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3.1 Topography:

Andaman and Nicobar islands, an archipelago of over 570 islands, big and small, lie as a long and broken chain in the Bay of Bengal between 6° and 14° latitude and 92° and 94° east longitude (Fig 1). Stretched over an area of more than 700 Kms North to South, these undulating islands are covered with dense forests and endless variety of indigenous and exotic flora and fauna. Often described as "Green islands in the marigold sun" on which the horizons are fixed, they are known throughout the country as "**Kalapani**" or the land of dark waters for its limitless miseries and sufferings which it had to offer to the deported convicts and prisoners as a penal settlement under the British regime.

The Union Territory of Andaman and Nicobar group of islands are separated from the mainland by a vast expanse of sea. These islands are grouped into two districts, Andaman and Nicobar. They are elevations of continuous submerged ridge, which extend almost unto Australia. On the Eastern side of the ridge lie Sumatra, Java, Bali and other islands of Indonesia. The Andaman and Nicobar group of islands are separated from each other by the ten-degree channel. Ranges of low hills enclosing narrow valleys are characteristic topographic feature of Andamans, while the Nicobar group is generally flat except Great Nicobar and Nancowry group, which are hilly. The soil of the Nancowry group is porous coral sand, which quickly absorbs the rainwater leaving hardly any stagnation. The total surface area of these islands is 8249 km².

3.2 Climate:

The climate of these islands may be described as normal for Andaman & Nicobar Islands. It is always warm and tempered by pleasant sea breezes; very hot during summer. The climate is highly humid (Relative humidity about 80%) with a warm temperature ranging between 23° and 30° C. The area receives heavy rainfall from May to January, influenced by both southwest (May to October) and Northeast monsoon (November to January). However, the heaviest rainfall is experienced during the months of May-June and the peak rainfall is during the month of May (351.1 mm). In other months rainfall is generally low

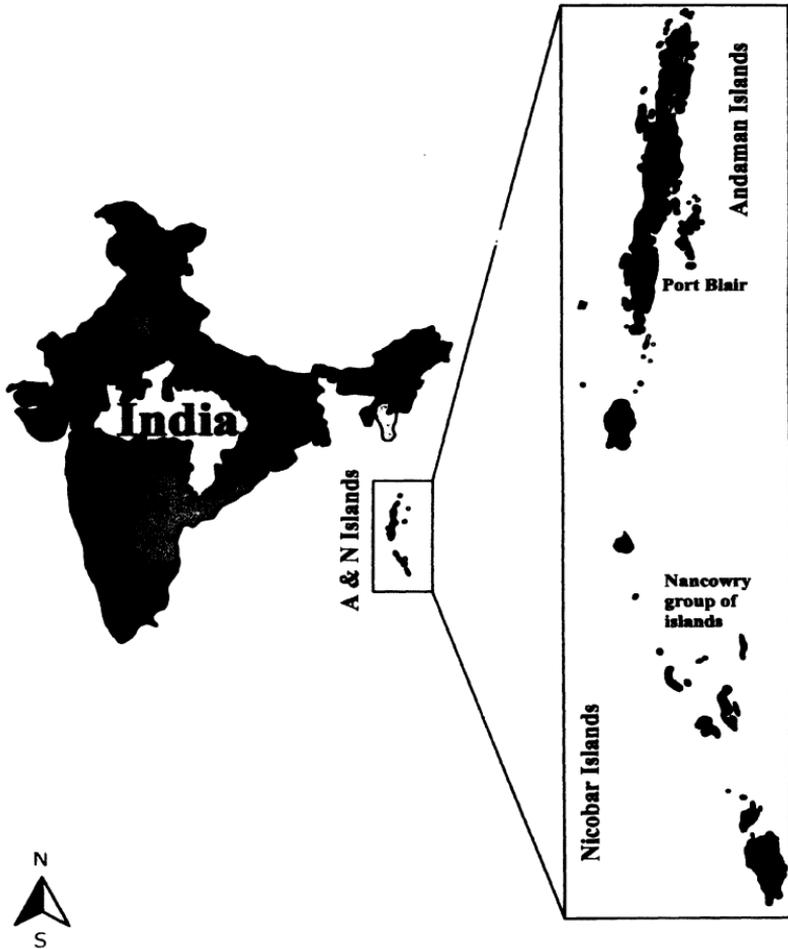


Fig 1 : Map of India Showing Location of Andaman and Nicobar Islands

with March (32.7 mm) being the driest month. The average annual rainfall is about 2500 mm (10 years average). Past records of meteorological data (1994-2000) show that monthly mean maximum temperature ranged from 15.2^o C to 34.5^o C. The monthly mean minimum temperature ranged from 12^o C to 29.4^o C. March and April were the hottest months with the daily mean maximum temperature of about 32.4^oC and daily mean minimum temperature of about 5.4^o C. During the relatively cooler months of November, December and January the daily mean maximum temperature was about 29.3^o C and daily mean minimum temperature was about 24.0^o C.

