

IN MEMORY OF

**DR. RADU OLTEANU
(1942-2015)**

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Our colleague and friend Dr. Radu Olteanu passed away in Bucharest on 18 December 2015. Radu was one of the most gifted micropalaeontologist of his generation, who produced, during his scientific career, started in 1966 until present-day, important information based on intensive work, in the field and laboratory, always motivated by deep conceptual thoughts. It is the extraordinary personality of a polymath that deserves to be remembered here. The cultural interests of Radu Olteanu covered a wide spectrum of topics related to general geology, palaeontology and evolutionary biology, as well as topics belonging to humanities, like philosophical aspects of human ethics, or those related to belles-lettres.

Within the international community of ostracod researchers, the scientific reputation of Radu Olteanu is well established through a series of publications widely distributed. His taxonomic investigations were, mainly, related to questions dealing with biostratigraphy or with palaeoecology of aquatic basins within the Paratethys domain, mainly the Dacian and the Pannonian basins during the Upper Miocene, the Pliocene and the Quaternary. While most of his Romanian

colleagues dealing with ostracods used mainly descriptive methods, useful in biostratigraphy, Radu Olteanu integrated in his studies aspects of evolutionary (palaeo)biology.

Radu Olteanu has the merit to have carefully studied this huge variability of morphological traits within several ostracod groups of the ostracods of Central and Eastern Paratethys, and offered explanatory hypotheses for them. In a widely distributed publication, issued 1989, in the British *Journal of Micropalaeontology*, Olteanu explains the diversity of ostracod assemblages within one time moment as a superposition of slowly and rapid evolving taxa. Therefore, the evolution of ostracods does not resemble to a continuous gradual process, as implied in the Neo-Darwinian evolutionary model, but appears more as a rugged and discontinuous trajectory. In another publication, printed in the French journal *Geobios*, the same year with the "*Cîmpia Moment*", but co-authored with M. Vekua, it is well argued that the origin of the high morphological variation of selected traits occurring in ostracod valves of selected phylogenetic lineages is due to a combination of genetic and environmental causes. Salinity changes in time

and space are considered stressing factors which produce large spectra of morphological variability, while small genetic rearrangements of morphologic patterns act as a macroevolutionary process leading to supraspecific taxa. Continuing within this line of thought Radu Olteanu challenged us with a longstanding dilemma in evolutionary biology, namely: is the cyclical explosion of morphological variability within specific phylogenetic lineages the result of a directional process and, if positive answered, is this cued by internal organismal factors (the hypothetic process favoured by Neo-Lamarckian naturalists like Emil G. Racovitza and called *orthogenesis*)? Olteanu explains that the Paratethys gradual water chemistry down to freshwater could explain ostracod evolutionary changes as a process resembling the orthoselection. The publication printed 1998 in *Revue Roumaine de Géologie* deals with this topic. In this publication, Radu Olteanu goes deeper into this subject offering us a possible explanation to a long-standing question in evolutionary biology called *Darwin's dilemma*. It is well known that Charles Darwin proposed the process of natural selection as the motor of evolution but could not explain the origin of variation, this latter being the raw material on which environmental selection acts on the organism. For the ostracods leptocytherids, Radu Olteanu explains the origin of high morphologic variation as the result of destabilising physiological mechanisms in ostracod populations due to cyclic or recurring hydrochemical changes in the Paratethys ecosystems. This evolutionary model was further developed by Olteanu in his book *The Darwinism, in search for order; the sophisme in*

palaeontology, printed 2000. This is a real bold idea that was, during the last years, developed within a general evolutionary framework by the American biologists Marc W. Kirschner and John C. Gerhart (*cf. inter alia* their book *The plausibility of life, resolving Darwin's dilemma*, Yale Univ. Press, 2005).

The *credo* of Radu Olteanu was to investigate the relationships sedimentation-fauna, lithofacies-biofacies, water dynamics-life environment, which point out how eager was Radu Olteanu to set apart from "old dogmas" and to proceed on new scientific ways of investigation. Following this belief, he collaborated, at a high level of understanding, with sedimentologists, and our common field trips appear now as remarkable scientific events, in harmony with a growing friendship.

Guided by his open spirit, Radu Olteanu felt urged to dive deep into new cultural horizons. During the last years, Radu Olteanu published at the *Editura Academiei Române* (the Printing House of the Romanian Academy), two other books which demonstrate his wide spectrum of interests, namely *Dilemmas of anthropogenesis* (2010), followed by *Dog origin and the domestication of animals* (2013). The former book deals *inter alia* with the cultural evolution of man, while the latter is a general presentation for laymen of the many aspects of dog evolution related, also, to the evolutionary pathways of men.

Historical fiction writing was another cherished intellectual venture of Radu Olteanu. In his literary essays, Radu blended his knowledge of history with a vivid, colourful and attractive writing style.

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