

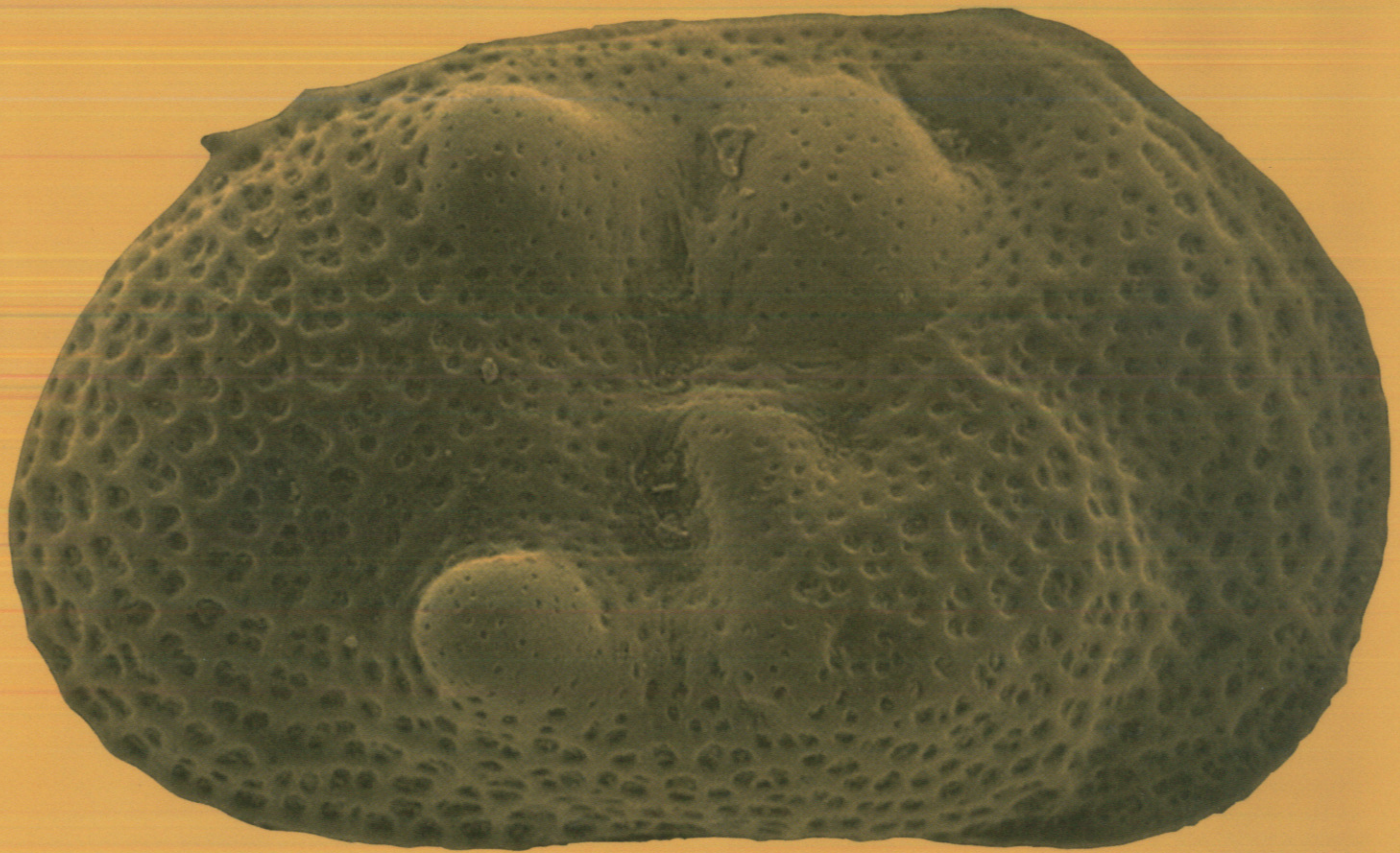
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## Advances in ostracodological research

*Selected papers from the 17th International Symposium on Ostracoda*

Elsa Gliozzi, Nevio Pugliese and Radovan Pipik, *Editors*



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# Advances in ostracodological research - Selected papers from the 17th International Symposium on Ostracoda

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The nine papers collected in this special issue of *Micro-paleontology* are a selection of contributions on presented at the 17<sup>th</sup> International Symposium on Ostracoda (ISO), which was held in Rome, Italy, on 23<sup>rd</sup>-26<sup>th</sup> July 2013, and attended by 141 scientists from 29 countries (see text-figure 1).

