

A distribution of Cretaceous to Paleogene deep-water agglutinated foraminifers in the western North Pacific Ocean

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Deep-water agglutinated foraminifers (DWAF) are often composed of the only microfossils well-preserved in deep-sea sediments without calcareous and siliceous fossils (e.g., pelagic brown clay). DWAF have been studied for a long time for determining a stratigraphic succession and obtaining paleoecological information. While their quantitative distributions in sediments from the Atlantic Ocean were well-documented (e.g., Kuhnt et al., 1992[1]), those from the Pacific Ocean were not well-understood. Wightman and Kuhnt (1992)[2] investigated DWAF in the sediment cores drilled at Deep Sea Drilling Project Sites 196 and 198, and Ocean Drilling Program Sites 800 and 801 in the western North Pacific Ocean. They reported that the faunal density and diversity of DWAF rapidly declined across the horizon that approximately corresponds to the Cretaceous/Paleogene (K-Pg) boundary.

Recently, we investigated the distribution of DWAF contained in a deep-sea sediment core of KR13-02 PC05 collected from the western North Pacific Ocean, and recognized a rapid decline of the density and diversity of DWAF across a spherule-rich layer. The spherules have a very similar appearance to those associated with the Chicxulub impact at the K-Pg boundary. A high-resolution distribution of DWAF and well-defined K-Pg boundary are expected to provide detailed DWAF stratigraphy and paleoecological information across the K-Pg boundary in the Pacific Ocean. We present a quantitative distribution of DWAF across the spherules-rich layer in the core and discuss its paleoceanographic implications.

References

- [1] Kuhnt, W. et al. (1992) *Cretaceous Res.* **13**, 467-478. [2] Wightman, W.G. & Kuhnt, W. (1992) *Proc. ODP* **129**, 247-264.