

FLORA OF KARNATAKA. ANALYSIS

B. D. Sharma, N. P. Singh

R. S. Raghavan & Miss. U. R. Deshpande

BOTANICAL SURVEY OF INDIA

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Series 2

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R. S. Raghavan & Miss. U. R. Deshpande



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F O R E W O R D

The State of Karnataka covers an area of over 1, 92,000 sq km., and several of its mountainous regions are covered with dense forests. Botanically, the region is very interesting, and there has been considerable exploration and taxonomic activity around Bangalore, Mysore, Hassan Chikmagalur etc. Floristic accounts of these districts have been published. Yet, so far there is no inventory of all flowering plants occurring in the state.

Work on such an inventory was started about 3 years ago and I am happy that Dr. Sharma and his colleagues have been able to complete this work dealing with 3924 species belonging to 1323 genera and 199 families.

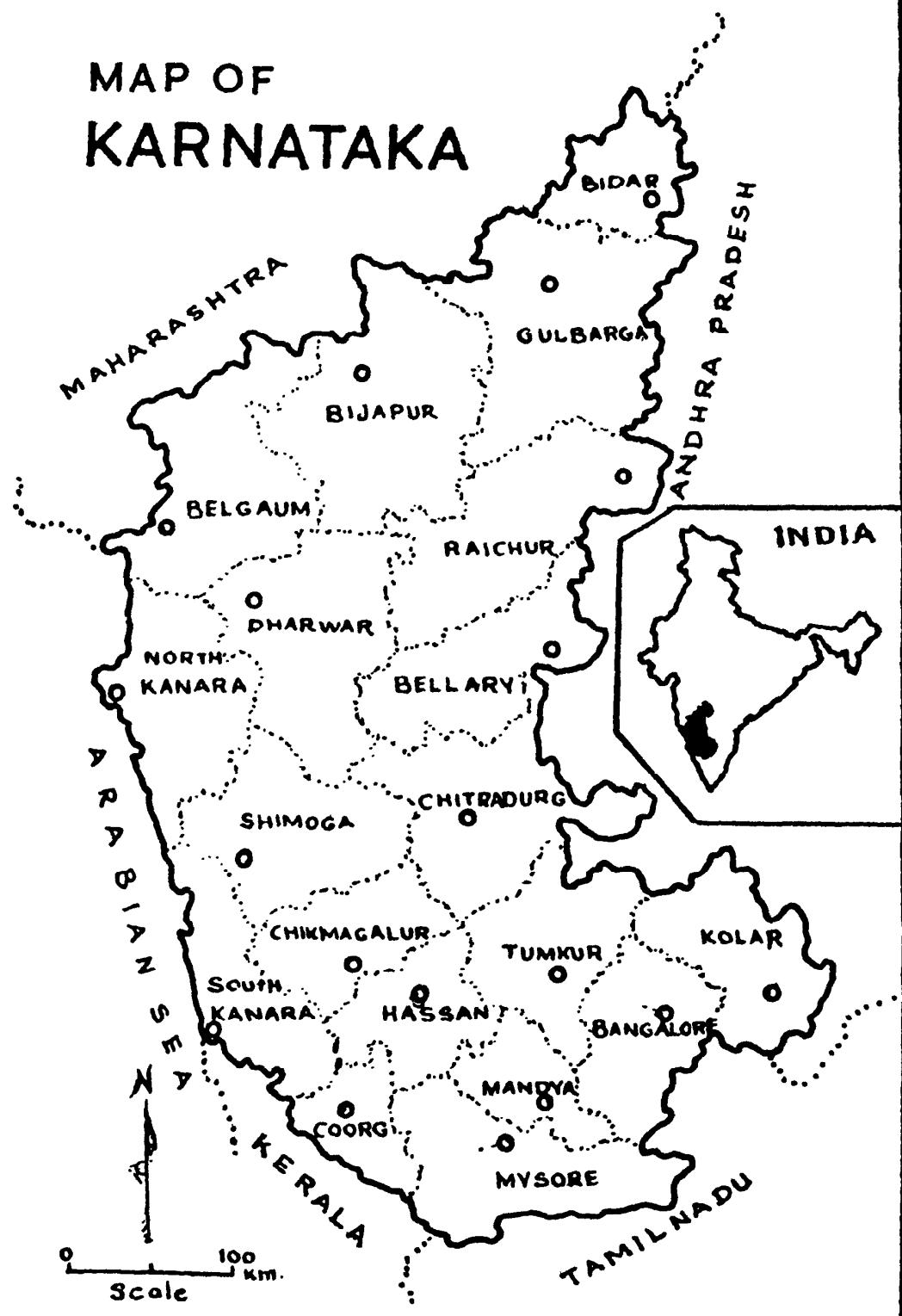
Besides the herbarium specimens incorporated in the regional herbarium, the analysis takes into account all published papers relevant to Karnataka and thus the work includes all species recorded from Karnataka proper. Diagnostic keys and detailed descriptions have not been given but every effort has been made to give selective synonyms and bring the nomenclature upto date. A brief mention has been made in the introduction about the endemic and endangered plants, emphasising the need for prompt remedial measures. One genus (*Hubbardia*) and atleast two species (*Ceropegia fantastica* and *Viscum mysorense*) are already feared to be extinct and many more are either threatened or vulnerable.

The work does give a glimpse of the rich diversity of the flora and should serve as a useful reference work for botanists, foresters, agricultural scientists and others interested in biological resources of this region.

