SUMMARY

The rocks of Baratang Island range in age from Cretaceous to Miocene. As the island is endowed with very thick vegetations, its major areas are concealed and therefore, exposures are met with only along road and nala cuttings, river beds, coastal and cliff sections. The present work embodies the revision of the geology of the Baratang Island with the help of available fossil flora and fauna and with special reference to the study of fossil calcareous algae, ichnofossils and bryozoa. The salient findings of the present study are enumerated here.

STRATIGRAPHY

The rocks of Baratang Island are classified into four major groups. In order of superposition these groups are Older Sedimentaries (older than Middle Cretaceous); Baratang Group (Lower Palaeocene - Lower Eocene); Port Blair Group (Middle Eocene to Oligocene) and Archipelago Group (Lower to Middle Miocene). A patch of red cherty ferruginous limestone containing foraminifers with Maestrichtian affinities has been discovered. This discovery bridges the gap between the Cretaceous exposures around Port Blair on the one hand and those on Middle Andaman on the other. The Baratang Group constituting broad lithological units like limestones, sandstones, conglomerates, shales, etc. has been placed at Lower Palaeocene to
Lower Eocene age. Unconformities separate the Baratang Group from underlying and overlying groups. Moreover, igneous intrusions intervene between the Baratang and Port Blair Groups. The fossil algal species like Cayeuxia andamanica sp. nov., Parachaetetes asvapatii Pia, P. flexuosa sp. nov., Peyssonnelia sp. cf. P. antiqua Johnson, Cymopolia mayaense Johnson and Kaska, Dissocladella deserta Elliott and Neomeris plagneais Deloffre recovered from sandstones out of various lithological types support Lower Palaeocene to Lower Eocene age for the Baratang Group.

The Port Blair Group comprising same rock types but with dominant flysch characters has been placed at Middle Eocene to Oligocene age. Presence of Discocyclina, fossil algal species such as Distichoplax biserialis (Dietrich) Pia, Lithothamnium sp. cf. L. nanosporum Johnson and Ferris and Lithophyllum dubium Lemoine suggest an age younger than that of Baratang Group. There is no fossil evidence at present for an Oligocene age, however, the overlying rocks belong to Lower to Middle Miocene Archipelago Group, the Upper age limit for the Port Blair Group is assigned as the Oligocene.

FOSSIL ALGAE

The study of fossil algae, a scantily studied and rather neglected fossil group, is the significant contribution of the present work. The fossil algal flora described here comes from the rocks classified under Baratang Group and Port Blair
Group. The richness of the flora can be understood as 58 species accommodated within 27 genera representing Cyanophyta, Rhodophyta and Chlorophyta have been discovered. Under Cyanophyta a new genus Baratangia has been erected to accommodate algal fragments exhibiting densely branched and flexuous coenocytic filaments. The fossil red algae is represented by 38 species distributed among 16 genera belonging to families Solenoporaceae, Gymnocodiaceae, Squamariaceae and Corallinaceae. Out of these families, Corallinaceae is the most dominant being represented by as many as 22 species. Abundance of Archaeolithothamnium and Lithothamnium is observed among Melobesioidean red algae. Occurrence of numerous fragments of Distichoplax is significant since it is an index alga for Palaeocene - Eocene rocks. Five species of family Codiaceae and 13 species of family Dasycladaceae under Chlorophyta are described. The important green algal genera are Halimeda, Broeckella, Cymopolia, Dissocladella, Trinocladus, etc.

The fossil algal species had been useful in fixing the age for Baratang and Port Blair Groups. These algae exhibit dominant Tethyan affinities, barring a few showing both cosmopolitan and Indo-Pacific affinities. The algal flora clearly indicates an undoubted marine conditions of deposition with shallow, clear but turbulent waters. The depth must have been around 10-12 m below low tide level in tropical warm region.

ICHNOFOSSILS

The ichnofauna incorporated in the thesis has been
discovered in the rocks showing flysch characters of both Baratang and Port Blair groups. In all 22 species representing 17 genera are described; out of which 6 species are new to science. The important genera are Acanthorhaphe, Bifasciculus, Gyrochorte, Ophiomorpha, Palaeophycus, Planolites, Rhizocorallium, Taenidium, Torrowangiæ. etc.

The analysis of this ichnofauna indicates that the rocks in which they occur must have been deposited in shallow water as 19 out of 22 ichnofacies belong to Cruziana facies and only three belong to Mereites facies. The ethological classification of the ichnofauna reveals that fodinichnial traces are dominant over the others because 13 species come under this category. The remaining 9 ichnospaces are shared by repichnia, domicinia and pascichnia. The dominance of conglomerates, grits and coarse sandstones of Andaman Flysch of Baratang area indicates a proximal source terrain. The conclusions made here on the basis ichnofossils, to some extent corroborates the conclusions drawn by Rodolfo (1969a and 1969b) on sediments, bathymetry, marine geology, etc. of Andaman Basin.

BRYOZOA

The Miocene limestones of Archipelago Group have yielded a few species of bryozoa along with a large number of foraminifers. The Cyclostome bryozoa dominates over the Cheilostome as out of 10 species 8 belong to former. The work on bryozoa is still at an initial stage. More material is required to understand the bryozoan fossil fauna. It is too early to deduce anything on the basis of only 10 species.