Geophysical Research Abstracts
Vol. 14, EGU2012-5997, 2012
EGU General Assembly 2012

Late Paleocene-Early Eocene Orthophragmines (Foraminiferida) from Galala (Egypt): Paleobiogeographic Implications

E. Özcan (1), C. Scheibner (2), and K. Boukhalfa (3)

(1) Istanbul Technical University, Department of Geology, Istanbul, Turkey (ozcanerc@itu.edu.tr), (2) Universität Bremen FB5, P.O. Box 330440, 28334 Bremen, Germany scheibne@uni–bremen.de), (3) Faculté des Sciences de Tunis, Département de Géologie, Université Tunis El Manar, Campus universitaire 2092 Tunis, Tunisia boukhalfakamel@yahoo.fr)

The composition of orthophragmines and applicability of present orthophragmines zonation to the 'southern' platforms of Tethys (e.g., platforms along northern Africa) remains ambiguous because of inadequate data. Our record from several Thanetian and early Ypresian platform- to platform margin sections at the Galala Mountains in eastern Egypt provide the opportunity to compare orthophragmines with the coeval assemblages from 'northern' (e.g., Europe, Crimea and Turkey) platforms. The Thanetian to early Eocene orthophragmines at the Galala Mountains are represented by several evolutionary lineages belonging to the genera Discocyclina Gümbel 1870, Nemkovella Less 1987 and Orbitoclypeus Silvestri, 1907, most of which have been introduced from Eurasian platforms. The late Paleocene taxa at Galala consist of two parallel-evolving lineages of Orbitoclypeus; Orbitoclypeus multiplicatus Gümbel, the most dominant species and, rare O. schopeni (Checchia-Rispoli). The accompanying discocyclinid taxa are scanty Discocyclina seunesi Douvillé, a well-documented, prominent species at Eurasian platforms and D. tenuis Douvillé, an incompletely known discocyclinid. The associations of these taxa are referred to OZ 1b (SBZ 3-4). The orthophragmines above the P/E boundary include unribbed taxa, such as Nemkovella stockari Less and Özcan, Discocyclina archiaci (Schlumberger), D. dispansa (Sowerby) and O. schopeni. The ribbed taxa, represented by several lineages such as O. bayani and O. munieri, in lower Ypresian of Eurasian platforms, are missing. Of these, the specimens of N. stockari, associated with Nummulites spp. and O. schopeni, exhibit a more advanced developmental stage than the topo-type specimens in OZ 2 beds in Turkey in having larger embryons and virtually symmetrical peri-embryonic spirals. These 'advanced' specimens, referrable to OZ 3 (SBZ 7/8), permit us to construct the N. stockari lineage in early Ypresian. The existence of N. stockari in coeval units in Tunisia, the only locality other than Galala where the early Ypresian orthophragmines are studied from the southern platforms and explained here briefly, implies that this species had occupied a large geographic area at the southern Tethyan shelves and can be regarded as early Ypresian marker. In one section, the orthophragmines in several successive levels above the P/E boundary are represented by a very primitive developmental stage of Discocyclina archiaci associated with D. dispansa and O. schopeni. As the first appearance of first two taxa coincide with OZ 3 in Europe, Crimea and Turkey, it is very probable that these assemblages may represent a transitional zonal position between OZ 2 and 3 (SBZ 5/6 and 7). The aforementioned taxa, described and illustrated for the first time from Egypt suggest a close link with those at northern shelves and their similarities with assemblages particularly from Turkish platforms are more straightforward.