

MYSORE DISTRICT

CHAPTER I

GENERAL

THE Mysore district is situated in the southern part of the Deccan Peninsula and it forms the southernmost district of Karnataka State. Mysore is the name by which Karnataka State was known prior to 1973. Mysore city is now the headquarters of the district and the revenue division of the same name. It is known as one of the garden cities of India, and is also known throughout the world for the pomp and gaiety of its traditional Dasara festival. In the days of Haider and Tipu, it came in limelight internationally. The total area of the district is 11,954 sq. km., being sixth in rank among the districts in the state in its size. Some of the places belonging to the Mysore district are of great antiquity, Tirumakudlu Narasipur, Hemmige, etc., being pre-historic sites. As reported from village papers the total area of the district was about 12.46 lakh hectares during 1985-86, the net area sown being 42.41 per cent of the total area. The district is mainly drained by the Cauvery besides the Kabini, the Lakshmanatirtha and the Suvarnavati which are the tributaries of the Cauvery. Irrigation by canals is a characteristic feature of the district, as average rainfall is comparatively low, 761 mm. per year. The climate of the district is moderate throughout the year and the district is generally free from the occurrences of earthquakes. The district is the second richest district in forest wealth in the state, next only to Uttara Kannada. Land holdings in the district are characterised by the predominance of small holdings. The climatic conditions of the district are congenial for the development of horticultural crops. The livestock wealth of the district is considerable and progress has been evidenced in the development of poultry

rearing, dairying and inland pisciculture. Industrially, it stands fourth in number of factories and third in their labour force in 1985-86 and the district is not endowed with rich mineral wealth. The district is known for its traditional industrial activities like agarbathi, silk-reeling, handloom weaving and the crafts like inlay work. Rearing silk worms is one of the major cottage industries of the district, and in area under sericulture, it stands first. Mysore district is well served by a large net-work of roads connecting all the taluks and important trading centres outside the district. The district occupies the top place in the state in respect of road communications. With regard to trade and commerce, the district is favourably placed. Considering its progress in respect of development and utilization of irrigational facilities, exploitation of forest wealth and its sericulture potential, Mysore district may be considered as one of the prosperous districts of the state.

Origin of Name

Mysore district, like most of the districts of Karnataka State, takes its name from its headquarters town. Mahisharashtra mentioned in Buddhist text *Dipavamsha* is identified with Mysore. Ashoka is stated to have sent Buddhist missionaries to this place. Some identify it with Erumainad of the ancient Tamil texts. But such identifications are difficult to accept. The earliest reference to Mysore is in a copper-plate inscription dated 862 A.D. from Kadalur, Mandya tq. (EI, XXXVI, pp 97) where the place is mentioned as 'Maysooru'. Later Maisunad or Maisurnad is mentioned in inscriptions of the 11th and 12th centuries. By way of literary flourish, it is also spelt as Mahisurapura. The name of Mahishur or its anglicised form Mysore is described as derived from Mahishasura or the buffalo-headed monster who lived in this area, and came to be killed by Chamundi. The Chamundi hill is being associated with Mahishasura's execution by the Goddess. But etymologically the place can be associated with *mayu* (an antelope) than *mahisha* (buffalo).

Location

The district lies between 11° 30' and 12° 50' North Latitude and 75° 45' and 77° 45' East Longitude. It is bounded on the north by Hassan, Mandya and Bangalore districts; on the south by Cannanore district of Kerala State and Udhagamandalam (Nilgiri) district of Tamil Nadu, on the east by Salem and Coimbatore districts of Tamil Nadu and on the west by Kodagu district, besides Wynad district of Kerala State. Physiographically, the region in which the district is situated may be classified as partly *maidan* and partly *semi-malnad*. Mysore district is described as an undulating table land, fertile and well watered by perennial rivers whose waters dammed by *aneuts* enrich their banks by means of canals. Here and there, granite rocks rise from the plain which is otherwise unintermittent and wooded.

Area and Population

Mysore district had an area of 11,954 sq km in 1981 forming 6.23 per cent of the total area of the state with a population of 25,95,900 of this 18,84,333 lived in rural parts of the district. Out of the total population of 25,95,900, males constituted 13,30,807 and the rest were females. The district stands VI and IV in respect of area and population respectively in the state. The density of population of the district is 217 persons per sq km and the district ranks VI in density in the state. Kollegal taluk is the largest taluk with an area of 2,787 sq km while Yelandur is the smallest taluk with an area of 263 sq km. Mysore district consists of eleven taluks, 13 towns, 1,641 inhabited and 196 uninhabited villages as in 1981.

History of the District as an Administrative Unit

The Ganga dynasty which appears to have been established in the 4th century ruled over the greater part of Mysore till the 10th century A. D., their principal territory being known as the Gangavadi-96,000. Earlier to this, the area might have been under the Pallavas for a few decades. In the 5th century, the Ganga capital was shifted to Talakad in T. Narasipur taluk. The Punnata area, in modern Heggadadevanakote region was under the Punnata rulers between the 4th and 6th centuries till its merger in Ganga territory. The Cholas succeeded in capturing Talakad and overthrowing the Gangas. The whole region, south of the river Cauvery from Kodagu and east of a line from near Shrirangapattana to Nandidurga was overrun by the Cholas and the area was under their rule for over 100 years. The Hoysalas gained greater power after 1111 A.D. under Vishnuvardhana and drove the Cholas out of Mysore. After the decline of the Hoysalas, Vijayanagar sovereigns become paramount throughout the south. Under the Hoysalas and the Vijayanagar rulers, chieftains like the Changalvas and the Ummattur chiefs were ruling over different parts of present Mysore district. During the latter part of Vijayanagar, the number of such feudatories increased. Of these, the Wodeyars of Mysore came to have complete control over the region. Raja Wodeyar made Shrirangapattana his capital in 1610. The Mysore Kingdom comprised only the Mysore Mandya and parts of Hassan district in 1617. It further expanded under Kanthirava Narasaraja, Chikkadevaraja and Haider and Tipu. It continued to be the part of Mysore State till 1947. Capital was shifted to Mysore again in 1800 after the fall of Tipu when Krishnaraja Wodeyar III became the ruler. During his personal reign from 1811 to 1831, the entire kingdom was divided into six Foudaris and the present Mysore district formed part of the Ashtagram Foudari. In 1831, the British took over the administration of the Mysore territory and the Commissioner was appointed to govern the territory of the Raja. The Commissioners rule of Mysore continued for fifty years (1831 to 1881) and in 1881 the Mysore territory was handed back to the Mysore Wodeyars. Under the suzerainty of the British empire, the Wodeyars of Mysore ruled over the Mysore Kingdom till

India's independence in 1947. When the British commission was formed in 1831, the six Foujdaris were reconstituted into four divisions *viz* Bangalore, Nagar, Chitradurg and Ashtagram, each under a Superintendent. In 1862-63 the state was divided into three divisions and then these again into eight districts and Mysore district was one of them. The area now comprising the present Mysore district first formed the part of Ashtagram Foujdari and later it formed a part of Ashtagram division and Mysore district was created in 1862.

In 1869, the Mysore district was divided into 14 taluks or amildaris for purposes of administration, namely, Mysore, Chamarajnagar, Patna Ashtagram including Shrirangapattana, Periyapatna, Yedatore, Heggadadevanakote, Gundlupet, Nanjangud, Mysore Ashtagram, Talakad, Mandya, Maddur, Malavalli and Yelandur (Jagir). The present Mysore district has ten of these taluks from 1939 when four taluks namely Patna Ashtagram, Mandya, Maddur and Malavalli were transferred to the newly created Mandya district. The taluk headquarters of Heggadadevanakote taluk were at Sargur between 1864 to 86 when it was shifted to Heggadadevanakote. Hunsur taluk till 1882 was called as Periyapatna taluk with headquarters at Periyapatna upto 1865. Talakad was the headquarters of the Talakad taluk until 1868, when the headquarters was transferred to Tirumakudlu Narasipur and in 1882, the name of the taluk was changed to Tirumakudlu Narasipur taluk. Yedatore was the headquarters of Yedatore taluk until 1934 when it was renamed as Krishnarajanagar taluk with headquarters shifted from Yedatore to Krishnarajanagar, a new town established on the right bank of the Cauvery, three miles from Yedatore. In 1807, Yelandur was granted as Jagir to Purnaiah. After the Inam Abolition in 1954, it became a full-fledged taluk. Periyapatna sub-taluk was created in 1931 and was later upgraded to a taluk with headquarters at Periyapatna. In 1939, Mysore district had only two sub-divisions and the Hunsur sub-division was created in 1973.

Territorial Changes

Several administrative changes took place in the year 1882 and the four taluks of the southern Hassan district *viz*. Arkalgud, Channarayapatna, Nagamangala and Attikuppe (present Krishnarajpet) were added to Mysore district after the abolition of Hassan district. Hassan district was recreated in 1886 and Arkalgud and Channarayapatna taluks were transferred to Hassan district while Nagamangala and Attikuppe remained in Mysore district. Mysore district had 13 taluks and one *jagir* in 1930.

In 1939, Mysore district was bifurcated into Mysore and Mandya districts. Mysore district comprised of eight taluks, one sub-taluk and one *jagir*. After Re-organisation of States and formation of New Mysore State in 1956, Mysore district was included in Mysore revenue division consisting of Mandya, Chikmagalur, Shimoga, Dakshina Kannada and

Kodagu districts besides Mysore. At Reorganisation in 1956, the taluk of Kollegal belonging to the erstwhile Coimbatore district of Madras State was included in the limits of present Mysore district.

The district is now organised into eleven taluks which are grouped into three sub-divisions, namely Mysore sub-division comprising of Mysore, Tirumakudlu Narasipur and Kollegal taluks; Nanjangud sub-division comprising of Nanjangud, Gundlupet, Chamarajanagar and Yelandur taluks; and Hunsur sub-division comprising of Hunsur, Krishnarajanagar, Heggadadevanakote and Periyapatna taluks.

The total number of villages taluk-wise are indicated in the following statement :

<i>Taluk</i>	<i>Hobli and number of Villages</i>	<i>No. of towns</i>	
1. Chamarajanagar	(1) Chamarajanagar	39	1
	(2) Haradanahalli	37	
	(3) Harave	39	
	(4) Santhemarahalli	42	
	(5) Chandakavady	33	
		190	
2. Gundlupet	(1) Gundlupet	37	1
	(2) Begur	38	
	(3) Terakanambi	38	
	(4) Hangala	48	
		161	
3. Heggadadevanakote	(1) Heggadadevanakote	66	2
	(2) Hampapura	61	
	(3) Sargur	50	
	(4) Kandalike	50	
	(5) Antharasanthe	55	
		282	
4. Hunsur	(1) Hunsur	32	1
	(2) Bilikere	69	
	(3) Hanagodu	72	
	(4) Gavdagere	37	
		210	

Mysore		Total	
3	1	176	
5. Kollégál			
(1) Kollegal	19	1	
(2) Paiya	19		
(3) Hanur	18		
(4) Ramapura	16		
(5) Lokkanahalli	15		
	87*		
6. Krishnarajanagara			
(1) Krishnarajanagara	29	1	
(2) Hebbal	24		
(3) Chunchanakatte	37		
(4) Saligrama	30		
(5) Mirle	23		
(6) Hosa Agrahara	33		
	176		
7. Mysore			
(1) Mysore	29	1	
(2) Varuna	41		
(3) Jayapura	45		
(4) Elawala	39		
	154		
8. Nanjangud			
(1) Nanjangud	41	1	
(2) Hullahalli	61		
(3) Chikkiahnachatra	25		
(4) Biligere	25		
(5) Kowlande	36		
	188		
9. Periyapatna			
(1) Periyapatna	55	1	
(2) Haranahalli	60		
(3) Bettadapura	40		
(4) Ravandur	46		
	201		
10. Tirumakudlu Narsipur			
(1) Tirumakudlu Narsipur	28	1	
(2) Bannur	26		
(3) Sosale	40		
(4) Talakad	21		
(5) Mugur	17		
	132		
11. Yelandur			
(1) Yelandur	14	1	
(2) Agara	12		
	26		

*In addition there are 30 forest beats counted as villages.

The taluk-wise latitude, longitude, area in sq km, population, elevation in metres, number of raingauge stations and annual rainfall in mm of Mysore district are given in Table I at the end of this chapter.

TOPOGRAPHY

Mysore district is a table-land situated in the angle where the Eastern and Western Ghat ranges converge into a group of hills called the Nilgiri hills. The lands of the district form an undulating table-land with granite rocks protruding at odd intervals. Lofty mountain ranges covered with vast forests, the home of elephants, shut in the western, southern and some parts of eastern district. The general elevation of the district is more than 800 metres above MSL. The principal ranges of hills are the Biligiri Rangana Betta in Yelandur taluk and the Mahadeshwara Betta in Kollegal taluk. Apart from these two, there are several other isolated hills such as the Gopalswamy Betta in the south near Gundlupet, the Bettadapura hills in the north-east and the Chamundi Hills near Mysore.

The Biligiri Rangana Betta forms a hilly terrain with lofty mountains raising to 1,687 metres above MSL. The hills run north to south for nearly 16 km. On the highest point is the temple of Biligiri Ranganatha Swamy from which the hills take their name. The important hills are the Biligiri Rangana Betta 1,279 m, the Matpod Betta 1,515.5 m, the Punajur Betta 1,252.7 m, the Honattikal Betta 1,451 m, the Chikkangiri Betta 1,552.7 m, the Honnanettikal Betta 1,773.27 m, the Ponnachibetta 1,490 m, Kattaribetta 1,816 m, Honaberrabetta 1,646 m, Kattatibetta 1,024 m and the Hethanabetta 1,363 m. The Kattaribetta is the tallest among the above hills of the district.

The Mahadeshwara Hills form a hill range of about 976 m above MSL and contain 77 hills such as the Anemale, Kadumale, Jenumale, etc. The Gopalswamy Hill is a lofty hill extremely picturesque in appearance, rising to a height of 1,468 m above MSL. In traditional writings it is called Kamaladri and Dakshina Govardhanagiri. It is generally enveloped in clouds and mist, hence the name Himavad Gopalswamy Betta. The Chamundi Betta rises to a height of 1,074 m above MSL. Bettadapura Hill is an isolated conical hill, 1,338.6 m above MSL and on the hill is a celebrated temple of Mallikarjuna.

