

Natural assemblages of the platform-type conodont in lowermost Triassic deep-sea black claystone from northeastern Japan, with probable soft-tissue impressions

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This presentation reports the Lower Triassic conodont assemblages which belong to genus of *Clarkina* from the Lower Triassic (Griesbachian) pelagic black claystone bed of the North Kitakami Belt in northeastern Japan (Akkamori section-5; Takahashi et al., 2019). In this horizon, four fossil assemblages include a paired segminiplanate-formed P1 element (*Clarkina*) yielded.

These fossil assemblages preserve probable impressions of ‘eye’ like sensory organs which were replaced by aggregations of silicate, phosphate, and sulphide minerals. Fossilization process of these soft-tissue impressions of conodont animals could be explained in the following. (1) Soft tissue buried in the sediments starts to decay, decreasing the pH via agents such as organic acids and sulphur reduction. (2) In such low-pH regional environments, silica clastic materials (e.g. quartz and clay) then attach to organic soft tissue surfaces, which then became coated with silicates. Authigenic minerals such as phosphate, clay, and sulphides also formed under these acidic and reductive conditions. (3) Following the maturation process (diagenesis), the replication of soft tissue was stabilised, and most of the organic materials are lost.

The occurrence of several sets of fossils that retain the original positioning of the conodonts' elemental apparatuses, as well as the original presence of soft tissue, may be attributed to the process by which the conodonts' bodies were transported to the deep seafloor, and by which the activity of agents of decomposition was inhibited in near-abiotic sediments under anoxic conditions in the pelagic deep sea during the earliest Triassic.

Reference

Takahashi et al., 2019. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 524, 212–229.

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