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Distribution of Bipinnaria and Pilidium in Relation to Physical Structure and UV-B Light in the Water Column off Anvers Island, Antarctica

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Feeding larvae of Antarctic bottom invertebrates have proven to be scarce in the plankton and consequently our knowledge of their ecology is limited. We collected bipinnaria larvae assignable to the genus *Odontaster* and several types of pilidium larvae of nemertean worms in quantitative net tows taken during the austral spring and summer 1997-1998 and considered their distribution with respect to the density stratification of the water column and the potential exposure to UV-B (λ = 308 nm). The average number of pilidium and bipinnaria larvae in the upper 40 m of the water column was 0.5 ± 1.0 per m^3 and the highest abundance was 2.1 per m^3 in early January when 270 bipinnariae were collected at a depth of 28 m. In October and November, water density (σ_1) in the upper 40 m was relatively uniform and bipinnariae and pilidiums were collected from 2 m to the maximum depth sampled (20-38 m). Beginning in December and continuing into February, surface melt produced a marked stratification of the upper water column with a major discontinuity layer at 10-15 m, and larvae were relatively rare near the surface. Larvae drifting at a depth of 4 m during periods of ozone depletion in October and November 1997 would potentially experience average maximum UV-B exposures of 80.10 joules/m^2/hr. Later in spring and summer, under a normal ozone column, average maximum potential exposures were 2.26 joules/m^2/hr at 14 m, where larvae were abundant. The physiological and ecological consequences of high surface exposures to UV-B during periods of ozone depletion depend on several factors, including stage development and residence times of larvae near the surface, and remain largely unknown.