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Taphonomy and Paleoecology of Cenomanian Oysters (Mollusca: Bivalvia) from Egypt

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Abstract : This study provided a taphonomic alteration and paleoecology of Cenomanian oysters from the Musabaa Salama area, south western Sinai, Egypt. Three oyster zones can be recognized in the studied area, a lower one of Amphidonte (Ceratostreon) flabellatum (lower-middle Cenomanian), a middle zone of Ilymatogyra (Afrogyra) africana (upper Cenomanian) and an upper one of Exogyra (Costagyra) olisiponensis (upper Cenomanian). Taphonomic features including disarticulation, fragmentation, encrustation and bioerosion were subjected to multivariate statistical analyses. The analyses showed that the distributions of the identified ichnospecies were greatly similar within the identified oyster zones in the Musabaa Salama section. With rare exceptions, Entobia cretacea, Gastrochaenolites torpedo and Maeandropolydora decipiens are considered as common to abundant ichnospecies within the three recorded oyster zones. In contrast, and with some exceptions, E. ovula, E. retiformis and Rogerella pattei are considered as frequent to common ichnospecies within the identified oyster zones. Other ichnospecies, including Caulostrepsis cretacea, G. orbicularis, Trypanites solitarius, E. geometrica and C. taeniola, are mostly recorded in rare to frequent occurrences. Careful investigation of these host shells and the preserved encrusters and/or bioerosion sculptures provided data concerning: 1) the substrate characteristics, 2) time of encrustation and bioerosion, 3) rate of sedimentation, 4) the planktonic productivity level, and 5) the general bathymetry and the rate of transgression across the substrate.

Keywords : oysters, Cenomanian, taphonomy, palaeoecology, Sinai, Egypt
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