CHAPTER

FOUR

GEOLOGY AND TOPOLOGY OF THE AREA

GEOLOGY AND TOPOGRAPHY OF THE AREA

Along the east-coast of India the Upper Gondwana deposits are exposed in the form of a series of detached outcrops. They are of considerable interest due to presence of marine fossile associated with the plant fossils. in Andhra Pradesh they are found in Krishna-Godavari basin, which is situated on the east-coast of India and which forms number of depressions separated from one another by ridges. In Ongole area they are found in Guntur, Prakasam and Nellore districts. The deposits are in the form of small patches and classified on the basis of their sub-divisions. The divisions are named after the places showing characteristic features of rocks. Since the work is related to Ongole region. The classification of the area is considered for their distinct features. The deposits are divided as follows :

i) Pavulur sandstones.

ii) Vemavaram shales,

iii) Budavada sandstones.

These are considered as distinct lithological units and on the basis of chronology Budavada sandstones is considered as the oldest. Vemavaram shale represents the middle and Pavulur sandstone is youngest or upper most division of the regional classification. The Budavada sandstones is 500 meter thick and shows succession of 80% shales and 20% sandstones. These sandstones are similar to Golapalli sandstones. The Budavada sandstones is covered by the Vemavaram shale which

is lithologically similar to Raghavpuram shale. The Pavulur sandstone which is upper most and considered equivalent to the Tirupati sandstone.

Recently Venkatchala and Sinha (1986) have given a brief account of Stratigraphy, age and Palaeoecology of Upper Gondwana deposits in the Krishna-Godavari basin. Accordingly among all these divisions vemavaram shales show the richest plant fossils, while the Budvada sandstone show meagre presence of plant fossils. The Pavulur sandstones are almost devoid of plant fossils. To understand the stratigraphic sequence number of shallow wells about 200 meter deep were drilled. Out of each, the well near Uppugunduru which belongs to Vemavaram shale showed a 55 meters of Upper Gondwana sequence, which includes 34 meter thick sandstones covered by 21 meter thick shale. The detail sequence is represented in Fig. 1.

The locality Kandkuru which lies at the outskirt of Ongole district, having more or less similar lithological sequence as shown in text Fig. 1. At Kandkuru the wells and water streams show a presence of alluvial which touches the gneissic outcrops in this region. The sandstones here are somewhat softer in nature having micaceous contents. The deposits show slight curve but swerve little from the horizontal line. There are several small exposures which are spread upto 20 Kms. around the Kandkuru region. These out crops are covered with laterite gravel and black soil. Hence the rocks are not clearly exposed. They are seen only when wells are dug or excavation of Tanks is taken and in many cases the opening of stone quarries

exposes these rock formations. The northern extension of kandkuru region can be traced upto Guntur town and then to Ongole town. Outside the Kandkuru village a lower ridge is developed where the rocks are exposed and form these deposits the material can be collected. From the South West of Kandkuru one comes across reddish or purple colour gritty sandstones, which are non-fossiliferrous. In some streams, lime stone deposits, and calacarious sandstones are associated with animal fossils like molluscan members. Hence a small patch of Kandkuru which has both fossiliferous shale of Vemavaram shale and non-fossiliferous shale of pavulur sandstones are detected. The present work deals with the Vemavaram shale, which are rich in fossil contents and not worked out so far. The present attempt may not give the complete picture and the detail information of the fossil flora and its geology in more details. But it is necessary to attend the deposits which needs more efforts for detail studies. This work gives only a brief account of fossil flora of Kandkuru town. But it also indicates the possiblity of similar outcrops which are not known today. Those can be detected when more attention will be paid to such areas.

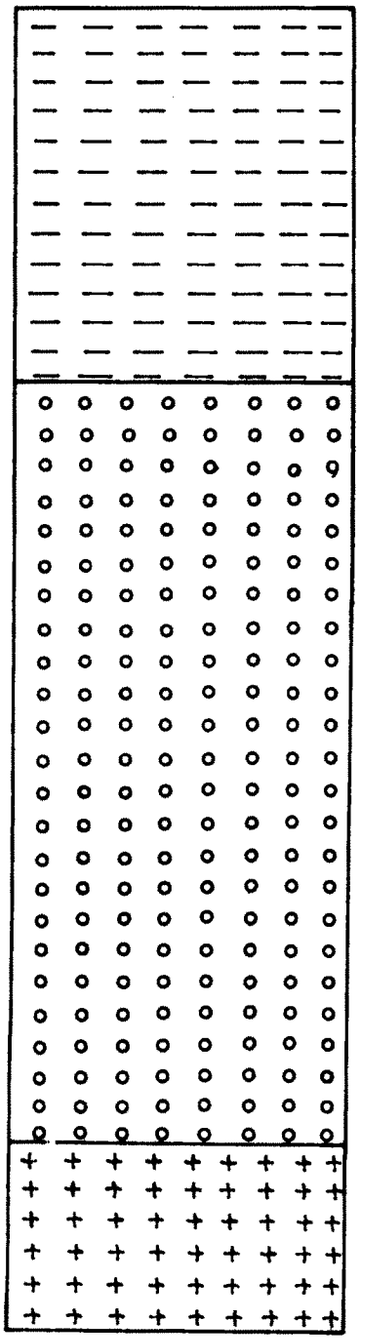

FIG. 1 – STRATIGRAPHIC SECTION OF THE KANDKURU REGION.