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THE ECOLOGICAL ROLE OF THE THECOSOME PTEROPOD, *LIMACINA RETROVERSA*, IN THE POLAR FRONTAL ZONE OF THE SOUTHERN OCEAN

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Limacina retroversa has been recorded in the Polar Frontal Zone in relatively high numbers during previous surveys. There have, however, been very few investigations into the trophodynamics of this species in the region. The aim of the present study was thus to determine the grazing impact of the pteropod, *L. retroversa*, in the south-west Indian sector of the Polar Frontal Zone (Southern Ocean) during austral autumn, 2004. The gut fluorescence technique was used to determine the grazing impact exerted by the pteropod and, for comparative purposes, the four dominant copepod species (*Calanus simillimus*, *Ctenocalanus* spp., *Clausocalanus* spp. and *Oithona similis*.). During the survey total integrated chlorophyll-*a* biomass ranged from 4.15 to 22.81 mg m^{-2} and was dominated by picophytoplankton at all stations. Total mesozooplankton abundances ranged from 163.84 to 2478.08 ind m^{-2} and were dominated by copepods (mean = 63 %; SD = 12 %). *L. retroversa* contributed up to 30 % (mean = 10 %; SD = 8 %) to the total numbers. *L. retroversa* exhibited a gut evacuation rate of 0.405 h^{-1} and a mean gut pigment destruction rate of 58 % (SD = 7 %). The mean daily ingestion rate of *L. retroversa* was estimated at 7578 ng (pigm) ind^{-1} day^{-1}. This rate corresponds to a community ingestion rate of between 0.048 and 2.503 mg (pigm) m^{-2} day^{-1}, or between 0.4 and 19.9 % of the total areal chlorophyll-*a* biomass daily. Results of the study indicate that, while the copepods were responsible for approximately 36 % of the total daily grazing impact within the region of investigation, the pteropod contributed up to 90 % (mean = 64 %). This result suggests that pteropods may play an important, and yet relatively unknown role during the less productive months in the Polar Frontal Zone. Further research is required to determine the seasonal role of *L. retroversa* in the region.