



## Living and dead benthic foraminifera assemblages in the Bohai and Yellow Seas: seasonal distributions and paleoenvironmental applications

Zi [U+FF0D] Ye Li

Ocean University of China, QingDao, China (lzy10423@163.com)

Benthic foraminifera are particularly useful at reconstructing paleoenvironments such as water depth, temperature, the exported flux of organic carbon to the sea floor and bottom-water oxygenation. In this study, we investigated the living (stained) and dead (thanatocoenoses) benthic foraminiferal assemblages collected from the surface sediment samples from the Bohai and the Yellow Seas in year 2012. A total of 172 benthic foraminiferal assemblage samples (87 samples were collected in May and the other 85 samples were collected in November). According to the distribution characteristics of living foraminifera we divided them into four groups in May and three groups in November. After the comparison of (a).the differences in living foraminifera species and abundance between two seasons and (b).the differences in living foraminifera groups of two seasons and (c).the differences in living assemblages and thanatocoenoses. We found that Living foraminifera is very sensitive to the change in the environment where they live, they are good indicators to short periods environmental changes. The results of redundancy analysis (RDA) between living foraminifera and their corresponding living environment parameters shows that in spring *Astrononion tasmanensis*, *Nonionella stella* and *Bulimina*.sp have a positive correlation with Depth, Density, salinity, and a negative correlation with Chlorophyll. *Buccella frigid* and *Verneuilinulla advena* have a positive correlation with dissolved oxygen (DO) and a negative correlation with Temperature. *Cribrononion subincertum* has a good positive correlation with turbidity (Turb) and temperature, and a negative correlation with DO. In autumn, There is a positive correlation between *V. advena* and Salinity. *Protelphidium tuberculatum* and *Ammonia beccarii* vars. have a negative correlation with Salinity and so on. Thanatocoenoses can be used to reconstruct the history in case of having considered the problem of agglutinated foraminifera lost during burial process. In our research, we found that species like *V. advena*, *Trochammina* sp., *Ammoscalaria* sp. and *Polskiammina asiatica* are disappearing obvious species in the process of postmortem taphonomic in the area of Bohai and Yellow seas. we should take consideration of the loss of aggressive species otherwise it will underestimate the abilities of those species as indicators of environment.