The extreme south of the district forms a terrain of dense forests and a major portion of the land here is uniformly covered by red loamy soil. The western taluks are bounded by the lofty mountain ranges of the Western Ghats. The main forest areas are located in the southern and south-western taluks of Kollegal, Yelandur, Chamarajnar, Gundlupet and H.D. Kote. Wild elephants, dwell in these vast forests. The drainage is towards east and comprises mainly of the Cauvery river basin besides those of the Kabini, the Lakshmanatirtha and the Suvarnavati which are the tributaries of the Cauvery.

RIVERS

The Cauvery

The Cauvery, which is the lifeline of the district has its source high up amidst the Western Ghats (the Brahmagiri Hills) at Talacauvery in Kodagu district. It is famous alike for its traditional sanctity, its picturesque scenery and its utility for irrigation. It is also known as 'Dakshin Ganga' or 'The Ganges of South'. The river Cauvery forms a natural boundary between Mysore and Kodagu district for about 36 km in the north-west of Mysore district before entering Arkalgud taluk of Hassan district. It enters the district near Abbur in the north-west of Krishnarajnar taluk, flows eastwards and at its confluence with the Hemavathi and the Lakshmanatirtha, the main tributaries of the Cauvery, is built the Kannambady Dam. This prestigious Kannambady or Krishnarajasagara Dam was built across the river Cauvery near Kannambady in Pandavapura taluk of Mandya district between 1911 and 1937 with the beautiful world famous Brindavan Gardens immediately down-stream after the Dam and the vast areas are provided with assured irrigation facilities thereafter. The waterspread of the reservoir occupies parts of Mysore and Krishnarajnar taluks also. After flowing for some distance in Mandya district, the Cauvery re enters the district at Ranganathapura in the north-west of Tirumakudlu Narasipura (T. Narasipur). The Cauvery receives the water from the Kabini river at T. Narasipur. Thereafter the river flows generally in the eastern direction in the taluks of T. Narasipur and Kollegal before reaching Tamil Nadu *via* Mandya and Bangalore districts. The Cauvery forms a boundary between T. Narasipur and Malavalli taluks for about three km, Kollegal taluk and Mandya district for about 27 km, Kollegal taluk and Bangalore district for about 20 km and Karnataka (Kollegal tq) and Tamil Nadu (Salem district) for about 64 km before leaving the district in the south-east of Kollegal taluk near the Bodamalai Hills of the Mahadeshwara series. The Cauvery traverses in the district for about 250 km. Among the number of falls in the bed of the river, the two important falls in the district are the Chunchanakatte falls and the Shivasamudram falls. The Chunchanakatte falls, about 20 metres in height, is 60 km upstream of Krishnarajasagara Dam. At Shivasamudram, the river plunges downwards in a series of waterfalls that send up dense clouds of spray. The river branches into two and each branch has a fall of more than 100 metres—the western fall is known as Gaganachukki and the eastern as Bharachukki. The two branches then meet to pass through Bangalore district where the Arkavati joins it, and reaches Mekedatu gorge before the river forms the common boundary between Karnataka and Tamilnadu. Out of the three well known Islands formed by the Cauvery *viz.*, Shrirangapattana, Shivasamudram and Shrirangam, the Shivasamudram Island lies in Mysore district. The Cauvery river rises at an elevation of about 1,235 metres

and within a distance of about 20 km, it falls to an elevation of about 885 metres. The main tributaries of the Cauvery rise at elevations much higher than the Cauvery and the river slopes in the head reaches of these tributaries are much steeper than those in the Cauvery main. Before its confluence with the Kabini, the Cauvery widens to an average breadth from 270 to 360 metres. From this point it swells to a much broader stream. Its bed continues rocky; its banks are high and covered with luxuriant vegetation. The mean annual flow of the Cauvery from 1964-65 to 1973-74 at Chunchanakatte was 2,349 million cubic metres. Apart from Krishnarajasagara dam, there are *anecuts* across the Cauvery like the Mirle *Anecut* near Mirlehally, the Chamaraja or Alalekatte near Alalekatte village and the Ramasamudra *Anecut* near Chamarajakatte village in Krishnarajanagar taluk and Madhavamantri *Anecut* near Mudukutore in T. Narasipur tq. *Skandapurana* has in it *Kaveri Mahatme* in which Cauvery is described as the adopted daughter of Kaveramuni to whom Brahma gave her as a boon in return for his penance. Cauvery later married Sage Agastya.

The Kabini

The Kabini (Kapila or Kappuhole) an important tributary of the Cauvery, rises in the Western Ghats at an elevation of about 2,140 metres in North-Wynad in Kerala State as two streams, the Manantody Puzha and Panamaram Puzha. About 15 km below their confluence, the Kabini joins a border between Kerala and Karnataka for about 12 km above Kakankote from where it turns east to receive the Nugu and the Gundal, both from the south at Nanjangud and joins the Cauvery from right side at T. Narasipur, their confluence being esteemed a spot of great sanctity. The Kabini enters the district near Bavali in the south-west of Heggadadevanakote and it has the total course of about 230 km, 137 to 183 metres wide and its catchment area is about 7,040 sq km, having a rainfall of about 410 cm in the ghat region to 70 cm in the plain. It is a perennial river and a dam has been built across the river near Bidaranahalli in Heggadadevanakote taluk. The Nugu, also known as the Brighu, an important tributary of the Kabini, has its birth at the Nellambore hills of Wynad in Kerala State and enters the district in Heggadadevanakote taluk. It flows towards north before reaching Kabini near Hampapura at Malarahundi, about eight km west of Hullahalli. A dam is constructed across this river near Birwal and an *anecut* near Laxmanapura in Heggadadevanakote taluk. Another tributary of the Kabini, namely the Taraka formed by the confluence of the Surtihole and the Nagarahole, flows from east to west in Heggadadevanakote taluk before reaching the Kabini at Matakere, 12 km west of Hampapur. The Kabini also receives water from the Sutnalla, Baralahole and the Voddallihole in Heggadadevanakote taluk. The *Gundal* river also known as the Kaundinya river, is a tributary of the Kabini. It rises in the Gopalaswamy Betta at an

elevation of 1,678 metres flows through a length of 64 km in Gundlupet taluk before joining the Kabini at Nanjangud.

The Lakshmanatirtha

The Lakshmanatirtha, a tributary of the Cauvery rises in Brahmagiri Devasi Hills of Western Ghats in southern Kodagu district and flows through a distance of about 130 km. It has a catchment area of 1,690 sq km. It enters the district near Chikkahejjur, south-west of Konana Hosahalli in Hunsur taluk and flows through Hanagodu, Hunsur and Kattemalalavadi before its confluence with the Cauvery on the right side at Sagarakatte in Krishnarajanagara taluk. Pick-ups are built across this river at several places like Hanagodu, Ramenahally, Kattemalalavadi, Hangarahalli, Marehalli, Sagarakatte and Jolanahalli in the district of which the Sagarakatte Dam was constructed during the period of Dewan Fornaiah. The annual flow in the river at Unduvadi, about 40 km upstream of Krishnarajasagara Dam was 1,815 TMC (average of 58 years till 1973-74).

The Suvarnavati

The Suvarnavati or Honnuhole rises in the mountains in the south eastern portion of the district, near Gajjalahatti valley and flows northwards through Chamarajnar and Yelandur taluks. It has a catchment area of 1,787 sq km and a total course of about 88 km in the district. Two streams viz. *Niredurgihalla* originating from Attikani estate and the *Araikadihalla* originating at Dimbam, the former traversing for about 19 km while the latter for about 32 km before joining together near Badipadaga make the Suvarnavati. This river after flowing for a further distance of 11 km is joined by an another tributary, the Chikkahole and it finally joins the Cauvery on right side at Kakkur near Talakad. The Chikkahole originates in the Hasanur Ghat range to the south of Chamarajnar close to the State border with Tamil Nadu. A dam is constructed across this tributary about 12 km away from Chamarajnar. The Suvarnavati river is also dammed at Attigulipura in Chamarajnar taluk to feed irrigation channels and tanks.

The Palar

The Palar river is a tributary to the Cauvery, and it forms the common boundary between Karnataka and Tamil Nadu in Mysore and the Udhagamandalam districts respectively for about 45 km.

The Moyar

The Moyar river forms the common boundary between Karnataka and Tamil Nadu in Mysore and Udhagamandalam district respectively for about 22 km. The Moyar river cuts into a picturesque gorge known as 'Mysore ditch' which is about 260 metres deep forming one of the most beautiful features of landscape overlooking the famous Nilgiri

mountains. It extends all along the southern frontier of Mysore from where the Kekkanalla joins the Moyar river to the place where the Sikattihalla meets the Moyar river.

The Uduthorehalla

The Uduthorehalla is a tributary to the Thattehalla which in turn confluences with the river Cauvery on its right side. It has total course of about 80 km with the catchment area of about 790 sq km.

Groundwater

The Mysore district has vast groundwater potentialities. It is estimated that the current draft for irrigation from the existing wells is about 87.38 million cubic metres which forms about 14 per cent of available resources of groundwater. This means annually about 521.17 Mm³ (86 per cent of the total resources) is allowed to waste as lateral flow. The traditional way of exploiting ground water is by means of dug-wells. Bore-wells provide a steady and continuous supply of water throughout the year. There were 8,558 wells in 1975 and in 1984 their number was 9,063 in the district, and another 42,275 wells are feasible.

Mysore district which is at an elevation of over 600 metres, is almost wholly made-up of hard crystalline rocks which are impervious to water. Conditions favouring accumulation of abundant supplies of ground water as in unconsolidated sedimentary formations are largely absent in Mysore. However there is generally a mantle of loose soil and decomposed rocks varying in thickness from a thin film to as much as 30 metres. The average thickness of this capping may be taken at 15 metres. This decomposed zone consists of sufficiently porous material capable of holding upto three gallons per cubic foot and acts as reservoir of ground water. The level of water is quite close to the surface at the end of October. Its level progressively gets lowered and reaches the lowest in the months of March-April. It is during these months that a large majority of the shallow open wells begin to fail. The level starts picking up after the commencement of rains in June. The fluctuation in water level in the district varies between three to four metres.

GEOLOGY

The Mysore district exposes a vast expanse of migmatite gneisses (popularly known as Peninsular Gneissic Complex) within which elongate rafts and enclaves of supracrustal rocks consisting of high grade schists occur. These high grade schists are considered as belonging to the oldest group of supracrustal rocks. The peninsular gneisses are represented by migmatites of both diatexitic and metatexitic types with inclusions of amphibolite in different stages of assimilation. The migmatites are the predominant rock types occupying the vast stretch of plain terrain in the district. The high grade schists are noticed as rafts within the gneissic

complex in the southern parts of the district and form the type area for the Sargur Group. The Sargur schist belt occurring north-east of Sargur forms the type area for this oldest group of rocks called Sargur Group (3,000 million years). The surrounding gneissic rocks are considered to be around 3,000 million years in age. Sargur schists contain kyanite, sillimanite, graphite and other minerals. In the northern, central and western and south-western parts of the district, the schist bands trend eastern parts of the district, the schist bands trend north-south. In the western and south-western parts of the district, the schist bands trend ENE-WSW or E-W. The schist bands occurring in the district are of ENE-WSW or E-W. The schist bands occurring in the district are of variable dimensions, the largest being the Sargur schist belt spanning a length of about 70 km from Eliwala to Shigebetta and a maximum width of 10 km. The schist band comprises garnetiferous kyanite-sillimanite-staurolite schists, fuchsite quartzite, kyanite, quartzite, crystalline limestone and dolomite, garnetiferous pyroblastite and amphibolite, ironstone, metaultramafic schists intruded by basic dykes (dolerite, amphibolite). Two parallel schist bands are exposed over a length of five km and a width of one kilometre between south-east of Wolagere and south-east of Amble. These bands chiefly comprise amphibolite, pyroblastite and calc-silicate rocks. This band is associated with gold mineralisation and reports available indicate mining activity in the past. East of Althur, a kilometre long schist band comprising amphibolite, pyroblastite and calc-silicate rocks occur. The schist band occurring NNW of Nanjangud is about eight kilometres in length and comprises hornblende-granulite, fuchsite quartzite and calc-silicate rocks.

The existence of layered complexes near Konkanhundi and Lalithadripura was brought to light recently. The Konkanhundi layered complex is roughly oval (8 km × 6.5 km) and occupies an area of 50 sq. km. it shows a rhythmic sequence of gabbro-norite-anorthosite which show concentric layering with inward dip.

The intervening area between the schist bands is occupied by a complex assemblage of migmatites and gneisses (peninsular gneissic complex). Gneisses form gently undulating plains with very low relief. Because of the ease with which they weather, the gneisses are generally concealed, fresh outcrops being rare.

The southern termination of the linear Closepet granite batholith takes place in the Kollegal taluk. Here, the Closepet granite, now Ramanagaram granites which are 2,380+ m.y. of age, is surrounded by the high hills of charnockite. The charnockites or the granulitic hypersthene rocks are found conspicuously in the region covered by the Biligirirangan range of hills and in small bands in the vast stretch of plain terrain to the west of Periyapatna in the western borders of Mysore district. There are numerous thin bands and lenses of similar granulitic hypersthene rocks in those areas. Dolerites are noticed traversing all the above formations.

The Chamundi granite which has been dated around 800 m.y. represents the youngest igneous activity in the district. Several dykes of felsite and porphyry, associated with the Chamundi granite episode, occur in clusters and are found to the north-west of Mysore.

Seismicity of Mysore

Earthquake is one of the natural calamities that has haunted the human race through-out the human history. Mysore district which forms the part of precambrian shield of India is relatively less vulnerable to earthquakes. Micro-earthquakes occurred to the north-east of Krishnarajasagara on 2-3-1967 and south of Hunsur on 24-6-1969 and are recorded at Gauribidnur Observatory which are of very moderate intensity of less than V.

