Composition and vertical migration calyptopes stages (Crustacea: Euphausiacea) in open southern Adriatic Sea throughout the seasons

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ABSTRACT

Composition, abundance and vertical distribution of calyptopes species were studied in the deepest area of southern Adriatic over all seasons. Hydrographic measurements confirmed that annual temperature variations are limited to the surface layer up to 100 m with minor salinity variations for the entire water column. Such stable hydrographic conditions contribute maintaining a relatively constant composition of planktonic community. Among 12 formerly known euphausiid species for the Adriatic and 13 for the Mediterranean 11 calyptopes species were recorded during this investigation. The most numerous were: *Thysanopoda aequalis*, *Euphausia krohnii*, *E. brevis*. The maximum abundance of all calyptopes was in the spring.

Four calyptopes migration patterns were observed: (i) nocturnal ascent to upper layers (*Euphausia brevis*, *E. hemigibba*, *E. krohnii*, *Nematoscelis megalops*; *Nyctiphanes couchii*), (ii) migration to upper layers at midday and night, and descent during the morning and evening (*S. maximum*), (iii) weakly-migrating or non-migrating population (*S. longicorne*), (iv) irregular migration independent from the day/night cycle (*S. abbreviatum*, *Thysanopoda aequalis*). According to the mean depth distribution, we distinguished calyptopes species that are characteristic for surface (0-50 m), sub-surface (50-200 m), mesopelagic (200-800 m), and bathypelagic layers (800-1200 m). Depending on the range of depth distribution they are characterized as scattered or non-scattered populations**.**

Keywords: calyptopis, euphausiids, Adriatic, vertical migration, composition, Mediterranean.