Botanical Survey of India
Howrah 711103
10-2-1984

S. K. JAIN
Director

MAP OF KARNATAKA



I N T R O D U C T I O N

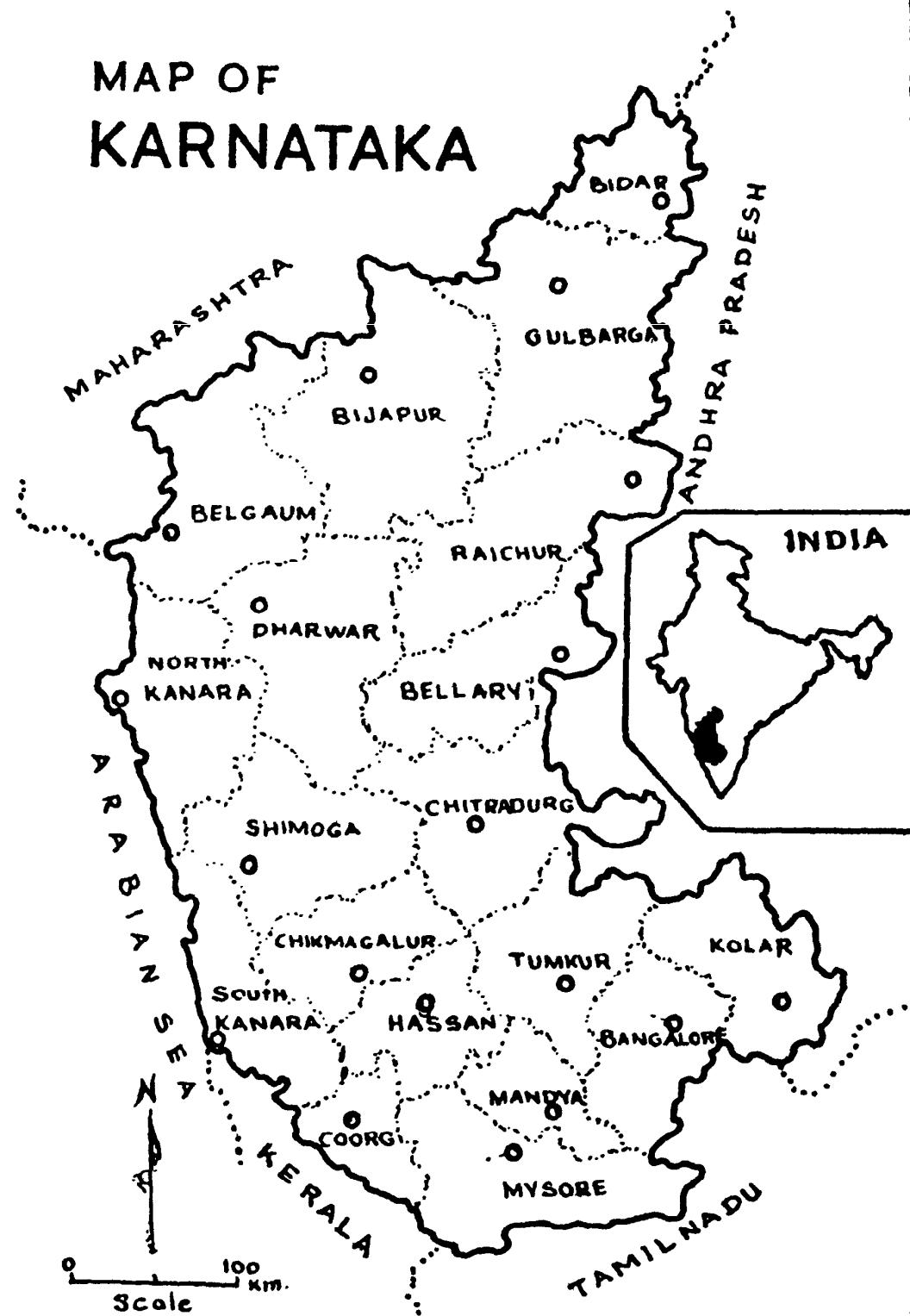
Geography

Karnataka State lies between $11^{\circ} 36'$ and $18^{\circ} 25'$ N latitude and $74^{\circ} 10'$ and $78^{\circ} 35'$ E longitude. It has a total area of 1,92,204 sq. km divided into 19 administrative districts of which Bijapur with an area of 17,079 sq. km is the biggest, whereas Coorg, with an area of 4,118 sq. km, is the smallest. The longest north-south distance is *ca.* 750 km and the widest east-west distance is *ca.* 400 km. The State is bounded by Maharashtra in the north, Andhra in the east, Tamilnadu in the south, Kerala in the south-west and the small centrally administered territory of Goa in the west, though the Arabian sea covers the major portion along the west. Along the coastal belt of North and South Kanara districts, the Western Ghats are no more than 40 km from the sea and at certain regions there is hardly 8 - 10 km of plain land between the sea and the Western Ghats. Scattered group of small, mostly uninhabited or sparsely populated islands are seen off the coasts of North and South Kanara districts. The total forest area of the State accounts for 35,365 sq. km, which is about 18.4% of the total area of the State, as against an ideal 33.33%.

Topography

Physiographically Karnataka State can be divided into two distinct regions viz. the 'Malnad', and the 'Maidan'. The 'Malnad' is the hilly country comprising mostly of the portion of Western Ghats in the State and includes the districts of North Kanara, South Kanara, Coorg, Hassan, Chikmagalur, Shimoga and to some extent Dharwar and Belgaum districts. The hilly range of Western Ghats runs from north to south along a narrow, over 300 km long coastal line in the west with the altitude rising from almost sea level to 1925.4 m (Mulainagiri, Chikmagalur district). The remaining districts make up the 'Maidan' or the plain country, which is mainly an inland plateau of varying height. The main features of plateau landscape are either flat or rolling, extensive plains between *ca.* 300 - 900 m alt., bordered by scarps, which may be dotted with conical or rounded hills or traversed by flat - topped ridges. This is known as the Karnataka plateau and can be divided into two sections by taking *ca.* 600 m, contour line as the dividing line between the northern (Karnataka

MAP OF KARNATAKA



main) plateau and the southern (Mysore) plateau. Many rivers, big and small, flow through the State, most of which have their origin in the Sahyadri mountains (Western Ghats). Of the main rivers of the State, the Cauvery, the Tungabhadra and the Krishna flow from west to east while the Sharavati, Kalinadi and Netravati flow from east to west.

Geology

The geology is fairly well known and a large portion of the State has been mapped. The peninsular gneisses are roughly 2300 - 2500 million years old and samples of schistose rocks are probably of 2900 - 3100 millions years of age. The northern margin comprising under one fourth of the State is covered by a series of sedimentary rocks known as Cud-dapah and Kurnool formations. These are succeeded by volcanic rocks known as the Deccan traps, which erupted through fissure type of volcanoes during cretaceous and eocene period. The Deccan trap flows from an elevated country with a series of horizontal platforms having step like edges. The trap has been laterised in many places. The narrow coastal strip is occupied by more recent detrital deposits and laterites also.

The remaining southern portion comprising nearly three fourth of the State is occupied by the ancient complex consisting of highly metamorphosed rocks like gneisses and schists of the Archaean system of lower pre - cambrian period. This can be mainly divided into the Dharwar system and the granitoid gneisses. The latter makes the basement while the former occupies long troughs and hollows. The Dharwar schists consist of the oldest rocks in the area, of ultra basic rocks and some large masses of intrusive basic igneous rocks. The granitoid gneisses occupy the maximum area and consist of several types of granitic rocks called as champion gneiss, peninsular gneiss, charconites and closepet granite. The latter is the youngest rock here while the peninsular gneiss occupies the largest area. Many dykes of Dolerite also traverse all the rocks besides the scattered lateritic masses. The middle division of the Dharwar system contains rich iron ores along with manganese.

Chikmagalur district is rich in iron ores and at Kudremukh alone over 610 million tons of magnetite ore occurs which is exploited at present. Almost the entire production of gold is restricted to Kolar gold mines (Kolar district) but encouraging prospects of more gold deposits are indicated in Gulbarga district. Copper mines at Gulbarga, Chikmagalur and Hassan districts are promising. Uranium and other radio active minerals have been located in N. Kanara and Chikmagalur districts. Notable among other mineral sources are limestones, quartzites etc.

Soils

Raychaudhuri *et al* (1963) divided the soils of the State into five main groups as follows :

1. *Coastal alluvium* : It is limited to the narrow flat belt adjoining the sea. These soils are sandy with very low clay or organic matter content.

2. *Laterite soils* : Mainly found in the area to the east of coastal alluvium and so also in Bidar district and to some extent in Bangalore and Kolar districts. These soils exhibit a loamy or clayey surface with a lot of pellet concretions of varying thickness followed by laterite horizons. These soils are acidic and low in bases like lime and poor in plant nutrients.

3. *Red soils* : This is the largest group found in the State mainly in the southern portion. These soils may be rich, gravelly, pale brown or red sandy loam type with their colour varying from place to place from bright red to yellowish - brown depending on the presence of hydrated oxides of iron. These soils have generally natural reaction with a tendency to develop acidity than alkalinity. They have low soluble salt contents, are poor in organic matter and nitrogen but have moderate potash.

4. *Mixed red, yellow and grey soils* : These are generally sedentary soils formed from the underlying, mostly granitic parent rock. The texture of the surface soil varies from stony to sandy in the pale yellow to light red soils, from loamy to clayey in the light- red to deep - red and grey groups. Pale yellow to deep red surface soils are generally associated with subsoils free from lime while grey soils are usually associated with clayey subsoils containing lime. Their pH varies from 6.5 - 7.5, they have low bases and are poor in nutrients.

5. *Black soils* : Those are mainly found in Bijapur, Gulbarga, Bidar, Belgaum, Dharwar and Raichur districts. These are either shallow, light coloured soils of the uplands or the deep dark, clayey soils of the lowlands. These have high clay content and water holding capacity. Their pH ranges from 7.5 - 8.5. They are highly base saturated and show accumulation of lime and soluble salts at the lower horizons and hence saline and saline alkaline soils are also observed in isolated localities. These are very fertile being well supplied with plant nutrients.

Climate

As Karnataka State is situated in the tropical zone, it has tropical monsoon climate. The year can be broadly divided into three seasons viz.

the cold season from December February which is generally free from rains ; the summer season from March May, rarely with thunder-showers especially in the later and hotter part ; and the monsoon season from June November of which south - west monsoon extends from June September, accounting for the bulk of the total rainfall and the north - east post - or retreating monsoon period from October November. The total annual rainfall in the State ranges from as low as 45 90 cm in the 'Maidan' region which roughly constitutes the eastern half, to as high as 150 750 cm in the heavy rainfall zone of 'Malnad', which extends from North Kanara in the north to Coorg in the south, with an average rainfall of about 118 cm. The climate is mild in the plateau area. The mean daily minimum temperature is the least during the cold month of January (14.4° C) when it starts rising gradually upto the hot months of April May (21.1° C), which falls very gradually in the monsoon months (17.2° C in November) to the lowest once again in January. The mean daily maximum temperature is the highest in April (34.5° C), starts decreasing gradually in the monsoon months upto July August (27.2° C), increases slightly during September October (28.3° C), decreases slightly again to the lowest in December (26.7° C), rises slightly in January and rapidly thereafter to the highest in April once again. These are only the averages but the temperatures may drop down to as low as 2° C and to as high as 46° C. The relative humidity in the Western ghat area is comparatively much higher than in the table land.

Past Work :

There are many publications of various dimensions on the flora of peninsular India in general and on that of Karnataka State in particular ; the work of Buchanan Hamilton (1807) seems to be the pioneer. But the State does not have any separate flora so far. However, Hooker's (1872-97) well known work is the first one to include the present area in general. Cooke (1901-08) and Talbot (1909-11) covered only the northern districts of North Kanara, Belgaum, Dharwar and Bijapur while Gamble (1915-36) covered the southern part of the State. Razi (1950, 1955, 1977), Raghavan (1977) and Singh *et al* (1976) have amply covered the various publications on taxonomy and floristics. However, a brief mention of some recent major works is made below.

