

ADVANCED STUDY OF BEROIDAE SPECIES AND RECENTLY DESCRIBED *BEROE PSEUDOCUCUMIS* SP. NOV: MORPHOLOGY, GENETICS, GEOGRAPHY

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The present study extends a thorough investigation of the order Beroida Eschscholtz, 1829 species, performed earlier by the authors with a particular focus on *Beroe ovata*, *B. cucumis*, and recently re-described *B. pseudocucumis* sp. nov. The paper refines description of this new species. The research focuses on the morphology, genetics, and worldwide distribution of *Beroe pseudocucumis* sp. nov., providing information on the holotype and paratype, required for compliance with ICZN regulations for new species registration. In the Mediterranean Sea, this species previously classified as *Beroe ovata* and subsequently as *Beroe cucumis* sensu Mayer has been re-identified based on the authors' morphological and genetic analyses as *Beroe pseudocucumis* sp. nov. Still, *B. ovata*, which initially invaded the Black Sea, stays there as the only recognized Beroida species. This study integrates field-obtained morphological traits of examined species with the historical data and genetic information derived from sequences, focusing on the ITS1-5.8-ITS2 nuclear ribosomal DNA cluster. Contrary to the widespread opinion that *B. cucumis* represents a one widely distributed species, our findings indicate significant genetic variation within its population. *B. pseudocucumis* sp. nov. was later also discovered in other parts of the World Ocean. Furthermore, the species' tolerance to water temperature was assessed. *B. cucumis* lives only in the cold waters, whereas *B. pseudocucumis* sp. nov. and *B. ovata* – in the warm and temperate waters. All three species mainly inhabit coastal areas. Geographic distribution of the two species, i.e., *B. cucumis* and *B. pseudocucumis* sp. nov. has been considered based on expert analysis of their photographs from various online sources.

Key words: Beroida; *Beroe ovata*; *Beroe cucumis*; *Beroe pseudocucumis* sp. nov.; morphology; genetic analysis; geographical distribution; Mediterranean Sea; World Ocean

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