

HOW FAR CAN GASTROPOD GROUPS BE TRACED IN THE GEOLOGICAL RECORD?

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It has been shown several times that the antiquity of gastropod taxa can reliably only be provided by paleontological data and not by the analysis based only on living species. On the other hand living species provide the information needed to trace coherent groups through the geological record and to recognize extinct units. This has not always been recognized in the past, and we have therefore quite a number of taxa with only fossil representatives, among these such well known groups as the Loxonematoidea, Murchisonioidea, Euomphaloidea and Subulitoidea with predominantly Paleozoic representatives. They have repeatedly been used as source to explain some modern gastropod units that fit nowhere else. On the other hand such seemingly strictly Paleozoic units are used to demonstrate the drastic faunal changes which supposedly have also wiped out most gastropods when the Permian/Triassic transition occurred. Our research has demolished several such larger taxa or decreased their content considerably. Thus, Euomphaloidea have to be restricted around some Paleozoic genera with characteristic protoconch with a last representative in the Triassic. Loxonematoidea still represent a problem, since the type is unknown, and in the Paleozoic there are members of this "genus" belonging to the Caenogastropoda as well as to the Heterostropha. Murchisonioidea have Carboniferous and Triassic members which seem related to the Cerithioidea, but the type may just as well represent an archaeogastropod. The Subulitoidea hold Carboniferous members that seem related to the Stromboidea, while others have heterostrophic protoconch. While some groups like the Neritoidea can be traced to the Ordovician, other groups like the Neomesogastropoda and Neogastropoda have Mid-Cretaceous origin, probably coming from the same ancestors, which, however, are still unknown. Vetigastropoda can be traced into the Ordovician, but among them those with nacre seem to be separated from those with crossed lamellar structure since at least Carboniferous time. Information on the age of monophyletic groups within the Gastropoda is thus of very different quality and many of the groups with only fossil representatives are artificial assemblages of species with convergent teleoconch shape.