Of the 19 districts of Karnataka State, books have been published on the flora of four districts viz. Bangalore by Ramaswamy and Razi (1973), Hassan by Saldanha & Nicolson (1976), Mysore by Rao & Razi (1981) and recently Chikmagalur by Yoganarasimhan *et al* (1983) besides the Botany of South Kanara district by Arora *et al* (1981). Earlier, Yoganarasimhan *et al* (1977) and Raizada *et al* (1979) had published the list of plants from Chikmagalur district. Singh *et al* (1976) have published

the Poaceae of Karnataka State. In addition, two theses have been submitted by the workers of the Botanical Survey of India viz. on the Flora of Shimoga district by Raghavan (1970) and on that of Eastern Karnataka comprising of the 8 districts of Bidar, Gulbarga, Bijapur, Raichur, Bellary, Chitradurg, Tumkur and Kolar by Singh (1981). A selected bibliography is also appended at the end, including references which contribute atleast one or more taxa to the enumeration.

VEGETATION

The vegetation is diverse ranging from the tropical wet evergreen forests to scrub jungles. The wet evergreen forests are seen at altitude ranging from 600 - 1000 m on the windward side of the south western ghats. Kadambi (1941) prefers to designate the evergreen forests of Shimoga and Hassan as ghat rain forests due to the distinct topography and high rainfall. The altitudinal distribution of the trees varies remarkably from the ghat - crest region to the interior even within a range of 5 - 8 kms. The floristic composition reveals some common elements with the Indo - Malaya rain forests but are markedly different from the rain forests of Eastern India. As one passes from North Kanara southwards, the constituents and density of the evergreen or semi evergreen species vary with increase in rainfall. Though the evergreen forests of Shimoga, Chikmagalur, Hassan and Coorg share more or less similar components yet the floristic composition is markedly dissimilar to that seen in Kerala. Rapid deforestation and indiscriminate exploitation of the forests result in deep differential erosion and often the ghat forests reach down to the sea.

At altitudes of 1200 - 1800 m or more, the hill tops exposed to the high velocity of the winds during the southwest monsoon, harbour stunted trees amidst grassy meadows and in the sheltered valleys occur shola-type vegetation. However, the hill top flora is somewhat different from that of Nilgiri or Pulney hill tops owing to the lesser altitude and lacks such alpine species as *Rhododendron*, *Rhodomyrtus*, *Gaultheria*, *Mahonia* etc. With decreasing altitude the vegetation gradually changes into evergreen, wet deciduous, dry deciduous and scrub forests. A number of aquatic, lithophytic and rheophytic associations occur in specialised ecological niches. Mangrove swamps occur along the coasts and offshore group of islands adjoining North & South Kanara districts. The family Podostemaceae is well represented in South Kanara district, many of the species being endemic or restricted in distribution. The forests

abound in species of *Calamus* many of which are either endangered or rare occurring in selected regions only. Except for *Gnetum* & *Cycas* no other gymnosperm occurs in the natural state in the forests. A brief account of the main vegetational types is given below.

The vegetation of Karnataka is generally divided into three parallel north south zones or belts based on the frequency of rainfall as follows :—

1. *The evergreen belt* : This stretches along the Western Ghats with a varying width of ca. 10 - 65 km and is situated in the region of heavy rainfall with a mean of 250 cm or more per annum. This can be subdivided into : (i) THE MOIST EVERGREEN BELT - a very narrow belt along the Western Ghats and covering the mountainous country with deep ravines and narrow valleys. The mountain ridges are nearly bare but for grasses or stunted trees and shrubs while the valley slopes are richly wooded. The hill tops above ca. 1000 m have herbaceous plants similar to those of temperate climates. In the evergreen zone the rainfall ranges from 250 to 600 cm mostly being on the higher side. Its main components are *Dipterocarpus indicus*, *Calophyllum apetalum*, *C. elatum*, *Hopea wightiana*, *H. parviflora*, *Holigarna arnottiana*, *H. grahamii*, *Olea dioica*, *Lophopetalum wightianum*, *Polyalthia coffeoides*, *Persea macrantha*, *Mangifera indica*, *Donella roxburghii*, *Poeciloneuron indicum*, *Mesua nagassarum*, *Dysoxylum malabaricum*, *Palaquium ellipticum*, *Vateria indica*, *Kingiodendron pinnatum* and *Artocarpus hirsutus* etc. Herbaceous flora is scanty in the floor of evergreen forests and saprophytes are frequent. As to horizontal distribution, 4 5 distinct tiers of trees and shrubs are evident. The tallest trees attain a height of 30 m or more with strongly buttressed stems. In the evergreen belt of Shimoga, the salient associations are *Poeciloneuron Mesua* at the ghat crest region followed by *Poeciloneuron Dipterocarpus*, *Hopea* or its edaphic variants as *Elaeocarpus* or *Lagerstroemia* gradually changing into *Lagerstroemia Terminalia*. *Poeciloneuron indicum* though abundant in Shimoga and Chikmagalur districts is either absent or quite rare in adjoining Hassan and S. Kanara districts. The forests abound in many lianas.

According to Champion & Seth (1968) this belt will fall under southern tropical wet evergreen forests while the next subdivision under southern tropical semi - evergreen forests. (ii) MIXED BELT OF EVERGREEN AND DECIDUOUS FORESTS. The rainfall here varies from 150 - 250 cm. It has a number of deciduous trees and more of herbs in addition to sprinkling of some evergreen trees, which are fewer here. The main deciduous species are *Terminalia paniculata*, species of *Diospyros*, *Lagerstroemia microcarpa*, *Elaeocarpus serratus*, *Mallotus philippensis* and *Ixora arborea* etc. As the elevation and rainfall decrease thickets of *Calamus* are replaced by bamboo.

2. *The deciduous forest belt* : These are situated in the intermediate rainfall region of ca. 75 - 150 cm, to the east of evergreen belt with a varying width of ca. 30 - 50 km. This, according to Champion & Seth (*I. c.*) falls under southern tropical moist deciduous forests. This also can be subdivided into : (i) THE DECIDUOUS TEAK HIGH FOREST BELT - with rainfall above 110 cm. The hill slopes and undulating country have a bamboo cover. The chief species seen is *Tectona grandis* while the other deciduous components are *Grewia tiliifolia*, *Lagerstroemia microcarpa*, *Dillenia pentagyna*, *Kydia calycina*, *Dalbergia latifolia*, *Terminalia crenulata*, *T. paniculata*, *T. alata*, *T. bellirica*, *Haldina cordifolia*, *Pterocarpus marsupium*, *Xylia xylocarpa*, *Bombax ceiba*, *Schleichera oleosa*, *Madhuca indica* var. *latifolia* and *Olea dioica* etc. (ii) THE DECIDUOUS TEAK POLE BELT has poor growth and is an open forest with grass undergrowth.

3. *Dry deciduous Fuel Tract and Scrub* : This is situated to the east of the above belt, occupying the whole of the remaining area of the State. It has a rainfall as low as 35 - 75 cm. This too can be subdivided into the superior and inferior types depending on the availability of the rainfall, the dividing line being at ca. 50 cm of precipitation. (i) THE SUPERIOR TYPE This has xerophytic plants alongwith some bamboos in addition to the deciduous species. Its main components are *Tectona grandis*, *Boswellia serrata*, *Anogeissus latifolia*, *Sterculia urens*, *Acacia chundra*, *Cochlospermum religiosum*, *Dalbergia latifolia*, *Lannea coromandelica*, *Diospyros tomentosa*, *Hardwickia binata*, *Dillenia pentagyna*, *Kydia calycina*, *Terminalia* ssp., *Lagerstroemia microcarpa*, *Haldina cordifolia*, *Madhuca longifolia* var. *latifolia*, *Buchanania lanzae*, *Grewia tiliifolia*, *Bombax ceiba*, *Pterocarpus marsupium*, *Soymida febrifuga*, *Chloroxylon swietenia*, *Albizia amara*, *Cassia fistula*, *Santalum album* and *Gmelina arborea* etc. According to Champion & Seth (*I. c.*) this subdivision will roughly fall under southern tropical dry deciduous forests and the succeeding one under southern tropical thorn & scrub forests. (ii) THE INFERIOR TYPE this is a dry arid tract having poorer growth with more xerophytic and stunted species with *Hardwickia binata* as its characteristic tree. Its main components are *Acacia chundra*, *A. leucophloea*, *A. nilotica* subsp. *indica*, *Aegle marmelos*, *Chloroxylon swietenia*, *Euphorbia nivulia*, *Flacourtie indica*, *Ixora arborea*, *Strychnos potatorum*, *Santalum album*, *Albizia amara*, *Dichrostachys cinerea*, *Zizyphus mauritiana*, *Z. xylopyrus*, *Wrightia tinctoria*, *Capparis divaricata*, *Securinega leucopyrus*, *Xeromphis spinosa*, *Canthium parviflorum*, *C. dicoccum* var. *umbellatum* and *Flacourtie indica* etc. Still poorer lands support scrub forests only which may be sometimes composed of only *Euphorbia antiquorum*, *E. tirucalli*, *Dodonaea viscosa*, *Cassia auriculata* etc.

