IV. GEOLOGY AND GEOGRAPHY :

A major portion of the taluka is Ghat Matha Plateau with an average height ranging between 600-900 meters, above sea level, rising upto 956 meters at Aundh. The whole area is covered by small hills and ranges of western ghats. There are two forts of old Maratha empaire viz. Wardhangad and Bhushangad.

There are no large streams or rivers in the taluka except Yerala river which rises from Mhaskoba hills and flows across the taluka from north to south. Other small streams in taluka are Nandani and Chan. However, due to hilly ranges, the taluka is covered with network of rivulets, running from all corners, remain flooded for less part of the year. In the taluka there are main three large damps as Yeralwadi, Mayani and Ner, due to which the minimum water flows down out of the taluka.

SOILS :

There are mainly three types of soils occur in the various regions. the first type consists of light and light medium soils. they are of inferior type, not retentive of moisture and therefore, suitable for Kharif crops.

The second type consists of Red soil and shallow light soils which are of Kharif as well as rabbi nature.

The third type is heavy, black cotton soils which are more tetentive of moisture.

Almost all soil samples studied indicated pH value from 6 to 8.9 i.e. soil is of both acidic and basic nature.

V. CLIMATE AND RAINFALL :

the taluka has generaly dry climate with the rainy season from middle of June to the end of September. A sultry period from about the end of September to the middle of November. Winter period from the middle of November to the end of January. A dry hot period during February and March and summer during April, May and upto the middle of June. Sumers rise, in general full of gusty winds.

This taluka gets rain from the south west monsoon. Like other talukas of the district the rains start in the middle of June and cease by the end of September. The normal rainfall is about 425 mm per year. This parts comes in the shadow of the western ghats and is therefore called "Rain-shadow" area. The yearwise and monthwise rainfall for last 10 years (from 1981-1990) is given in the Table 1.

VI. TEMPERATURE :

The minimum temperature during winter comes down to the $12^{o}C$ while the maximum temperature attained during summer is $39^{o}C$. The annual mean temperature ranges between $29^{o}C$ to $35^{o}C$.

VII. GENERAL ASPECTS OF VEGETATION :

The vegetation of this area is dry deciduous type. It is due to the moderate and irregular rainfall. The oneset of winter results in the defoliation ofmost of the trees. As the days warm up, new foliage appears. Due to extreme climatic conditions there is significant variation in the herbaceous flora. Most of the herbs start their life cycle in the begining of the monsoon and complete it by the end of December-January. Some of them however, can withstand cold weather and may continue to grow upto April. In general maximum number of herbaceous species are found during October and few during April-May.

There is sudden rise in the number of species between May and June when the Taluka receives first showers of Monsoon. Naturally there is change from dry soil to the wet and a large number of perrenials and ephemerals appear. From June onwards the number of species increases gradually and attains the highest peak in October when the monsoon ends.

The vegetation can be conviniently groups under two main categories.:

I) Hill forests.

II) Savannha formations.

I) Hill Forests :

These occur in small patches of hills such as Ramdongar, Chandakhana hills, Kartikswami and Wardhangad, which extends the ranges from North to South on west boundary of Taluka.

Trees and small shrubs are the cheif woody components Common tree species are Anogeissus latifolia, Bahumia racemosa Butea monosperma, Diospyros Sp., Boswellia serrata, Dolichandrone falcata, Semecarpus anacardium. they are seen scatteed in association

with shrubs. Shrubby species include Grewia species, Cassine glauca, Clerodendrum serratum, Acasia species, Indigofera pulchella, Carrisa congesta, Zizyphus oenoplia, Lantana Camera, etc. It also consists of woody twiners and climbers as Cocculus hirsutus, Hemidesmus indicus, Jasminum roxburghianum, Abrus precatorius, Tylophora dalzelii, Gymnema sylvestrae, Celastrus paniculata, Marsdenia volubilis etc. Oianthus uroeolatus, + conrolura member papilonaceae members.

