



## ***Euphilomedes chupacabra* (Ostracoda: Myodocopida: Philomedidae), a new demersal marine species from coastal Puerto Rico with male-biased vespertine swimming activity**

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### **Abstract**

A new species of Philomedidae is described: *Euphilomedes chupacabra* from coastal Puerto Rico. This is the first described species of *Euphilomedes* from the Western Atlantic, a genus of particular interest for its sexually dimorphic lateral eyes. As *E. chupacabra* can be easily caught in large numbers and may have a short generation time, it has potential to be used as a laboratory animal to study questions of dimorphic eye development. Males of *E. chupacabra* are abundant in plankton for a short time; the average time of peak activity was 103.6 minutes after sunset, and the density range at the peak time on different nights was 24 to 862 males/m<sup>3</sup>. Males were preferentially attracted to pier lights. There is evidence that species from all myodocopid families display vespertine (post-sunset) migratory behavior, probably associated with mating. We hypothesize that vespertine planktonic mating is an adaptive behavior that exists in many myodocopids and is either the ancestral state for the group or partially or fully convergent in multiple species.

**Key words:** systematics, taxonomy, lateral eye, laboratory animal, behavior, sunset, plankton

### **Introduction**

Philomedidae is a family of ostracod crustaceans inhabiting marine systems around the world. Of particular interest is the diversity of eye phenotypes within the family. Some species show extreme sexual dimorphism in lateral eyes (Kornicker 1992: Appendix 2), some lack eyes altogether (Kornicker 1975; Kornicker 1991), and males of at least one species possess a novel field of eye tissue adjacent to the compound lateral eye (Riviera & Oakley submitted).

Here we describe *Euphilomedes chupacabra*, a new species of philomedid from Puerto Rico. No other *Euphilomedes* has been described from the Western Atlantic, although Cohen (1989) reported two individuals of an undescribed species from an outer fore-reef sand trough near Carrie Bow Cay, Belize. The new species is similar in morphology to species like *Euphilomedes morini*, known only from waters off California. For two reasons, the new species could prove valuable as a laboratory organism to study the mode of development of its sexually dimorphic lateral eyes. First, individuals can be collected easily in large numbers using hand nets. Second, the warm water habitat of the Caribbean might be correlated with a shorter generation time, making rearing in the lab possible, as has been demonstrated for the myodocopid *Skogsbergia lernerii* Kornicker, 1958 (Cohen 1983). Species of *Euphilomedes* from colder waters of California have long generation times (Baker 1977), and experimental laboratory rearing suggests that colder water is correlated with longer generation times (Cohen 1983, and references therein).

All material is deposited in the Santa Barbara Museum of Natural History (SBMNH). Abbreviations: l.v., lateral view; m.v., medial view.