The divisions and subdivisions gradually merge into each other in the above order.

ENDEMIC AND THREATENED FLORA

Next to the Himalayan region, peninsular India has the highest number of endemic species most of which occur along the Western Ghats (Jain & Sastry 1983). The vegetation is subject to continuous exploitation, the forest acreage has shrunk drastically and the flora is depleting. Some of the monotypic endemic genera occurring in Karnataka include *Adenoon* Dalz., *Ascopholis* Fisch., *Calacanthus* T. Anders. ex Benth., *Danthonidium* C. E. Hubb., *Erinocarpus* Nimmo ex Grah., *Griffithella* (Tul.) Warming, *Hubbardia* Bor, *Jerdonia* Wight, *Lamprachaenium* Benth., *Nanothamnus* Thoms., *Polyzygus* Dalz., *Paracautleya* Smith, *Supushpa* Suryan., *Wagatea* Dalz., to mention a few of which the genus *Hubbardia* is now probably extinct. The genera *Poeciloneuron* Bedd. and *Oianthus* Benth., are exclusive to Western Ghats and endemic species belonging to these genera occur in Karnataka.

Karnataka abounds in many endemic species and as per our present knowledge the distribution of many species is restricted to the State. These include *Acanthopale jogensis* Gilli., *Aglaia littoralis* Sundararaghavan, *Bulbophyllum mysorense* (Rolfe) J. Sm., *Calamus nagbettai* Fernandez et Dey, *Croton lawianus* Nimmo, *Hubbardia heptaneuron* Bor, *Eulophia emilianae* Saldanha, *Glyphochoa mysorensis* (Jain et Hem.) Clayton, *Hugonia belli* Sedgw., *Hoya retusa* Dalz., *Iphigenia mysorensis* Arekal et Swamy, *Isachne meeboldii* Fischer, *I. mysorense* Sundararaghavan, *I. veldkampii* Bhatt. et Nagendran, *Ischaemum dalzellii* Stapf ex Bor, *I. ritchiei* Stapf ex Bor, *Luisia macrantha* Blatt. et McC., *Marsdenia raziana* Yogan. et Subram., *Memecylon terminale* Dalz., *Nervilia hispida* Blatt. et McC., *Nilgirianthus warrensis* (Dalz.) Bremek., *Oberonia brachiphylla* Blatt. et McC., *O. josephi* Saldanha, *Ochlandra talbotii* Brandis, *Oldenlandia prainiana* (Talb.) Craib, *O. sedgwickii* Blatter, *Paracautleya bhatii* Smith, *Phalaenopsis mysorensis* Saldanha, *Phlebophyllum canarium* (Bedd.) Bremek., *Phyllanthum talbotii* Sedgw., *Psychotria canarensis* Talb., *Smithsonia maculata* (Dalz.) Saldanha, *Schizachyrium sudhanshui* Singh, *Tarenna agumbensis* Sundararaghavan, *Theriophorum uniseriatum* Blatt. et McC., *Vernonia dalzelliana* Drumm. et Hutch., *V. ornata* Talb. etc. to cite a few.

Of the species described from Karnataka *Hubbardia heptaneuron* Bor (Poaceae) & *Viscum mysorense* Gamble (Loranthaceae) are believed to be

extinct and besides, such species as *Caralluma truncato coronata* (Sedgw.) Grav. & Mayur., *Cynoglossum ritchiei* C. B. Cl. *Dalechampia stenoloba* Raghavan et Kulkarni, *Leucas angustissima* Sedgw., *Lepidagathis clavata* Dalz., *Oianthus disciflorus* Hook. f. are endangered there being no recent collection of these species other than the *types*. A few species such as *Ceropegia fantastica* Sedgw., *Dimeria woodrowii* Stapf, *Gymnema cuspidatum* (Thunb.) K. Schum., *Oianthus urceolatus* (Dalz.) Benth., *Rotala ritchiei* (C. B. Cl.) Koehne etc. have been rediscovered after a long lapse of years from neighbouring States of Karnataka but these are vulnerable and likely to be lost unless prompt protective steps are taken. Possibly *Ceropegia fantastica* described from North Kanara and once recollected from Goa in 1965 is already extinct. Species like *Capparis cleghornii* Dunn and *Ischaemum mangaloricum* (Hack.) Stapf, considered extremely rare have been found to be now common in newer localities, thus extending their distribution. It is essential that steps to protect the vanishing floristically interesting species are taken before it is too late. Biosphere reserves and conservation steps are an urgent necessity.

Since 1950, two new genera and 38 species have been described from Karnataka.

PRESENT WORK

As indicated earlier the present day State of Karnataka does not have a published flora of its own, even though a number of small publications are available on it. Therefore, it was thought desirable to first have an inventory of plants of the State which will facilitate the preparation of the State Flora at an early date. Accordingly, an effort has been made below to enumerate all known species from the State.

In the following list, upto - date nomenclature has been provided as far as possible. Families have been arranged broadly according to Bentham & Hooker's System with minor variations according to their present delimitation. All the genera and species as well as infraspecific taxa have been arranged alphabetically. Only the valid names have been cited and synonyms are given only if it differs from Cooke's Flora of the Presidency of Bombay and Gamble's Flora of the Presidency of Madras. The occurrence of the taxa is indicated district wise within the State, which are also arranged alphabetically for the sake of convenience.

The districts marked with an asterisk(*) indicate that no specimens have been seen but included on the basis of publications. If the specimens are

present in the regional herbarium of the Western Circle, Botanical Survey of India, Pune (BSI) from any district/s, the same are given without any reference to its publication elsewhere.

Names preceded with a + mark indicate that they are cultigens. A map of the State is provided with district boundaries for easy location (Map 1). The index to genera is arranged alphabetically to facilitate ready reference but the index to species covers only those selective synonyms relevant to the text.

The enumeration below lists 3924 taxa (3780 species and 144 infraspecific) under 1323 genera belonging to 199 families. Of these, 2888 (2797 species and 91 infraspecific) taxa under 1022 genera and 161 families belong to dicots whereas 1034 taxa (981 species and 53 infraspecific) under 299 genera and 36 families will fall under monocots. The gymnosperms are represented by two families, the genera *Cycas* and *Gnetum* having one species each.

In angiosperms 83 families are represented each by a solitary genus. Of these 42 genera have only one species each whereas 41 genera are represented by having 2 or more species under each genus. *Cyperus* L. has the largest number of species (42 species besides 5 infraspecific) closely followed by *Eriocaulon* L (37 species and 6 infraspecific) and *Impatiens* L. (35 species and 2 infraspecific). Nearly 270 species are cultigens which includes exotic weeds, garden escapes and commercial crops. Many of the exotic weeds are now quite naturalised.

Family name	Genera	Species	Infraspecific taxa
1. Poaceae	118	368	20
2. Fabaceae	66	273	13
3. Asteraceae	80	174	5
4. Orchidaceae	52	173	3
5. Euphorbiaceae	50	169	3
6. Acanthaceae	48	164	8
7. Cyperaceae	22	156	14
8. Rubiaceae	43	136	3
9. Lamiaceae	23	94	—
10. Convolvulaceae	16	73	2
Leguminosae*	103	385	13

* If this family is taken as *sensu lato* (i.e. including Fabaceae, Caesalpiniaceae and Mimosaceae), Leguminosae becomes the largest family with 398 taxa as against Poaceae with 385 taxa.

A comparison of the first 10 dominant families of Karnataka State with those of the regional floras of Cooke & Gamble and with the Hooker's Flora of India is given below :

Family Name	Order of dominance in the Flora of Karnataka	Cooke's Flora of Bombay Presidency	Gamble's Flora of Madras Presidency	Hooker's Flora of British India
Leguminosae	I	I	I	II
Poaceae	II	II	II	III
Asteraceae	III	IV	VII	VII
Orchidaceae	IV	VIII	VI	I
Euphorbiaceae	V	V	V	V
Acanthaceae	VI	III	IV	VI
Cyperaceae	VII	VI	VIII	VIII
Rubiaceae	VIII	VII	III	IV
Lamiaceae	IX	—	IX	IX
Convolvulaceae	X	X	—	—

The above statement shows that the first 2 dominant families are the same in all the areas except that of India as a whole. It is also seen that the order of dominance of Karnataka Flora is almost akin to that of Cooke's Flora.

The following list includes all the recently described taxa, new records for India and additional distributional data for the State in particular.

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Plate I A view of the typical evergreen forest at Agumbe (Shimoga district) with *Dipterocarpus*, *Diospyros*, *Hopea*, *Calamus* and *Pinanga* predominating.



