

## Triassic Euthyneura (Gastropoda) from St.Cassian Formation (Italian Alps) with a discussion on the evolution of the Heterostropha

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with 1 Figure and 4 Plates

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### Abstract

The genera *Cyndrobullina* and *Actaeonina* of the Cyndrobullinidae are described. The species *Cyndrobullina scalaris* is redescribed, and the three new species *Cyndrobullina pralongiana*, *Actaeonina stuorense*, *Actaeonina lancedellia* are presented. Two new genera *Dolomitella* and *Zardinella* are differentiated and placed into new families of the Heterostropha, the Dolomitellidae and Zardinellidae. The history of the potential earliest Opisthobranchiata is discussed. A general review of the geological history of the subclass Heterostropha (=Heterobranchia) in the class Gastropoda of the Mollusca during their Paleozoic and Mesozoic evolution is given.

### Zusammenfassung

Die Gattungen *Cyndrobullina* und *Actaeonina* der Familie Cyndrobullinidae werden beschrieben. *Cyndrobullina scalaris* wird revidiert und die drei neue Arten *Cyndrobullina pralongiana*, *Actaeonina stuorense*, *Actaeonina lancedellia* beschrieben. Zwei neue Gattungen - *Dolomitella* und *Zardinella* - werden differenziert und zur Aufstellung zweier eigener Familien - Dolomitellidae und Zardinellidae - der Unterklasse Heterostropha genutzt. Die Evolutionsgeschichte der bisher ältesten, möglicherweise den Opisthobranchiern angehörigen Fossilien wird diskutiert und in den größeren Rahmen der geologischen Geschichte der Heterostropha (=Heterobranchia) innerhalb der Klasse Gastropoda unter den Mollusca während ihrer paläozoischen und mesozoischen Entwicklung gestellt.

### 1 Introduction

The knowledge of the morphology of the protoconch allows to place a number of gastropods from the Upper Triassic St. Cassian Formation into the gastropod subclass Heterostropha FISCHER, 1885 (=Heterobranchia GRAY, 1840). Nearly all species of this subclass with a planktotrophic larva have a protoconch that coils in the opposite direction to the teleoconch. Thus they usually change in shell coiling from left to right during their early ontogeny (BANDEL 1991d) and at or prior to metamorphosis (in contrast to the Cirroidea COSSMANN, 1916 (BANDEL 1993b)). Distinct lineages discovered among the fossil members of this subclass can be interpreted as ancestral Opisthobranchia and are here described.