

MATERIAL AND METHODS

Along the East Coast of India several Upper Gondwana localities are found. In Andhra Pradesh they are exposed at Vemavaram and other places in Prakasam district and Raghavapuram, Gollapalli in West Godavari district, Ayyaparaj, Kotapalli in Vishakhapattanam district and Yellapur in Adilabad district.

In Orissa they are exposed at Atgarh and in Tamilnadu at Tirucherapalli and Ramanathapuram. Besides these they are also found at Tereni and Satyavedu.

The plant fossils of Andhra Pradesh are preserved mostly as impressions, petrifications are rather less in proportion. Among all these localities in Andhra Pradesh, Vemavaram is considered as the richest locality so far its fossil assemblage is concerned. It is situated in famous Ongole area in Prakasam district. Foote (1879) considers these beds as middle stage in the Tripartite division of the Upper Gondwana beds of this area. The plant bearing beds are considered as marine beds and at some places they are exposed at the surface. On the other hand, at Uppugunduru they are situated in the lower strata and can be exposed when quarrying is done. Chinna-Ganjam is a new fossiliferous locality located by Vagyani in 1986. It is situated on the Ongole-Chirala bus road and 30 K.M. NEN of Ongole town.

Besides Vemavaram, Uppugunduru is the second rich locality recently discovered by Vagyani (1986) and described fossil plants from this place. Later on, fresh collections were made from Uppugunduru as well as Chinna-Ganjam. Here the plant fossils are found in cotton fields and nullah cuttings. When the ploughing is done the fossiliferous shales are brought to the surface of the field. In the summer, the nullahs are dried out and fossils can be collected from them. They are also found in the material taken out from newly dug out wells. Shales are exposed by breaking them along the bedding plane. Sometimes, they are exposed naturally and can be directly collected. For the collection of plant material help of Sri B. Veeraiah and VeerNarayan Rao was obtained are local coolies were employed for breaking the large shales.

The collections were made in three visits - February, 1987, November 1987 and also in February 1988. The impressions were cleaned thoroughly by removing sand and dirt on them by using dry cotton plugs and soft hair brush. They were serially numbered by using India ink or black sketch pen. Care was taken to avoid the friction between impressions. Sometimes it was found that the size of the impression is small and the shale is a large piece on which it is preserved. It was carefully packed in the paper bag and later on cut into desirable size in the laboratory. First, the impressions were critically observed for their morphological characters using large magnifying lens. Only those specimens were selected

which showed excellent preservation. The selected specimens were again cleared by using camel hairbrush and sometimes acetone or xylol. Specimens were grouped according to their classification and it was noted that Coniferales and Bennettiales group form the prominent part while Pteridosperms, Pteridophytes form a minor part. The specimens which could not be grouped into any group were placed under Incertae sedes. But they are quite rare in this collection.

In the laboratory the specimens were observed under strong reflected light to ascertain their morphological features. Following characters such as - attachment of the leaf to the rachis, shape of the leaf, venation pattern, nature of the apex, branching etc. were carefully noted. The text-figures were drawn on ivory-paper showing habit sketch and other detail of the specimen. For this purpose, crooked pen and India ink was used. Suitable magnifications of the text-figures were calculated and given in the explanation.

The photographs were made by using Pentax 35 mm single lens reflex (SLR) under suitable light conditions. For desirable effects proper filters were used. ORWO film with speed of 200 and 400 ASA was used. The final prints were taken on hard, normal and special grade papers of Agfa make. Magnification of the photograph were calculated and given in the explanation of the plates. The copying of the text figures were made by

using 'Gulminard' film and final prints were prepared from it. Numbers were introduced in the final text and plate figures. The maps were first prepared from Topo sheets and then copied by xerox method. Scales were suitably reduced in these maps.

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