Plate II : A general view of the deciduous forests at Tunga range (Shimoga district) with *Terminalia*, *Anogeissus*, *Hymenodictyon* and *Xylia* being the dominant trees.



Plate III A general view of a hillock with huge boulders showing thorn forests mainly composed of *Givotia rotlleriformis* alongwith clumps of *Euphorbia nivulia* at Benkal Reserve Forest, Gangavati (Raichur district).



Plate IV : A close up of the flowering twig of *Elaeocarpus tuberculatus*, a showy, tall evergreen tree.

RANUNCULACEAE

Clematis gouriana Roxb. (Hort. Beng. 43. 1814) ex DC. Syst. 1 : 138.
1817.

Bangalore, Belgaum, Bellary, Chikmagalur, Chitradurg, Coorg,
Hassan, Kolar, Mysore, N. Kanara, Shimoga, S. Kanara*, Tumkur.

C. hedysarifolia DC. Syst. 1 : 148. 1818.

Belgaum, N. Kanara, Shimoga.

C. montana Ham. ex DC. Syst. 1 : 164. 1818.

N. Kanara.

C. munroana Wt. Ill. 1 : 5. t. 1. 1840.

Coorg, S. Kanara*.

C. smilacifolia Wall. Asiat. Res. 13 : 402. 1820.

Chikmagalur, Hassan, N. Kanara, S. Kanara.

C. triloba Heyne ex Roth, Nov. Pl. Sp. 251. 1821.

Shimoga.

C. wightiana Wall. (Cat. 4674. 1828) ex Wt. & Arn. Prodr. 2. 1834.

Chikmagalur, Kolar*, Mysore*.

+ **Consolida ambigua** (L.) Ball & Heywood in Fedde. Repert. 66 :

151. 1962. *Delphinium ajacis* auct. plur. non L.

Kolar*

Naravelia zeylanica (L.) DC. Syst. 1 : 167. 1817.

Chikmagalur, Coorg, Dharwar*, Hassan, Mysore, N. Kanara,
Shimoga, S. Kanara*.

Ranunculus wallichianus Wt. & Arn. Prodr. 4. 1834.

Mysore.

Thalictrum dalzellii Hook. Ic. Pl. 9. t. 868. 1852.

Chikmagalur, Hassan, Mysore*.

T. javanicum Bl. Bijdr. 2. 1825.

Chikmagalur.

T. saniculaeforme DC. Prodr. 1 : 12. 1824.

Chikmagalur, Mysore.

DILLENIACEAE

Dillenia bracteata Wt. Ic. 2. t. 358. 1840. ("*bractiata*" in tab.).

Mysore.

D. indica L. Sp. Pl. 535. 1753.

Belgaum*, Coorg, Shimoga.

D. pentagyna Roxb. Pl. Cor. 1 : 21. t. 20. 1795.

Chikmagalur, Coorg, N. Kanara, Shimoga, S. Kanara*.

D. retusa Thunb. in Trans. Linn. Soc. 1 : 200. t. 19. 1791.

Mysore*.

MAGNOLIACEAE

Magnolia grandiflora L. Syst. ed. 10 : 1082. 1759.

Coorg.

Michelia champaca L. Sp. Pl. 536. 1753.

Bangalore*, Chikmagalur, Coorg, Hassan*, Kolar, Mysore, N. Kanara, Shimoga.

M. nilagirica Zenk. Plant. Ind. 21. t. 20. 1835.

Chikmagalur*, Mysore.

ANNONACEAE

+**Annona muricata** L. Sp. Pl. 536. 1753.

Bangalore*.

+**A. reticulata** L. Sp. Pl. 537. 1753.

Bellary, Mysore*.

A. squamosa L. Sp. Pl. 537. 1753.

Bangalore*, Bidar, Coorg, Gulbarga, Kolar, Mysore, N. Kanara*, Tumkur.

+**Artobotrys hexapetalus** (L. f.) Bhandari in Baileya 12 : 147. 1964.
A. odoratissimus R. Br., non Bl.

Bangalore, Mysore.

A. zeylanicus Hook. f. & Thoms. Fl. Ind. 128. 1855.

Chikmagalur, Coorg, Hassan, N. Kanara, Shimoga, S. Kanara*.

Cyathocalyx zeylanicus Champ. ex Hook. f. & Thoms. Fl. Ind. 1 : 127. 1855.

S. Kanara*.

Desmos lawii (Hook. f. & Thoms.) Safford in Bull. Torrey Bot. Club 39 : 506. 1912. *Unona lawii* Hook. f. & Thoms.

Coorg, Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara.

Goniothalamus cardiopetalus (Dalz.) Hook. f. & Thoms. in Fl. Ind. 107. 1855.

Coorg, Hassan, N. Kanara, Shimoga, S. Kanara*.

Meiogyne pannosa (Dalz.) Sincl. in Sarawak Mus. J. 5 : 3. 604. 1851.
Unona pannosa Dalz.

Chikmagalur, Shimoga, S. Kanara*.

M. ramarowii (Dunn) Gandhi in Sald. & Nic. Fl. Hassan 38. 1976.

Unona ramarowii Dunn

Hassan, S. Kanara.

Miliusa eriocarpa Dunn in Gamble, Fl. Pres. Madras 1 : 21. 1915.

M. indica Hook. f. & Thoms., non Leschen.

Mysore*, N. Kanara, S. Kanara.

M. tectona Hutch. ex Parkinson, For, Fl. Andaman Islands 75. 1923.

Saccopetalum tectonum (Hutch. ex Parkinson) Chatterjee

Belgaum, N. Kanara*.

M. tomentosa (Roxb.) J. Sincl. in Gard. Bull. Singapore 14 : 378. 1955. *Saccopetalum tomentosum* Hook. f. & Thoms.

Chikmagalur, Coorg, Mysore*, N. Kanara, S. Kanara*.

M. velutina (Dunal) Hook. f. & Thoms. Fl. Ind. 151. 1855.

Bangalore*, Hassan*. Tumkur*.

M. wightiana Hook. f. & Thoms. Fl. Ind. 149. 1855.

Hassan*.

Mitreophora grandiflora Bedd. Fl. Sylv. t. 75. 1871.

Mysore*, Shimoga, S. Kanara*.

Orophea zeylanica Hook. f. & Thoms. Fl. Ind. 111. 1855.

Coorg, Mysore*, N. Kanara.

Polyalthia cerasoides (Roxb.) Benth. & Hook. f. ex Bedd. Fl. Sylv. t. 1. 1869.

Bangalore*, Bellary, Mysore*.

P. coffeoides Hook. f. & Thoms. Fl. Ind. 141. 1855.

N. Kanara, S. Kanara*.

P. fragrans (Dalz.) Bedd. Fl. Sylv. t. 74. 1871.

Chikmagalur, Coorg, Hassan*, N. Kanara, Shimoga, S. Kanara*.

+*P. longifolia* (Sonnerat) Thw. Enum. 398. 1864.

Bangalore*, Mysore*.

P. suberosa Hook. f. & Thoms. Fl. Ind. 140. 1855.

Mysore*.

Sageraea laurifolia Blatter in Journ. Bombay nat. Hist. Soc. 34 : 294. 1931. *Bocagea dalzellii* Hook f. & Thoms. p. p.

N. Kanara.

Uvaria hookerii King in Ann. Roy. Bot. Gard. Calcutta 4 : 28, t. 22. 1893.

N. Kanara, Shimoga.

U. narum (Dunal) Blume in Fl. Java 5. 1828.

Chikmagalur, Coorg, Hassan, N. Kanara, S. Kanara.

MENISPERMACEAE

Anamirta coccus (L.) Wt. & Arn. Prodr. 446. 1834. *A. paniculata* Colebr.

Coorg, Hassan, N. Kanara, Shimoga, S. Kanara*.

Cissampelos pareira L. Sp. Pl. 1031. 1753 var. *hirsuta* (Buch. ex DC.) Forman in Kew Bull. 22 : 356. 1968. *C. pareira* L., p. p.

Bangalore, Chikmagalur, Coorg, Hassan, Kolar, N. Kanara, Shimoga, Tumkur.

Cocculus hirsutus (L.) Diels in Engl. Pflanzenr. 46 : 236. 1910. *C. villosus* DC.

Bangalore, Belgaum, Bellary, Bidar, Bijapur, Chikmagalur, Chitradurg, Coorg, Gulbarga, Hassan, Kolar, Mysore, N. Kanara, Raichur, Shimoga, Tumkur.

C. pendulus (J. R. & G. Forst.) Diels in Engl. Pflanzenr. 46 : 237. f. 78. 1910. *C. laeba* DC.

Bellary*.

Coscinium fenestratum (Gaertn.) Colebr. in Trans. Linn. Soc. 13 : 65. 1822.

Coorg.

