

Phylogeny of Middle Jurassic *Striatojaponocapsa* and middle Cretaceous *Turbocapsula*, and potential of reliable radiolarian zonation

*Atsushi Matsuoka¹, Xin Li²

1.Department of Geology, Faculty of Science, Niigata University, 2.Graduate School of Science and Technology, Niigata University

The four-segmented *Stichocapsa tegiminis* Yao group gave rise to three-segmented *Striatojaponocapsa plicarum* (Yao). The evolutionary first appearance biohorizon defines the base of the *Striatojaponocapsa plicarum* Zone of Bajocian-early Bathonian age. In turn, *Striatojaponocapsa plicarum* (Yao) evolved into *Striatojaponocapsa conexa* (Matsuoka) through *Striatojaponocapsa synconexa* O'Dogerty, Gorican and Dumitrica. The evolutionary first appearance biohorizon of *Striatojaponocapsa conexa* defines the base of *Striatojaponocapsa conexa* Zone of late Bathonian-early Callovian age. This is a well-known evolutionary lineage of Middle Jurassic radiolarians and contributes to offer a reliable chronological framework. An evolutionary trend similar to the *Striatojaponocapsa* lineage is recognized in middle Cretaceous radiolarians belonging to the genus *Turbocapsula*. Four-segmented forms of *Turbocapsula* evolved into three-segmented *Turbocapsula figitiva* O'Dogerty by reducing segment number. *Turbocapsula figitiva* gave rise to *Turbocapsula costata* (Wu) by acquiring widely-spaced costae. This speciation is characterized by cladogenesis. The *Turbocapsula* lineage has a potential to produce a reliable radiolarian zonal scheme for the middle Cretaceous (Barremian-Aptian).

Keywords: radiolaria, phylogeny, zonation