

The new record of *Philodina gregaria* from Sôya Coast and life history of the species

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Bdelloid rotifers are a key, widespread and abundant group of Antarctic microscopic invertebrates. So far, 18 species of bdelloid rotifer have been reported in Antarctica, and 12 of them are known as endemic species. But bdelloid rotifers had been reported only their existence, have not been studied their distribution, abundance and species identification in Sôya Coast. A *Philodina gregaria* is known as an endemic species in Antarctica, and it was occasionally found making huge reddish colonies in shallow ponds and wetlands of ice-free areas of Ross Sea, McMurd and Signy Island. We collected water, sediments and soil samples from several ice-free areas on Sôya Coast in JARE-60 summer season, and discovered some orange-colored patches of bdelloid rotifer at the wetland around Oyako Ike in Skalvsnes. Using the frozen samples of the colony, we tried to culture the vital bdelloid rotifers to check species and its life cycle property of the species based on the previous research reported on and a culture method of Antarctic tardigrades. These melted samples were added water, set in an incubator of 5°C, and checked once a day for several months. Based on the morphological features, the bdelloid rotifer was identified as *Philodina gregaria*. They awaked from cryptobiosis after three days, started to grow and mature, and an egg was found in their bodies by two months after. The egg hatched within its mother's body and a young individual swam out (body size: ca. 150µm), and it start to grow. It took 10 days to reach the same size as the parent individual (about 800µm) (Fig1), and then matured, started lay eggs within 2 months. Now, the culture is currently progressing to the F2 generation (Fig2).

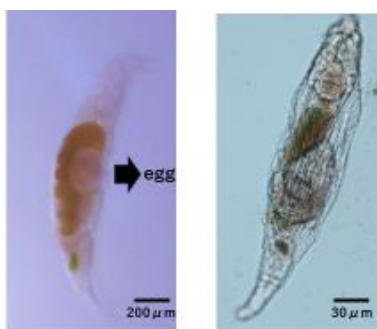


Fig1. *Philodina gregaria*

The left rotifer is adult and has an egg.

The right rotifer is young.

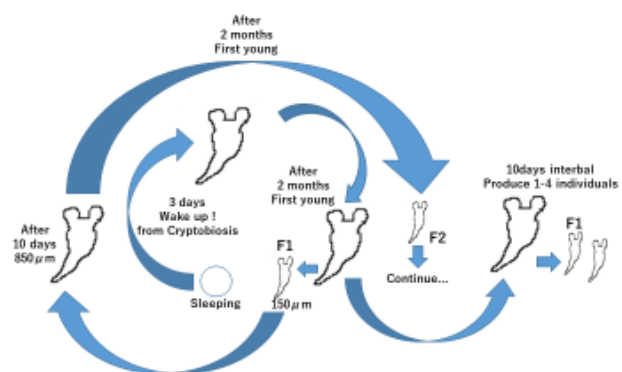


Fig2. Lifecycle of *Philodina gregaria*