Cyclea arnottii Miers in Ann. & Mag. Nat. Hist. ser. 3. 18 : 19. 1866.

Coorg, S. Kanara.

C. peltata (Lamk.) Hook. f. & Thoms. Fl. Ind. 201. 1855, *non* Diels *nec.* Miers *C. burmanni* Hook. f. & Thoms.

Bellary, Chikmagalur, Coorg, Hassan, Mysore, N. Kanara, Shimoga, S. Kanara.

Diploclisia glaucescens (Bl.) Diels in Engl. Pflanzenr. 46 : 225. 1910. *Cocculus macrocarpus* Wt. & Arn.

Belgaum, Chikmagalur, Coorg, Hassan, Mysore, N. Kanara, Shimoga, S. Kanara.

Pachygone ovata (Poir.) Hook. f. & Thoms. Fl. Ind. 1 : 203. 1855.

Bellary*, Mysore*.

Stephania japonica (Thunb.) Miers, Ann. Mag. Nat. Hist. ser. 3. 18 : 14. 1866. *S. hernandifolia* Walp.

Chikmagalur. Coorg, Hassan, Mysore, N. Kanara, Shimoga.

Tinospora cordifolia (Willd.) Hook. f. & Thoms. Fl. Ind. 183. 1855.

Bangalore, Belgaum, Bijapur, Chikmagalur, Coorg, Mysore, Shimoga.

T. sinensis (Lour.) Merr. in Sunyatsenia 1 : 193. 1934. *T. malabarica* (Lamk.) Hook. f. & Thoms.

Chikmagalur, N. Kanara.

NELUMBONACEAE

Nelumbo nucifera Gaertn. Fruct. 1 : 73. t. 19. f. 2. 1788. *Nelumbium speciosum* Willd.

Bangalore*, Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara, Shimoga.

NYMPHAEACEAE

Nymphaea nouchali Burm. f. Fl. Ind. 120. 1768. *N. stellata* Willd.

Bangalore*, Chikmagalur, Coorg, Hassan*. Mysore*, Shimoga, S. Kanara*.

N. pubescens Willd. Sp. Pl. 2 : 1154. 1799. *N. lotus* Hook. f. & Thoms., *non* L.

Bangalore*, Bellary, Hassan*, Shimoga, Tumkur.

PAPAVERACEAE

Argemone mexicana L. Sp. Pl. 508. 1753.

Bangalore*, Bidar, Bijapur, Chikmagalur, Chitradurg, Coorg, Gulbarga, Hassan*, Kolar, Mysore*, N. Kanara, Raichur, Shimoga, Tumkur.

BRASSICACEAE

+**Brassica campestris** L. Sp. Pl. 666. 1753.

N. Kanara.

+**B. juncea** (L.) Czern. Consp. Pl. Chark. 8. n.s. 1859.

Chikmagalur, Coorg, Gulbarga, Hassan*, Kolar, Shimoga.

+ **B. nigra** Koch. Deutsch. Fl. 4 : 713. 1833.

Bangalore* Chikmagalur, Chitradurg, Coorg, Mysore*.

Cardamine africana L. Sp. Pl. 655. 1753.

Chikmagalur*, Mysore*.

C. hirsuta L. Sp. Pl. 655. 1753.

Bangalore*.

C. trichocarpa Hochst. ex. Rich. Tent. Fl. Abyss. 1 : 18. 1847.

C. subumbellata Hook. f. & T. Anders.

Belgaum*, Chikmagalur, Mysore*.

Coronopus didymus (L.) J. E. Sm. Fl. Brit. 2 : 691. 1800. *Senebiera pinnatifida* DC. ; *S. didyma* (L.) Pers.

Bangalore*, Belgaum, Coorg, Hassan*, Kolar, Mysore*, Shimoga*, Tumkur.

+ **Iberis amara** L. Sp. Pl. 649. 1753.

Mysore*.

+ **Lepidium sativum** L. Sp. Pl. 664. 1753.

Bangalore*, Kolar.

+ **Raphanus sativus** L. Sp. Pl. 669. 1753.

Bangalore*.

Rorippa indica (L.) Hiern, Cat. Afr. Pl. Welw. 1 : 24. 1896. *Nasturtium indicum* DC.

Bangalore*, Belgaum*, Coorg*, Dharwar, Kolar*, N. Kanara.

Schouwia arabica (Vahl) A. P. DC. Syst. 2 : 644. 1821.

Bellary.

CLEOMACEAE

Cleome angustifolia Forsk. Fl. Aegypt. Arab. 120. 1775. *C. tenella* L. f.

Bijapur.

C. aspera Koen. ex DC. Prodr. 1 : 241. 1824.

Bijapur, Dharwar*, Mysore*.

C. chelidonii L. f. Suppl. 300. 1781.

Belgaum*, Mysore*, N. Kanara, Shimoga.

C. felina L. f. Suppl. 300. 1781.

Bijapur, Chitradurg, Dharwar, Raichur.

C. gynandra L. Sp. Pl. 671. 1753. *Gynandropsis pentaphylla* DC.

Bangalore*, Chikmagalur, Kolar, Mysore*, N. Kanara.

C. monophylla L. Sp. Pl. 672. 1753.

Bangalore*, Belgaum, Bijapur, Chikmagalur, Chitradurg, Coorg, Hassan*, Kolar, Mysore*, N. Kanara, Raichur, Shimoga.

C. simplicifolia (Camb.) Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 169. 1872.

Belgaum*, Bidar, Gulbarga.

C. speciosa Raf. Fl. Ludovic. 86. 1817.

N. Kanara*, Shimoga.

C. viscosa L. Sp. Pl. 672. 1753.

Bangalore*, Bellary, Bijapur, Gulbarga, Hassan*, Kolar*, Mysore, N. Kanara, Raichur, Shimoga, S. Kanara*.

CAPPARACEAE

Cadaba fruticosa (L.) Druce, Bot. Exch. Club. Soc. Brit. Isles 3 : 415. 1914. *C. indica* Lamk.

Bangalore*, Bellary, Bijapur, Chitradurg, Coorg, Dharwar, Hassan*, Kolar, Mysore, N. Kanara, Raichur, Tumkur.

Capparis cleghornii Dunn in Gamble, Fl. Pres. Madras 1 : 46. 1915.
C. roxburghii Cooke, non DC.

Coorg, Chikmagalur, Hassan, Mysore*, N. Kanara*, Shimoga.
S. Kanara*.

C. decidua (Forsk.) Edgew. in J. Linn. Soc. 6 : 184. 1862. *C. aphylla* Roth.

Bijapur, Chikmagalur, Gulbarga.

C. divaricata Lamk. Encycl. 1 : 606. 1785.

Bijapur, Chikmagalur, Chitradurg, Dharwar, Gulbarga, Hassan*, Mysore, Raichur, Tumkur.

C. grandiflora Wall. ex Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 174. 1872.

Bangalore*, Hassan*, Mysore*, Tumkur*.

C. grandis L. f. Suppl. 263. 1781.

Bellary*, Chitradurg, Dharwar, Kolar*, N. Kanara.

C. moonii Wt. Ill. 1 : 35. 1840.

Chikmagalur, Coorg, Mysore, N. Kanara.

C. rheedii DC. Prodr. 1 : 246. 1824. *C. heyneaana* Wall. ex Wt. & Arn.

Dharwar, N. Kanara, Shimoga.

C. rotundifolia Rottl. Neue. Schr. Ges. Naturf. Fr. Berl. 4 : 185. 1803. *C. pedunculosa* Wall. ex Wt. & Arn. var. *longispina* (Hook. f. & Thoms.) Cooke

N. Kanara.

C. sepiaria L. Syst. ed. 10 : 1071. 1759.

Bangalore, Bellary, Bijapur, Chikmagalur, Chitradurg, Dharwar, Hassan, Kolar, Mysore, N. Kanara, Shimoga, Tumkur.

C. spinosa L. Sp. Pl. 503. 1753.

Coorg.

C. tenera Dalz. in Hook. Kew J. Bot. 2 : 41. 1850.

N. Kanara.

C. zeylanica L. Sp. Pl. 720. 1762, *non* Cooke **C. horrida** L. f.

Bangalore*, Belgaum*, Bellary, Bidar, Bijapur, Chikmagalur, Chitradurg, Coorg, Dharwar. Gulbarga, Hassan*, Kolar, Mysore*, N. Kanara, Raichur, Shimoga, Tumkur.

Crateva magna (Lour.) DC. Prodr. 1 : 243. 1824. *C. religiosa* auct. *non* Forst. f.

Hassan*, Mysore*, N. Kanara, Shimoga.

Maerua oblongifolia (Forsk.) A. Rich. Tent. Fl. Abyss. 1 : 32. t. 6. 1847. *M. arenaria* (DC) Hook. f. & Thoms. *M. ovalifolia* Cambess.