Along with trees and shrubs, abundant herbs are also seen in rainy season. First to appear on the ground are Scilla hyciantha, Iphiginea indica, Iphiginea pallida Cyanotis tuberosa and few grasses. Other herbaceous species such as Evolvulus alsinoides, Lagascea mollis, Indigofera Sp.Tridax procumbens continue till February. During September -October common herbs seen include Alysicarpus Spp.,Cassia pumila Chlorophytum Spp. Cleome Spp., Crotalaria Spp., Mollugo Pentaphylla, Oldenlandia Spp., Kyllinga triceps, Vernonia cinerea and Zornia diphylla.

II) Savana Formations :

Excluding above mentioned hill forests, the rest of the area with several rivulets and streams is covered with open grasslands with few scattered shrubs and trees.

The common trees include Azardiracta indica, Acacia nilotica, Butea monosperma and Dolichandrone falcata. Most common shrubs are Cassia auriculata,, Capparis Spp., Zizyphus oenoplia.

The grasslands :

Large area of the Taluka is covered with open grasslands mainly of dwarf grasses and other herbaceous species. The principal herbaceous species of such grasslands include Alysicarpus pubescene, A.rugosus, A.tetragonolobus, Boerhavia diffusa Cleome simplicifolia, Cynotis Spp., Euphorbia Spp., Goniogyna hirta, Kyllinga triceps, Phyllanthus Spp., Polygala arvensis, Sesamum laciniatum, Tricholepis glaberrima and Tridax procumbens.

In addition to these main types of vegetation, certain characteristic associations are met within the Taluka.

i) Vegetation along river-stream banks :

Most of the rivulets and streams remain dry for major part of the year and get flooded during monsoon only. Some common trees along stream banks are Phoenix sylvestris, Syzigium cumini, Pongamia pinnata Acacia nilotica Shrubs include Clerodendrum phlomidis, Combretum Ovilifolium, Vitex negundo, Woodfordia fruticosa.

During wet period of the year the river banks possess luxurient herbaceous vegetation. Most common among them are Alternanthera sessilis, Alysicarpus tetragonolobus ,Ammania baccifera, Baccopa monnieri, Cyperus Spp.Eclipta alba, Indigofera Spp., Leucas procumbens, polygonum glabrum and Typha angustata.

ii) Pond Vegetation :

Pond vegetation includes Aeschynomene indica, Alternanthera sessilis, Caesulia axillaris, Cyperus Spp.;Hygrophila auriculata,

Phaseolus trilobus etc. As the ponnols dry up, new members make their appearance on the wet mud of drying ditches. These are commonly Commelina benghalensis, Dopatrium junceanum, Oldenlandia Spp and few others.

iii) Waste land Flora :

a) Waste land along road sides :

The comon plants such as Acanthospermum hispidum, Argemone mexicana, Blumea Spp., Calotropis procera, Cassia tora, Cleome viscasa, Echinops echinatus Euphorbia hirta, Tridax procumbens, Xanthium strumarium are typical members of waste lands and along roadsides.

b) Wateland around villages :

Abutilon indicum, Achyranthes aspera, Ageratum conyzoides, Altenanthera pungens, Amaranthus spinossus, Cassia sophera, Cleome gynandra, Peristrophe bicalyculate, Portulaca oleracea, Sida acuta, Solanum indicum, Trianthema portulacastrum, etc. are typical plants of westlands around villages.

c) Wasteland around gardens and cultivated fields :

Acalypha indica, Brassica Spp., Emilia sonchifolia, Malvastrum coromandelianum Portulaca quadrifida, Sida glutinosa, Solanum nigrum, Triumfeta rotundifolia and Vicoa indica are typical weeds of gardens and cultivated fields.

d) Wall flora :

Most of the old houses and old walls are covered with small herbaceous species. These include Amaranthus spinosus

Boerhhavia diffusa, Cleome gynandra, Eragrostis Spp. Indigofera Spp. Lagascea mollis, Leucas Vrticifolia, polygala arvensis, Portulaca Olracea Tribulus terrestris and Tridax Procumbens.

Dominant Trees :

Most dominant tree species in the area are Boswellia serrata Mongifera indica, Ailanthes excelsa, Ficus bengalensis, Ficus religiosa , Azadirachta indica, Tamarindus indica, Acacia nilotica, Terminalia alata, Dolichandrone falcata etc.

