

Paleocene wood-fall communities from eastern Hokkaido, northern Japan

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Deep-water sediments across the Cretaceous-Paleocene boundary, which saw the extinction of dinosaurs, ammonites and many other animals, are exposed in eastern Hokkaido, northern Japan. The Paleocene deep-water deposits of the Katsuhira Formation above the boundary include many fossilized wood fragments which are often bored by wood-boring bivalves and are associated with other invertebrates. We recovered 42 such associations preserved in small carbonate concretions within dark gray mudstones. The associations show a high diversity and consist of many small mollusks, corals and brachiopods. Most common are detritus feeders as the aporrhaid gastropod *Kangilioptera inouei* and deposit feeding protobranch bivalves. Several associations include chemosymbiotic bivalves, namely *Thyasira* sp. and the lucinid *Myrtea ezoensis*, as well as limpets which are known to feed on wood and/or wood-associated microbes. Minor faunal elements are deep-sea suspension feeders such as *Bentharca*, *Propeamussium*, and *Astarte*, and predatory gastropods including buccinids, cancellariids, naticids, turrids, cylichnids and ringiculids. On the family level, these Paleocene wood-fall communities have a similar taxonomic composition and high diversity as associations from the Paleocene Basilika Formation in Spitsbergen Island. They also resemble wood-fall associations from Upper Cretaceous strata in Hokkaido, Japan and from Eocene to Oligocene strata in Washington State, USA, by sharing nuculanid bivalves, *Thyasira*, and limpets. Interestingly, provannid gastropods are absent from the Paleocene communities in Japan and Spitsbergen, despite their presence in the above mentioned older and younger examples. Bathymodiolin mussel such as *Idas* has also not been found in the Paleocene communities reported here.