CHAPTER - IV

MATERIALS AND METHODS

MATERIAL AND METHODS

Present investigation is based on the material collected from the various localities from Panhala (Map II). Several visits were attempted to the sites under study for collection of the material. For showing the natural habit the photographs were taken at the growing habitat. Material was collected in patches or tufts along with substrates and carried into small plastic boxes and sealed polythene bags. These were labeled alongwith the information such as place and it's collection date. Following localities were visited for liverwort collection during monsoon period from 1997 to 1999 - Teen Darwaja, Pusati point, Andharbav, Gopal tirth bag, Ambarkhana, Sajja kothi, Tabak Van Udhyan, Wagh Darwaja, Parashar Cave and their adjacent areas. As far as possible, taxonomic notes were noted in the note book.

The liverworts collected were brought to the laboratory and duly identified with the help of various available books of floristic bryology. (Kashyap 1972, Vashista 1996; Smith 1982). Identifications of specimens were confirmed by the authorities in their respective fields of specialisations. Specimens were thoroughly cleaned with water and fixed in Formalin-Aceto-Alcohol : (FAA- 70% ethyl alcohol 90 ml + Glacial acetic acid 5 ml + Formalin 5 ml). The preserved specimens are maintained. Photographs were taken as far as possible immediately. For

detail studies close up of some specimens were taken by using a PENTAX SLR 35mm camera. For close up of photographs lenses of No.1 and 2 were used.

Free hand sections of liverworts were cut and mounted in 10% glycerine and made temporarily permanent by ringing with DPX. For anatomical and sporophytic study the sections or slides were photomicrographed by using MfAKS system of JENEVAL Carl Zeiss microscope. The photographic film used was NOVA Black white with 100 ASA and 135 DIN.

Ecological observations like humidity and light intensity were recorded by using Hygrometer and Lux-meter respectively.

Liverworts were collected alongwith their appropriate amount of substrates in separate polythene bags. Soon after drying, the soil was ground in mortar with pestle to break up aggregates or lumps and used for analysis after seiving.

METHODS OF ANALYSIS :

a) pH : pH can be measured by using glass electrode pH meter (ELICO, Hyderabad). For this 1:5 soil suspension (1 soil : 5 D.W.) was prepared by stirring for about an hour at regular intervals

whereas water sample was used directly (Kadam, 1987; Trivedi et al. 1987).

b) Conductivity : The conductivity of the soil and water (*R. fluitans*) samples were measured by using conductivity meter (Elico, Hyderabad). For the measurement of conductivity, water sample was used directly whereas soil samples were prepared in 1:5 aqueous solution (Trivedi et al. 1987).

c) Moisture content of soil : The soil sample was collected and weighed as early as possible after collection (W_1), then it was kept in oven at 150^0C till dryness and again the weight is taken (W_2) (Trivedi et al. 1987).

Moisture percentage will be :

$$= \frac{W_1 - W_2}{W_1} \times 100$$

d) Organic matter of soil : For determination of organic matter, one gram dry soil was transferred into the crucible and kept in the furnace at 500^0C for 2 hours. The organic matter is lost due to high temperature and loss in weight accounts for organic matter (Kadam 1987).

CHAPTER - V

DESCRIPTIVE