Area Under Study:

Western India comprises a vast area and to delimit the boundaries and area is rather a difficult job, as it is more or less arbitrary area or region. To delimit the area, it would be more appropriate to consider the lateral eastern and western slopes of Western Ghats (Sahyadri) which forms a range of mountains about sixteen hundred km. in length running through Maharashtra, Mysore, Tamil Nadu and Kerala States.

The Western Ghats range begins at the Kundaiabari pass in the south-western corner of the Khandesh district of Maharashtra State. From Kundaiabari (21°N 6°N and 74° 11'E) the chain runs southward with an average elevation which seldom exceeds 1219 M., in a line roughly parallel to the coast, from which it's distance varies from 35 to 100 kms. For about 180 kms., up to a point Trimbak, its direction is somewhat west of south; and it is flanked on the west by the thickly wooded and unhealthy table-land of Peth, Mokhada and Jawhar (457 M.), which forms a step and a barrier between the Kakan lowlands and the plateau of the Deccan (about 609 M.). South of Trimbak the escarp of the Western face is more abrupt; and for 60 km., as far as the Malsej pass; the trend is south-by-east, changing to south-by-west from Malsej to Khandala and Vagjai (95 km.), and again to south-by-east from here until the chain passes out Maharashtra into North Kanara (Karnatak State) near Jog (Girsappa) (14° 10/N and 74° 50'E).
On the eastern side the ghats throw out many spurs or lateral ranges that run from west to east, and divide from one another the valleys of the Godavari, Bhima and Krishna river systems. The chief of these cross ranges are the Satmalas, between the Tapti and Godavari valleys; the two ranges that break off from the main chain near Harischandragarh and run south-eastwards into the Marathwada, enclosing the triangular plateau on which Ahmednagar stands and which is the watershed between the Godavari and Bhima. The Mahadeo range, that runs eastwards and southwards from Kamalgarh and passes into the barren uplands of Atptadi and Jath, forming the watershed between Bhima and Krishna systems.

North of the latitude of Goa, the Maharashtra part of the range consists of eocene trap and basalt, often capped with laterite, while farther south are found such older rocks as gneiss and transitional sandstones. The flat-topped hills, often crowned with bare wall like masses of basalt or laterite, are clothed on their slopes with Teak (*Tectona grandis*) and bamboo (*Bambusa spp.*) in the north; with Jambul (*Syzygium cuminii*), Ain (*Terminalia tomentosa*) and Nana (*Lagerstroemia parviflora*) in the centre and Teak, Black wood and Bamboo in the south.

On the main range and its spurs stand a hundred forts. From north to south the most notable points in the ranges are - Trimbak at the source of the holy river Godavari; Kalsubai (1654 M.) the highest peak in the range; Harischandragarh (1430 M.), Bhimashankar at the source of the Bhima river; the Bhor or Khandala pass; the forts of Sinhgarh and Purandar in the spurs south of Poona; the fort of Pratapgarh between the Fitzgerald ghat; the hill station
of Mahableshwar (1437 M.) at the source of the Krishna; the Amba pass, through which runs the road from Ratnagiri to Kolhapur; the forts of Vishalgarh and Panhala; the Amboli pass through which run two main roads from Vengurla to Belgaum; Castle rock; the Arballi pass on the road from Karwar to Dharwar; the Devimane pass on the road from Kumta to Hubli and the Jog falls on the river Sharavati.

The Western Ghats bound the state of Karnataka on the west, separating south Kanara and run from Chandragutti (851.4 M.) in the north west to Pushpagiri or the Subrahmanya hill (1715 M.) in the north Coorg and continue through Coorg into Kerala. In the west of the Sagar taluk from Govardhangiri to Devkonda they approach within 20 km. of the coast. From there they tend south-eastwards, culminating in Kundremukh (1894 M.) in the south-west of Kadur district, which marks the watershed between the Krishna and Kauvery systems. They then bend east and south to Coorg, receding to 75 kms. from the sea. Here, too numerous chains and groups of lofty hills branch off from the Ghats eastwards forming the complex series of mountain heights south of Sagar in the west of Kadur district.

Gneiss and hornblend schists are the prevailing rocks in this section capped in many places by laterite. The summits of the hills are mostly bare, but the sides are clothed with magnificent evergreen forests.

In Tamil Nadu and Kerala the Western Ghats continue in the same general direction, running southwards at a distance of from 80-160 km. from the sea until they terminate at Cape Comorin, the
southern most extremity of India. Soon after emerging from Coorg they are joined by the range of Eastern Ghats, which sweeps down from the otherside of the Peninsula. At the point of junction they rise up into the high plateau of the Nilgiris, on which stand hill stations of Ootacamund (2133 M.) Coonoor, Wellington and Kottagiri and whose loftiest peaks are Dodapetta (2670 M.) and Makurti (over 2439 M.)

