Pattern of morpho-functional diversifcation of damselfishes (Pomacentridae)

Bruno Frédérich

Laboratory of functional and evolutionary morphology, University of Liège, Institut de Chimie (B6c), 4000 Liège, Belgium (e-mail: bruno.frederich@ulg.ac.be).

Coral reef fishes represent one of the most outstandingly diverse assemblages of vertebrates on the planet but our understanding of their mode of diversification remains limited. Currently, some biologists are testing various hypotheses about the evolutionary history of coral reef fishes and are exploring the factors driving their diversification. During my post-doctoral research, I explored the pattern of morphological diversification of damselfishes (Pomacentridae, 386 species). I produced a time-calibrated phylogeny based on 8 loci including 208 species and collected eco-morphological data (trophic data, body shape and oral jaws shape) in more than 120 species. Using various phylogenetic comparative methods, I have illusrated that the Pomacentridae observed repeated ecological radiation and morphological convergence during their evolutionary history. I have also highlighted the primary role of a ligament joining the mandible and the hyoid in the evolution and the morpho-functional diversification of pomacentrids.