

## Bivalves from Cretaceous cold–seep deposits on Hokkaido, Japan

Steffen Kiel, Kazutaka Amano, and Robert G. Jenkins

*Acta Palaeontologica Polonica* 53 (3), 2008: 525–537 doi:<http://dx.doi.org/10.4202/app.2008.0310>

Cretaceous cold–seep deposits of the Yezo Group on Hokkaido, Japan, yield a rich and well–preserved mollusk fauna. The systematics of nine bivalve species previously reported from these deposits can now be reevaluated using newly collected fossils. The fossils include a Cenomanian specimen of *Nucinella gigantea* with a drill hole possibly made by a naticid, by far the oldest record of a drill hole from a cold seep site. In Japan, Cretaceous seep bivalve assemblages are characterized by (i) the unique occurrence of large specimens of *Nucinella* (Manzanellidae), (ii) the commonly present nuculid *Acila* (*Truncacila*), and (iii) a high diversity of lucinids, possibly as many as four distinct genera. Two new species described are the Albian *Acharax mikasaensis* (Solemyidae) and the Albian to Campanian *Thyasira tanabei* (Thyasiridae), of which the former had previously been misidentified as the oldest vesicomyid, the latter as the oldest *Conchocele*.

**Key words:** Solemyidae, Manzanellidae, Lucinidae, Thyasiridae, hydrocarbon seeps, chemosymbiosis, Cretaceous, Japan

Steffen Kiel [[steffen.kiel@gmx.de](mailto:steffen.kiel@gmx.de)], Institut für Geowissenschaften, Christian–Albrechts–Universität Kiel, Ludewig–Meyn–Str. 10, 24118 Kiel, Germany, and Dept. of Paleobiology, Smithsonian Natural History Museum, Box 37012, Washington DC 20013–7012, USA; Kazutaka Amano [[amano@juen.ac.jp](mailto:amano@juen.ac.jp)], Department of Geoscience, Joetsu University of Education, Joetsu 943–8512, Japan; Robert G. Jenkins [[robertgj@ynu.ac.jp](mailto:robertgj@ynu.ac.jp)], Faculty of Education and Human Sciences, Yokohama National University, Kanagawa 240–8501, Japan.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see [creativecommons.org](http://creativecommons.org)), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(970.4 kB\)](#)