Immediately south of the high plateau of Nilgiris the range, which now runs between the districts of Malabar (Kerala) and Coimbatore (Tamil Nadu), is interrupted by the remarkable Palghat Gap. This break in the whole of it's length is about 25 km. wide and is scarcely more than 304.8 M. above the sea level. South of this gap the Ghat's rise abruptly again to even more than their former height. At this point they are known as Anamalai or elephant hills and the minor ranges they here throw off to the west and east are called the Nelliampaths and Palni hills respectively. Anamalai ranges lie approximately between 10°.1' - 10°.30'N and 76°.30' - 77°.15'E covering parts of Coimbatore district of Tamil Nadu and parts of district of Kerala. On the Palni hills is situated Kodaikanal. The Anamalai hills are divisible into higher and lower ranges. Average elevation of lower ranges is not more than 700 M. with peaks and ridges rising from 1500 to 1600 M. and covered with luxuriant Dipterocarpous forests. The higher ranges lying to the west consists of extensive open grassy hills and valleys with Shola forests similar to those of Nilgiris and Palnis and varying from 2000 to 2900 M. in height.

The chief forest types include : 1) Tropical wet Evergreen
forest - growing on mountains having 700-1600 M. height. The trees reach a height of 50 M. or more with dense canopy differentiated into layers, 2) Tropical moist Deciduous, 3) Tropical dry Deciduous and 4) Wet temperate forest commencing from 1600 M. and mostly confined to summits and consists of vast stretches of grasslands interspersed by dense growth of short, bushy evergreen trees.

Immediate to the south of the Anamalai hills lie the Cardamom hills (9°27'-10°4'N and 76°52'-77°17'E.) with elevation ranging from 650-1300 M. and with a total area of 2439.89 sq.kms. From the Anamalais to the north it is separated by the Devicolon plateau. On the south of ranges extend as far as the Aryankavu pass, separating it from the southern pass of the Western Ghats which taper off near Kanyakumari.

North of the Nilgiri plateau the eastern flank of the range emerges somewhat gradually into the high plateau of Mysore, but it's western slopes rise suddenly and boldly from the low coast. South of the Palghat gap both the eastern and western slopes are steep and rugged. The range here consists throughout of gneisses of various kinds, flanked in Malbar by picturesque terraces of laterite which shelve gradually down towards the coast. In elevation it varies from 914-2439 M. above the sea and the Anaimudi Peak (2694 M.) in Travancore is the highest point in the range and in Southern India.

Considerable areas of Nilgiri ranges, Anamalai ranges and Cardamom hills are cultivated for Tea, Coffee, Cinchona and Cardamom. It's forests are also of great commercial value, Bamboo
Black wood (Dalbergia latifolia) and Teak growing with special luxuriance.

The Western Ghats thus represent a series of mountains that rise abruptly from the coastal plains having altitude upto 1 to 2 km. and orientation roughly parallel to the west coastline of India. The moist air currents which approach the Western Ghats from the west are forced to ascend the mountains. In this process they shed their moisture in the form of frequent and heavy rains over Western Ghats. After they have surmounted the Ghats, the monsoon winds advance into Deccan Plateau, Madhya Pradesh and thence to the Bay of Bengal. But as they have already shed their moisture it is not surprising to find an extremely strong contrast in the rainfall between the windward and leeward side of the Ghats.

The scenery of the Western Ghats is always picturesque and frequently magnificent, the heavy evergreen forest with which slopes are often covered adding greatly to their beauty.

Localities where extensive collections of lichens were made by my teacher and colleagues, during the period 1973-1976 are enlisted below under the eight regions of Western Ghats. These areas constitute more or less geographical, geological and Phytogeographical regions of Western Ghats (Map: I).

I Western Ghats in Maharashtra:-- Saptashringi, Triyambakeshwar, Sinhgadh, Purandhar, Khandala, Lonavala, Malvali-Bhaja, Mahabaleshwar, Hatkamba, Dabhode Ghat, Amba, Amboli, Panhala.

II Western Ghats in North Karnataka State:-- Belgaum, Dharwar,
Londha, Anmod, Devimane ghats, Yellapur.

IIa Western Ghats in South Karnatak State :— Sagar, Tirthahalli, Rippenpeth, Agumbe, Shringeri, Koppa.

IIb Western Ghats in Coorg :— Balupeth, Khushalnagar, Mercara, Baugmandla, Talcauvery.

III Nilgiri hills :— Ootacamund, Kottagiri, Dodapetta, Pykara, Korakundha, Coonoor, Mawanhalva, Mudumalai.

IV Anamalai hills :— Silent valley, Marayoor, Rajmalai.

V Palni hills :— Kodaikanal, Berijam lake, Perumalmalai, Shembagnur, Silver Caskade, Kodai Munnar Rd.

VI Cardamom hills :— Thekadi, Periyar, Peermade, Munnar, Devicolon.