Bellary, Bijapur, Chitradurg, Coorg, Dharwar, Hassan*, Kolar, Raichur.

VIOLACEAE

Hybanthus enneaspermus (L.) F. v. Muell. Fragm. Phyt. Austr. 10 : 81. 1876. **Ionidium heterophyllum** Vent. *I. suffruticosum* (L.) Ging. ex DC.

Bangalore*, Belgaum*, Bellary, Bidar, Bijapur, Chikmagalur*, Chitradurg, Dharwar, Gulbarga, Hassan*, Kolar, Mysore, N. Kanara, Tumkur.

Rinorea bengalensis (Wall.) Kuntze, Rev. Gen. Pl. 1 : 42. 1891
Alsodea zeylanica Thw.

Coorg, Hassan*, N. Kanara, S. Kanara*.

Viola patrinii DC. Prodr. 1 : 293. 1824.

Chikmagalur, Mysore*, Shimoga.

V. serpens Wall. in Roxb. Fl. Ind. 2 : 449. 1832.

Chikmagalur, Coorg, Mysore*.

BIXACEAE

+ **Bixa orellana** L. Sp. Pl. 512. 1753.

Bangalore*, Chikmagalur*, Coorg, Hassan*, N. Kanara.

COCHLOSPERMACEAE

Cochlospermum religiosum (L.) Alst. in Trim. Handb. Fl. Ceylon 6 : 14. 1931. *C. gossypium* DC.

Bangalore*, Belgaum, Bellary, Bijapur, Chitradurg, Coorg, Gulbarga, Hassan*, Kolar, Mysore*, N. Kanara, Tumkur.

FLACOURTIACEAE

Casearia bourdillonii Mukherjee in Bull. bot. Soc. Bengal 19 : 109. 1965. *C. varians* Bedd., non Thw.

Hassan*.

C. elliptica Willd. Sp. Pl. 2 : 628. 1800. *C. tomentosa* Roxb.

Belgaum, Bellary, Chikmagalur, Chitradurg, Coorg, Gulbarga, Hassan*, Mysore*, N. Kanara.

C. ovata (Lamk.) Willd. Sp. Pl. 2 : 629. 1799. *C. esculenta* Roxb.

Belgaum, Chikmagalur, Coorg, Hassan*, N. Kanara*, Shimoga, S. Kanara*.

C. graveolens Dalz. in Hook. J. Bot. 4 : 107. 1852.

Shimoga.

C. rubescens Dalz. in Hook. J. Bot. 4 : 108. 1852 var. **rubescens**

Coorg, N. Kanara*, Shimoga.

C. rubescens Dalz. var. **gamblei** N. Mukh. in J. Bombay nat. Hist. Soc. 69 (2) : 393. 1972.

N. Kanara*.

C. wynadensis Bedd. Ic. Fl. Ind. Or. t. 160. 1874.

Shimoga.

Flacourtie indica (Burm. f.) Merr. Interpr. Rumph. Herb. Amb. 377. 1917. *F. ramontchi* L. 'Herit.' ; *F. latifolia* (Hook. f. & Thoms.) Cooke *F. sepiaria* Roxb.

Bangalore*, Belgaum, Bellary, Bidar, Chikmagalur, Chitradurg, Coorg, Gulbarga, Hassan, Kolar, Mysore, N. Kanara, Shimoga, S. Kanara*, Tumkur.

F. montana Grah. Cat. Pl. Bombay 10. 1839.

Chikmagalur, Hassan*, N. Kanara*, Shimoga, S. Kanara*.

Homalium zeylanicum (Gardn.) Benth. in J. Linn. Soc. Bot. 4 : 35. 1860.

Chikmagalur, Hassan*, N. Kanara*, Shimoga, S. Kanara*.

Hydnocarpus laurifolia (Dennst.) Sleumer in Bot. Jahrb. 69 : 33, 86. 1938. *H. wightiana* Bl. p. p.

Coorg, Hassan*, N. Kanara, Shimoga, S. Kanara*.

H. pentandra (Buch. Ham.) Oken, Allg. Naturgesch. 3, 2 : 1381. 1841. *H. wightiana* Bl. p. p.

Chikmagalur, N. Kanara.

Scolopia crenata (Wt.) Clos, Ann. Sci. Nat. 4, 8 : 250. 1857. *excl. specim. Philippin.*

Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara*.

Xylosma latifolium Hook. f. & Thoms. in Hook. f. Fl. Brit. India 1 : 194. 1872.

Chikmagalur*.

PITTOSPORACEAE

Pittosporum dasycaulon Miq. Ann. Bot. Ind. 3 : 5. 1850.

Belgaum*, Chikmagalur, Coorg, Dharwar*, Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara*.

P. napaulense (DC.) Rehder & Wilson, Pl. Wilson. 3 : 326. 1916.
P. floribundum Wt. & Arn.

Belgaum*, Hassan*, Mysore*, N. Kanara*.

P. neelgherrense Wt. & Arn. Prodr. 154. 1834.

Chikmagalur*.

P. tetraspermum Wt. & Arn. Prodr. 1 : 154. 1834.

“Karnataka”*.

+**P. viridiflora** Sims in Bot. Mag. t. 1684. 1814.

Chikmagalur.

POLYGALACEAE

Polygala arillata Buch. Ham. in Don, Prodr. Fl. Nep. 199. 1825.

Chikmagalur, Coorg, Mysore*, Shimoga.

P. arvensis Willd. Sp. Pl. 3 : 876. 1802. *P. chinensis* auct. non L.

Bangalore, Belgaum*, Bellary, Bijapur, Chikmagalur*, Chitradurg, Dharwar, Gulbarga, Hassan*, Mysore*, N. Kanara, Raichur, Tumkur.

P. elongata Klein ex Willd. Sp. Pl. 3 : 879. 1800.

Bangalore*, Belgaum*, Bellary*, Bijapur, Chikmagalur, Chitradurg, Hassan*, Kolar, Mysore*, N. Kanara, Raichur, Shimoga, Tumkur.

P. erioptera DC. Prodr. 1 : 326. 1824.

Bellary, Bijapur, Chikmagalur, Chitradurg, Dharwar, Gulbarga, Kolar, Mysore*, N. Kanara.

P. javana DC. Prodr. 1 : 326. 1824.

Bangalore*, Coorg, Mysore*.

P. persicariifolia DC. Prodr. 1 : 326. 1824.

Bangalore*, Belgaum*, Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara*, Shimoga.

P. rosmarinifolia Wt. & Arn. Prodr. 1 : 37. 1834.

Chikmagalur, Coorg, Mysore*.

P. sibirica L. Sp. Pl. 702. 1753.

Mysore*.

Salomonia ciliata (L.) DC. Prodr. 1 : 334. 1824. *S. oblongifolia* DC.

Mysore*, N. Kanara, Shimoga. S. Kanara*.

Xanthophyllum flavescens Roxb. Pl. Cor. 3 : t. 248. 1815.

Coorg, Shimoga.

CARYOPHYLLACEAE

Arenaria neelgherrensis Wt. & Arn. Prodr. 43. 1834.

Belgaum*, Dharwar*, N. Kanara*.

Cerastium glomeratum Thuill. Flor. Par. ed. 2 : 226. 1824.

Chikmagalur, Coorg, Mysore*, S. Kanara*.

Drymaria cordata (L.) Willd. ex Roem. et Schult. Syst. Veg. 5 : 406. 1820 ssp. *cordata*

Bangalore*, Chikmagalur, Coorg, Mysore*, S. Kanara*.

D. cordata (L.) Willd. ex Roem. et Schult. ssp. *diander* (Bl.) Duke, Ann. Missouri Bot. Gard. 48 : 253. 1961.

Chikmagalur, Hassan*.

Polycarpea aurea Wt. & Arn. in Ann. Nat. Hist. ser. 1, 3 : 91.
1839. *P. corymbosa* (L.) Lamk. var. *aurea* Wt.

Bellary, Bijapur, Coorg, S. Kanara*.

P. corymbosa (L.) Lamk. Encycl. 2 : 129. 1797.

Bangalore*, Belgaum, Bellary, Bijapur, Chikmagalur, Coorg,
Dharwar*, Hassan, Kolar, Mysore*, Raichur, S. Kanara*, Tumkur.

Polycarpon prostratum (Forsk.) Aschers. & Schweinf. in Oster. Bot. Zeitschr. 39. 128. 1889. *P. loeflingiae* Benth. & Hook. f.

Hassan*, Mysore, N. Kanara, Shimoga.

Stellaria media (L.) Cyrill. Essent. Pl. Char. Comment. 36. 1784.

Bangalore*, Chikmagalur, Coorg, Mysore*, N. Kanara.

PORTULACACEAE

Portulaca oleracea L. Sp. Pl. 445. 1753.

