RECORDS
OF
THE GEOLOGICAL SURVEY OF BANGLADESH
Volume I, Part 2

Quaternary Geomorphic Evolution of the Brahmanbaria–Noakhali Area, Comilla and Noakhali Districts, Bangladesh

By
M. ABU BAKR
Geological Survey of Bangladesh

Issued by the Director General, Geological Survey of Bangladesh, Dacca
Printed by the Officer-in-charge, Bangladesh Government Press, Dacca.
1977

ABSTRACT

The Brahmanbaria-Noakhali area in the Comilla and Noakhali Districts lies in the eastern part of Bangladesh. It is longitudinally disposed and gently slopes from the base of the Tripura Hills of India westward to the Meghna River. It can be divided into three correlatable geomorphic and geologic units.

The geomorphic units, in order of antiquity, are the Lalmai Deltaic Plain, the Chandina Deltaic Plain, and the Meghna Flood Plain. The two deltaic plains are roughly crescent-shaped, fanning out from east to west. They have been affected by differential uplifts. They slope roughly stepwise to the west. Characteristic drainage patterns broadly distinguish the three units. Dendritic or modified dendritic drainage is developed in the Lalmai Deltaic Plain, whereas mature and nearly extinct drainage which includes tightly meandering streams, old meander scars and levees characterise the Chandina Deltaic Plain. The present-day braiding and meandering river system is the distinctive feature of the Meghna Flood Plain.

The correlatable geologic units are the Madhupur Clay of Pleistocene Epoch, the Chandina Formation of Early Recent Age and the Meghna flood-plain deposits of Recent Age. The Madhupur Clay consists of reddish brown clay and sandy clay. It is unconsolidated and unconformably overlies the Dupi Tila Formation of Pliocene Epoch. The Chandina Formation and the Meghna flood-plain deposits consist of clay, silty clay, silt, and sand. The former are generally more compact and slightly more oxidised than the latter.

It appears that differential uplifts have modified the orientation and vitality of the rivers. The overall result has been gradual degeneration of the drainage. This probably had an unfavourable effect on the old human settlements in the Lalmai Hills.

The two deltaic plains are results of delta building operation by the two older drainage regimes during the Quaternary Period.