RECYCLED PERMIAN AND CRETACEOUS PALYNOFOSSILS FROM THE BARAIL AND SURMA GROUPS (OLIGOCENE EARLY MIOCENE) IN JAINTIA HILLS (MEGHALAYA) AND CACHAR (ASSAM), INDIA

H. P. SINGH, R. K SAXENA & M. R. RAO

Birbal Sahni Institute of Palaeobotany, 53 University Road, Lucknow 226 007, India

Abstract

Palynological study of the Barail and Surma groups (Oligocene-Early Miocene) exposed along Sonapur—Badarpur Road Section in Jaintia Hills (Meghalaya) and Cachar (Assam) revealed the occurrence of 22 genera and 25 species of recycled palynofossils. Of these, Permian palynotaxa (17 genera and 19 species) are better represented than the Cretaceous ones (5 genera and 6 species). Their occurrence is more frequent in Surma Group than in Barail Group. Based on recycled palynofossils, occurrence of extensive Permian deposits in Khasi and Jaintia Hills has been postulated. These deposits would have served as source for the Cretaceous sediments which also would have recycled in Barail—Surma sediments resulting into the occurrence of both Permain and Cretaceous palynofossils. It is quite likely that the Lower Gondwana (Permain) sediments at Singrimari (Garo Hills) might be a remnant of the then-existing extensive Permian deposits and that the parts of these might be concealed beneath the younger sediments.

Introduction

Recycling of palynofossils of older age in younger sediments is a common phenomenon. Proper interpretation of recycled palynofossils may be helpful in deducing source area/formation of the sediments, whereas their non-recognition may result into erroneous conclusions. Recycled palynofossils from the Indian Tertiary sediments have been recorded by several workers (Saxena & Sarkar, 1983), whereas those from the Tertiary sediments of north-eastern India have been recorded by Banerjee *et al.* (1973, Permian palynofossils from the Tertiary sediments of Upper Assam), Salujha *et al.* (1973, Permian palynofossils from the Early Miocene sediments of Meghalaya), Dutta (1978, Permian palynofossils from the Early Miocene sediments of Nagaland and Assam), Dutta (1980, Permian palynofossils from the Siwalik sequence of Arunachal Pradesh), Dutta and Singh (1980, Permian and Eocene palynofossils from the Siwalik equivalents of Arunachal Pradesh), Trivedi (1985, Permian and Late Mesozoic palynofossils from the Late Eocene sediments of Meghalaya) and Singh *et al.* (1985, Permian and Cretaceous palynofossils from the Oligocene sediments of Meghalaya and Assam).

Recently, authors made a detailed palynological study of the Barail (Oligocene) and Surma (Early Miocene) sediments exposed along Sonapur-Badarpur Road section in Jaintia Hills, Meghalaya and Cachar, Assam. This road section exposes, excellent sections of Barail Group (divisible into Laisong, Jenam and Renji formations) and Surma Group (divisible into Bhuban and Bokabil formations) of geosynclinal facies (Saxena & Tripathi, 1982). During palynological study of these sediments, a number of recycled Permian and Cretaceous palynofossils were also recovered. A list of the recycled palynofossils is given below :

Recycled Assemblage

Permian palynofossils—Caheniasaccites ovatus Bose & Kar (pl. 1, fig. 3), *Cannanoropollis* sp. (pl. 2, fig. 15), *Cuneatisporites* sp. (pl. 2, fig. 28), *Indotriradites* sp. (pl. 1, fig. 10; pl. 2, fig. 21), *Klausipollenites* sp. (pl. 2, fig. 17), *Lahirites* sp. (pl. 2, fig. 30), *Lunatisporites pellucidus* (Goubin) Maheshwari & Banerjee (pl. 1, fig. 11; pl. 2, fig. 16), *Microbaculispora*