3.3 Soil type:

Geologically, two sedimentary series are known in Andamans, the Port Blair and the archipelago in the Andamans, besides altered igneous intrusions of volcanic rocks. The Port Blair series consists principally of non-calcareous grey sand stone and imbedded shales, with occasional nests of poor coal, conglomerates and pale greylime stones. The archipelago series consists of soft limestones formed of coal and shell sand, soft calcareous sand stones and white clay with occasional conglomerates. Volcanic fragmentary rocks apparently younger appear in the Port Blair series. A turbulent ten-degree channel separates Andamans from the Nicobars which are spread over 300 kilometers and comprise of 19 islands out of which 7 are uninhabited, the Nicobars are contrastingly different from the Andamans. In fact, these islands are the most inaccessible from the mainland India. Generally, the soil structure prevalent in the villages of the Nicobar group of islands is porous coral

3.4 Population, Housing and Socio-economic Conditions:

The total population of Andaman and Nicobar islands is 3, 56,265 (Anonymous 2001). These islands are home to six primitive tribes constituting about 9% of the total population of these islands. The tribes are Great Andamanese, Onges Jarawas and Sentinelese belonging to Negrito race and Shompens and Nicobarese of Mongoloid race. More than 95% of the tribal population is constituted by Nicobarese whereas the population of other tribes is

very small ranging between 37 (Great Andamanese) and 250 (Jarawas). Besides these tribes, mainlanders, for administrative and business purposes also stay on different islands. Of these six tribes, Sentinelese are still hostile and inaccessible. Andaman and Nicobar Administration has rehabilitated Andamanese and Onges in Strait island, Dugong creek and South Bay area of Little Andaman respectively and are being provided with regular free rations and other facilities. The Nicobarese depend mainly on pigs that they rear and naturally available coconuts, the rest of the food commodities being supplied from the mainland.

Most of the houses in Port Blair and the administrative head quarters of Car Nicobar and Nancowry group are constructed on wooden platforms. The aborigine tribes live in huts raised on stilts along the seacoast. (Plate 1)

3.5 Occupation:

Agriculture and horticulture is the mainstay of the settlers. The other occupations include manufacturing, cultivation, trade, commerce, business, transport, construction, etc. Besides, in these islands fishing also forms an important occupation. In the Nicobar group of islands, the tribals are mainly engaged in cultivation of coconut and arecanut. To improve the economy of the tribals, demonstration farms have been raised in Nicobars to teach modern methods of cultivation viz., plantation inter-cropping, manuring, spacing and plant protection. Besides, demonstration on cultivation of vegetables, root crops etc. is also being carried out periodically to make the tribals acquaint with the cultivation of these crops. The Nicobars are exclusively populated by the tribal community who depend on the forest produce for their livelihood, which necessitates them to spend considerable part of the day working in the forests for harvesting the forest produce (Plate 2). This occupation naturally exposes the ethnic community to the bites of day biting mosquito species.

3.6 Crops:

Both the groups of islands are rich in tropical forests and natural

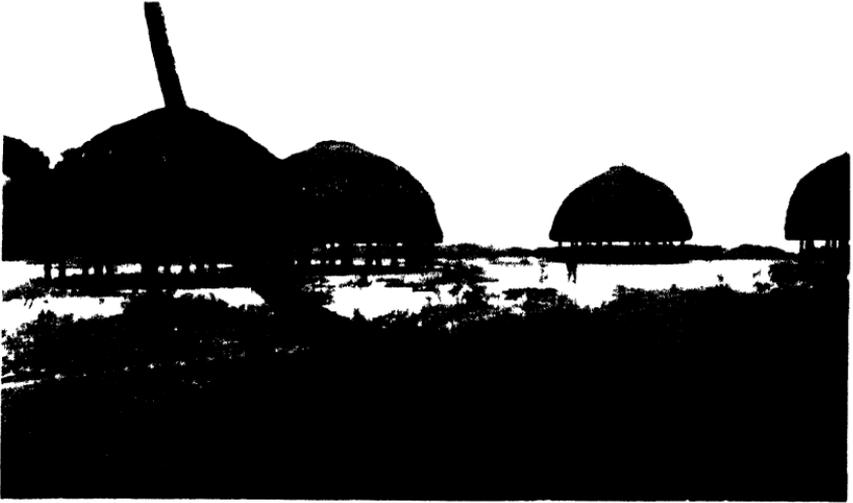


Plate 1 Typical Nicobarese Hut



Plate 2 The Native Nicobarese Returning After Work From the Forest

vegetation. Only a small part of the land is under wet cultivation. Considerable areas are under coconut and arecanut plantations.

