THE TERMINATION OF THE TETHYS AND ITS PALAEBIOGEOGRAPHICAL CONSEQUENCES

1PILLER, W. E., 2HARZHAUSER, M., 3MANDIC, O., 4NEBELSICK, J. H., 2ROEGL, F., 5SCHUSTER, F., 5STEININGER, F.F., and 5WIELANDT, U.
1Institute for Geology and Palaeontology, Karl-Franzens-University Graz, Austria; 2Natural History Museum, Vienna, Austria; 3Institute for Palaeontology, University of Vienna, Austria; 4Institute for Geology and Palaeontology, University of Tuebingen, Germany; 5Senckenbergmuseum, Frankfurt, Germany.

The closure of the Tethys is a major palaeogeographic incision since it terminates global equatorial ocean water circulation by blocking the seaway between the Indo-Westpacific and the Mediterranean. This makes an exchange of marine biota between these bioprovinces impossible, however, it enables terrestrial organisms to move from Africa to Eurasia. To trace the closure and to elucidate the related effects, in a multidisciplinary approach Oligocene and Early Miocene sections were studied in Central Iran (Esfahan-Sirjan Basin, Qom Basin), the Zagros Mountains, Turkey (Mut Basin, Sivas Basin), Greece (Mesohellenic Trough), and Egypt (Suez area). This well dated sections clearly show, that a marine connection between the western Iranian area and the eastern Mediterranean existed up to the Late Burdigalian. Detailed analyses of various biota (corals, foraminifera, gastropods, bivalves - particularly pectinids, echinoderms, and coralline algae) show different provincialism for different organism groups exhibiting a highly complex biogeographical pattern. Generally, the Iranian biota are more closely related to that of the Eastern Mediterranean than to that of the western Indo-Westpacific (e.g., Pakistan). In respect to water circulation, the biotic distribution implies free water circulation and exchange between the Mediterranean and the western Indo-Westpacific during the Late Oligocene. Although a marine connection was present until the Late Burdigalian, an only restricted water and biota exchange was possible during the Aquitanian and Early Burdigalian.