

**Phylogeny of the Neogastropoda: A Morphological Perspective  
Considering Its Relationship with the Caenogastropoda**

Luiz Ricardo L. Simone

Museu de Zoologia da Universidade de São Paulo  
Caixa Postal 42594, 04299-970 São Paulo, BRAZIL, lrsimone@usp.br

During a decade the anatomy of almost 300 species of gastropods have been studied in detail. The first step of the project was to analyze representatives of each family of all superfamilies of the Caenogastropoda, defining phylogenetically each superfamily. The second step was to analyze the Caenogastropoda as a whole, having the superfamilies as terminal groups. The final result of these two phases of the project was to portray cladograms of each superfamily and another single cladogram with the superfamily ground plans as terminal taxa. A set of Patellogastropoda, Vetigastropoda, Neritimorpha, and Heterobranchia was used as outgroups. Based on this, Caenogastropoda can be defined by 39 morphological synapomorphies (from which six undergo reversions) and the cladogram arrangement has successively the following superfamilies: (1) Cyclophoroidea, (2) Ampullarioidea; (3) Viviparioidea; (4) Cerithioidea; (5) Rissoidae; (6) Stromboidea; (7) Calyptraeidea; (8) Naticoidea; (9) Cypraeoidea; (10) Tonnoidea; (11) Conoidea; (12) Muricoidea; and (13) Cancellarioidea. Representatives of some of the presently considered caenogastropod superfamilies, not mentioned here, were actually mixed with these taxa. Neogastropoda resulted as a monophyletic taxon, supported by seven synapomorphies. The main goal is to focus on the neogastropod superfamilies. Some aspects will be explored, such as the present concept on the Conoidea taxonomy, in particular, which must be reanalyzed. The Cancellarioidea and the Muricoidea share at least three synapomorphies, and most probably they can be considered as a single superfamily. However, because of the high diversity and large number of included families, Muricoidea is still under analysis in the present level. The analysis of the Muricoidea itself is considered as large as the remainder of the project. The present phase aims at analyzing a set of each muricoidean family, which varies from 12 to 16 (according to different authors), defining phylogenetically each family and, at the end, to analyze the superfamily as a whole, with the family ground plan as terminal taxa. Some provisional results are given in the form phylogenetic analyses of the Pseudolividae, Marginellidae, Olividae, and Muricidae.

Symposium – Relationships of the Neogastropoda