MINERALS AND ORES

Numerous occurrences of amphibole asbestos are reported from certain areas in Mysore district. The occurrences of chrysotile asbestos to the west of Gopalapura village, 18 km to the south-west of Mysore City, was known since 1919. It occurs as veins and veinlets in a highly weathered, grey coloured serpentinite. The cumulative vein area was calculated to be 45 sq km extending to an average depth of 25 metres below the outcrop surface. An indicated reserve of 3,200 tonnes of chrysotile asbestos is estimated to be available in the area. It is of cross fibre variety, the fibre length varying from 5 to 20 mm. The Maniganahalli occurrence is of academic interest only and consists of a few veins of chrysotile in the ultramafic body, west of the village. The chrysotile asbestos is also noticed at Antharasanthé. The amphibole variety occurs at Aichanahalli, Konanuru, Motha, Terakanambi and Dodda Yachenahalli.

Barytes : Thin beds of barytes occur inter-bedded within the sillimanite quartzite about, two km west of Kundur. This occurrence has a strike length of three kilometres. Samples from this area were analysed as follows : BaSO₄ 1.07 to 1.87 per cent and SiO₂ 64.1 to 74.96 per cent.

Chromite

Chromite occurs in the district in altered ultrabasic rocks (serpentinised peridotites). It is localised by forming regular veins, lenses and segregated packets of various dimensions. Workable deposits of various grades and of varying extent are found in the district. These deposits occur mostly to the west of the line joining Mysore city and Nanjangud town. Sindhuvalli mine, from commencement of mining operations in 1907 upto its closing down has produced about 1,36,000 tonnes of high grade ore containing 48-52 per cent chromic oxide. The Department of Mines and Geology has produced about 4,000 tonnes of ore containing 44-47 per cent chromic oxide at Talur deposit from 1928 to 1932. Afterwards, it was handed over to Mysore Chromite Company to extract the balance, estimated

as 6,000 tonnes. Major occurrences are noticed at Gurur, Doddakanya, Doddakatur, Waddarapalya, Chikkatur, Tagadur and Urabadur. Here about 10,000 tonnes of proved ore reserves with 40-47 per cent chromic oxide content have been estimated. Another 10,000 to 15,000 tonnes of chromite deposits are noticed to the east of Kadakol at Uttanahalli, Sollepur, Ayyanahalli, Nachanahally and Waddarapalya. Apart from Sindhuvali deposit, the total estimated medium and low grade chromite reserve is about 30,000 tonnes in other areas of the district. In Doddakatur area one of the boreholes intersected a chromite body having a thickness of 55 cm but it has no strike extension. Core samples analysed Cr_2O_3 19.92 to 40.05 per cent and Fe_3O_4 16.77 to 26.30 per cent. Exploratory drilling carried out by the Geological Survey of India in the Sindhuvali-Talur belt, though has not indicated persistent chromite bodies, has brought to light the incidence of precious metals like platinum, iridium, silver and nickel in the area. This discovery has necessitated the re-examination of the entire belt.

Copper

Copper ore deposits are located at Sowanahalli 12 km east of Nanjangud and copper mineralisation is noticed at the contact of decomposed granitic gneiss and a basic dyke. Copper occurrences are also reported from Halavanahundi, Kalmatturdoddi, Porsegavandanapalya, Hadabanahatta and Adamalnattam areas in Kollegal taluk. About a kilometre to the west of Sowanahalli, gossan and malachite encrustations are noticed along the fractures and contacts of a dolerite dyke which intrudes the Konkahundi layered complex. The gossan zone is traceable intermittently over a distance of 400 metres. The gossan does not contain any primary sulphide mineral. The mineralisation consists of small veins and stringers of pyrrholite-pentlandite, chalcopyrite and pyrite. This occurrence is not of economic significance due to very low copper (0.14 to 0.37 per cent) and nickel values (0.1 to 0.42 per cent). The copper mineralisation in the form of malachites and azurite encrustations are observed in the fracture plane in Mastinalli stream around Kalmathurdoddi in Kollegal taluk. The exposed mineralised zone is 0.5 metres thick and two metres long.

Corundum

Corundum occurs in various types of ultra-basic rocks. Numerous occurrences of corundum are present in the area between Sargur in the south to Arsikere in the north, at Thoravalli, Bannikoppa, Bilikere, Sonhalli, Singamaranahalli, Manikpur, Kyatanahalli, Bettadabeedu, Kupya and Budipadaga. Corundum in these localities is either grey and granular or is found as coarse barrel shaped or pyramidal pinkish red crystals. Grey to blue corundum occurring as massive boulders have been noticed at Bommanahalli. Pink corundum occurs as thin layers in the anorthosite of Sindhuvali. Ruby corundum occurs at Kupya and Budipadaga. The

area between Kupya in Mysore district and Mandya for about 30 km in length contains some occurrences of corundum. A portion of corundum raised is being used locally by a private concern for preparing in small scale abrasive papers and cloth, grinding wheels and polishing pastes etc. Corundum occurs embedded in the quartzite as prismatic and barrel shaped crystals at three km north-east of Bheemanabeedu in Gundlupet taluk.

Garnet: Garnet occurs at Mavinhalli, Kaniyanahundi, Machanahalli, Chattanahalli, Sargur, Bilikere and Karighatta areas. Garnet occurring at Mavinhalli and Kaniyanahundi are of gem quality, Garnet occurring near Machanahalli shows flashes of purple due to inclusion.

Gold

Gold has been found to occur in the district but none of the deposits has been found suitable enough to be worked profitably on a commercial scale. There seems to have been several ancient workings in the neighbourhood of Hunsur and Nanjangud. Among these the most important were found at Amble and Woolagiri (Volgere) in Nanjangud taluk, Hunjankere 12 km east of Shrirangapattana and Butagalli in T. Narasipur taluk. The Amble and Woolagiri occurrences were prospected recently by the Geological Survey of India for base metals and the results are not encouraging. Auriferous quartz reefs are known to occur at Porsedyke, Hadabanatta, Doddakatur and NW of Kowdalli in Kollegal taluk. The Porsedyke working consists of extensive old workings situated on top of Maddinamanegudda 3.6 km NNE of Persegaundanapalya. Quartz reef striking extend over a strike length of 500 metres with a steep westerly dip. It ranges in width from 0.5 to 10 metres. The Hadabanatta deposit is said to have been worked by Haider Ali and Tipu Sultan. The quartz reef is about 60 to 80 metres long and about a metre wide. Old workings are seen in the quartz veins of Doddakatur. The veins are disposed enechelon with dextral shifts and are exposed intermittently. About 3.6 km NNW of Kowdalli, at the south-western end of Tulsibetta, old workings are seen. Quartz veins are localised along a fracture zone in charnockitic gneisses and quartz-feldspar granulites. Two shafts are seen east of Uduthorehalla.

Graphite: In Mysore district, crystalline graphite occurs as lenses and thin veins at about three km WSW of Mavinhalli. It forms an elongated lenticular body, traceable for about 50 to 60 km in length varying in width from two to five metres. It contains coarse scales of crystalline graphite to the extent of 10 to 15 per cent of the rock. The veins and lenses of graphite occur associated with kyanite-sillimanite mica schists and quartzite and these occurrences are located near Mavinhalli, Chattanahalli and east of Thoravalli and are comparatively richer occurrences.

Iron ore

Iron ore rocks have been noticed to occur in the Sargur region in Heggadadevanakote taluk at Motta and on the crest and flanks of the hill near Itna and on the ridges running from Kundapatna towards Kulya. Preliminary assessment of the Motta deposits indicates a reserve of about 13.20 million tonnes of ore upto a depth of six metres. Regional survey over an area of 200 sq km has been carried out in parts of Kollegal taluk with a view to locate and assess the potential deposits of iron ore. The preliminary estimated reserves is 4.5 million tonnes for 15 km cumulative strike length, worked to a depth of three metres.

Kyanite

Notable occurrences of kyanite and sillimanite deposits are known in Kollegal, Thoravalli and other villages in Heggadadevanakote taluk and in Hunsur taluk. Kyanite and sillimanite occur mostly together as constituents of the pelitic schists, quartzites and gneisses over a vast stretch of the district. They are commonly associated with other minerals such as rutile, garnet, ilmenite, graphite and staurolite which increase the TiO_2 , and Fe_2O_3 percentages, thereby lowering its refractory characteristic. Thus it renders it suitable for use in refractories. About 71,000 tonnes of kyanite-sillimanite reserve with 36.94 to 52.84 per cent Al_2O_3 at Thoravalli occurrence; 25,000 tonnes of kyanite with 33.76 to 50.59 per cent of Al_2O_3 at Shantipura reserve; 52,000 tonnes of kyanite with 37.19 to 48.83 per cent Al_2O_3 at the Malleswarabetta deposit; 8,80,000 tonnes of sillimanite with more than 45 per cent Al_2O_3 and 2,00,000 tonnes of kyanite with more than 45 per cent Al_2O_3 have been estimated.

Lead: A few isolated crystals of Galend have been found in a quartz vein to the north-west of the village Aravattige Koppal and also at Antharasanthe in Mysore district.

Magnesite

The district is the principal producer of magnesite in Karnataka. Magnesite deposits occur sporadically distributed in the district, the deposits at Doddakanya and Doddakatur are fairly good and the deposits at Allainpur, Sindhuvalli, Hullahalli, Solapur, Mavinhalli, Talur, Bannur, Chakkur, Kakkeri, Karya and Kupya are relatively of minor importance. Promising occurrences have been reported in Kollegal taluk. Doddakanya deposits are being mined by Tata Iron and Steel Co. (Tisco) Ltd. for use as refractory bricks. The average extraction of magnesite has been increased from 2,500 tonnes to 5,000 tonnes per year from 1940 onwards. The recorded occurrences of Magnesite situated about a kilometre south of Hullahalli village in Nanjangud taluk was investigated. It occurs as a net-work of intersecting veins in the ultrabasic rock. The veins range from two to 75 cm in thickness and traceable over a length of two to 15 metres. The

reserves of magnesite are estimated at 75,000 tonnes with MgO content varying from 43 to 46 per cent and silica percentage of one to seven per cent. The occurrence of Magnesite deposit at Karya was recorded in 1923. The Magnesite occurs as a net-work of intersecting veins in the ultrabasic, the thickness of veins ranging from two to 100 cm. The reserves are estimated at three lakh tonnes. The samples collected from pits and drill cores showed the MgO content to vary from 44 to 47 per cent with SiO₂ ranging from 0.5 to 5 per cent.

Though some mica bearing pegmatites have been located in Mysore district, the distribution of mica in the pegmatites is very erratic and many of them do not show any books of promising sizes.

Limestone and Dolomite

The notable occurrences of limestone and dolomite are at south-east and south-west of Bettadabidu in Heggadadevanakote taluk. The limestone is grey coloured and is interlayered with thin cherty quartzite. They are traversed by cream coloured coarsely crystalline calcite veins. The limestone is being quarried and used as chips for mosaic flooring and also as a filler for the chemical fertilizers. Lime kankar occurs on either banks of the river Gundal and near the villages Nenekatte, Bettadamadahally and Halladamadahally in Gundlupet taluk over an extent of 200 ha and the estimated reserves is about 0.75 million tonnes.

Soap Stone: Soap Stone occurs at Chattanahalli, Talur and Kadakola in Mysore taluk, Manhalli and near Sargur in Heggadadevanakote taluk and at Varuna. The deposits near Varuna, Chattanahalli and Manhalli are being quarried and used for carving kitchenwares. They are also cut into bricks and used as refractory.

Vermiculite

Vermiculite occurs at the contact of the ultramafic rock and the gneisses near Gopalapura, Thoravalli and Mavinhalli. The Gopalapura occurrence comprises narrow and irregular veins at the contact of the ultramafic bodies. This deposit is being worked by open pits. The Mavinhalli occurrence consists of vermiculite veins ranging in width from 30 cm to 80 cm and in length from 20 metres to 30 metres. Vermiculite occurs in a 6 × 200 metres zone NNE of Thoravalli. Another occurrence situated south-east of the village has a width of two metres, length of 60 metres and has been worked to a depth of two metres. A reserve of 39,000 tonnes of vermiculite with an exfoliation of nearly 14 times has been estimated. The deposit occurring 1.6 km north of Gopalapura has been worked by Minerals Refining Corporation, Bombay by means of open pits.

Gem Stones

Ptolemy had described Punnata as the place where beryl was abundant, this being H. D. Kote taluk region. Occasional occurrences of ruby, star-ruby, sapphire, star-sapphire, garnet, aventurine, opal, dropside, enstatite, labradorite, moon stone, blue kyanite, beryl, green and yellow serpentine that could be used as precious and semi-precious stones, have been reported in the district. Good quality star-rubies occur in Kupaya, Varuna, Bhimanabidu and Kyathanahalli. Ruby corundum occurs in Budipadaga, Chilkunda, Sargur, T. Narsipur Krishnarajanagara, Bommanahalli, Tumbla, Agasthyapura and Bilikemmanadoddi. Pink garnet occurs widely distributed in the district as a metamorphic mineral in various types of schists gneisses, limestone and other types of rocks. Near Bherya and to the west of Chattanahalli dull coloured fractured crystals of garnet of the size of 4.5 cm in diameter are found. Loose pieces and fragments of darkrose red garnets can be obtained in fairly large quantities from the surface soils at several places in the district. A rare variety of star garnet near Kuppe has been found to be suitable as gem stones. Blue and green transparent facet-grade kyanite has been located in Sargur. An excellent band of kyanite corundum rock exhibiting blood red patches of corundum in a bluish green body of kyanite has been located near Itna. Criss-cross veins of white to yellow opal exhibiting dendritic structure occur within ultramafic rocks near Managanahalli. Grey and greenish grey moonstones exhibiting excellent silk occurs within the sillimanite-garnet graphite gneiss near Sargur and in charnockites within Biligirirangana hills. Green and yellow beryl associated with blue and green apatite occurs within the pegmatites at Mundur in the district.

