

## 2. METHODOLOGY

### 2.1 Field-trips

For the sake of convenience and systematic study, the entire area was divided into 5 zones viz. east, north, west, south and city proper. Regular excursions were undertaken twice a week during the initial period and later at least twice a month. As a result of this, it was possible to collect most of the plants in vegetative, flowering and fruiting phases. Rough diaries were maintained to record the field observations, which generally include :

1. Habit of the plant,
2. Average size of the plant,
3. Actual state of the plant,
4. Colour of the flower,
5. Any other striking morphological characters, which might prove to be useful in identification.
6. Ecology
  - (a) Type of ground and habitat,
  - (b) Any clear association,
  - (c) Relative abundance (depending upon the number of individuals present in a locality),
  - (d) Local name and uses, if any.

Proper field books containing all the above mentioned informations were prepared with the help of rough field diaries. All the specimens so far collected and observed, have been given field

numbers in a consecutive order and these numbers entered simultaneously in the rough field diaries and field books.

## 2.2 Collection

For the collection of plants, plastic or polythene bags were used and for spiny specimens metallic vasculum was used. Some delicate and rare specimens were immediately pressed on the spot, others were carried to the camp and pressed. For collecting and pressing plant specimens, the instructions given by Lawrence (1951), Santapau (1955), Radford et al. (1974) were followed with certain modifications as and when required.

## 2.3 Herbarium

Before mounting the dried specimens on the herbarium sheets, they were deeped in a 5% ~~of~~ saturated solution of mercuric chloride, dissolved in rectified spirit. The poisoned specimens then dried and mounted on thick sheets of 40 X 27 cm size. Fevicol was found most suitable adhesive. Woody and larger specimens were stiched with thread. All the herbarium sheets along with plants were fully labelled on the right lower corner from the field diary. The drawings of important and rare plants were carried out on the herbarium sheets.

## 2.4 Identification

An attempt was made in every case to identify the plants from fresh materials and thus provisional identification was

made with the help of Cooke's, Gamble's, Hooker's floras, monographs and many recent floras, revisions which have been cited in the text. Some plants could not be identified in the laboratory, were preserved and confirmed later on by matching the plants with authentic specimens at Blatter's herbarium, Bombay and the Herbarium of Botanical Survey of India, western circle, Pune.

### 2.5 Arrangement of the herbarium sheets

The same species collected from different localities are arranged according to their collection numbers under one species cover. The different taxa of a genus are arranged within the genus cover and later on, all genera of a family are arranged alphabetically within family folder. All the species were arranged according to Bentham and Hooker's system of classification, which is still in vogue in this country.

### 2.6 Index card

The scattered informations from the field diaries were written on the index cards, thus index cards of every species were prepared. They give all informations like reference no. date of collection, locality, flowering and fruiting period and critical observations, if any. These index cards are helpful at the time of writing systematic enumeration of the plants. All the plants enumerated in the present work are cited by appending, the relevant field number to the author's name viz. J.V.J.

## 2.7 Keys

The routine keys formulated in this work, are based on simple macro-morphological characters. The keys are so constructed as to make the job of identification of plants fairly simple. Thus the keys included in this work are of three types viz. a) general key to the families, b) key to the genera and c) key to the species. The technical terms used in the keys are explained with the help of line drawings. In addition to these routine keys, the special keys to identify hydrophytes and weeds growing in and around Surat are given, keeping in view the requirements of a wide variety of flora users.

## 2.8 Drawings and photographs

To facilitate the identification of a number of rare or otherwise noteworthy plants; the line drawings to scale are given. Such illustrations were prepared usually from fresh material.

Colour, black and white photographs depicting various aspects of the vegetation are given with a hope that they will serve effectively as visual aids in understanding the vegetation. Some photographs of the individual taxa are also given to make the identification as easy as possible.

## 2.9 Nomenclature

Nomenclature has been brought upto date in accordance with

the International Code of Botanical Nomenclature (1972). Information regarding the currently accepted names is gathered from recent publications which are cited in the text.

The families are arranged as per Bentham and Hooker's (Genera Plantarum, 1862-1883) system of classification. However, at places Hutchinson's (1959) classification is followed in further splitting up of the families. For the sake of convenience, the arrangement of the genera within the family and the species within a genus, are alphabetical.

The voucher specimens collected during present work, are deposited in the herbarium of the Botany Department of the M. S. University of Baroda, Baroda.