

Chemosynthetic community on Cretaceous marine reptile falls

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The large organic-falls, e.g. whale-falls, on sea floor might play important roles for both evolution and dispersal of chemosynthetic communities (see review of Smith et al. 2015; *Annu Rev Marine Sci*). However, fossil record of the chemosynthetic communities on large organic-falls, especially in Mesozoic, is very sparse to assess its importance in the geological past. In this presentation, we review chemosynthetic communities on Mesozoic marine reptiles including sea turtle falls. The marine reptiles flourished in Mesozoic when the whales have not yet appeared. Kaim et al. (2008; *Acta Palaeo Pol*) reported accumulations of provannid gastropods and its relatives on Cretaceous plesiosaurid carcasses. This indicated that the marine reptiles could also support chemosynthetic life the same way as marine mammals. Among the marine reptiles, sea turtles is one of the few groups of large marine organisms, which survived the end-Mesozoic extinction event. Danise and Higgs (2015; *Biol Lett*) reported bone-eating *Osedax* (i.e. heterotrophic polychaetes) worm traces from Cretaceous plesiosaurid and sea turtle bones. However, it is still largely unknown which kind of chemosynthetic invertebrates associated with sea turtle-falls. We have found at least two examples of chemosynthetic communities on Cretaceous sea turtles from Yezo Group in Hokkaido, Japan. Associated chemosynthetic fauna is composed of provannid, *Hikidea* sp. and some other gastropods, thyasirid, lucinid and solemyid bivalves. The fauna is similar to the ones from Cretaceous plesiosaurid-fall and hydrocarbon seep communities of the same region. This finding indicates that the chemosynthetic communities were supported not only by plesiosaurid carcasses but also by a wider array of decomposing marine vertebrates.