Ornamental building stones

The ornamental granite stones of Mysore are being exported to United Kingdom and Japan. Even grained pink granites are produced in the district. Felsite dykes with a variety of pleasing colours are produced from Sadanhalli and Metagalli in Mysore taluk. An emerald green quartzite carrying fuchsite (a chrome mica) is reported from Mailenahalli in the district. Some of the green quartzite turn pink or red on heating. Because of its jade-like colour, the rock is used for beads, couplings, buttons, ornaments, etc. This rock is the costliest ornamental stone. The granite and the gneisses occurring in the district are used extensively as building stones. The steatite is being used for making utensils, paper weights, ink-pots, etc.

Production and value of major minerals in Mysore District.

	1984		1985	
	<i>Production</i> Tonnes	<i>Value</i> Rs.	<i>Production</i> Tonnes	<i>Value</i> Rs.
Dolomite ..	2,010	1,00,500	2,212	1,10,600
Felsite ..	1,023	5,11,500	1,125	5,62,500
Kyanite ..	722	72,200	748	74,800
Magnesite ..	18,400	27,61,200	20,248	3,37,200
Soap stone (Steatite)	10	500	12	600
Vermiculite ..	450	4,500	495	4,950
Total ..	22,615	34,50,400	24,840	10,90,650

Production and value of minor minerals in Mysore District

	1984		1985	
	<i>Production</i> Tonnes	<i>Value</i> Rs.	<i>Production</i> Tonnes	<i>Value</i> Rs.
Building stones ..	16,368	3,27,360	22,915	4,58,304
Brick earth ..	21,760	1,08,800	32,640	1,63,200
Lime kankar ..	3,902	78,040	4,000	80,000
Ordinary sand ..	4,351	21,755	4,951	29,755
Ornamental stone	26,364	3,16,36,800	29,000	3,48,00,480
Total ..	72,745	3,21,72,755	93,506	3,55,31,739

FLORA*

Since Mysore District lies in the south-western part of the Deccan Plateau, and stretches from the foot of the Western Ghats to the broken chain of the Eastern Ghats and from the Cauvery in the north to the foothills of the Nilgiris in the south, the ecological factors vary considerably and nurture different types of plant cover. The part of the District bordering on Kodagu lies just below the Western Ghats at a mean altitude of 600 m. Being on the leeward side and close to the mountain range, it receives a fairly good amount of seasonal precipitation from the S—W Monsoon (June—September), much less however than that received on the western, windward side of the Ghats. The dry season is long. The dryness is often accentuated by annual ground fires. The aerial portions of the herbs scarcely survive from year to year.

The trees overcome these limitations by a simultaneous shedding of their leaves during the hot dry months of March-April. They thus avoid water

*This section is authored by Rev. (Dr.) C. J. Saldanha, Centre for Toxonomic Studies, St. Joseph's College, Bangalore.

loss through transpiration. The dry period is also the reproductive season. The leafless trees burst into flowers, set seed and develop fruit. The convectional showers in April-May come as a relief and trigger off a series of changes. The trees are clothed with a new flush of leaves. The shrubs also come into flower and leaf. The herbaceous plants which have survived the dry period by perennating underground parts emerge through the soil with an array of flowers. These forests are termed *moist deciduous forests*. The climax moist deciduous forest occurs in small areas within the District. There is a good patch between Kakankote and the Kerala border. Some of the higher slopes of the Biligirirangana and Mahadeswara Hills also have moist deciduous forests.

The structure of the moist deciduous forest consists of a tree layer with an open canopy. A number of good timber trees are native here. *Nandi* (*Lagerstroemia microcarpa*), *saguvani* (*Tectona grandis*) and *matti* (*Terminalia alata*) dominate in some places. Especially prominent during the dry period are the white flowers of *Konanakombu* (*Radermachera xylocarpa*) and the red flowers of *kempuvaniya* (*Erythrina indica*) and *bilisulige* (*Pterocarpus marsupium*). The composition and frequency of the canopy trees vary depending on soil and rainfall. *Gante mara* (*schrebera swietenoides*) is much more frequent in the moist deciduous forests of the Biligirirangana Hills.

Besides the trees there are many climbers and epiphytes. The undisturbed moist deciduous forests make a good habitat for epiphytic orchids. The graceful spikes of *sitahoo* (*Rhychostylis retusa*) adorn many a tree during the dry season.

Since the open canopy permits light to penetrate to the lower strata of the forest, there is a well developed shrub layer. *Bodina gida* (*Ardisia solanacea*) and *kodasige* (*Holarrhena pubescens*) are conspicuous. The ground flora comes into its own during the wet season. *Suvarna gedde* (*Amorphophallus*) and *neladali* (*Curculigo*) respond to the first showers with inflorescence and flower.

The *dry deciduous forest* is adapted to a longer dry period. The trees are shorter, often armed. The undergrowth forms thorny thickets. Climbers are wiry and often with latex. Sclerophyllous and succulent xerophytes are not infrequent. Survival during the dry months and protection from browsing are priorities for this type of vegetation. *Dinduga* (*Anogeissus latifolia*), *taremara* (*Terminalia bellirica*) and *alale* (*Terminalia chebula*) are the principal broad leaved trees of these forests. During the dry season the large yellow flowers of *arasina buruga* (*Cochlospermum religiosum*) put on a spectacular display. As the season advances the winged fruits of *thanuku* (*Gyrocarpus americanus*) are dispersed by the wind to await the next rains. Here also twiners and shrubs are abundant. An occasional *Mandichalu*

(*Cycas circinalis*) is an interesting Gymnosperm. *Crotalaria berteriana* with silky leaves and yellow flowers is a common and elegant shrub.

The *dry deciduous forest* is well represented in Mysore District in the Wildlife Sanctuaries of Nagarhole, Bandipur, Nugu and the lower part of the Biligirirangana Hills. There are modifications due to soil factors and seral stages caused by biotic pressures. As trees become sparse the woodland turns into wood savanna. Further changes are noticed as open spaces between the trees increase. Isolated thickets dot the hillsides and shrubs and scrub take over. The area between Gundlupet and the Gopalaswami Betta shows all these stages.

Poorer soil and scanty rainfall especially during the hot months of June and July can only support the *thorn-scrub* type of plant cover. The trees are slow growing, stunted and armed. *Ane Gobbli* (*Acacia latronum*), *kaduseege* (*Acacia pennata*) and *chigare* (*Albizia amara*) represent the hardy tree species of these forests. *Vaaduvaradu* (*Dichrostachys cinerea*) not only has thorns but also peculiar two coloured spikes. Clumps of *karibiduru* (*Dendrocalamus strictus*) occur in open areas, *magali beru* (*Decalepis hamiltonii*) with abundant latex and woody follicles is a robust climber. The shrubs are wiry and thorny. *Uriseege* (*Mimosa rubicaulis*) and *bada bakka* (*Pterolobium hexapetalum*) are capable of forming an almost impenetrable undergrowth.

There are pockets of highly specialised plants in special ecological niches. Several species of the carrion-fly plant *Caralluma* occur among rocky boulders. The candelabra of *jadegalli* (*Euphorbia antiquorum*) and *kolugalli* (*Euphorbia tirucalli*) occur on dry and exposed hilltops.

An interesting patch of the *Southern Montane Vegetation* with shola-grassland formations occurs in the Biligirirangan Hills between 1,400-1,800 m. altitude. The sholas are compact, low and non-stratified forests that are watered by mountain streams that run through them. *Bettada dalchini* (*Cinnamomum*), *guddada rembe* (*Elaeocarpus*) and *massivara* (*Meliosma*) common elements of the evergreen forests of southern India, are found here. *Chinnadavare* (*Hypericum mysorense*) and *dodda chiriyathe* (*Exacum bicolor*) typical of the grassy mountain meadows are found on the grassy slopes of the uppermost levels of the Biligirirangana and the Mahadeswara Hills during the post-monsoon period. Unfortunately this vegetation has only vestigial remnants. Estates and plantations of exotics have replaced the natural plant cover.

The central portion of the District is under intensive cultivation because of excellent irrigation facilities. The crops grown here and the weeds of these crop-lands are common to most of the Districts of Southern Interior Karnataka. Aquatic vegetation of submerged, free-floating and emergent plants is quite common. There are numerous irrigation tanks with

Nymphaea and *Nelumbo*, *Aponogeton* and *Potamogeton*, *Hydrilla* and *Hygrophylla*. The many rivers that run eastwards from the Western Ghats have riparian plants on their banks and seasonally submerged shrubs in shallow parts of their beds.

Mysore District has 1,601 species of Angiosperms placed in 778 genera belonging to 170 families. A number of ferns, Lycopods and mosses occur in the moist forests of the District.

To summarise, there are two types of vegetation in the District—the wet and the dry. The Southern Montane and the Moist Deciduous belong to the wet type. The Dry Deciduous and the Thorn-Scrub belong to the dry type. Irrigation and Agriculture have modified part of the plant cover. Sanctuaries and Parks have helped in preserving other areas.

FAUNA

Mysore district has a rich and colourful heritage in respect of wildlife. The forests of the district offer good habitat for larger grazing animals like the gaur and deer. The wildlife bearing forest areas of Mysore can be grouped into two regions *viz.*, old Mysore plateau and Kollegal hills. The old Mysore plateau includes moist and dry deciduous forests and undulating plains. This area harbours a rich and variegated array of wild animals and is probably the best known by naturalists. There is a good representation of the sambar and spotted deer which seems to prefer a semi-degraded habitat. The interest of the princely rules of Mysore in the old days and the foresight of the successive Governments of Karnataka in recent years have resulted in the creation of national parks and sanctuaries and strict enforcement of game laws.

Kollegal hills is an eastern extension of the western Ghats region except for the Biligirirangana hill pocket which can support only dry deciduous forests. The elephants are commonly found over most of this region as bamboo shoots and other plant fodder are available. The gaur, sambar and the spotted deer occur in most of the hill ranges. The wild dog is found in many places but the panther and tiger are poorly represented. This region which once enjoyed a rich *fauna* is depleted largely due to human activities. The numbers and varieties of wildlife keep changing with the seasons with floristic changes and the current availability of the plant and animal food they depend upon.

The tiger (*panthera tigris tigris*), the most magnificent of the greater cats, is called *huli* and sometimes *hirey huli* in Kannada. Tigers are far ranging predators, mainly feed on sambar, four horned antelope and wild boar. They also prey on the gaur, although not very often. Tiger uses hanging covers of rocks, crevices, hollows in the river and stream-beds, thick covers of bamboos, lantana and eupatorium weeds, tall grass and reeds for resting,

breeding and predatory activities, and even old neglected temples. They are essentially nocturnal and experts at detecting the presence of other creatures by the least sounds made by them. Tiger blocks comprising of 30 to 40 ha each were formed for shooting of tigers in the past. From 1941 to 1958, a total number of 68 tigers and 18 panthers were shot in those blocks and surrounding areas. Many of those blocks were unfortunately deforested in recent years for cultivation and settling the people displaced due to the construction of Kabini Dam.

Panthers (*Panthera pardus*) are common and constitute the co-predators of the tiger. Panthers are also nocturnal and are often out by day as well. Panthers perch on trees for predation and they keep their kill tucked upon the trees. Nature has so balanced the food habits of tiger and panther that there is not much of competition between the two.

The jungle cat (*Felis chaus*) or *kadu bekku* mainly prey upon rats, lizards and birds and also potential predator of chital fawns. The Indian or wild dog or *silunayi* (*Cuon alpinus*) is the real competitor to the tiger and panther. They are found in packs of 8 to 12 and sometimes wild dogs in packs upto 40 are also seen. They prey upon almost any animal like gaur, sambar, deer, four-horned antelope, hare, boar and other animals. There are references to tiger-wild dog encounters wherein both get killed or wounded.

The small Indian civet (*Viverricula indica*) or *punugina bekku* and the toddy cat or common palm civet *Paradoxurus hermaphroditus* are the animals of the civet tribe in the district. Both are small, long and low to ground animals with long nails. The Indian civet was caged for the sake of secretion of the gland at its rear end from which the scent civet was extracted. The common mongoose *Herpestes edwardsii* and the striped-necked mongoose *Herpestes vitticollis* are common here.

The two primates in the district are the bonnet macaque (*Mucaca radiata*) and the common langur (*Presbytis entellus*). The bonnet monkey is the familiar red monkey of South India, common around shrines and jungle side towns. They are omnivorous, often found near water and are excellent swimmers. Langurs are vegetarians and seen in fair numbers. Langurs are much more vocal than bonnet monkeys and do not take to water, unless forced to do. The bonnet monkey is called *kapi*, *kothi*, *manga* and the common langur as *muscia* or *muela*.

The Indian giant squirrel or *kendalilu*, *Ratufa indica* is the largest of all squirrels, arboreal and diurnal. It builds globular nest in the top branches of trees. The other diurnal squirrel of the area is the familiar three striped palm squirrel or alilu *Funambulus palmarum*, The fascinating large brown flying squirrel *Peaurista petaurista* (*haruva bekku*) is even more bigger than the giant squirrel and lives in hollows in the boles of tall

trees. It sleeps in day time and will be out at night. It does not fly but can cover 60 metres in a glide, airborne on the flaps of skin on either side which expands to a parachute from tree top to tree trunk.

The Indian porcupine *Hystrix indica* is nocturnal and seldom comes out before dark. Black naped hare *Lepus nigricollis nigricollis* is another creature that does not come out of cover till it is dark. Hares undoubtedly figure on the diet of all predators but they are not easily caught, being capable of surprising jumps and a fine turn of speed.

Wild elephants, gaur and chital were the star attractions of Bandipur, though their number had been depleted by the disastrous rinder-pest epidemic of 1968. The Indian elephant *Elephas maximus* is perhaps the main mammalian feature of Mysore forest and they can be seen in small or large herds. Elephants are gregarious animals and always move in herds except a solitary male elephant. As they require lot of food for their enormous bodies, they keep on moving and cover almost every part of the habitat in search of food. Gaurs are the tallest, handsomest and perhaps the most peaceable of the wild oxen.