Since 1963, when the 1<sup>st</sup> ISO took place in Naples (Italy), this four-year recurring event has brought together researchers from all over the world who specialize in living and fossil ostracods and their applications in biology and geology (Danielopol et al. 2015). Scientific sessions dealing with paleoenvironment, paleobiogeography, paleoclimatology, biostratigraphy, genetics, taxonomy and evolution of ostracoda are included in the program of every meeting, attended by the entire ostracodological community.

Ostracoda are bivalve microcrustaceans with a carapace made of low-Mg calcite, known since the Ordovician (Siveter et al., 2014) to occur in every aquatic habitat, from hyperhaline to freshwater, and even in semi-terrestrial humid environments such as damp soil or moss. They are mainly benthonic and their occurrence is strictly controlled by such parameters as temperature, depth, salinity, substrate, aquatic vegetation, nutrients and pollution (Rodríguez-Lazaro and Ruiz-Muñoz 2012). With such notable sensitivity to environmental changes, they are invaluable proxies for paleoenvironmental and paleoclimatic reconstruction of the past. Moreover, their valves of biogenic carbonate secreted in a very short time are eminently suitable for geochemical analyses of stable isotopes and trace elements that accurately reflect past hydrochemistry (Ito et al. 2003).

In this special issue of *Micro-paleontology*, the first three papers are mainly taxonomic. Cabral et al. illustrate a brackish-marine Sinemurian ostracod fauna from the Coimbra Formation (S. Pedro de Moel, Portugal) made of 14 species and describe 3 new species. After a detailed taxonomic study, the authors have been able to reconstruct brackish and marine oscillations of the Early Jurassic palaeoenvironment. Carignano and Cusminsky analyze the family Limnocytheridae in Campanian-Maastrichtian brackish to freshwater sediments of the Allen and Loncoche Formations (Neuquén Basin, Argentina), erecting 5 new species and providing new paleogeographic and biostratigraphic data on this evolutionary successful family in the Mesozoic. Schornikov re-describes the living brackish species

*Cyprideis pedashenkoi* from Lake Issyk-Kul (Kyrgyzstan), with a discussion of the differences from the ubiquitous living cosmopolite *Cyprideis torosa*, and concludes that the lake hosts a highly endemic ostracod assemblage.

Five papers show the important role of Ostracoda as proxies in palaeoenvironmental reconstruction of shallow marine environments with five case-studies. Şafak et al. analyze the transgressive event that occurred during the Eocene in the Central Sakarya Basin (NW Anatolia/Turkey), analyzing the occurrence of 35 ostracod species with different ecological requirements. Tuncer and Tunoğlu illustrate the paleoenvironmental characters of an Early Pleistocene freshwater permanent waterbody recorded by the sedimentation of the Fevzipaşa Formation (Aydın, western Turkey). In this paper the authors use ostracods also as proxies to estimate the age of the formation. Tsourou et al. show the progressive rising of the Tardiglacial-Holocene sea-level in the Southern Evoikos Gulf (Western Aegean Sea, Greece), reconstructing the paleodepths on the base of different bathymetrically well determined ostracod assemblages. Frezza et al. and Salvi et al. use ostracods, coupled with foraminifers, as environmental proxy for the recognition of water quality of the Tyrrhenian Sea, respectively in the Southern Tuscany continental shelf (Northern Tyrrhenian Sea) and in the area of the Ex-Military Arsenal of the La Maddalena Harbour (Sardinia, Italy). In the first paper the authors show the influence of organic matter enrichment on the composition and frequency of ostracod assemblages; in the second one the changes in biotic indices, presence of tolerant species and development of abnormal tests in Foraminifera and Ostracoda due to pollution, presumably from military equipment and armament, with high content of As, Hg, Zn, Cu, Pd, Cd and hydrocarbon (chain length C>12).

The last paper, by Wang et al., illustrates the application of ostracods in biostratigraphy, presenting a chronostratigraphic frame of the Early Cretaceous based on nonmarine ostracod occurring in the western Liaoning area, NE China. After a careful taxonomic revision, the authors use ostracods as proxies for the age determination and correlation of scattered lacustrine basins of the region famous by its sites of exceptional preservation.

It should be clear from the collection of papers grouped in the present volume that a wide range of scientific topics can be in-



TEXT-FIGURE 1  
The participants in the 17th International Symposium on Ostracoda: Rome, July 2013.

investigated through ostracods. Some of them evidence the refined role of the ostracods to define the natural climate and environmental changes occurred through the time. Therefore, they could become excellent tools for defining how the animal biodiversity may respond to man-induced environmental and climate changes.

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Special thanks go to the Organizing and Scientific Committee of the 17<sup>th</sup> ISO, to all participants and to the Department of Science of Roma Tre University that made it possible, for the seventeenth time, to bring together ostracodologists from the entire world in a challenging and friendly scientific meeting, conversing painstakingly during four days of full immersion on our beloved little animals.

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