SCOPE AND OBJECTIVES

Taxonomic exploration of an area is a fundamental prerequisite for many biological investigations and it includes all activities that are part of the effort to organize and record the diversity of plants and acquaints us with the fascinating differences among the species of plants. Without the system of nomenclature provided by plant taxonomy, there could be no comprehensive reference to names of plants. Once names and classification have been provided, there must be methods to identify a taxon as being similar to another known entity. Influenced predominantly by the gradient rainfall, the Western Ghats are known for their vegetational exuberance and biological diversity. The intrinsic potential of biodiversity is a key resource for evolving new kinds of food, medicine, cosmetics and several other value-added products of industrial importance.

Species richness is often accompanied by enormous genetic diversity within species. Despite the high richness and diversity, no exhaustive study on the complete spectrum of flora and their geographic pattern in the Western Ghats has been attempted. Keeping all these aspects in mind, the present study is an attempt to realise the target in one sector of the Western Ghats, namely Veerapuli Reserve Forest and its environs with the following objectives in mind.

1. To make a thorough floristic survey of flowering plants and to record the field data namely habit, habitat, altitude, forest types, phenology (flowering and fruiting) and distribution.
2. To provide dichotomous key for the dicotyledonous families, and to provide detailed taxonomic descriptions for selected families within dicotyledones (with short descriptions for others) with up to date nomenclature.
3. To provide a list of medicinal plants along with their usage.
4. To document the critically endangered, vulnerable, endangered, and endemic taxa.
5. To evaluate the present status of the study site and suggest methods for conservation.
MATERIALS AND METHODS

Materials:

The source of materials for this work was the periodical collection of plant specimens from Veerapuli Reserve Forest and parts of the neighbouring Mahendragiri Reserve Forest from 1996 to 2000. Field trips were undertaken to different parts of the study area during different months, each trip lasting for 3 to 5 days, so as to study seasonal changes in vegetation pattern and floristic composition.

Methods:

a. Collection:

Exhaustive collections were made in the study area and triplicates of all plants were collected to study the range of variation in characters. Special attention was given to collection of specimens with flowers and fruits from the same plant whenever possible. Those taxonomic characters, which cannot be observed from dried specimens, such as plant height, leaf/flower odour and colour, hairiness, and secretions in both vegetative and reproductive parts and habitat types were noted in the field itself. Available flowers and fruits were pickled in kew spirit (10 litre rectified spirit + 0.5 litre glycerine + 4.5 litre distilled water). Photographs of vulnerable, endemic and other valuable taxa were taken with the help of Minolta and Pentax K 1000 cameras.

b. Field notes:

Detailed notes were entered in the field notebook at the time of collection in the field itself. The data such as date of collection, name (family and species), uses, locality, habit, distribution, habitat and short descriptions (those characters which cannot be observed in pressed specimens) were recorded.

c. Processing:

Large specimens were trimmed to the size of about 20 cm length and the excess leaves and flowers were removed without altering the arrangement and position of leaves, flowers and fruits.
d. Poisoning and Mounting:
All the processed specimens were immersed in denatured spirit (with 2.5% HgCl₂) and kept in blotters for pressing. The flowers and fruits were preserved in kew spirit for dissection. The best specimen of every field number was mounted on mounting board (42 x 28 cm). Field labels (8 x 12 cm) with important data from the field notebook were affixed at the bottom of the right hand side of the sheet.

e. Identifications:
All specimens were critically observed and preserved flowers were dissected out for study. They were checked with descriptions available in Flora of presidency of Madras (Gamble 1927) and Flora of British India (Hook. f. 1886) and a provisional identification was made. Identifications were further confirmed after matching the specimens with available authentic or type sheets in Madras Herbarium (MH), Botanical Survey of India (southern circle), India.

f. Taxonomic Study:
The authentically identified specimens were described in detail for selected families. The exomorphic characters were noted with measurements using a stereoscopic dissection microscope (STE 6, HERTEL & REUSS, Germany). The indumentum and nature of branchlets and venation of leaves were examined with a hand lens and stereomicroscope. The floral parts were studied using either the pickled materials or dried materials. The dried materials were then boiled in distilled water for a minimum period and then examined as stated above. The delicate materials were directly soaked in water for the required period before analyzing them.
g. Descriptions and Illustrations:

Detailed descriptions for selected families are given in the present study. Description of the genus has been prepared by extracting all the characters of the species. The same method has been followed for the family description. No separate description is given for the genus in the case of monotypic genera. In enumeration part, short descriptions (habit, leaf shape, inflorescence, flower colour and fruit) are given followed by the habitat, phenology, field numbers of specimens collected and World distribution. Illustrations are given for selected species in the form of full-page indian ink drawing with appropriate legends.

h. Keys:

The keys are mainly based on the observed characters, though books have been consulted. Keys are provided for the class Dicotyledones and for variety, subspecies, species and genera of selected families.