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Planktonic foraminiferal bioevents and faunal turnover across the Cretaceous Tertiary boundary in north of Iran

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In the north of Iran in the Galanderud area, similar to those known from the eastern Tethys realm, experienced unusually adverse environmental conditions for planktic foraminifera during the last two million years of the terminal Cretaceous to early Danian.
This section is studied to determine the foraminiferal biozones of the upper Cretaceous to lower Paleocene and to detect patterns of foraminiferal changes across the Cretaceous-Tertiary (K-T) boundary.
All late Maastrichtian planktic foraminiferal biozones CF1 to CF4, and Danian biozones P0 (Parvularugoglobogerina extensa) P1a (Parvularugoglobogerina eugubina) and Parasubbotina pseudobulloides are present. Faunal studies show that all but four of the Cretaceous species identified disappeared at or below the K-T boundary in zone CF1 (P. hantkeninoides). Another four species (Heterohelix globulosa, H. dentata, H. monmouthensis, G. cretacea) appear to have survived in to the early Danian. Early disappearances appear to be environmentally controlled. Coarse ornamented species with small populations disappeared first, where as small species will little or no ornamented and generally large populations tended to survive after the environment changing. This indicates a pattern of gradual and selective faunal turnover in planktonic foraminifera during the latest Maastrichtian and in to the earliest Danian that is similar to that observed at the El kef stratotype of Tunisia, as well as K-T sequences in west of Iran, Egypt, Italy, Spain and Mexico.