

**REGIONAL DIFFERENCES IN THE LIFE CYCLE OF AN IMPORTANT SEA-ICE COPEPOD (*PARALABIDOCERA ANTARCTICA*) ALONG THE COAST OF EAST ANTARCTICA.**

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The small calanoid copepod *Paralabidocera antarctica* is known to be closely linked with sea-ice. Its presence along the east Antarctic coast makes it a good candidate for studying the biology of a species on a large spatial scale. The aims of this work were to: (1) analyse the life cycle of *P. antarctica* in the coastal zone of Terre Adélie, and (2) compare results with those from two other Antarctic stations, Syowa (Japan: 69°00'S, 39°35'E) and Davis (Australia: 68°28'S, 78°10'E). The temporal survey was conducted near Dumont d'Urville Station (66°40' S, 140° E), at an inshore site where the water depth was 41 m. Both the ice-water interface and the water column were sampled weekly with a WP2 net (2 m under the ice) and umbrella net (0-35 m), from November 2004 to December 2005. From April to December 2005, sea-ice cores (bottom 20 cm) were also collected weekly. Total abundances of the copepodite stages of *P. antarctica* clearly show (1) two peaks in the water column and two in the ice during the spring period, and one major peak in the water column in December, and (2) zero abundances during the rest of the year. From these results we deduced a long overwintering period by nauplii in the ice and rapid growth through the copepodite stages to reach the adult stage in late November. At Syowa and Davis Stations it was found that *P. antarctica* had a one year life cycle. The adult population develops over late spring/early summer and eggs are laid in the ice at the end of February at Syowa and in the sediments at the end of January at Davis. A long period of wintering in the ice as naupliar stages follows. While there are many similarities in the life cycles of *P. antarctica* studied at each station, regional differences in timing of key events most probably reflect local differences in the growth cycle of sea ice. At Syowa there is some multi-year sea-ice that facilitates reproduction by *P. antarctica* well into the summer. At Davis sea-ice routinely breaks out in late December to early January and the life cycle is completed in early summer. Finally, at Terre Adélie, where break-out of sea-ice is less predictable, the adults grow and reproduce by late spring.