The faunal transition of fossil radiolarians across the Permian/Triassic boundary

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A drastic change of radiolarian fossil faunas occurred around the Permian/Triassic boundary. The detail of this change, however, was obscure at the P/T boundary because of the scarcity of our knowledge of Earliest Triassic radiolarian fauna. Induan (Earliest Triassic) chert sequences are exposed at Arrow Rocks, a small islet within Whangaroa Bay in Northland, New Zealand. Although many chert beds were recrystallized among these Induan chert sections, well-preserved radiolarians were obtained from about 10 horizons within these sections. The radiolarian fauna from these Induan cherts are composed of Albaillellarians including Albaillella sp. and Follicucullus scholasticus, several species of Latentifistulids such as genera Cauletella, Nazarovella and Ishigaum, Entactiniids such as Hegleria, Entactinosphaera and Entactinia, and spherical forms. Some primitive species of Nassellarians, which are typical among Mesozoic and Cenozoic radiolarian fauna, occur in the upper part of the Induan sequence in Arrow Rocks. Albaillellarians, Latentifistulids and Entactiniids are major constituents of Permian radiolarian fauna, and almost all of Albaillellarians and Latentifistulids had disappeared during the Early Triassic age. Therefore, all the Permian-type radiolarians had not been extinct at the P/T boundary. The faunal change of radiolarians did not occur only at the boundary, but did gradually during the Early Triassic. The two stages of OAEs of late Induan and around the P/T boundary, recognized in the Early Triassic chert sequence of Arrow Rocks, may have been influential with these faunal change of radiolarians.