428A.

POACEAE (= GRAMINEAE)

Alloteropsis cimicina (Linn.) Stapf [= *Panicum cimicinum* (Linn.) Retz.]

Common. Namadachilume Forest R. H. area, 73256, 73275.

Apluda mutica Linn.

Common. Namadachilume Forest R. H. area, 73257.

Aristida setacea Retz.

Rare. Namadachilume Forest R. H. area, 73281.

Arundinella pumila (Höchst.) Steud.

Rare. Namadachilume Forest R. H. area, 73475.

Bambusa arundinacea Retz.

Rare. Namadachilume Forest R. H. area, 73434A.

Brachiaria ramosa (Linn.) Stapf (= *Panicum ramosum* Linn.)

Common. Namadachilume Forest R. H. area, 73277.

Cymbopogon schoenanthus (Linn.) Spreng. (= *Andropogon schoenanthus* Linn.)

Abundant. Namadachilume Forest R. H. area, 73282, 73448 ; Banglibetta, 73350.

Dactyloctenium aegyptium (Linn.) Beauv. (= *Eleusine aegyptia* Desf.)

Rare. Namadachilume Forest R. H. area, 73258.

Digitaria granularis (Trin.) Henr. (= *Paspalum granulare* Trin. ex Spreng.)

Common. Namadachilume Forest R. H. area, 73267.

D. longiflora (Retz.) Pers. (= *Paspalum longiflorum* Retz.)

Common. Namadachilume Forest R. H. area, 73254.

D. sanguinalis (Linn.) Scop. (= *Paspalum sanguinale* Lamk.)

Rare. Banglibetta, 73382 ; Namadachilume Forest R. H. area, 73255.

Hackelochloa granularis (Linn.) O. Ktze. (= *Manisuris granularis* Linn. f.)

Rare. Banglibetta, 73336.

Melanocenchrus jacquemontii Jaub. et Spach (= *M. royleana* Nees)

Rare. Namadachilume Forest R. H. area, 73429A.

Oropetium thomaeum (Linn. f.) Trin. (= *Nardus thomaea* Linn. f.)

Rare. Temple area, 73390.

Panicum repens Linn.

Rare. Namadachilume Forest R. H. area, 73265.

P. trypheron Schult.

Rare. Namadachilume Forest R. H. area, 73260.

Setaria glauca (Linn.) Beauv. (= *Panicum glaucum* Linn.)

Rare. Namadachilume Forest R. H. area, 73264.

S. tomentosa (Roxb.) Kunth [= *S. intermedia* (Roth) Roem. et Sch.]

Rare. Banglibetta, 73362.

Sporobolus diander (Retz.) Beauv.

Rare. Namadachilume Forest R. H. area, 73278.

Tripogon jacquemontii Stapf

Common. Namadachilume Forest R. H. area, 73280.

PTERIDOPHYTES

As the details on the distribution of fern species with reference to different hilly areas in South India are meagre, the record of the following species for the area under study forms an additional data on the distribution of ferns.

SELAGINELLACEAE

Selaginella longipila Hieron

Common. Temple area, 73400.

PTERIDACEAE

Actinopteris dichotoma (Forsk.) Kuhn (= *Acrostichum dichotomum* Forsk.)

Rare. Banglibetta, 73347.

Adiantum caudatum Linn.

Rare. Banglibetta, 73306.

Cheilanthes mysorensis Wall. ex Hook.

Rare. Namadachilume Forest R. H. area, 73454.

Hemionitis arifolia (Burm. f.) Moore (= *Asplenium arifolium* Burm.)
In rocky crevices. Rare. Banglibetta, 73324.

ASPLENIACEAE

Asplenium praemorsum Sw. (= *A. furcatum* Thunb.)
In moist rocky crevices.
Rare. Banglibetta, 73314, 73326.

POLYPODIACEAE

Pyrrosia longifolia (Burm.) Morton (= *Cyclophorus acrostichoides* Presl.) (= *Niphobolus fissus* Br.)
Common. Temple area, 73297.

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