Chital or spotted deer *Axis axis*, are found all over the forests and among the commonest wild animals. They attain a fine bodily development and carry superb antlers. Minas and fantail fly catchers are often seen perching on the backs of chital for feeding on the ectoparasites. The sambar *Cervus unicolour*, too were affected by the 1968 epidemic but to nothing like the extent to which the gaur were. They may be seen more commonly, especially at and around the tanks and pools. Although the hillsides are their favourite dwelling spots, they are often seen in the plains and grassy patches. The barking deer *Muntiacus muntjak* is mainly an animal of thickly wooded forests. It is diurnal and territorial in habit. The mouse deer *Tragulus meminna* is essentially a creature of the forest floor. These are tiny little creatures inhabiting the rocky hillside. The only antelope found is the unique Indian chausingha or the four horned antelope *Tetracerus quadricornis*. It is commonly seen where the terrain is hilly and undulating with open and grassy forests. They are diurnal in habit and usually seen alone or in pairs.

The Indian wild boar *Sus scrofa* are seen in groups of eight to 12 and are usually fatty. They feed on tuberous roots and other food and are omnivorous. Tigers and wild dogs prey on wild boar. The sloth bear *Melursis ursinus* feeds on honey, mohwa flowers, a great variety of forest fruits, tender grass and shoots, also on grubs and termites which it digs up with its strong claws. They are occasionally preyed upon by tigers. Other animals found in the district are the jackal *Canis aureus*, the Indian fox *Vulpes bengalensis*, the striped hyaena *Hyaena hyaena*, the Indian bush rat *Golunda ellioti*, the Indian pangolin *Manis crassicaudata*, the otter *lutra* sp. etc.

Summer is the time to look for birds with so many forest trees in flower and fruit and visibility so good in the tree tops. The typical woodland birds are : the southern yellow legged green pigeon *Treron phoenicoptera chlorigaster*, the rose-ringed and more commonly the blossom-headed parakeets and occasionally, where the tree growth and foliage are richer, the blue winged parakeet and the Indian lorikeet ; the common Hawk-cuckoo, the Indian cuckoo *Cuculus micropterus*, the Indian plaintive cuckoo and the non parasitic crow pheasant ; the crimson-breasted barbet and the green barbet, wood-peckers-the golden backed, the yellow-fronted pied, Drongos-the white bellied, the greater racket tailed ; the southern tree pie, cuckoo-shrikes, minivets, and wood shrikes, babblers, fly catchers-paradise, the white spotted, the grey tit and sun-birds the purple, the purple rumped and Lotens.

The common ground birds are pea fowl, the grey jungle fowl, the red spur fowl and quails. The white-backed vulture is the common vulture. The diurnal forest birds of prey commonly seen are the crested serpent eagle and the crested hawk eagle. The brown fish owl, the jungle owlet and scops owls are the chief nocturnal birds of prey. Other birds of the night are night-jars and the ston curlew. The grey partridge, Doves-spotted ring, the green bee eater, the hoopoe, bulbul ; the common, the jungle, the brahmny and the grey-headed myna; Robin, the Indian and magpie, weavers and munias, swallow-common and wire-tailed and swifts are also seen. At the tanks and pools, there are some water-birds and water-side birds such as white breasted water-hen, the coot, the spot-bill and lesser whistling teal, king-fishers, wag-tails, the red-wattled and the yellow wattled lapwing, etc. Pond tortoises are common at all the pools and may be seen sunning themselves on the bank or on a log in water.

Pythons are common and are found to be preying on a broad spectrum of animals and birds. There are crocodiles in the rivers. The snakes found are the king cobra, the cobra, the krait, the viper, the rat snake, water-snake, tree-snakes and the common green-whip snake. The common monitor is the largest of the lizard tribe and there are other lizards such as skinks and blood suckers. The most noteworthy of them is the fascinating flying lizard *Draco dussumieri*. The arachnids are well represented with scorpions, harvestmen and a variety of spiders including a largespider whose web spans forest paths. The insect life especially soon after rains, is bewilderingly rich.

FORESTS

Mysore district stands next only to Uttara Kannada district in respect of forest area and has 10.68 per cent of the total forest area of the State. Of the total geographical area of 11,954 sq km, forest constitutes 4,126.45 sq km, forming 34.52 per cent of the area of the district in 1984-85. Of

this, the reserved forests account for 3,875.59 sq km. The types of forests in the district are semi-evergreen, moist, dry deciduous, scrub and thorn forests. An area of 11,649 ha of Revenue C and D class lands have been handed over to the Forest Department upto 1984-85 for the purpose of taking up large scale afforestation programmes. The forest area of the district has been divided into four divisions for the purpose of administrative convenience. They are 1) Mysore with 611.03 sq km, 2) Chamarajanagar with 426.20 sq km, 3) Kollegal with 1,916.71 sq km, and 4) Hunsur with part of the area in Mysore district (482.99 sq km) and part of the area from Kodagu (168.40 sq km). Besides, an area of 689.52 sq km of forests has been earmarked separately for the purpose of Project Tiger in the Bandipur National Park since 1973.

Forest Management

Prior to 1834, the forests were the common property of the neighbouring villages. They did not cause much injury to the forests. The Mysore rulers had made the sandalwood tree a State property as early as in the days of Chikkadevaraya. The state maintained a list of sandalwood trees and verified the list every year, both in Mysore and Kodagu and this continues to be so to some extent even today. Teak was always a royal tree and protected. It was only sold on payment of stump fee. It is likely that earlier to 1839, (after 1800), teak was extracted for the use in Bombay Dockyard (where ships were built for the Indian Navy) from the Begur forest. In those days, forests were managed by the Superintendent of the Ashtagram Division. Before the formation of the Forest Department in 1864, the fellings were conducted in an unsystematic manner and were confined to young, easily transportable trees. Later, fellings became more systematised and the marked trees were removed. In 1879, Forest Department was abolished and the forests were transferred to the control of the Deputy Commissioner. This resulted to quote noted conservator H. Srinivasa Rao, reign of chaos and uncontrolled fellings both licit and illicit which continued till 1885 when the Department was resuscitated. Both the introduction of Railways and the consequent demand for the teak sleepers from 1886 to 1891 made the forest suffer most. After 1892, this demand is said to have decreased and the fellings were limited to the requirements of the district. *Kumri* (shifting) cultivation was also better regulated from that year. In 1902, a provisional working scheme was drawn up by G. Krishnamurthy Naidu and the fellings were confined to annual coupes and tree marking was done more systematically.

H. Srinivasa Rao's Plan which was in force from 1910 to 1930 was confined to annual coupe and compensatory plantations were prescribed for those coupes to replace the teak removed. About the year 1930-31, some portions of the forests were subjected to heavy sleeper fellings under Improvement Fellings. Apart from the regular plantations which were commenced in 1872, raising teak in *thakkals* was practiced since 1894 in

the Begur forests though with disappointing success. Since 1927, the formations of plantation was systematised. The above working plans were replaced by two working plans prepared by Dr. Kadambi in 1941-42 which aimed at more systematic works and silvicultural systems. He prescribed selection fellings coupled with artificial regeneration in favourable localities.

The forests in the district are managed as per the prescriptions of the Working Plans. Working Plans are prepared for periods of 10 to 15 years after taking into consideration the type of forests, the condition of the existing crop, the demand for various forest produce and for conservation of ecological balance and protection of environments. Evergreen and semi-evergreen, forests are worked under selection system on a long working circle. The deciduous forests are worked under the selection system or by clear felling followed by artificial regeneration. Clear-felling is resorted to only in a small percentage of area to convert degraded forests into fully stocked normal forest with economically important species. At present, clear-felling has been completely stopped and only dead and fallen timber and firewood is extracted.

About 50 per cent of the state forests in the district are degraded. In addition to this, 25,702 ha of revenue waste-lands which are not fit for agriculture are ordered to be transferred to the Forest Department out of which 11,649 ha had already been transferred upto 1984-85. Afforestation work is taken up on a large scale in these areas. The system of sale of standing trees in coupes has been given up completely. Under selection system only the trees marked for fellings are felled and in respect of clear-felling system, the entire tree growth is felled. There are three methods of disposal of timber and other forest produce in Government Depots *viz.*, Auction sale, retail sale and by selection by Railways, Defence Department, etc. at fixed prices. The timber is being supplied on retail sale basis for *bona fide* purpose of construction of houses and preparation of Agricultural Implements from Hunsur, Kallabetta, Yerehalli and Nanjangud timber depots.

Exploitation of forests

The various forest products are systematically exploited on the principle of progressive and sustained yield and sold to various industries and individuals as per the policy of Government. A number of forest-based industries are allotted soft-wood to be removed from the forest. The raw materials allotted are plywood, match-wood, soft-wood, packing case-wood, etc. As per section 101 B of Karnataka Forest Act 1963, (as amended during 1984) no lease or agreement or any other document entered into by the State Government and providing for supply of firewood timber or other forest produce by the State Government shall at a time be for a term not exceeding five years. The industries are permitted to extract softwood from

the areas leased to them. Fifty per cent of the lops and tops of the soft-wood extracted by the industries is permitted to be removed by them. The balance is brought to Departmental depots and disposed off to the registered small scale wood industries like slate frame, packing case industries, etc. by auction.

Match-wood and plywood: There are four plywood factories *viz.* Veneer Mills, Mysore, Srinivasa Industries, Mysore, Hunsur Plywood Works (Private) Ltd., Hunsur and Sree Karnataka Veneering Industries, Mysore; one chip-board factory *viz.* Mysore Chip Boards, Mysore; one matchwood factory *viz.* S.P.S. Industries, Chamarajanagar. Mysore Splints and Veneers Manufacturers Association, Mysore having 14 member factories on its roll, is drawing softwood timber from the department regularly on long lease basis.

Eucalyptus plantation

Eucalyptus plantations raised under various socio-economic programmes are reserved for supply of fire-wood and small timber to the rural and urban population. Even in the case of the industries, 30 per cent of the material allotted is permitted to be availed of by the local population free of charge on head loads. An area of 4,000 ha of plantation raised since 1976 in revenue waste-lands at Madahalli has been earmarked for supply of fire-wood and poles to Mysore city and neighbouring villages. Harihar polyfibres have been allotted the eucalyptus plantations raised by the Department upto 1968 in Mysore, Kollegal, Chamarajanagar and Hunsur divisions for a period of 30 years from 1971 for the manufacture of rayon grade pulp. The eucalyptus plantations are worked on a rotation of nine years in respect of original crop and eight years in respect of coppice crop.

Fire-wood: The Government has opened ten fire-wood depots in the district to make available fire-wood for domestic use at reasonable rates. Seven fire-wood depots run by Karnataka State Forest Industries Corporation Limited are located at Hunsur, Krishnarajanagara, Chamarajanagar, Gundlupet, Nanjangud, Periyapatna and Kollegal while the remaining three depots run by the Department are located at Heggadadevanakote, Sargur and Antharasanthe. In addition, firewood is being supplied to four co-operative societies for distribution of the same to the public on no loss no profit basis. Apart from this, firewood to the Hostels and Institutions is being supplied at the sanctioned rates from Government roadside depots.

Bamboo

There is a considerable reduction in the outturn of the bamboo due to gregarious flowering in the district and sustained supply is effected. Establishing regeneration is a problem due to uncontrolled grazing. The department has started extracting bamboos departmentally and supply them to depots due to acute shortage of bamboos and to discourage reckless

removal by permit holders. There are six bamboo depots in the district at Hunsur, Periyapatna, Krishnarajanagar, Chamarajanagar, Sargur and Kollegal. Mysore Paper Mills, Bhadravathi are allotted the forests of Kollegal and Chamarajanagar divisions on a long term lease basis. The green bamboos available now are being mostly supplied to Medars and Burads.

The government by an amendment to the Forest Act annulled the past agreement in respect of rates to be paid by various industries as per the agreement and assumed powers to fix the rates for the supply of raw materials to the industries. Consequent on this, the rates for various species of timber and other raw materials to be supplied to the industries have been increased considerably with effect from 29th June 1982. Another revision is given effect from 1st April 1985. The reduction of import duty on timber to 10 per cent during 1985 has resulted in fairly large quantities of timber being imported to our state, and thereby helps to stabilise the timber price.

Forest Protection

The most deleterious factors in forests today are forest fires and excessive and uncontrolled grazing. Two main annual fires are usually seen, the first will be when the summer starts and it burns all the dry grass and some of the fallen leaves. The second fire sets in when the fallen leaves accumulate on the forest floor and the remaining grass dries up. The first fire usually occurring in March is more severe than the second fire occurring in April and early May. All the fires occur from January to April and last till the onset of pre-monsoon showers in April and May. All the fires originate through human agencies. Fires also originate and spread from the frontiers of Wynad and Madhumalai.

Bamboo flowered gregariously in 1916 which brought in severe fires. The localities and the periods where bamboo flowered (by opening up large gaps in the canopy allowing tall grass to come up) are (1) Heggadadevanakote 1916 and 1960 and (2) Chamarajanagar 1927-28, 1964 and 1973. In 1961-62, bamboo flowered and those were allowed to be extracted by the Gwalior Rayons on payment of royalty which reduced fire hazards. Systematic fire protection was started as early as 1874. H. Srinivasa Rao in his Working Plan of 1910 has recorded that "though systematic fire protection was commenced in 1874, the result has been disappointing. Large portions of forests have been burnt over almost every year, escaping only in years of early rainfall". Lantana and bamboo wherever found set up crown fires, else it is mostly ground fire.

There are three forest mobile squads in the district, the one at Mysore is headed by Assistant Conservator of Forests and the other two at Kollegal and Hunsur being headed by Range Forest Officers. Forest mobile squads

assist the territorial staff to prevent the smuggling of forest produce from government lands and reserved forests in particular by intensive and extensive patrolling in forests round the clock. Several check-posts have been established at strategic places and they function round the clock. Fire arms are supplied to staff of checkposts. Forest mobile squads are equipped with wireless sets to check elephant poaching, sandal smuggling and other illegal activities in the state forest all along the border of Kerala and Tamil Nadu.

