

## Taxonomy, phylogeny, and functional morphology of the foraminiferal genus *Involutina*

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Early Jurassic aragonitic foraminifers are outstandingly well-preserved in the Marmorea crust, a multiphased ferromanganese layer limiting the Schnöll and Adnet formations (Adnet, Northern Calcareous Alps, Austria). This remarkable preservation, related to the pervasive impregnation of aragonitic tests prior to their recrystallization, allowed observing unknown diagnostic features of the genus *Involutina*, which typifies the Suborder Involutinina. Thanks to a detailed examination of the Adnet specimens, this paper clarifies the taxonomy, systematic position, and phylogeny of *Involutina*. A new diagnosis, structural model, and lineage are introduced for the group. *Involutina* is the direct descendant of *Aulotortus* and the two taxa probably showed a parallel evolution. As *Aulotortus*, *Involutina* presents a high intraspecific variability and its diversity must be revised downward. Current phylogenetic and taxonomic frames of the Suborder Involutinina are firmly questioned as, contrary to previous schemes, the type-genus possesses more than one lamellar deposit per whorl. In *Involutina*, the height and distribution of papillae on the test surface is not random and probably related to a biological function. We here propose that the papillose lamellae and tube infoldings that characterize representatives of the genus were rudimentary features for light catching and symbiont positioning, respectively.

**Key words:** Foraminifera, Involutinidae, *Aulotortus* model, papillae, symbiosis, Jurassic, Austria.

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