The following are the main crops in Andaman and Nicobar islands

Dry crops

Ground nut -	<i>Arachis hypogaea</i>
Cashew nut -	<i>Anacardium occidentale</i>

Wet crops

Rice -	<i>Oryza sativa</i>
Sugarcane -	<i>Saccharum officinarum</i>
Banana -	<i>Musa sapientum</i>
Betel vine -	<i>Piper betle</i>

3.7 Water Supply and Disposal of Sewage Water:

Port Blair and Car Nicobar have protected water supply. In Teressa and Nancowry, wells are the only source of potable water. Water for drinking purpose has to be imported to Chowra Island, as the ground water is not suitable for drinking. This necessitates storage of rainwater in drums and other containers for summer. In Port Blair and Nancowry, sewage water enters the sea through drains. In other islands no proper drainage system exists and the sewage water is either absorbed by the porous soil or accumulated as pools or pits.

3.8 Mosquitogenic Conditions:

The main forest types occurring in these islands are Tropical Evergreen Forests, Moist Deciduous Forests and Mangrove forests etc., which account for about 86% of the geographical area. It is well known fact that the tree holes serve as common site, for the breeding of certain mosquitoes. These tree holes form important breeding habitats for *Oc. niveus* and other Aedines. Besides the

tree holes, discarded containers, coconut shells etc could also serve as the site for breeding of this species of mosquito. In the Nicobar of islands tree holes are known to support the breeding of *Oc. niveus* (Anonymous 1993-94).

3.9 Teresa, an Island Selected for Undertaking Year Long Studies on Transmission

Teresa, one of the remotely located islands, Nicobar district is located in Bay of Bengal ($8^{\circ} 20'$ North latitude and $93^{\circ} 7'$ and $93^{\circ} 15'$ East longitude). Earlier survey reported high microfilaraemia (12.5%) and disease (5.8%) rate (Anonymous, 1995-96), in this island. Hence, this was selected for carrying out year long studies on transmission dynamics. It covers an area of 87.0 km^2 and has a population of 1935 constituted predominantly by the Nicobarese tribe spread in 11 villages (Fig 2). All the villages in this island are surrounded by forest interspersed with coconut and arecanut groves and other plantations.

For their livelihood, the tribals go to forest for collecting forest produce. The climate is generally humid (average humidity about 80%) and hot ($24-31^{\circ} \text{C}$). Both the South west (May–Oct) and North East (November- January) monsoons are active here. The tribal population lives in typical huts raised on wooden stilts.

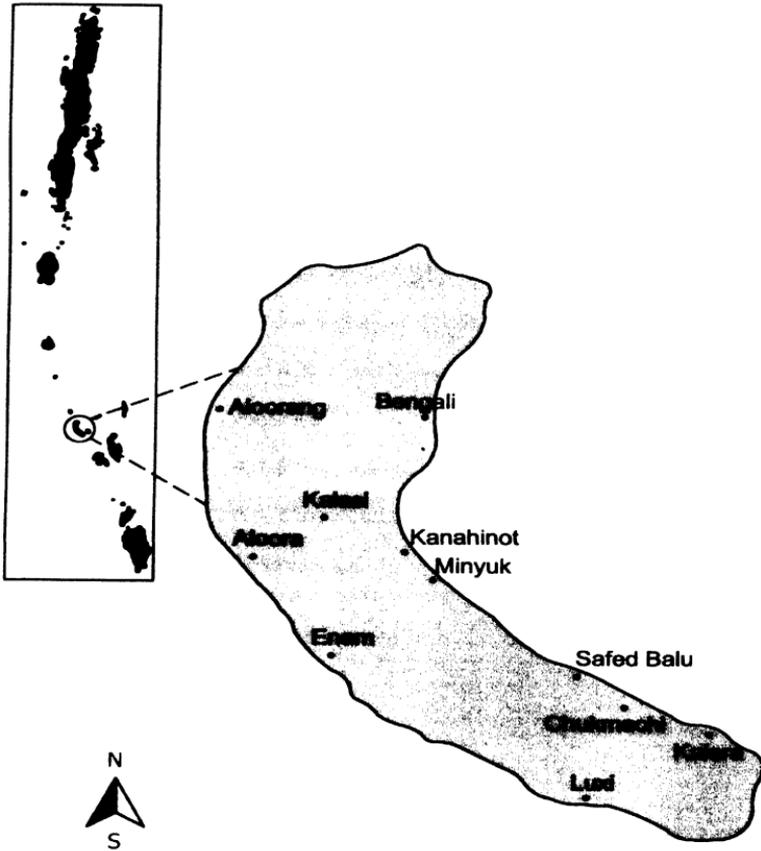


Fig 2 : Map Showing Distribution of Villages in Teressa Island