Khedda

Elephants were used since time immemorial for wars and royal ceremonies. The famous Khedda operations for capturing elephants date back to 18th century, the period of Haider Ali's Rule. The earliest method was to capture elephants by pit method which is still in vogue. The word Khedda is derived from the pit (*khadda*) formed around the enclosure to get the elephants into the enclosure. From the enclosure, elephants were attracted to roping stockade where they were roped with the help of tamed elephants. Later, land drive was the method adopted for capturing elephants. The first successful attempt to capture elephants by Land Drive method was made by G.P. Sanderson in 1874 at Budipadaga hills. The spectacular River Drive was designed and carried out by Sanderson in 1891 in the honour of the Grand Duke of Russia. The first Khedda operation was conducted near Chamarajanagar in 1873-74. The November 1889 Khedda was witnessed by his Royal Highness Prince Albert Victor at Budipadaga hills. The Prince of Wales witnessed Khedda operations at Kakanakote in 1905-06 which was the 14th Khedda in the State of Mysore. After the construction of the Kabini reservoir, the entire area suitable for Khedda operation has been submerged. The locality of Khedda operation, year and the number of elephants captured in the district are as follows : Karadihalli, Chamarajanagar taluk 1873-74—55, Budipadaga (Biligiri Rangana Betta) twice in 1889-90—51 and 37, Kakankote 1890-91—107, 1891-92—75, 1892-83—76, Chamarajanagar 1893-94—50, Kakankote 1895-96—33, Kakankote and Gopalaswamy Betta 1896-97—170, Kakankote 1897-98—27, 1898-99—17, 1905-06—78, 1909-10—91, 1913-14—109, Chamarajanagar, 1917-18—33, Kakankote 1919-20—50, 1922-23—22, 1923-24—51, Budipadaga 1925-26—33, Kakankote 1929-30—88, 1935-36—60, 1938-39—50, 1939-40—80, 1940-41—7, Budipadaga 1945-46—44, 1946-47—156, Kakankote 1948-49—35, 1949-50—38, 1953-54—71, 1960-61—66, 1967-68—88 and 1970-71—47. No operations were undertaken after this.

Social Forestry

World Bank has sanctioned a project under social forestry for Karnataka for a period of five years from 1983-84 to take up large scale afforestation programme in barren lands including the assistance for planting in private lands. Under this project, it is proposed to plant trees in a

phased manner on all available revenue waste-lands, gomal lands, barren forest areas, roadsides, fore-shore of tanks and reservoirs, canal banks, fallow and marginal agricultural lands, etc., with the active participation of the village panchayats and the public. In addition, three to four schools are being selected in each taluk for raising school forests. The programmes carried out during 1984-85 under social forestry in the district are as follows: Afforestation of (a) fore-shore areas—162 ha, (b) roadside plantations—38 km, (c) canal bank plantations—23 km, (d) Bamboo plantations—29 ha and (e) school forestry—54 ha and free distribution of seedlings—56 lakhs.

To augment the present stock of trees in Mysore city, planting of flowering and shade trees began during 1984-85 on selected main roads and about 2,000 seedlings have been planted. About 2,000 seedlings have been supplied to the industries free of cost to take up tree planting programme in their premises. During 1984-85, it was proposed to assign plantations in revenue waste lands to landless Scheduled Caste and Scheduled Tribes for which purpose three SC/ST families are first identified in each taluk and two hectares of land are earmarked for planting at the rate of two ha per year for seven years. The family would be paid Rs. 250 per month for raising and after-care.

Three important tribes are found in the forests of this district *viz.*, Soligas in the B.R.T. Range, Bettakurubas and Jenukurubas in H.D. Kote taluk. These tribals have been living in the forest since time immemorial and are useful in assisting the Department to carry out various departmental works and also collecting minor forest produce (See also Chapter III and XVII). The Department is helping the tribals to secure continuous employment, and some co-operative societies are functioning to assist them.

Vanamahotsava

Large scale nurseries have been raised all over the circle under various schemes. In 1985, there were 130 nurseries including temporary nurseries and it was proposed to distribute 130 lakhs seedlings to the public. Upto 2,500 seedlings would be distributed free of cost to each individual and for any excess required, the same would have to be paid for. It was also proposed to distribute fruit-yielding seedlings like jack, tamarind, etc. and flowering plants like gulmohar, jackaranda, cassia, etc. to the public of Mysore by carrying out a door to door campaign.

Plantations are raised under the N.R.E.P. scheme by employing the unemployed people in the rural areas. During 1984-85, an amount of Rs. 27.38 lakhs has been spent for raising plantations of firewood and small timber besides supplying seedlings free of cost for encouraging Farm Forestry. About three lakhs mandays of labour force has been created and local people are engaged to carry out the works. The plantations raised will help to cater to the needs of villagers in respect of firewood

and small timber, etc., Under *Rural Landless Labourers Employment Guarantee Programme*, 3.4 lakh mandays have been created in the district in 1984-85 by incurring an expenditure of Rs. 31 lakhs for raising block plantations with fuelwood, fodder and timber species.

Integrated Western Ghats Development A scheme for development of Western Ghats is taken up which includes the plantations of bamboo, match-wood, plywood, cultivation of medicinal plants and rehabilitation of mining area etc. During 1986-87, 47 ha were brought under teak and other mixed species plantation, raising of 0.82 lakh seedlings at a total cost of four lakhs of rupees in Lakshmanatirtha catchment area and Nagarhole National Park area.

Payment of Crop Compensation Increased wildlife population has been causing heavy damage for agricultural crops all along the forest borders in the district. During 1984-85, about 1,200 cases have been settled by making a payment of Rs. 5.95 lakhs as compensation in the district. Further, to minimise the crop damage, suitable action has been taken by appointing local people as elephants scaring staff on payment of wages besides by digging elephant proof trenches.

Sri Chamarajendra Zoological Gardens, Mysore

Sri Chamarajendra Zoological Gardens popularly known as Mysore Zoo was established in 1892 during the regime of Chamarajendra Wodeyar. Formerly, it was named as Palace Zoological Gardens and had an area of about four ha. Its area increased to six ha in 1907 and was renamed as Sri Chamarajendra Zoological Gardens in 1909. The Garden is situated on the outskirts of Mysore City with the picturesque Chamundi Hills as its background. The Garden was transferred to the Forest Department in 1972 and then to the Zoo Authority of Karnataka in 1979. The garden now expanded its area to about 100 ha to provide modified specific enclosures for all animals and birds. In 1986-87, there were 885 wild animals and birds maintained in the Zoo.

Sri Chamarajendra Zoological Gardens has to its credit breeding of rare animals and largest mammals in captivity and this unique feature is said to be present only in this garden in the whole of Asia. Successful breeding of 87 species of both exotic and indigenous animals has been carried out in this garden. This garden has been grouped under 'A' class category of zoos in India. This is the only zoo in the country having all the three species of white, black and Indian rhino. This zoo has many animals like brown bear, sloth bear, Nilgiri langur, chimpanzee, orangutan, Himalayan bear, brown lemur, etc. which are enlisted in the red books of the International Union for Conservation of Nature and Natural Resources. This zoo has become the centre for the multiplication of tigers in the country.

About 60 ha of the Karanji tank adjoining to the zoo was acquired to develop it as a boating centre, miniature bird sanctuary and animal

safari park. In addition, a prestigious Natural History Museum is likely to be established in the Karanji tank area by the Government of India. During recent years, this garden has gained a noticeable importance as a tourist centre and the revenue realised increased from 15.08 lakhs of rupees in 1984-85 to 32.05 lakhs of rupees in 1986-87. Friends of the Zoo, Zoo Outreach Organisation and other private bodies are helping the zoo authorities in their work. 'Zoo's Print', a periodical, is being published by the latter.

Wildlife preservation

Right from the commencement of 20th century, the need to conserve Wildlife was realised in the princely state of Mysore and the Mysore Game and Fish Preservation Act was passed as early as 1901.

The Mysore rulers declared several forest areas rich in *fauna* as Game preserves, Tiger preserves and Tiger Blocks with restrictions on shooting. An area of 35 sq miles was declared as a Game Sanctuary in Chamrajanagar State Forest of Mysore district in 1931 and was maintained as such for 10 years. It was later realised that this sanctuary was too small to constitute a complete ecological unit and in 1941, the ambitious Venugopal Wildlife Park was constituted, extending over 800 sq km with a *sanctum sanctorum* of 82 sq miles known as Bandipur Sanctuary within the park. The park extended from the Moyar river forming the natural southern border towards the Nilagiris, northwards towards Gundlpet to include the 1,450 metres high range of the Gopalaswamy hills and the park was named after the deity of the shrine atop the hill, Venugopala. With a view to preserve aquatic birds and to provide nestling and breeding facilities, three Islands in the Cauvery river extending over an area of 168 acres were notified as Bird Sanctuaries during 1940. The Maharaja of Mysore, Jayachamarajendra Wodeyar was the first Chairman of the Central India Board for Wildlife which was organised in 1952. Mysore State constituted its State Board for Wildlife in the year 1952. The Mysore Wild Animals and Wild Birds Preservation Act was enacted in 1963. With the object of conserving wildlife in general and endangered species in particular, State Government has constituted two National Parks and three Wildlife Sanctuaries covering an area of 1,529 sq km, forming 37 per cent of the forest area of the district during 1985.

Bandipur National Park

The Bandipur National Park is one of the best managed out of 15 National Parks in India. It is situated about 80 km south of Mysore city on Mysore-Ootacamund road. The National Park was a part of the Venugopal Wildlife Park constituted in 1941. It was upgraded to National Park by extending the area during 1974. It has an area of 874.2 sq km comprising of 334.56 sq km core area and 539.64 sq km Buffer Tourism. The altitude is about 1,025 metres above sea level. The climate of

Bandipur is a salubrious one with temperatures varying from 20° to 30° celcius. The National Park is the home for all the important wild animals found in South India.

The Bandipur National Park is one of the 15 Tiger Reserves in the country. *Project Tiger* as a Central Sector Plan Scheme was initiated in 1973-74, and it envisages to preserve wildlife right from autorophs to heterotrophs *i.e.*, the whole of biotic pyramid with tiger placed at the top. The Reserve has been constituted as 'Bandipur National Park' by the Notification dated 5.6.1974. The area of the Reserve has been increased from 690 sq km (1973) to 865.73 sq km (1985) leaving an area of 8.47 sq km which forms a satellite block across a highway. The extended Bandipur Tiger Reserve comprises of (a) wilderness zone of 523 sq km, (b) buffer zone of 260 sq km and (c) Tourism zone of 82 sq km and Administrative zone of 1 sq km. The well-preserved Reserve occupies the rainshadow areas of the Western Ghats. Among the various animals found in the Reserve are: *Herbivores*: Chital, muntjac, sambar, chausingha, gaur, wild boar, elephant, mouse deer, blacknaped hare, sloth bear, langur, bonnet macaque, giant squirrel and the flying squirrel; *Carnivores*: Tiger, leopard, wild dog, jungle cat, small Indian civet, toddy cat, common mongoose and stripe-necked mongoose; *Reptiles*: Crocodiles, snakes and monitor lizards; and *Avifauna*: Notable are the pied hornbill, green pigeon, wood peckers, drongoes, bee-eaters, king fishers, pea-fowl, jungle-fowl, partridges and fowls; these are varied and rich.

Bandipur Tiger Reserve is systematically managed and has a management staff. Increased prey species, assured water supply and afforded security are mainly responsible in the gradual increase of tigers from 11 (1973) to 54 (1983). The elephant census carried out in 1983 gave the total number of elephants at 1,118. There were 464 gaurs, 1,374 spotted deer, 407 sambars, 659 wild boars, 130 wild dogs, 807 langurs, 63 panthers, 43 sloth bears, 215 barking deer and 219 chausinghas during 1983-84 in the Tiger Reserve.

The Reserve is contiguous to Madumalai Wildlife Sanctuary (Tamil Nadu), to the south and Wynad (Kerala) to the south-west. The Bandipur Tiger Reserve handles about 45,000 visitors per year. Restricted tourism is being practised in Bandipur. There are 88 beds in various cottages including dormitory type which cater to the needs of the tourists. Professional tourist guides workshops are conducted in wildlife tourism at Bandipur to the inservice staff and to interested persons from travel agencies and hoteliers involved in tourism.

Nagarahole National Park

The Nagarahole National Park derives its name from the river Nagara Hole, winding through the forests and was constituted in 1955 in Kodagu district as a game sanctuary. After Reorganisation, adjacent four reserve

forests of Mysore district *viz.*, Kachuvanhalli, Veerannahalli, Mettikuppe and Kakankote were added to the sanctuary, bringing total area of the sanctuary to 571.55 sq km. The sanctuary was upgraded to National Park by a Notification dated 16-3-1983. The total area of National Park is 643.29 sq km of which, 354.95 sq km lies in Mysore district (1985). The *fauna* and *flora* are the same as that of Bandipur National Park. A part of these great forests (Kakankote) were once the exclusive hunting preserves of the erstwhile Maharajas of Mysore. The park is approachable by all weather roads from Mysore (96 km) or Madikeri (90 km). The best season to view the wildlife is between September and May.

The Biligiri Rangana Temple Wildlife Sanctuary is situated 114 km from Mysore. It has an area of 324.4 sq km. This sanctuary was established in 1974 and the major *fauna* comprises of sloth bear, wild boar, spotted deer, elephant, fowl, grey jungle fowl, panther, pea-fowl and sambar.

The Nugu Wildlife Sanctuary lies adjacent to the Nugu Reservoir in Mysore district and has an area of 30 sq km. It is 40 km from Mysore. The sanctuary abounds in wild animals like elephants, spotted deer, gaur, tiger, sambar, barking deer, wild boar, marsh crocodile, etc. This sanctuary was established during 1974. *The Arabhithittu Wildlife Sanctuary* was established between Mysore and Hunsur in 1985 and has an area of 13.5 sq km, specially meant for preserving black bucks.