Dominant Shrubs :

Most dominant shrubs are Lantana camara, Calotropis procera, Cassia auriculata, Cassia occidentalis, Ficus hispida, Caesalpinia sepiaria, Acacia chundra, Balanites aegyptica, Capparis aphylla, Carrisa congesta etc.

Climbers :

There are many climbers, notabaly including Oianthus urceolatus, O.disciflorus, Tylophora dalzellii, Hemidesmus indicus, Pergularia damaea, Cryptolepis buchnani, Mucuna pruriens, Cocculus hirsutus, Tinospora cordifolia, Cuscuta reflexa, Vallaries heynei, Dioscorea bulbifera, Vitis quadriangularis, Atylosia scarbaeoides, Teramnus labialis, Wattakaka volubilis etc.

Exotics :

Quite a number the species are introduced and naturalised in the area. Among them most common are Datura ferox, Acanthospermusn hispidium , Parthenium hysterophorous, Cryptostegia grandiflora, Mortynia annua, Hyptis suaveolens, Tecoma

stans, Ipomoea fistulosa, etc.

Medicinal Plants :

The plants used in Ayurvedic medicine and by Local people are found in the area. The most common among them are Tinospora cordifolia, Asparagus racemosus, Cocculus hirsutus, Hemidesmus indicus Aegle marmelos, Adhatoda Zeylanica, Withania somnifera, Ricinus Communis, Argemone Mexicana, Psoralea corylifolia, Syzigium Cumini, Solanum nigrum, Eclipta alba, Holarrhena antidysentrica, Iphiginea indica, Momordica dioica etc.

Rare and Endemic Plants :

Notable rare and botanically interesting plant species in the area are Clematis triloba, Delphinium dasycaulon, striga sulphurea, Oianthus Urceolatus, O. disciflorus, Urginea congesta, Wahlenbergia flexuosa, Gloriosa superba, Ceropegia noorjahanii Ceropegia hirsuta.

CULTIVATED PLANTS :

Many plants are cultivated for their edible fruits including Mongifera indica, Manilkara sapota, Cocus nucifera, Citrus Spp., Carica Papaya, Psidium gujva, Annona reticulata, A.squamosa, Pithecellobium dulce etc.

The most of the plant species are cultivated for their ornamental value, including Delonix regia, Sathodea companulata, Cassia fistula, Michelia champaca, Rosa Spp., Samanea saman, Tagetus pitula, Caesalpinia pulcherima.

Major cultivated crop plants are Sorghum vulgare, Triticum Spp., Penisetum typhoides Zea mays, Cicer ariantinum, Arachis hypogera, Cajanus Cajan, Phaseolus Mungo, Vigna Sinensis, Dolichos lablab Vicia faba, Solanum tuberosa , Allium cepa, etc.

VIII : FLORISTIC ANALYSIS

TABLE-No.1 : Following are the ten dominating families in this Taluka

Sr.No.	Family Name	No.of genera	No.of species
1	POACEAE	42	69
2	PAPILIONACEAE	38	59
3	ASTERACEAE	37	45
4	EUPHORBIACEAE	15	27
5	CUCURBITACEAE	12	25
6	ACANTHACEAE	17	20
7	MALVACEAE	10	20
8	CYPERACEAE	8	20
10	LAMIACEAE	10	17

TABLE-2 : The Following table shows the total number of families, genera and species found in the taluka.

	Number	Percentage	Number	Percentage	Total
Families	88	81.49	20	18.51	108
Genera	357	80.00	92	20.00	449
Species	525	78.24	146	21.75	671

TABLE-3.

	Families	Genera	Species
Polypetalae	48	157	247
Gamopetalae	25	155	207
Monochlamydae	15	45	71
Monocots	20	92	146

The analysis reveals that 108 families are represented by 449 genera, comprising 671 species of these dicots are represented by 88 families with 357 genrra and 525 species, while the monocots by 20 families, 92 genera and 146 species. The analysis further reveals that ~~following~~ 37 families are represented by 1 genus and 1 species each; 6 families have 1 genus and 2 species each.

The dominant 10 families are given in Table No.1. Relevent comparisons of monocots and dicots with their families, genera and species is given in the Table No.2 and relevent comparisons of polypetalae, Gamopetalae, monochlamydae and monocots is given in Table No.3.