JURASSIC Palynomorphs from Andigama, Sri Lanka: Some Morphological Details

G. Edirisooriya and H.A. Dharmagunawardhane

Department of Geology, Faculty of Science, University of Peradeniya

Jurassic sedimentary rocks are known to occur in a few isolated and small faulted basins in the northwestern province of Sri Lanka. One such basin is situated at Andigama in the Puttalam district. The present study was carried out with the objective of identifying and describing the details of two of the palynomorphs found in Andigama carbonaceous shale. Shale samples were collected and analyzed using standard palynological technique of hydrochloric acid and hydrofluoric acid digestion. Samples were observed under the transmission light microscope. Microflora assemblages from Andigama were found to consist of upper Jurassic Pteridophytic spores with dominance of *Contignisporities* sp. *Cicatricosisporities* sp, and to a lesser degree *Classopolis* sp. No angiosperm members have been found so far from this basin. Gymnospermae spores were rarely represented.

Fig.1. *Contignisporities* sp. (x500 µm)

Fig.2. *Cicatricosisporities* sp. (Andigama)(x500 µm)

Classification (Fig.1): *Contignisporities* sp.Anteturma: SPORITES, Turma: TRILETES,
Feature Description*:* Palynomorphs are microspores and shape is trilete. These are bilaterally symmetrical, and slightly convex on the distal surface. An intra-radial surface is strongly arched. Amb varies triangular to sub-triangular and slightly convex in lateral view. Laesurae is extending towards the cingulum's inner margin. Cingulum is simple, elongated, thinly layered, laminated and often shrunk. Width of the cingulum varies between 2 µm - 3 µm. Apices of the spore are curved. Muri on the distal surface are parallel and directly encroach into the cingulum. On the radial region, some of the muri are bisected. Margins of muri are smooth; thickness varies between 2 - 4 µm.

Classification (Fig.2): *Cicatricosisporities* sp. Anteturma: SPORITES, Turma: TRILETES
Feature Description: Palynomorphs are microspores and shape is slightly elliptical and trilete. These spores are radially symmetrical and characterized by distal or equatorial sculpture of more or less parallel to the muri. Muri are arranged in a center closely and terminate along the amb on distal region forming an acute angle to the equator. Some of these muri are bisected and fused with the neighboring muri. Each Muri are elongated and margins are entire but not smooth. Thickness of the muri varies between 2 µm - 5 µm. These species do not comprise Cingulum. Amb is strongly triangular with convex or concave to distal region. Apices are curved.

Andigama shale has a great affinity with Rajmahal formation, India. The evidence of present microfloral assemblage of *Contignisporities* and *Cicatricosisporities* has been considered as significant evidence for the exact dating of Late Jurassic and Early Cretaceous palynoflora. Earlier workers have also compared Indian Jurassic-Cretaceous palynonoflora with those known from Australia and have reported that stratigraphic age ranges from Tithonian (167.7 my) to Berriasian (145.5 my) for the above taxa. Since the aim of this report was to present an outline of spore–pollen affinity of Sri Lankan palynological studies, these findings must be viewed as preliminary rather than comprehensive. Detailed descriptions of the spore-pollen and distribution data are being undertaken for further confirmatory studies.