Subitaneous eggs of freshwater copepods pass through fish guts: Survival, hatchability, and potential ecological implications

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ABSTRACT: We measured the survival of subitaneous eggs of two calanoid (*Eudiaptomus gracilis*, *E. graciloides*) and two cyclopoid (*Cyclops abyssorum*, *Macrocyclops albidus*) freshwater copepods after they had been consumed by fish. Unexpectedly, over 80% of the calanoid eggs and 30-59% of the cyclopoid eggs were morphologically intact in fish feces. Subitaneous eggs of *E. graciloides* showed similar proportions of gut passage as dormant resting eggs. About 70-80% of the calanoid eggs and 35-50% of the cyclopoid eggs released nauplii within 3 d. Hence, a total of 50-70% of the calanoid eggs and 11-29% of the cyclopoid eggs survived ingestion and gut passage. Survival was slightly higher because of shorter gut passage time when the fish had been prefed natural plankton compared with hungry fish. We interpret digestion resistance of subitaneous eggs in copepods as an adaptation to fish predation on egg-carrying females.