CHAPTER - 1

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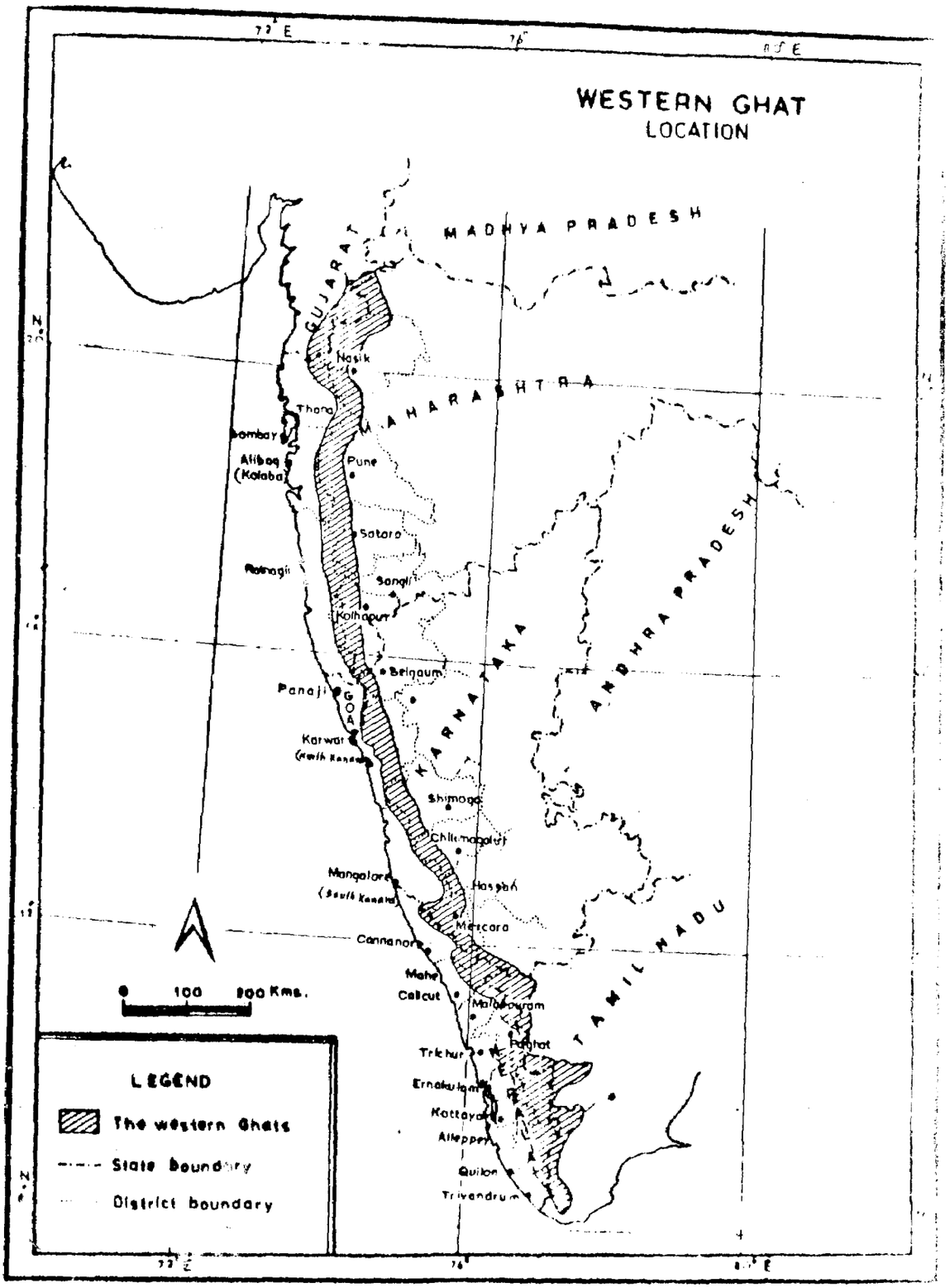
The present investigation on "STUDIES IN HYMENOMYCETOUS FUNGI" is mainly based on floristic and taxonomic study and confined to the South Western part of the Maharashtra State. Most of the workers have extended their studies in Basidiomycetous fungi from Maharashtra, who studied mostly the plant pathogens, belonging to the well known parasitic groups viz. Rusts and Smuts. Nevertheless, Saprophytic Hymenomycetous fungi have been received comparatively less attention. The work on the Hymenomycetous (Basidiomycetes) fungi is comparatively scanty except those few workers who have made sporadic contribution in the field of taxonomy of Hymenomycetes. Therefore, it seems that there is every possibility, that the intensive and careful field work and detailed laboratory study may bring out some additional and valuable informations regarding systematic study of Hymenomycetous fungi. With this conviction the topic "STUDIES IN HYMENOMYCETOUS FUNGI" has been selected.

