Abstract

The presented thesis explores the palaeoecological aspects of the evolution of the well-known fossil oyster genus *Rhynchostreon* Bayle, 1874, a significant representative of Cretaceous fauna. The study integrates sedimentological (quartz grain size), geochemical (concentration of major oxides) and palaeobiological (taphonomy) proxies to categorise five oyster-bearing localities in the Bohemian Massif and the Pieniny Klippen Belt (Western Carpathians) into three environments with differing substrate characteristics, environmental energy levels and salinity regimes. Subsequently, the five specific palaeopopulations of *Rhynchostreon suborbiculatum* (Lamarck, 1801), occupying these habitats (including the dynamic Cenomanian nearshore, the quiet environment of the Turonian hemipelagic sea and the Cenomanian–Turonian marginal marine system influenced by variable fluvial activity), underwent a series of morphological and population studies. These studies involved the analyses of size-frequency distributions, morphotype structure, and shell thickness. Results from this multidisciplinary approach suggest that the salinity tolerance of *R. suborbiculatum* may be higher than commonly assumed, and its ecological response to climatic changes (i.e. the fluctuation of salinity, level of eutrophism, etc.) aligns with recent representatives of oysters. The thesis also highlights a lithofacial dependence in the distribution of ribbed and smooth-shelled morphotypes. From this point of view, the presence of apical ribbing on the left valve can be considered an adaptation with a stabilising function. Anchoring in the correct position at the water/sediment interface, it gives the carrier a competitive advantage in the early stages of ontogeny or under certain less dynamic (energy) environmental conditions. On the contrary, a more robust shell (in size and thickness) appears to be a more suitable alternative to increase the chances of survival in high-energy environments. Actuoecological comparisons in this thesis indicate that intraspecific competition, leading to increased population biomass (as a whole) at the expense of specific individuals, was already common in Late Cretaceous ecosystems. In particular, in the context of the latter, the results of this thesis confirm that the integration of geological and palaeobiological approaches with recent ecological perspectives enhances our understanding of the ecology of significant parts of the global ecosystem, such as oyster-dominated habitats, even in a historical context.