

2. DESCRIPTION OF THE FORESTS

The Western Ghat belt has four major types of forests of which the Dry Deciduous type occurring in the lower rainfall region is in a very degraded state. The other three types are described below.

2.1 Evergreen Forests

The Western Ghat belt receives about 2,500 to 2,900 hours of sunshine every year (Agriculture Finance Corporation 1992). This source of energy coupled with a rainfall of more than 2,000 mm results in the growth of Evergreen forests, perhaps samples of the most luxuriant and diverse vegetation on earth. In spite of the great variation in rainfall from month to month and season to season, the soil retains an adequate quantity of moisture throughout the year to enable plants to carry on photosynthetic activity without interruption. High humidity prevails at all times and even in the dry season, there is some precipitation of moisture in the early mornings. This is due to condensation of the warm fog which rises during the day to the canopy. In the rainy season, humidity is almost always at saturation point (Kadambi 1958).

Several gigantic trees tower over the general level of the forest and the stature of the trees is surprisingly varied. In sheltered valleys, the large trees attain a height of over 45 meters, while on ridges and slopes, directly facing the western wind, the largest individuals are barely 15 meters in height. The Evergreen forests of Western Ghats exhibit pronounced tropical characteristics both in their composition and general ecology. There is not a single species of the temperate type. With the exception of the giant climber Gnetum scandens, there are no gymnosperms (Champion 1936). Some of the larger trees exhibit conspicuous plank buttresses.

Champion describes these forests as follows:

"Lofty, dense, evergreen forests, 150 feet or more high, characterised by the large number of species trees which occur together. Consociations (gregarious dominants) are rarely met with and two-thirds or more of the upper canopy trees are of species individually contributing more than one per cent of the total number; a few species may be met with semi-gregariously but this is not typical."

Some species of the top storey are trees with clear boles 100 feet long and 15 feet or more in girth, and may be deciduous and semi-deciduous without affecting the evergreen nature of the forest as a whole. The canopy is extremely dense; it has been demonstrated that apart from the scattered giants which project well above the general canopy, differentiation into definite canopy layers probably does not exist. Epiphytes are numerous,

especially aroids, ferns, mosses and orchids. Climbers vary greatly in amount being sometimes conspicuous but in general they are less characteristic than in the semievergreen and moist deciduous forests.

Ground vegetation in typical areas may be almost absent, elsewhere a carpet of Strobilanthes or Selaginella and ferns may occur; grasses are absent. The undergrowth is often a tangle of canes, creeping bamboos and palms, which may replace high forest as cane-brake along streams. Erect bamboos are unusual, but may occur locally. Long cylindrical boles usually with thin smooth bark are typical but plank buttresses are also frequent. The leaves are thick and glossy, only rarely finely pinnate or hairy, and are often white or pink when young. Cauliflory may be relatively common". (Champion 1986)

Kadambi has recognised three distinct altitudinal variants and five clear associations based on horizontal distribution in the evergreens of Shimoga district itself (Kadambi 1945). These are the forests of Ebony (Diospyros ebenum), White Cedar (Dysoxylon malabaricum), and of Poon (Calophyllum tomentosum). The latter has provided ship masts for centuries enabling sea trade of teak, ebony, cinnamom, pepper, cardamom and turmeric.

2.2 Semi-Evergreen Forests

This forest type is situated along the lower westerly slopes of the ghats and occurs as an ecotone between the Evergreens and the Moist Deciduous forests in the east. Semi-evergreen forests have a canopy of evergreen species interrupted by deciduous dominants that rise above the general level. The stature of these forests is lower than that of Evergreens. These forests are the home of White cedar and Gamboje (Garcinia species).

2.3 Moist Deciduous Forests

These forests occupy about 50% of the area of Malnad, occurring to the east of the Evergreen - Semi Evergreen belt. It is the home of rosewood (Dalbergia latifolia) Indian laurel (Terminalia tomentosa), kino (Pterocarpus marsupium) and many other durable hard wood species. In areas in which the soil is not lateritic, teak occurs naturally making it in monetary terms, one of the richest forests in the world. The standing biomass in a well stocked forest of this type could be worth one million Rupees per hectare (One US\$ = Rs 30, 1993). It is home of the big bamboo (Bambusa arundinacia) which makes way to the solid bamboo (Dendrocalamus strictus) in lower rainfall regions which are also the home of sandal (Santalum album), the only wood sold on a weight basis.

Many parts of these forests were overworked during the Second World War. Much worse, over major parts today regeneration is totally absent. This is because of over grazing, fires and removal of green material for use as fire-wood.