Forest is the Wealth of Nation. Development of any country is depending on its natural resources. Forest is one of the natural resources which is destroying day by day due to increasing human activities. In addition to

this some of the fungi which play their role in destroying timber by wood-rotting. Decay in timber-wood is caused by wood-rotting fungi, among which members of Aphyllophorales are mostly dominant, mainly inhibit wood which is a rich source of organic substrate and thus provide a suitable food base. Majority members of Aphyllophorales, Tremellales, Auriculariales and Dacrymycetales of Hymenomycetes causes decay in trees and timber, among which members of the Polyporaceae and constitute the most important dominating agencies. Decay of wood by wood rotting fungi is generally considered to be of two major types: as White rots and Brown rots. The white rot-fungi are able to degrade both of the major components of wood cell walls, cellulose and lignin. They also bleach the wood and leave a white to pale coloured residue that has spongy, string or laminated structure and mostly produces extra cellular phenol oxidases. Some wood-rotting fungi are unable to degrade lignin and selectively remove cellulose and other polysaccharides from wood. These brown-rot fungi leave an amorphous, brown, crumbly residue, that is composed largely by lignin. Majority of the Hymenomycetous fungi by wood-rotting habit reduces the Quality and Market value of timber and ultimately adversely affect the wealth of Nation. Though majority of the Hymenomycetous fungi are harmful in relation to wood-rotting, some are edible due to high protein-value, pleasant taste and flavour, while some may yield quality antibiotics. Therefore, efforts for

basic floristic and taxonomic studies in Hymenomycetous fungi has been extended.

Maharashtra is one of the major states in India and forms a part of the Western zone of the country with an area of 306345 sq. kilometers, almost the entire within the limits of the Deccan-trap. The state is divided into three parts viz. i) Western Maharashtra, ii) Marathwada, and iii) Vidarbha. The Western Maharashtra is further divided in to three areas viz. Coastal Konkan, Ghats and Desh; because of the Western Ghats of Sahyadri ranges, traversing this area more or less parallel to the West. Geography, climate, vegetation etc. of the state have been described in detail by Arunachalam (1967) and Deshpande (1971), Edaphic and climatic conditions show the pronounced diversity. The present investigation is confined to the South-Western Maharashtra and especially to the Western Ghats. The area under study include Satara, Poona and Raigad districts. Among these Satara district has been thoroughly explored. The Western Ghats (Text plate 1) lying between 8^{o} 15' N and 21^{o} 20' N latitude with an average height of 1,200 M runs for about 1600 Km along border of the Deccan from near Tapti (Tapi) Mouth in the north (Gujarath State, Surat district) to cape comorin or Rameswaram, the southern-most point of India, overlooking the Arabian sea on the west and running more or less parallel to the coast. In the present study major collections were made from the


WESTERN GHAT
LOCATION
MADHYA PRADESH
GUJARAT
MAHARASHTRA
KARNATAKA
ANDHRA PRADESH
TAMIL NADU
GOA
Nasik
Thane
Bombay
Alibag (Kolaba)
Pune
Satara
Ratnagiri
Sangli
Kolhapur
Belgaum
Panaji
Karwar (North Kanara)
Shimoga
Chikmagalur
Mangalore (South Kanara)
Hassan
Mercara
Cannanore
Mahe
Calicut
Malappuram
Palghat
Trichur
Ernakulam
Kottayam
Alleppey
Quilon
Trivandrum
100 200 Kms.
LEGEND
The western Ghats
State boundary
District boundary

TEXT PLATE 1

Western Ghats, distributed in the districts of the Maharashtra.

The 'Deccan trap' influences the landscape over a major portion of the area. Sahyadri's scarp forming the most prominent feature along its western administrative boundary. The hill ranges and valleys have characteristic 'Lava' topography consisting of flat tops and stiff escarpment on flank which carry several 'terraces' or 'steps'. Soil vary from tract to tract, a variety of soils from rich loam to poor thin 'murmad'. The hills and ridges are covered with lateritic soils; while in valleys the soils are of mixed character and varies from brownish to reddish. In the eastern portion, due to the undulating nature, deeper soils are formed in the low lying parts, while the ridges are covered by shallow soils, more or less partially eroded.

The South-west Monsoon bring almost the entire annual rainfall within a period of only three months from mid-June to mid-September, which is as high as 6350 mm in Mahabaleshwar area in the west and minimum about 480 mm at far east of the area. The monsoon months from - June to September account for 90% to 95% of the annual rainfall in the extreme west, the percentage decreases in the north-east to about 60% of the annual rainfall. The months of October to December together receive 15% to 20% of the annual rainfall in the Eastern part. The months of April and May together receive about 5% rainfall. The total rainfall during the months of

January-March is neglegible. July is the wettest month and receiving about 40% of the annual rainfall. The annual rainfall during 1987-88 was less while it is higher during 1988-89 than the annual average rainfall.

The temperature exhibits a large range between winter and summer as well as during day and night. In summer the temperature rises as high as 107°F during the month of April, while in winter it declines as low as 58°F during the month of December and January. The mean relative-humidity of the region is nearly 57%. It is maximum in July and August; there is a gradual fall every month from September to a minimum in March i.e. about 20%.

The climate of the area is temperates, especially adjoining the ghats. The year in respect of this area may be divided into three climatic periods as: a hot whether period from March to May, a rainy weather period from June to October and cold weather period from November to February.

The edaphic and varied ecological factors lead to the development of different types of vegetation as : Tropical deciduous forests. Dry deciduous forests, semi-evergreen forests, evergreen forests, scrubs and open grass-lands or pastures. The vegetation type changes from locality to locality, due to varied ecological conditions, which provide good opportunity for the growth of different types of fungi, throughout the year.