CLIMATE

The climate of the district is moderate throughout the year. The year may be divided into four seasons. The summer season from March to about the end of May is followed by the south-west monsoon season lasting upto about the end of September. October and November may be termed as the post-monsoon or retreating monsoon season. The period from December to February is the dry season with generally clear bright weather.

Rainfall

The district receives the major portion of its rainfall from the south-west monsoon. The normal annual rainfall is spread over a period of about seven calendar months from the later half of April to October. Records of rainfall in the district are available for ten rain-gauge stations for periods ranging from 44 to more than 100 years. The average annual rainfall in the district is 761.9 mm. The western taluks of Periyapatna and Heggadadevankote and the eastern taluk of Kollegal receive more rainfall as compared to the central portions of the district. Gundlupet, T. Narasipur and Chamarajnagar taluks are prone to occasional droughts. Most of the rainfall in the district is confined to the period from April to November. October is the rainiest month. The rainfall during the south-west monsoon

months from June to September constitutes only about 40 per cent of the annual rainfall. The rainfall during the pre-monsoon months of April and May and during the post-monsoon months of October and November are as much as about 26 and 29 per cent respectively of the annual rainfall. The rainfall during April, May and October is mostly in the form of thunder-showers. The variation in the annual rainfall from year to year is not large. During the 50 year period from 1901 to 1950, the highest annual rainfall amounting to 156 per cent of the normal occurred in 1903 and the lowest annual rainfall which was 72 per cent of the normal, in 1918. In the same 50 year period, the annual rainfall in the district was less than 80 per cent of the normal in seven years, none of them being consecutive. Considering the rainfall at the individual stations, however, two or more consecutive years of rainfall less than 80 per cent of the normal, occurred once or twice at eight out of ten stations. The rainfall in the district was between 600 to 900 mm in 36 out of 50 years. On an average, there are 53 rainy days (i.e. days with rainfall of 2.5 mm or more) in a year in the district. This number varies from 45 at Chamarajanager to 62 at Heggadadevankote. The heaviest rainfall in 24 hours recorded at any station in the district was 205.5 mm at Chamarajanager on 17th October 1916. The statement of rainfall for 10 raingauge stations and for the district as a whole (based on records from 1901 to 1950) are given in tables II and III. Average rainfall of Yelandur taluk for 12 years (Normal rainfall is not available) is as follows: January—3.7 mm, February—0 March—8.7, April—64.1, May—167.9, June—63.6, July—58.2, August—72.8, September—130, October—142.7, November—74.8, December—20.4 and Annual—806.9. The taluk-wise rainfall statistics is appended in Table VIII and the rainfall statistics of some raingauge stations in Table IX.

Temperature

There is a meteorological observatory in the district at Mysore and the records of this observatory may be taken as representative of the conditions in the district in general. The period from March to May is one of the continuous rise in temperature. April is usually the hottest month with the mean daily maximum temperature at 34°C and the mean daily minimum at 21.4°C. On individual days, the day temperatures during summer may exceed 39°C. There will be welcome relief from the heat when thunder-showers occur during April and May. With the advance of the south-west monsoon, by about the beginning of June, the day temperature drops appreciably and throughout the south-west monsoon period, the weather is pleasant. After mid-November both day and night temperatures decrease progressively. December is the coldest month with the mean daily maximum temperature at 27°C and the mean daily minimum at 16.5°C. On some days during the period from November to January, the minimum temperature may go below 11°. The highest maximum

temperature recorded at Mysore was 39.4°C on 1917 April 4 and the lowest minimum temperature was 10.6°C on 1945 December 13. The normal temperature and relative humidity at Mysore is appended in table IV.

Relative Humidity : Relative humidities are generally high during the south-west monsoon season. They are generally about 70 per cent and above in the mornings throughout the year while in the afternoons, humidities are comparatively lower except during the south-west monsoon season. The period from January to April is the driest part of the year with relative humidities of about 30 per cent and lower in the afternoons.

Cloudiness : The skies during the south-west monsoon period are heavily clouded or overcast and are moderately clouded during the post-monsoon period. In the rest of the year, the skies are mainly clear or lightly clouded. During the summer and post-monsoon season there is some increase in cloudiness in the afternoons.

Winds : The winds are generally moderate with some strengthening during the South-West monsoon season. During the period from May to September winds are mostly westerly or south-westerly. North-easterlies and easterlies appear in October and these become more predominant in the next four months. In March and April, winds are mainly south-westerly or westerly in the mornings, while in the afternoons, they blow from directions between north and east.

Special Weather Phenomena : During October and November some of the depressions and cyclonic storms, which originate in the Bay of Bengal, cross the east coast and move westwards across the peninsula. Such depressions and storms pass through the district or in the neighbourhood of the district causing widespread heavy rain and high winds. Thunder-storms are common during the hot season and the post-monsoon season months. Rainfall during the monsoon season is also sometimes associated with thunder. Tables V and VI give the mean wind speed and special weather phenomena for Mysore city.

The rainfall and the climate of the district are quite congenial for those working in the fields as well as to those who are engaged in sericulture. The rivers of the district get flooded occasionally but little damage is done to the life and property. The district is generally free from the occurrences of earthquakes. The district did not witness any major geographical or geophysical event during the decade.

Ecology and Environment Problems

Mysore district is declared as industrially backward district in Karnataka. The State Government is encouraging industrial development in this district. Industrial development is mainly centered around Mysore city and the industrial area of Nanjangud town. The Karnataka State Pollution Control

Board insists on the industries to provide adequate treatment facilities for the liquid effluents and air pollution control measures to be implemented before the factory is commissioned for production. The Board has identified 49 major and 48 medium industries out of which 38 major and 30 medium industries have already put up effluent treatment plants and the rest are in the process of putting up the effluent treatment plants. These effluent treatment plants are operating satisfactorily and meet the norms laid down by Pollution Control Board. The Board has restricted the industries which are located on the river banks from discharging of treated waste water into the river or natural valley and has directed the industries to treat the effluent to inland surface water discharge standard and to use the treated effluent on land for irrigation.

The major pollution to the river is mainly due to the untreated domestic sewage and sludge/sullage being discharged from the towns located on the river bank. This pollution is more significant than the pollution caused by the industries from the health point of view. The Karnataka State Pollution Control Board is regularly monitoring the water quality of the Cauvery river and its tributaries in the district, on a monthly basis, at Satyagala bridge near Kollegal, upstream and downstream of Nanjangud town. The monitoring data indicates that the quality of river water is confirming to class 'C' water standards as laid down in Indian standard 2,296, after analysing the samples for 32 parameters prescribed by World Health Organisation.

Air pollution in Mysore district is not very significant. The main air pollution sources *viz.* Gammon Ferro Chem and Mandya National Paper Mills in the neighbouring Mandya district have taken steps to modify the existing equipments and instal new control equipments to meet the standards laid down by the Board. The Motor Vehicles Department has amended the Motor Vehicles Rules to regulate the emission from automobiles and the job of controlling and monitoring of vehicular emissions is being taken up.

The Ecology and Environment Department has started an Interpretation Centre for the purpose of training tribal people in conserving wildlife at Bandipur Tiger Reserve during 1984-85. During 1985-86, Environment Training Centre was established and it is proposed to impart training in Wildlife to teachers and students of the State at this centre.

Statement showing variations in the taluk-wise number of villages as per revenue records and Census villages.

Taluk	Total No. of villages according to		Reasons for variation in the number of villages
	Survey, Settlement and Land Records Department	List finalised for 1981 Census	
1	2	3	4
1. C. R. Nagar ..	188	190	Mangala which is a single revenue village according to Survey and Settlement records has been divided on the basis of <i>khatas</i> into three units for revenue collection purposes and each has been reported as a separate village by the revenue authorities.
2. Gundlupet ..	159	161	Bandipur State Forest which is only one unit according to Survey, Settlement and Land Records Department has been shown as two units in the list of villages. Similarly Beerambadi District Forest has been shown as three units. Nallur Amanikere village is omitted in the census list as it is fully submerged under water.
3. H.D. Kote ..	281	282	Antharasanthe Kaval village is also known as Krishnarajapura. But both have been reported as independent villages by the revenue authorities and this position is simply reflected in the Census list.
4. Hunsur ..	211	210	Revenue Village Thippe Kaval is fully incorporated in Hunsur town and hence it is omitted in the Census list of villages.

1	2	3	4
5. Kollegal ..	89	117	Difference of 30 villages is due to the addition of forest beats, with a view to cover the forest area systematically for the census operations, each beat is regarded at par with revenue village. (Kollegal Range-13, Hanur Range-2, Ramapura Range-8 and Mahadeshwara Malai Range-7). Kollegal and Mudigundam are fully incorporated in the Municipal limits of Kollegal town and hence these are omitted in the Census list of villages.
6. K, R. Nagar ..	176	176
7. Mysore ..	169	154	Revenue village Paduvarahalli is fully incorporated in Mysore City. Sagarakatte village is fully submerged under water and the following 13 villages are treated as urban being outgrowths of Mysore urban Agglomeration (Mysore, Nachanahalli, Malalavadi, Kukkarahalli, Bhogadi, Maragowdanahalli, Metagalli, Belavatha, Irangagere, Devanoor, Kyathamaraahalli, Chamundibetta and Kurubarahalli).
8. Nanjangud ..	189	188	Revenue village Chamalapura is fully incorporated in Nanjangud town limits and hence it is omitted in the Census list of villages.
9. Periyapatna ..	201	201
10. T. Narasipura ..	133	132	Revenue village T. Narasipura is fully incorporated in the Municipal limits of T. Narasipura town. Hence, it is omitted in the Census list of villages.
11. Yelandur ..	26	26
DISTRICT ..	1,822	1,837	

TABLE—I

Table-I showing taluk-wise Latitude, Longitude, Elevation, Rainfall, Raingauge Stations and Annual Normal Rainfall of Mysore District.

Taluk	Location				Area (1981) Sq. Km.	Population 1981	Elevation Metres	Rainfall	
	Longitude		Latitude					No. of Rain- gauge Stations	Annual Normal Rainfall (mm)
	From	To	From	To					
C. R. Nagar	76°-42'	77°-08'	11°-35'	12°-07'	1,229.2	2,73,317	450—800 800—900	8	675.9
Gundlupet	76°-24'	76°-50'	11°-32'	11°-58'	1,406.3	1,68,879	450—800 800—900	6	679.7
H. D. Kote	76°-06'	76°-30'	11°-41'	12°-14'	1,617.8	1,73,071	800—900	6	920.1
Hunsur	76°-05'	76°-30'	12°-03'	12°-23'	897.1	1,79,359	800—900	6	762.8
Kollegal	76°-57'	77°-43'	11°-46'	12°-16'	2,786.1	2,64,627	800—900 900—1,500	13	817.4
K. R. Nagar	76°-08'	76°-28'	12°-20'	12°-38'	605.3	1,83,818	800—900	4	680.5
Mysore	76°-26'	76°-48'	12°-04'	12°-26'	815.2	6,45,104	800—900	4	809.7
Nanjangud	76°-25'	76°-54'	11°-48'	12°-11'	981.6	2,70,920	800—900	5	707.5
Periyapatna	72°-56'	76°-17'	12°-08'	12°-33'	814.7	1,55,094	800—900 900—1,500	5	845.8
T. Narasipur	76°-46'	77°-00'	12°-04'	12°-23'	599.1	2,20,336	800—900	5	719.3
Yelandur	76°-57'	77°-09'	11°-42'	12°-05'	264.7	61,375	450—800 800—900	2	773.7
DISTRICT	75°-55'	77°-45'	11°-30'	12°-40'	11,954.0	25,95,900	450—1,500	64	761.9

The total area of the district given here does not tally with the taluk-wise figures as the latter was supplied by the Director of Survey, Settlement and Land Records in Karnataka and the former by the Surveyor General, India.

TABLE—II
Normal rainfall and Normal rainy days for the raingauge stations in Mysore District
(1901 to 1950)

		(M.M.)												
Station	No. of years	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual
1. Mysore (Obsy.) ..	50	4.3	6.6	13.2	63.5	151.1	60.5	69.1	87.1	117.1	153.7	71.6	11.9	809.7
		0.4	0.4	0.9	4.6	8.1	5.5	7.5	7.3	7.8	9.0	4.6	0.9	57.0
2. Chamarajanagar	50	5.6	3.6	10.2	52.8	125.7	37.3	35.3	71.6	88.9	150.4	75.7	18.8	675.9
		0.6	0.3	0.8	3.8	7.9	3.1	3.7	4.7	5.8	8.5	5.1	1.2	45.5
3. Hunsur ..	50	2.8	4.6	9.7	59.4	135.4	73.7	100.8	75.2	77.2	149.6	61.5	12.9	762.8
		0.3	0.3	0.8	4.0	7.9	7.1	9.5	6.9	6.0	8.9	3.8	0.8	56.5
4. Krishnarajanagar (Yedatore).	50	3.6	4.8	10.9	50.8	130.6	45.7	63.0	57.1	80.3	155.7	65.8	12.2	680.5
		0.3	0.3	0.9	3.8	7.7	4.2	6.2	5.2	5.4	8.8	4.3	0.8	47.9
5. Heggadadevankote	50	4.3	9.7	14.7	70.1	139.5	89.4	181.6	106.2	84.1	131.3	74.7	14.5	920.1
		0.3	0.5	1.2	4.6	8.1	7.6	12.3	8.6	6.2	7.6	4.1	0.8	61.9
6. Gundlupet ..	50	5.6	4.8	15.7	70.4	125.7	41.9	48.0	49.8	64.8	155.2	79.3	18.5	679.7
		0.4	0.4	1.1	5.3	8.1	3.8	5.4	4.4	4.9	9.0	4.8	1.3	48.9
7. Nanjangud ..	50	5.6	7.6	12.9	73.4	132.6	46.2	65.0	65.3	82.5	135.6	67.8	13.5	707.5
		0.5	0.4	0.9	4.6	8.1	4.6	6.9	6.2	5.7	8.0	3.7	1.0	50.6
8. T. Narasipur ..	50	3.8	6.3	9.9	59.7	136.5	51.6	45.2	81.5	113.0	142.0	65.8	14.0	719.3
		0.4	0.5	0.5	3.8	7.2	3.6	4.2	6.1	6.9	8.1	3.8	0.9	46.0
9. Periyapatna ..	22	4.1	7.1	18.5	70.1	136.1	79.8	124.2	96.8	84.6	157.0	56.6	10.9	845.8
	21	0.3	0.5	1.0	4.5	7.5	7.9	11.1	8.1	6.2	9.5	4.0	0.9	61.5
10. Kollegal ..	50	4.3	5.3	11.7	68.3	125.5	62.7	61.2	93.2	126.0	162.6	79.8	16.8	817.4
		0.5	0.5	1.0	4.8	7.6	4.7	5.9	7.2	7.4	9.6	5.1	1.4	55.7
MYSORE ..		4.4	6.0	12.7	63.9	182.9	58.9	79.3	78.4	91.9	149.3	69.8	14.4	761.9
District Normals (10 Stations)		0.4	0.4	0.9	4.4	7.8	5.2	7.3	6.5	6.2	8.7	4.3	1.0	53.1

Normals of rainfall and rainy days are printed together. A rainy day is a day on which 2.5 mm or more of rain are recorded.

