CHAPTER III

DESCRIPTION OF STUDY AREA

The study was carried out during 1970-73 in 5 districts of Gujarat State, India viz. Baroda, Broach, Kaira, Surat and Panchmahals. The survey area lies between 21° to 23° N latitude and 72° - 15' to 74° E longitude (photograph 1). The northwestern border of the area adjoins the border of Sabarkantha and Ahmedabad districts of Gujarat, while, its eastern border touches Rajasthan and Maharashtra States. The southern border adjoins Bulsar and Dangs districts of Gujarat, Baroda, Broach and Kaira and Surat districts are on the Gulf of Cambay. Of the hill features the highest peak is Pavagadh reaching to 822.6 meters above mean sea level. The average altitude is 15 to 50 meters.

Soil:

Most of Baroda district is formed by plains except certain hillocks here and there, where the land is undulating. The southern part has rich black soil. Remaining parts contain sandy-loamy soil.

The soil of Broach district is of alluvial type except Rajpipla zone where some hillocks are present and the soil is laterite.
In Kaira district three types of soils are present
(1) alluvial (2) Sandy soil (3) Black cotton soil. The
Northern and eastern portion of Punchmahals is covered by
hills and forest intercepted by plain, cultivated land
in villages are situated in the river valleys. The soil
is mainly of laterite type. In Surat district, soil is of
alluvial type.

Rivers and lakes:

The main rivers of study area, are the Vishvamitri,
the Narmada, the Tapti, the Dhadhar and the Mahi. The
important lakes of survey area are Ajwa and Pratappura in
Baroda District while the Mahi reservoir and Ukai reservoir
are situated on the rivers Mahi and Tapti in Kaira and
Surat districts respectively.

Climate and Temperature:

Climate is hot and dry in the hot season commencing
from the middle of March and ending by the middle of June.
The climate during the rainy season is hot, and moist.
The cold season beings from the middle of November. The
maximum temperature recorded during 1970 is 48.33°C in
April and minimum temperature was recorded in January 8.0°C.
Rainfall:

The South West monsoon brings rain to Gujarat. The rainy season is confined to the four months from June to September. The average annual rainfall is 50 to 100 cms in these areas except in Surat where it is 150 cms.

Forest:

The area under forest in 1961-71 was 5100 sq.km. of 38,571 sq.km. in the study area.

Domestic environment:

The huts in the survey areas are of two types. One in which the walls are made of clay and domestic animal excreta, while in the second type it is of bamboo plastered with clay mixed with cowdung. The roofs are of claytiles but more usually of split bamboo and thatch and of palm leaves especially in Surat district, while in urban areas, houses are made of cement and bricks. The roof is usually 150 to 180 cms. high from the ground level. A house or a hut has one door and one or two rooms. Out of them generally one room is utilised for keeping the domestic animals. It includes cattle, poultry and goats. Ventilation is poor in the houses and huts. Some cattle sheds are attached to
Map shows the Gujarat and districts of present study area.
sleeping rooms. In villages, the chief occupation is forming and work in the fields and forest. Economically the population is poor. There is a Primary Health Centre for every 50,000 - 80,000 population. A P.H.C. is staffed by a Medical graduate, sanitarians, vaccinators, Maternal and child health nurses and family planning workers, for medical and Public Health Services.

**History of insecticides spray:**

In Table 5A the history of insecticides spraying of the present survey area have been listed.
### Table 5A

<table>
<thead>
<tr>
<th>District</th>
<th>Year</th>
<th>Insecticides</th>
<th>Dosage</th>
<th>Other measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baroda</td>
<td>1953-1964</td>
<td>D.D.T.</td>
<td>100mgm/sq.ft.</td>
<td>Nil</td>
</tr>
<tr>
<td>Kaira</td>
<td>1975 onwards</td>
<td>Malathion</td>
<td>200mgm/sq.ft.</td>
<td>Nil</td>
</tr>
<tr>
<td>and Punchmahals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1956-1958</td>
<td>Dieldrin</td>
<td>50 mgm/sq.ft.</td>
<td>do.</td>
</tr>
<tr>
<td></td>
<td>1975 onwards</td>
<td>Malathion</td>
<td>200mgm/sq.ft.</td>
<td>Oiling and Biological control.</td>
</tr>
</tbody>
</table>