

Summary

The term „swimming crab“ refers to a specific appearance (= morphotype) that occurs within the phylogenetically well established taxon „true crabs“ (Brachyura). Swimming crabs differ from many other representatives of the group by several morphological and ethological features that together enable them to swim and which distinguish them from all other „swimmers“ in the animal kingdom. Particularly, swimming crabs have the rear limbs being modified as swimming legs, which in many other crabs have the shape of a walking leg.

In this work, the evolution of the swimming crab morphotype is examined according to the research program of a modern evolutionary morphology. It is shown that the morphotype differ from non-swimming crabs not only by its external, but also by its internal anatomy. While the former contains for example new data on the movability of the swimming leg, the latter is shown through differences in the musculature and skeletal structures, which are described for the first time in most species. A morphological reconstruction of the ancestors of extant swimming crabs and their relatives comes to the conclusion that the morphotype only evolved once, but has been reversed in several cases to forms that can not swim, of which the common shore crab *Carcinus maenas* is a well-known example.