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Discovery of a stygobiotic population of the epigean diaptomid calanoid *Eudiaptomus intermedius* (Steuer, 1897) in Central Italy

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In the frame of a research project aimed at investigating the crustacean diversity of the vast karstic network of the Frasassi Cave (Marche, Central Italy), several stygobiotic populations of a cave-dwelling diaptomid calanoid copepod were discovered. The populations are planktonic, never found in the hyperbenthos, and widespread in the saturated karst of this complex groundwater system, represented by lakes always characterized by a chemoautotrophic benthic layer, which represents the main source of organic matter for the stygobiotic fauna living in this challenging environment. The specimens show typical stygomorphic features, such as anophtalmy, depigmentation, reduced fecundity (the females bring no more than 2-4 large eggs) and a continuous reproduction through the year. Surprisingly, the morphology of both males and females is almost identical to that of the widespread epigean species *Eudiaptomus intermedius*, which normally lives in permanent and temporary water bodies in Slovenia, Croatia, and Central and Northern Italy. In order to evaluate whether the morphological similarity may be related to the cryptic species-concept, frequently evocated for other stygobiotic species, with disjunct distribution in several groundwater systems in the world, two mitochondrial molecular markers (16S and Cyt-b) were used to test whether the Frasassi cave populations are to be considered as belonging, or not, to the epigean species *E. intermedius*. The molecular approach supported the identity of the cave population as *Eudiaptomus intermedius*, and shed new light on the interpretation of the "adoption" of stygomorphic traits in subterranean populations belonging to an epigean species.