Bangalore, Chikmagalur, Chitradurg, Coorg, Dharwar, Gulbarga,
Hassan, Kolar*, Mysore*, N. Kanara.

P. pilosa L. Sp. Pl. 445. 1753. ssp. **pilosa** *P. tuberosa* Roxb.

Hassan*.

P. pilosa L. ssp. **grandiflora** (Hook. f.) Geesink in Blumea 17 : 294.
1969.

Mysore*.

P. quadrifida L. Mant. 1 : 73. 1767.

Bangalore*, Bijapur, Dharwar, Gulbarga, Kolar, Mysore*, N.
Kanara.

P. suffruticosa Wt. (in Wall. Cat. 6843. 1828) ex Wt. & Arn. Prodri.
356. 1834.

Bangalore*, Mysore*.

P. wightiana Wall. (Cat. 6842. 1828) ex Wt. & Arn. Prodr. 356.
1834.

Bellary, Bijapur.

TAMARICACEAE

Tamarix ericoides Rottl. in Gesel. Naturf. Fr. Berl. Neue Schr. 4 :
214. 1813.

Bijapur, Gulbarga, Mysore*, N. Kanara*.

ELATINACEAE

Bergia ammannioides Roxb. (Hort. Beng. 34. 1814) ex Roth, Nov. Pl.
Sp. 219. 1821.

Gulbarga, Hassan*, Kolar*, Mysore*, N. Kanara.

B. capensis L. Mant. 241. 1771.

N. Kanara.

Elatine capensis Wt. in Hook. Bot. Misc. 2 : 103. Suppl. t. 5. 1831.
Mysore*.

HYPERICACEAE

Hypericum japonicum Thunb. ex Murray, Syst. Veg. ed. 14. 702.
1784 et Fl. Jap. 295. t. 31. 1784.

Bangalore*, Belgaum*, Chikmagalur, Coorg, Dharwar, Hassan*,
Mysore*, N. Kanara, Shimoga.

H. mysurensis Wt. & Arn. Prodr. 99. 1834.

Bangalore*, Chikmagalur, Coorg, Hassan, Kolar, Mysore*.

CLUSIACEAE

Calophyllum apetalum Willd. Ges. Naturf. Fr. Berl. Mag. 5 : 79.
1811. *C. wightianum* Wall. ex Planch. & Triana ; *C. decipiens* Wt.

Chikmagalur, Coorg, Hassan*, Mysore, N. Kanara, Shimoga, S. Kanara*.

C. austro indicum Kosterm. ex P. F. Stevens in *J. Arn. Arb.* 61 : 250. 1980.

Coorg*.

C. elatum Bedd. Fl. Sylv. Gen. 22, t. 2. 1869. *C. tomentosum* Wt.

Coorg, N. Kanara, Shimoga, S. Kanara*.

C. inophyllum L. Sp. Pl. 513. 1753.

Mysore*, N. Kanara, S. Kanara.

Garcinia gummi - gutta (L.) Robs. in Brittonia 20 : 103. 1968. *G. cambogia* (Gaert.) Desr.

Chikmagalur, Coorg, Hassan*, N. Kanara, Shimoga, S. Kanara*.

G. indica (Du Petit-Thou) Choiss. in DC. Prodr. 1 : 561. 1824.

Coorg, N. Kanara, Shimoga, S. Kanara*.

G. morella Desr. in Lamk. Encycl. 3 : 701. t. 405. f. 2, 1792.

Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara.

G. spicata (Wt. & Arn.) Hook. f. in J. Linn. Soc. 14 : 486. 1875.

N. Kanara*, Shimoga.

G. talbotii Raiz. ex Sant. Fl. Khandala ed. 2, 14. 1960. *G. spicata* Hook. f. var. *macrantha* Cooke ; *G. malabarica* Talb.

Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara*.

G. xanthochymus Hook. f. ex T. Anders. in Fl. Brit. India 1 : 269.
1874. *G. tinctoria* Dunn

Chikmagalur, Coorg*, Hassan*, Mysore*, N. Kanara, Shimoga.

N. Kanara, Shimoga, S. Kanara*.

Mammea suriga (Buch. Ham. ex Roxb.) Kosterm. in Comm. For. Res. Inst. Indonesia, Bogor 72 : 23. f. 19. 1961. *Ochrocarpus longifolius* Benth. & Hook. f. ex Anders.

M. nagassarium (Burm. f.) Kostermans in Cey. J. Sci. 12 : 71. 1976.
M. ferrea auct non L.

Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara, Shimoga, S. Kanara*.

Poeciloneuron indicum Bedd. in J. Linn. Soc. 8 : 267. t. 17. 1865.

Chikmagalur, Mysore*, Shimoga, S. Kanara*.

THEACEAE

+**Camellia sinensis** (L.) O. Ktze. Act. Hort. Petrop. 10 : 95. 1887.

Coorg.

Eurya japonica Thunb. Fl. Jap. 191. t. 25. 1784.

Chikmagalur, Coorg, Hassan*. Shimoga, S. Kanara*.

Gordonia obtusa Wall. (Cat. 1489. 1829) ex Wt. & Arn. Prodr. 87. 1834.

Chikmagalur, Coorg, Hassan*, Shimoga.

DIPTEROCARPACEAE

Dipterocarpus indicus Bedd. Fl. Sylv. t. 94. 1871. *D. turbinatus* Cooke, non Gaertn. f.

Coorg, Hassan*, N. Kanara, Shimoga, S. Kanara*.

Hopea canarensis Hole in Indian Forester 44 : 575. 1918.

S. Kanara*.

H. glabra Wt. & Arn. Prodr. 85. 1834.

S. Kanara*.

H. jacobi Fischer in Kew Bull. 1932 : 245. 1932.

Coorg*.

H. parviflora Bedd. Fl. Sylv. t. 7. 1869.

Chikmagalur, Coorg, N. Kanara, Shimoga, S. Kanara*.

H. racophloea Dyer in Hook. f. Fl. Brit. India 1 : 310. 1874.

S. Kanara*.

H. wightiana Wall. (Cat. 6295. 1828) ex Wt. & Arn. Prodr. 85. 1834.

Chikmagalur, Coorg, Hassan*, Mysore, N. Kanara, Shimoga, S. Kanara*.

Shorea roxburghii G. Don, Gen. Syst. 1 : 813. 1831. *S. talura* Roxb.

Coorg, Hassan* Mysore*, N. Kanara, Tumkur,

S. tumbuggaia Roxb. Fl. Ind. 2 : 617. 1832.

Mysore*, N. Kanara*.

Vateria indica L. Sp. Pl. 515. 1753.

Chikmagalur, Coorg, Hassan, Mysore, N. Kanara, Shimoga, S. Kanara*.

Vatica chinensis L. Mant. 2 : 242. 1771.

Mysore*, S. Kanara*.

ANCISTROCLADACEAE

Ancistrocladus heyneanus Wall. (Cat. 7262. 1828) ex Grah. Cat. Bombay Pl. 28. 1839.

Chikmagalur, Coorg, Hassan*, N. Kanara, Shimoga.

MALVACEAE

Abelmoschus angulosus Wall. ex Wt. & Arn. Prodr. 53. 1834. *Hibiscus angulosus* Steud.

Chikmagalur*, Coorg*, Mysore*, Shimoga, S. Kanara*.

A. crinitus Wall. Pl. As. Rar. 1 : 39. 1830. *Hibiscus cancellatus* Roxb.

N. Kanara*.

+**A. esculentus** (L.) Moench. Meth. Pl. 617. 1794. *Hibiscus esculentus*.

Bangalore*, Mysore*, Raichur.

A. ficulneus (L.) Wt. & Arn. ex Wt. Cat. 14. 1833. *Hibiscus ficulneus* L.

Dharwar, Gulbarga, Hassan*, N. Kanara.

A. manihot (L.) Medik. Malv. Fam. 46. 1787. *Hibiscus manihot* L. ; *H. tetraphyllus* Roxb,

Chikmagalur, Hassan*, N. Kanara, Shimoga.

A. moschatus Medik. Malv. Fam, 46. 1787. *Hibiscus abelmoschus* L.

Chikmagalur, Coorg, Hassan*, Mysore*, N. Kanara.

A. setinervis (Dunn) Rolla Rao et Hemadri ex Sharma *et al comb. nov.* *Hibiscus setinervis* Dunn in Kew Bull. 1914 : 324. 1914.

Chikmagalur.

Abutilon asiaticum (L.) G. Don, Gen. Syst. 1 : 503. 1831.

Bijapur, Chitradurg.

A. crispum (L.) Medik. Malv. Fam. 29. 1787.

Bijapur, Dharwar*.

A. hirtum (Lamk.) Sweet, Hort. Brit. 53. 1826. *A. graveolens* (Roxb. ex Hornem.) Wt. & Arn. ex Wt.

Bangalore*, Bidar, Mysore*.