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THE EPIKARST OF SOME SICILIAN CAVES: AN "*ULTIMA* THULE" FOR CRUSTACEAN MEIOFAUNA?

Pollution and global change are strongly affecting groundwater habitats of several Italian regions, with impacts on their biotic communities and strong decrease of their biodiversity. Starting in 2009, our research group has been investigating the crustacean meiofauna collected from the epikarst of four caves in Sicily (Conza, Entella, Molara (PA) and Cavallo caves (AG)), representing the first research in this habitat for Sicily, and one in Calabria (Vucco Ucciardo Cave, CS). We focused our research on harpacticoid copepods, mainly of the family Parastenocarididae, a characteristic and highly specialized component of groundwater fauna worldwide. The results of our research, when compared with older records, highlight the conservation value of the epikarstic habitats and their taxocoenosis: a) *Stammericaris trinacriae* (Galassi, Pesce, Cottarelli, 1989) was collected only in 1987 from two wells in Trapani Province which have now been filled up. A new, very abundant population was collected from the epikarstic drip and rimstone pools of di Entella Cave throughout a 2-year sampling campaign conducted monthly in 2012-2014. This is the first record of a Parastenocarididae from an evaporitic cave; b) *Nitocrella stammeri* Chappuis, 1938 a representative of the family Ameiridae with perimediterranean geonemy, was extinct in one of the 19 recorded Sicilian populations (STOCH, 2003-2004): the well of Porto Palo (SR) (monitored in 2005), where it was originally collected in 1978. A new populations of this species was collected in 2014 from a typical carbonatic karstic fissured acquifer, in the rimstone pools of Cavallo Cave; c) a new species of *Cottarellicaris*, presently under study, was collected in 2013 and 2015 from rimstone pools in Vucco Ucciardo Cave; d) *Stammericaris diversitatis* (Cottarelli and Bruno, 2013) was collected in several occasions from 2009 to 2014 from the rimstone pools and epikarstic drip of Conza Cave, where it is endemic. All the caves where these species were collected are dry caves, exclusively recharged by percolating rainfall. Hence, the rainfall-fed epikarst underlying unfarmed soil could represent a refuge for sensitive taxa, when compared with other more easily polluted habitats (e.g., the hyporheic zone of streams and rivers), and should be carefully protected since it could harbor endangered, endemic or rare species.

References

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