SOME ECOLOGICAL ASPECTS OF SELECTED MANGROVE ISLETS IN THE NEGOMBO LAGOON(SRI LANKA).

by

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Chapter 1

HABITAT

1.1. Location

Three islets were selected for study.These are situated at the northern end of the Negombo lagoon (Fig.1) about 37 Km north of Colombo,along the west coast of Sri Lanka,latitude 7 11' and longitude 79 50'. The lagoon itself is 12.87 Km long with a width of 4.02 Km in the widest region.It is separated for most of its length from the Indian ocean by a narrow sand bar with an underlying sandstone on the seaside which extends northwards as Duwa reef.According to Cooray(1962) the Negombo lagoon like most lagoons has been formed in the quarternary period by the growth of a spit,which remains today as this sand bar.The rivers Ja-Ela, Dandugam oya empty into the southern end of lagoon and a Dutch canal connects the lagoon with the Kelani river near its outlet in the vicinity of the Colombo harbour.

Geomorphologically these islets show a deltaic form.This appearence of the islets suggest that they were formed either due to silting or due to lagoon waters incising the mainland.The former method of formation appears to be in agreement with the work of Cooray(1962) on Muthurajawela and Wickramasuriya(1969) on Munnakkara in the District of Colombo (Fig.2).

1.2. Topography and elevation

Since the mangrove habitat is a mixture of different habitats - terrestrial,marine and limnetic,the affinity to anyone of these sub-habitats depends on the distance

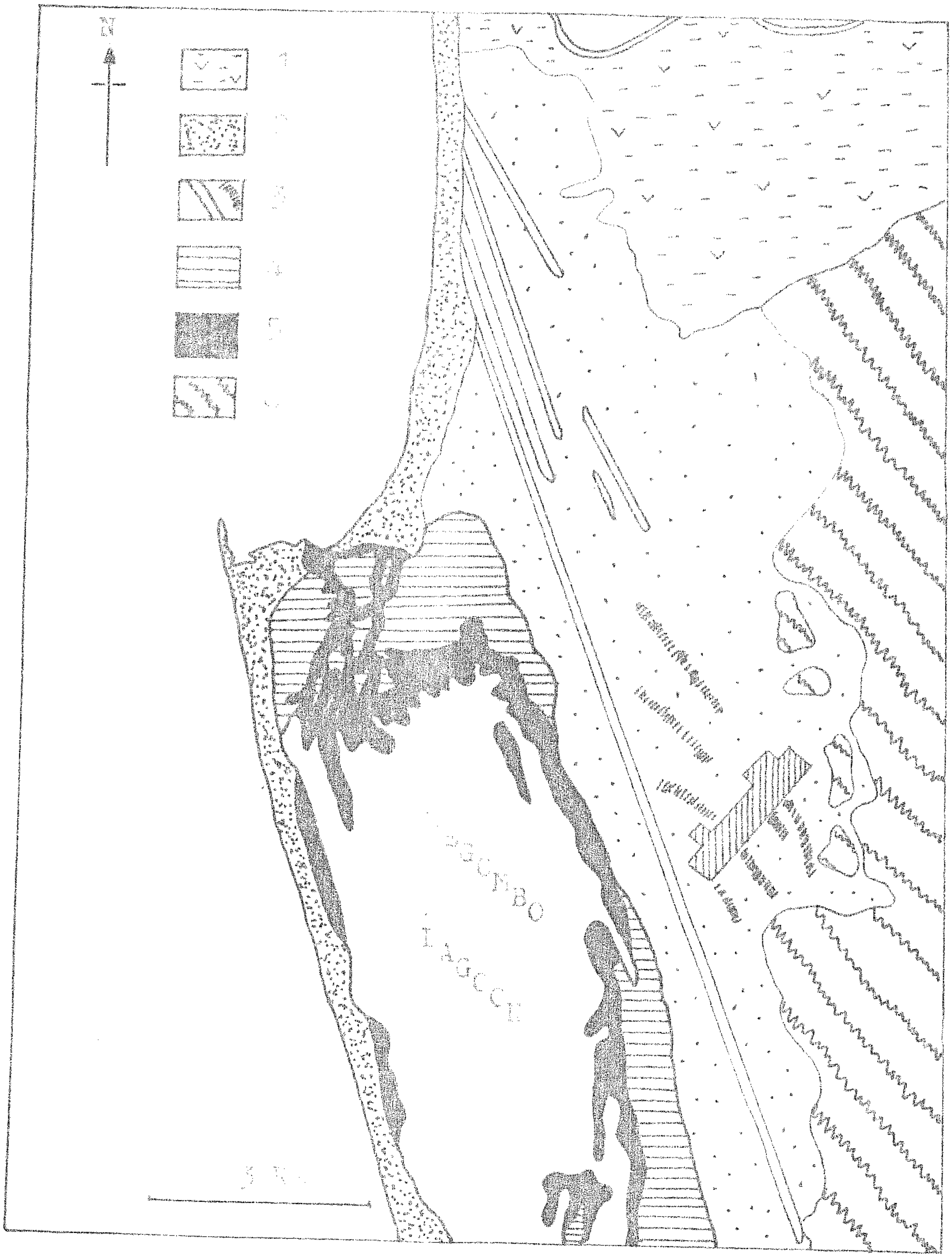

Fig.2. Sketch map of the Negombo area showing the outward growth of coast line(After L.Herath 196[illegible])

1-Alluvium,[illegible]rier spit and beach,3-Old beach plain with [illegible] and swales(or runnels),4-Lagoon flats,5-Submerged lagoon flats,6-Crystalline basement

of such habitat from the sea,and on its elevation.The islets under study are situated close to the sea and close to one another.Hence elevation becomes the important factor in determining variations,among the islets.

The elevation was measured using a Theodolite on 23.7.77 across the middle of the islet 1(Fig.3).At low tide it is evident that the elevation is about 0.30 m throughout except in the western border,where it reaches 0.60 m due to a sand ridge.Elevation of the mudflat is about 0.20 m (Fig.4).

Elevation is one of the factors responsible for controlling tidal inundation.Daily tidal fluctuations around these islets is less than 0.30 m, although the seasonal fluctuation can be as high as 0.60 m.Hence it is clear that daily tidal fluctuations can only inundate the periphery of the islets.The mud flat situated in the northern part of islet 1 being at a lower elevation, was submerged for longer period,than the rest of islet 1,and other islets.Heavy rains can flood both the mud flat and the islets.

1.3. Climate

"The classification of Sri Lanka as belonging to the South Asian monsoon climate, is by comparison,with the vague and scarcely concrete term'tropical',the more exact and detailed characterization,in so far as it regards the outstanding phenomenon and dominating factor of the climate"(Dombros 1974).The four seasons of the year according to rains are the S.W.monsoon,the N.E.monsoon and the two intermonsoons.The monsoons also accompany strong winds which increase the amplitude of waves in the