Scope and Plan of the Study
Filaria is a major public health problem in India next to malaria. The main causative agents of lymphatic filariasis in man are *Wuchereria bancrofti* and *Brugia malayi*. The steady increase in human and mosquito populations in areas where mosquito control is ineffective is one of the major factors in the spread and increase in prevalence of filariasis.

Hence a study was undertaken to find out the prevalence rate of filariasis among the population of Madras city.

II IMMUNOLOGICAL STATUS AND IMMUNE RESPONSES IN BANCROFTIAN FILARIASIS PATIENTS

Filaria is normally characterized by wide spectrum of features including recurrent fever, lymphangitis, lymphadenitis, hydrocoele, chyluria and tropical pulmonary eosinophilia. However, some individuals show no symptoms in spite of harbouring microfilariae. This wide spectrum of clinical disease, presumably reflects an equally wide range of host responses to filarial infection. In an effort to understand the immune status in filariasis it has been planned to study the immune responses in patients with bancroftian filariasis and the following have been done.

II.1 Evaluation of Peripheral Blood white cells

II.11 Enumeration of peripheral blood T-lymphocytes in different patients.

II.111 Studies on CMI responses by leucocyte migration inhibition test (LMIT) using homologous and heterologous antigens.
III  ISOLATION, PURIFICATION AND CHARACTERIZATION OF
HOMOLOGOUS AND HETEROLOGOUS ANTIGEN

The non availability of this parasite in large quantity for antigen
extraction is an obstacle for the progress in filarial diagnosis. Purification of
the heterologous filarial antigen by fractionation showed specific cross
reaction with human parasites for use in immunodiagnosis. Such studies
have included the use of antigens from Setaria digitata, Dipetalonema vitae,
Onchocerca gibsoni, Litomosoids carinii and Dirofilaria immitis. Although the
fractionation has reduced the nonspecific crossreactions, no antigen has been
identified or isolated with clear species specificity for lymphatic filariasis.
Therefore the following study was undertaken to isolate, purify and
characterize both homologous and heterologous antigens.

III.i  To isolate W.bancrofti microfilarial antigen from microfilariae carrier
patients.

III.ii To collect and purify heterologous antigen from S.digitata (adult
worms) by anion - exchange column chromatography.

III.iii To characterize the homologous and heterologous antigens.

III.iv To find out the cross reactivity of homologous antigen with
heterologous antisera. (Vice versa).

IV IMMUNE RESPONSE TO FILARIAL ANTIGEN IN RABBITS

A. To study the immune response to W.bancrofti microfilarial
antigen

B. To evaluate the immune response to S.digitata ww antigen
S. digitata whole worm antigens
   i. Antibody responses
   ii. CMI responses

(b) Immune response to S. digitata SD2-4 fractions
   i. Antibody response

VUTILITY OF HOMOLOGOUS AND HETEROLOGOUS ANTIGENS IN THE DIAGNOSIS OF BANCROFTIAN FILARIASIS

Detection of filarial antibody/antigen in patients' sera.