

ビンセネス湾（南大洋インド洋セクター）の季節海氷域における小型カイアシ類の空間分布

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Distribution of small copepods in the seasonal ice zone in austral summer off Vincennes Bay (Indian sector, Southern Ocean)

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A lot of studies of Southern Ocean ecosystem have been focused on Antarctic krill and dominant larger copepods, although recent studies revealed that the small zooplankton were numerically predominant, being comparable to larger ones in biomass. The aim of this study is to elucidate relationship between spatial (vertical and horizontal) distribution patterns of small copepods and environmental factors related to the local scale gyre off Vincennes Bay.

Discrete depth samplings were carried out from 200 m depth (200-100, 100-50, 50-0 m) by a Vertical Multiple-opening Plankton Sampler (VMPS) with a 100 μm -sized mesh at 13 stations (stns) along two transects (6 stns along 110° E meridional transect and 7 stns along 63.5° S latitudinal transect).

At all stns, small copepods were dominant in number. The most dominant component was *Oithona* spp followed by *Ctenocalanus citer*, Oncaeidae spp., and *Microcalanus pygmaeus*. Of these taxa, the marked variety of distribution was observed in the meridional transect in *M. pygmaeus*. They were abundant at southern and western stns, but less abundant northern stations around the southern Antarctic Circumpolar Current front. This distribution pattern was likely due to re-circulation of coastal waters, which was dominant in sub-surface layer at the southern and western stns.

Along the meridional transect, a change in water masses structure was found around 108°E. The upwelling was observed east of 108° E, providing the shallow Circumpolar Deep Water (CDW) distribution. On the west side, the cold water mass originated from coastal waters was found widely in sub surface layers. Distributions of copepods were related to these physical features. The most remarkable meridional difference was observed on Oncaeidae spp.. Stations on the west side, they concentrated in the lower water temperature of 150-50 m depth, and at the eastern stns, they concentrated in the warmer CDW in 200-100 m depth.

There is a difference in composition of developmental stage of *C. citer* between the eastern and western stations. Mature copepodites, especially adult females were dominant in the western waters. On the east side, adult females decreased, but CIVs and CVs being dominant.

M. pygmaeus turned out no major difference along the latitudinal transect.