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**The “unusual” reproduction of planktic foraminifera:  
An asexual reproductive phase of  
*Neogloboquadrina pachyderma* (Ehrenberg)**

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*Neogloboquadrina pachyderma*, one of the planktonic foraminifera that lives in temperate to subpolar water in the world ocean is widely used in high-latitude paleoenvironmental analyses. However, their life cycles and reproductive behavior are not understood sufficiently well. Here we present the first example of asexual reproduction in a planktonic foraminifer [*Neogloboquadrina pachyderma* (Ehrenberg) right-coiling form] in culture.

Twenty six specimens of living *N. pachyderma* for cultural experiments were collected from surface water in the Tsugaru Strait, between mainland Japan and Hokkaido (lat 41°28.8'N, long 141°14.2'E, water temperature: 4.7°C) using plankton tow on Mar. 2003. One week after from collecting, one *N. pachyderma* released a lot of bispherical bodies in the culture vessel. All released individuals consisted of two chambers and were uniform in shape. Moreover, we could see streaming cytoplasm in them and what appeared to be rhizopodia protruding from their spherical shells. We kept these offsprings in different temperatures and succeeded in growing six specimens at 4.7 °C and 8 °C. Particularly, in spite of the right-coiling morphotype of the parental shell, all these offsprings developed the left-coiling morphotype. Moreover, three matured offsprings produced gametes. The SSU rDNAs of these gamonts were classified as *N. pachyderma* (sin.) genotype. Thus, *N. pachyderma* may have alternating sexual and asexual reproductive phases and exhibit both coiling directions. Our findings suggest we must reconsider the phylogenetic and morphologic uses of both *N. pachyderma* coiling variations as paleoclimate proxies.