

CHAPTER - IV

GEOLOGY AND TOPOGRAPHY

OF THE AREA

The Upper Gondwanas are represented along the East coast by a series of exposures in the form of outliers on the gneiss or inliers in Pleistocene or Recent alluvial deposits. Few deposits among these occur between the gneiss and marine Upper Cretaceous beds. Many deposits here are quite smaller ones. These deposits are interesting due to their fossiliferous nature. The majority of these beds have a low inclination, though dips upto  $40^{\circ}$  have been noted in the southern outcrops near Sriperamatur and in Trichinopoly. Whenever their base is exposed, it is found that these exposures directly rest upon a floor of gneiss. The thickness of these exposures is somewhat difficult to estimate, but it is considered having a thickness upto 100 feet.

Foote (1879) recognised many small outcrops of Upper Gondwana beds near Ongole. They are found on the North and South of Ongole town. Smaller outcrops occur in wells and streams. Some of them occur within the alluvium on the coast while most of them fringe the gneissic outcrops. The "Upper Gondwanas" here show slight rolling but swerve little from the horizontal.

Foote (1879) recognised three-fold divisions of Ongole outcrops. They are (1) Budvada sandstone, (2) Vemavaram shales and (3) Pavulure shales. The Budwada stage,

is named after the village Budvada and consists sandstones. They have yielded many marine fossils and few plant fossils. The Vemavaram shales named after the village, Vemavaram. They are of light grey colour, mottled in parts, and with different hardness. They have a rich fossil flora. This flora shows some similarity with the flora of Sriperamatur stage in Tamilnadu. The fossils are found as impressions on rocks with clayey character. The Vemavaram outcrops are separated from Budvada sandstones by alluvium. The boundary between them is not known. It is considered that the Vemavaram stage is more or less confirmable continuation of the Budvada sedimentation.

Puvalur sandstones are poor in fossil contents and they are correlated with the Tripati sandstones of Ellore. The thickness of the Pavalur stage is small. The sandstones are friable and pale brown in colour.

Sriperamatur beds is one of the four main exposures found near Madras. The town, Sriperamatur is situated 40 Kilometers W.S.W. of Madras. The dip of the rocks is low and in some places greater than exposures on the North. The direction of dip varies at different places. The Gondwana rocks of Sriperamatur consists of white fossiliferous shales associated with friable sandstones, grits and micaceous sandy shales. Conglomerates of all these showing loose texture occur here. At the base sometimes big boulders

are found. It is possible that these loose conglomerates correspond with those of Budvada stage of Ongole area.

The shales of Sriperamatur includes both animal and plant fossils. The plants fossils are mostly impressions but occasionally petrified woods are found. The shales are thinner and show poor preservations as plants. The plants are fragmentary in nature. The flora here is a mixture of Rajmahal and Jabalpur plants and can be compared with that of Raghavapuram shales.

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