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ECOLOGICAL CHARACTERISTICS OF *EUPHAUSIA SUPERBA* DANA IN THE SOUTHERN OCEAN (ABSTRACT)

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In order to study the distribution of *E. superba* with special reference to environmental structure in the Southern Ocean, the KAIYO MARU occupied oceanographic sections along 75°W from December 1984 to January 1985, 90°W, the Drake Passage, 30°W (partly 20°W) and 12.5°E from December 1984 to February 1985. This report describes meridional distribution of *E. superba* which usually occurs above 200 m in depth. The characteristics of the sections were studied by comparing the gross wet weight of *E. superba* sampled by the KYMT net, the back scattering strength (SV) measured by the scientific echo sounder from 10 to 100 m, the integrated-chlorophyll-*a* from the surface to 200 m, the average integrated-temperature from the surface to 200 m ($\overline{Q}_{200}$), the average integrated-geostrophic flow from the surface to 200 m referring to the level near the sea bottom, and the vertical water temperature distribution.

Along 30°W, which crosses the Weddell Sea, the northernmost appearance of *E. superba* was 51°00'S, where $\overline{Q}_{200}$ was 2.0°C. South of 51°S, the biomass of *E. superba* gradually increased to a maximum of 28019 g/10³ m³ at 64°36'S, where $\overline{Q}_{200}$ was −1.4°C, but the biomass decreased with approach to the pack ice. The SV value of the echo sounder showed a similar tendency to the *E. superba* distribution. In the *E. superba* abundant area, the flow was slow (the eastward flow was below 4.9 cm/s). The chlorophyll-*a* increased in the *E. superba* abundant area in comparison with other areas. Such animals as Amphipoda, Copepoda, Medusa, *Thysanoessa macrura*, etc., were collected together with *E. superba*. Along the Drake Passage section the distribution area of *E. superba* was narrower than along the 30°W section, and $\overline{Q}_{200}$ was nearly below 0.0°C, same as in the case of 30°W. The northward extension of isothermal line of $\overline{Q}_{200}$ differs from section to section. The water below $\overline{Q}_{200}$=0.0°C extended as far as 780 nautical miles from the pack-ice edge on 75°E, 210 miles on 90°W, 240 miles on the Drake Passage, 600 miles on 30°W and 12.5°E. The distribution of *E. superba* corresponds fairly well to that of $\overline{Q}_{200}$.

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