Palynological Evidence for Epicontinental Dry Subtropical to Temperate Climatic Conditions During the Eocene in the Southeast Mediterranean

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Abstract

Palynological analysis was carried out on five outcrop samples from the Bartonian-middle Eocene Sannor Formation exposed at Gebel El-Giza El-Hamra in the Shabrawet area, Egypt. These samples cover about 40 m of section representing floodplain-deposits dominated although depositional mechanics of riverine channels, especially the high energy units. The pollen assemblages are characterized by a high predominance of Poaceae and Pinaceae, which are the most abundant taxa in the studied samples, reflective of low-energy depositional conditions. The pollen assemblages dominate by gymnosperms such as Pinus and Sequoia, indicating an environment rich in coniferous trees. The occurrence of several taxa such as Poaceae, Gramineae, Cyperaceae, Myrtaceae, and Myriaceae suggests the presence of a herbaceous vegetation. The pollen assemblages reflect an arid and warm climate, as suggested by the high percentages of Pinus and Sequoia, and the low percentages of Betula, Alnus, and Populus. The climatic conditions prevailed during the Eocene in the Southeast Mediterranean region were characterized by a dry subtropical to temperate climate, suitable for the development of coniferous forests and a rich herbaceous vegetation. The palynological assemblages provide valuable information on the paleoecological conditions and environmental changes that occurred during the Eocene in the Southeast Mediterranean region.