TABLE—III
Frequency of annual rainfall in the District—(Data 1901—1950)

Range in mm.	No. of years	Range in mm.	No. of years
501—600	7	901—1,000	4
601—700	14	1,001—1,100	1
701—800	11	1,101—1,200	2
801—900	11		

TABLE—IV
Normal temperature and relative humidity
(MYSORE)

Month	Mean Daily		Heaviest Max. ever recorded		Lowest Min. ever recorded		Relative Humidity	
	Max. °C	Min. °C	°C	Date	°C	Date	0830*%	1730*%
January	28.3	16.4	32.8	1936 January 27	11.1	1953 January 28	75	30
February	31.2	18.2	36.1	1931 February 28	12.1	1967 February 17, 18	69	25
March	33.5	20.2	37.8	1931 March 30	13.3	1933 March 11	71	21
April	34.0	21.4	39.4	1917 April 4	15.5	1971 April 27	75	34
May	32.6	21.2	37.8	1936 May 3	15.6	1904 May 4	79	51
June	28.9	20.2	37.2	1926 June 1	12.6	1974 June 10	81	66
July	27.3	19.7	33.3	1899 July 30	15.8	1961 July 1	84	70
August	27.9	19.6	33.9	1899 August 5	16.7	1928 August 12	84	67
September	28.7	19.3	33.3	1936 Sep. 14	13.4	1959 Sep. 20	83	61
October	28.4	19.6	32.8	1905 October 1	12.9	1974 October 31	85	61
November	27.4	18.3	32.2	1918 Nov. 1	10.9	1974 Nov. 18	80	54
December	27.0	16.5	32.0	1972 Dec. 1	10.6	1945 Dec. 13	78	43
Annual	29.6	19.2					79	49

*Hours (Indian Standard Time)

TABLE—V

Mean Wind Speed in Km/hr.
(MYSORE)

Jan.	Feb.	March	April	May	June	July	August	Sep.	October	Nov.	Dec.	Annual
11.3	9.1	8.8	8.4	10.2	13.9	14.1	12.5	10.7	7.9	9.3	11.3	10.6

TABLE—VI

Special Weather Phenomena
(MYSORE)

Mean No. of days With*	Jan.	Feb.	March	April	May	June	July	August	Sep.	Oct.	Nov.	Dec.	Annual
Thunder	0.2	0.5	2.0	8.0	12.0	2.0	0.8	2.0	3.0	5.0	1.2	0.3	37.0
Hail	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dust Storm	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.1
Squall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fog	1.0	1.1	0.8	0.2	0.1	0.0	0.0	0.0	0.0	0.9	1.7	0.7	7.0

*No. of days 2 and above are given in whole numbers.

TABLE—VII

<i>Taluk</i>	<i>Heaviest rainfall in 24 hours* (mm)</i>	<i>Highest annual rainfall as % of normal & year**</i>	<i>Lowest annual rain- fall as % of normal & year**</i>
C. R. Nagara	205.5	1916 Oct. 17	194 (1903)
Gundlupet	185.2	1957 May 22	155 (1946)
H. D. Kote	149.9	1924 July 25	157 (1933)
Hunsur	119.1	1903 May 21	171 (1903)
Kollegal	162.1	1921 April 8	169 (1903)
K. R. Nagara	126.0	1930 May 10	193 (1916)
Mysore	184.4	1957 May 23	160 (1903)
Nanjangud	158.7	1957 May 24	178 (1933)
Periyapatna	97.8	1957 May 24	162 (1933)
T. Narasipura	168.1	1957 May 24	177 (1903)
Yelandur	NA	NA	NA
District			156 (1903)

*Based on all available data upto 1970. **Years given in brackets.

TABLE—VIII

Taluk-wise Rainfall Data of Mysore District

(MM)

<i>Taluk</i>	<i>Normal Rainfall (1901-1950)</i>	<i>Annual Rainfall 1973-74</i>	<i>Annual Rainfall 1974</i>	<i>Annual Rainfall 1975</i>	<i>Annual Rainfall 1976</i>	<i>Annual Rainfall 1977</i>	<i>Annual Rainfall 1978</i>	<i>Annual Rainfall 1979</i>
C. R. Nagara	675.9	723.1	845.4	734.9	484.6	704.2	798.8	963.0
Gundlupet	679.7	1031.6	651.0	883.8	711.4	1584.2	989.8	1059.0
H. D. Kote	920.1	902.3	472.2	1078.8	621.3	1013.4	703.5	949.8
Hunsur	762.8	781.0	666.8	862.4	699.2	987.8	778.9	921.4
Kollegal	817.4	588.0	632.6	987.1	506.5	887.3	1165.1	1156.6
K. R. Nagara	680.5	912.7	514.6	855.0	510.2	1388.2	1001.7	1058.7
Mysore	809.7	821.6	494.3	771.4	512.6	740.4	734.9	802.1
Nanjangud	707.5	79.2	741.0	935.0	620.5	746.1	780.3	691.1
Periyapatna	845.8	726.8	658.9	1024.7	487.8	861.1	770.0	1313.6
T. Narasipura	719.3	684.1	669.3	688.7	367.3	1092.3	719.4	926.6
Yelandur	773.7	806.9	1361.6	1355.4	613.3	1373.1	1152.1	1420.3
District	761.9	775.0	634.6	882.1	557.7	1034.4	844.2	994.8

		<i>Annual Rainfall 1980</i>	<i>Annual Rainfall 1981</i>	<i>Annual Rainfall 1982</i>	<i>Annual Rainfall 1983</i>	<i>Annual Rainfall 1984</i>	<i>Annual Rainfall 1985</i>	<i>Annual Rainfall 1986</i>	<i>(MM)</i>
C. R. Nagara	..	888.7	947.7	512.8	513.8	715.3	544.3	903.5	
Gundlupet	..	662.7	984.8	561.0	890.2	757.7	445.2	522.1	
H. D. Kote	..	858.8	1037.6	711.4	886.5	783.5	696.9	750.0	
Hunsur	..	691.0	1073.0	318.0	748.5	550.0	703.9	675.4	
Kollegal	..	849.1	959.3	487.7	1117.2	667.5	477.8	174.4	
K. R. Nagara	..	580.6	678.0	567.8	559.0	604.2	443.6	624.2	
Mysore	..	555.9	702.8	498.9	873.8	807.5	474.5	729.3	
Nanjangud	..	744.0	870.5	418.4	685.4	777.5	581.7	692.3	
Periyapatna	..	800.7	1052.6	656.3	941.8	1040.5	805.7	718.7	
T. Narasipura	..	697.0	837.2	483.6	764.9	662.0	612.0	745.0	
Yelandur	..	815.7	1031.1	395.4	856.5	729.0	707.2	795.1	
District	..	732.9	914.3	540.8	798.1	736.6	578.6	706.7	

TABLE- IX

Raingauge-wise annual rainfall in Mms.

Sl. No.	Raingauge Station	1970	1975	1979	1980	1981	1982	1983	1984	1985	1986
Chamarajanagar Taluk :											
1.	Chamarajanagara	782.7	734.9	954.6	888.7	947.7	512.8	513.8	715.3	544.3	903.5
2.	Suvarnavathi (RP)	777.6	1000.2	794.4	654.3	793.9	372.4	608.1	582.6	691.0	488.7
3.	Haradanahalli	757.8	575.6	912.1	643.8	656.8	290.6	347.2	680.8	723.9	458.5
4.	Santhemaranahalli	876.2	55.4	1286.9	1277.3	1329.0	N.R.	0.0	NR	NR	NR
5.	Kuderu	NR	1060.0	874.9	721.1	833.5	415.2	861.3	747.3	727.7	602.8
Gundlupet :											
1.	Gundlupet (TRO)	755.3	883.2	1020.9	662.7	984.8	561.0	890.2	757.7	445.2	522.1
2.	Bandipura	651.4	2081.4	803.0	726.6	953.8	552.0	848.0	936.9	646.4	1005.2
3.	Moolehole	1032.5	1119.8	1327.2	1202.3	958.9	888.2	854.3	1362.2	1018.1	1235.0
4.	Terakanambi	692.2	699.0	1101.8	623.7	757.0	561.2	682.3	639.1	533.9	574.4
H.D. Kote Taluk :											
1.	H.D. Kote	818.2	1078.8	1104.1	858.8	1036.6	711.4	886.5	783.5	696.9	750.0
2.	Saragur	NR	NR	1015.9	992.4	1108.6	496.1	577.3	951.2	655.0	638.2
3.	Birwal (Nugu)	1058.0	1088.5	1129.7	881.5	0.0	697.2	829.0	991.8	602.1	763.5
4.	Kakanakote	1305.9	1071.3	NR	507.0	0.0	N.E.	N.E.	NR	NR	NR
5.	Kabini	892.8	776.7	572.5	NR	1247.0	R.N.R.	N.E.	1009.70	581.3	807.4
Hunsur Taluk :											
1.	Hunsur (T.B.)	909.9	862.4	940.9	691.0	1073.0	318.0	748.5	550.0	703.9	675.4
2.	Undavadi	875.9	1001.6	926.9	316.9	620.1	444.7	444.9	310.7	436.1	431.4
3.	Rathnapura	..	699.3	1021.4	860.8	825.2	539.5	761.0	747.0	489.9	801.5

Kollegal Taluk :												
1.	Kollegal	..	851.5	987.1	1257.6	849.1	959.2	487.7	1117.2	667.5	477.8	174.4
2.	Mudigundam	..	810.7	895.8	989.2	658.8	847.0	435.3	856.9	714.8	676.2	631.8
3.	M.M. Hills	..	1103.8	1162.5	1409.4	909.2	1585.6	921.2	1444.2	961.8	901.0	999.6
4.	Gajanur	..	N.R.	720.7	838.0	558.7	692.0	299.0	699.5	576.5	302.4	408.2
5.	Hanur	..	875.3	1004.5	1129.0	489.0	624.3	271.1	587.2	518.3	527.8	691.2
6.	Kamagere	..	714.2	NR	1203.3	858.9	1377.5	893.5	868.6	814.1	922.0	841.7
K.R. Nagar Taluk :												
1.	K.R. Nagar (Court)	..	925.4	855.0	1011.6	580.6	678.0	566.8	559.0	604.2	443.6	624.2
2.	Chunchanakatte	..	584.7	925.9	1069.4	441.2	495.6	302.2	652.3	321.6	630.8	1167.1
3.	Saligrama	..	826.1	205.9	907.4	1100.7	1276.0	897.2	758.1	576.0	427.0	506.8
Mysore Taluk :												
1.	Mysore (Obsy)	..	479.8	771.4	471.8	555.9	884.8	498.9	673.8	807.5	474.5	729.3
2.	Eelawala	..	00	NR	290.3	1342.4	711.0	550.0	796.0	710.4	441.7	807.7
3.	Nagenalli (ARS)	..	561.4	624.9	815.9	592.3	624.2	395.9	727.8	602.4	492.1	701.6
Nanjangud Taluk :												
1.	Nanjangud	..	579.8	935.0	922.1	744.0	870.5	419.4	685.4	777.7	581.7	692.3
2.	Biligere	..	00	570.6	525.0	625.0	490.8	441.8	486.3	487.9	535.9	564.4
3.	Halepura	..	N.R.	72.3	387.2	477.4	327.2	360.9	378.0	300.1	460.3	388.1
4.	Nagapura	..	NR	1151.6	615.5	659.7	819.7	704.5	512.4	694.2	626.1	846.3
Periyapatna Taluk :												
1.	Periyapatna	..	1022.4	1024.7	1081.5	800.7	1051.6	656.3	941.8	1040.5	805.7	718.7
2.	Bylakuppe	..	1200.2	1023.6	879.8	1939.8	1183.3	926.6	1145.8	1792.9	832.6	999.7
3.	Bettadapura	..	839.6	1152.4	1367.7	370.3	776.8	836.4	536.0	891.0	598.0	643.4
4.	Anechowkur	..	1004.8	1241.1	2389.7	1052.3	1224.3	741.6	1034.8	1390.8	756.5	792.7
T. Narasipur Taluk :												
1.	T. Narasipur	..	719.1	671.7	912.7	697.7	836.9	483.6	764.9	662.0	612.0	745.0
2.	Bannur	..	557.2	502.5	1223.5	673.0	661.1	500.5	380.9	386.7	217.7	00
3.	Mugur	..	N.R.	719.7	1079.0	664.5	735.2	404.6	629.9	520.9	659.6	580.2
4.	Talakad	..	N.R.	537.1	874.8	842.7	1070.0	552.0	973.4	246.5	586.4	00
Yelandur Taluk :												
1.	Yelandur	..	499.0	1355.4	850.0	815.7	1031.1	395.4	856.5	729.1	707.2	795.1
2.	B.R. Hills	..	1519.0	1500.0	1990.5	1190.2	2132.6	982.2	1424.2	1093.7	1279.2	1328.2

00— Out of Order,

NE— Not in existence.

NR— not received.