

STRANDING OF *NYCTIPHANES COUCHII* (BELL, 1853) (CRUSTACEA, EUPHAUSIACEA) IN THE NORTH-WESTERN SICILIAN COAST (CENTRAL MEDITERRANEAN)

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Abstract

One massive stranding of Euphausiid *Nyctiphanes couchii* was recorded along the north-western Sicilian coast of "S. Vito Lo Capo" between March 17th 2013 night and March 18th morning. Random samples were collected in order to obtain the size structure of the specimens. Considering the knowledge on the species biology and meteo-marine conditions, it has been suggested that the unusual phenomenon is due to intense upwellings in the area.

Keywords: Crustacea, Water transport, Tyrrhenian Sea

Nyctiphanes couchii (Bell, 1853) is a neritic species common in the shelf-seas of the NE Atlantic, W Mediterranean, but also in the Adriatic and Aegean Sea [1]. It provides a large fraction of plankton biomass throughout the year, constituting an important key species in the food webs for several fishes and cetaceans [2,3]. Adults total length (TL) ranging between 12 and 17 mm with an observed length at first maturity of about 12 mm. *N. couchii* breeding at age of one year, during spring and summer, with females that are able to carry about 50 eggs attached to the thoracic legs [4]. The species makes diel migrations to the surface waters at night [3], but the rate, time and amplitude of these migration are essentially unknown in the investigated area. A massive beaching of this euphausiids occurred in "S. Vito Lo Capo", a shallow bay located in the north-western Sicilian coast, between March 17th 2013 night and March 18th morning (Fig. 1).

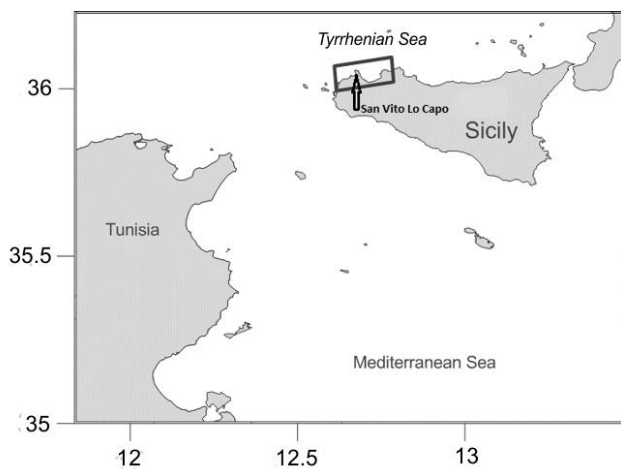


Fig. 1. Position of "S. Vito Lo Capo" bay, located along the north-western Sicilian coast.

The local Office of Coast Guard informed our Institute about the stranding, highlighting a very large patch of pink color (reporting "neonatal crustaceans") along 1 km of beach (Fig. 2). An inspection of our researchers identified the species *N. couchii* along the beach as well as the pools on rocky shores. Random samples of the specimens were collected in order to obtain a length frequency distribution (LFD). Each individual of a random sub-sample was photographed by digital camera connected with a stereomicroscope with a magnification of 8X (Leica DC 200, software Leica IM 50) and measured as carapace length (CL) (software Image Pro Plus Vers. 4.1. Media Cybernetics). Weather conditions and satellite images were verified in the three days before the stranding.

A total of 509 specimens were measured with CLs ranging between 2.2 and 5.4 mm. The shape of the distribution was unimodal with a peak of frequencies at 4 mm CL, although a sign of a component of smaller individuals could be recognized (Fig. 2).

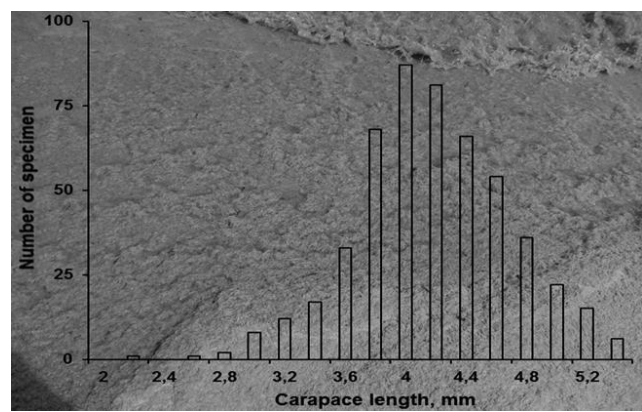


Fig. 2. Length Frequency Distribution of stranded *Nyctiphanes couchii*, overlapped to the photo of straddling specimens on the shoreline.

Although the cloudy sky did not allow to analyzed the satellite image of sea surface, the strong wind from SE, blowing at about 70 km/h, favorable to upwelling in the area, followed by rough sea from MW, supports the hypothesis that *N. couchii*, with a poor swimming ability, was stranded as consequence of oceanographic adverse condition. The stranding of small shrimps was repeatedly reported along the coasts of the "Maddalena Archipelagos" (Sardinia, central Tyrrhenian sea), being the more recent occurred on March 12th 2013 [5]; however, according to the information collected by fishermen, the massive stranding of this species was recorded for the first time in the S. Vito Lo Capo Bay.

References

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