

Phyletic evolution and paleogeographic distribution of the Early Cretaceous radiolarian *Turbocapsula*

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A radiolarian biostratigraphic study ranging from the latest Barremian to the Aptian of a pelagic sequence (section BB1) near Babazhadong in southern Tibet revealed phyletic relationships of species belonging to the genus *Turbocapsula*. Three species and two subspecies are included in this genus: *Turbocapsula tetras* LI & MATSUOKA, *T. fugitiva* O'DOGHERTY, and *T. costata* (*T. costata* (WU) *multicostata* LI & MATSUOKA, and *T. costata* (WU) *costata*). *Turbocapsula fugitiva* appears to have arisen from *T. tetras* by losing the septa between the third and the fourth segments. *Turbocapsula fugitiva* seems to have given rise to *T. costata multicostata* following the development of thicker costae between its two to five rows of pores. With the decrease in the number of the costae and the development in the costae, *T. costata multicostata* evolved into *T. costata costata*. The phyletic evolution of the genus *Turbocapsula* has a high stratigraphic value. An overview of localities where *Turbocapsula costata* (Wu) has been reported and lithology, depositional setting, associated fossil records, Paleomagnetic data from these localities are summarized. All these data lead to the conclusion that locations of known *T. costata*-bearing strata are restricted to the low to mid-latitude Mediterranean and eastern Tethys. This indicates that the zonation established by the phyletic evolution of the genus *Turbocapsula* cannot be utilized for Early Cretaceous zonal correlations between the Pacific, the Atlantic and other regions.

Keywords: Early Cretaceous, radiolarian, *Turbocapsula*, Phyletic evolution, paleogeographic distribution