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Podosiridae, a new family of North Atlantic deep sea amphipod (Crustacea, Amphipoda)

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Bellan-Santini (2007) described *Podosirus vaderi* from a vent community on the Mid-Atlantic Ridge in the Azores Triple junction zone. At the time she placed it in the family Eusiridae and pointed out similarities to the Podoceridae. The original description of *Podosirus vaderi* was based on an ovigerous female. Male characteristics are not known, but based on established trends among similar amphipods without apical robust setae on uropods 1 and 2, it is presumed that there is minimal sexual dimorphism. Because the female has the first gnathopod smaller than the second and a well developed male-like second gnathopod, it is probable that the male will have similar gnathopods. Whether calceoli occur in the male is also not known.

Bellan-Santini (2007) originally placed *Podosirus vaderi* in the composite Eusiridae (as defined by Barnard & Karaman 1991). This family arrangement was not accepted by Bousfield & Hendrycks (1995, 1997) who re-established the original families Eusiridae, Calliopiidae and Pontogeneiidae. In the sense of Barnard & Karaman (1991) or Bousfield & Hendrycks (1995) *Podosirus vaderi* is not a eusirid because: maxilla 2 is without an oblique setal row on the inner plate which is much shorter than the outer plate; all coxae are similar in size; there are no lobes on coxa 5; there are dorsal carinae on pereonites 1–3; urosomite 1 is elongate; and the telson is entire. Likewise it is not a calliopiid because the body is subcylindrical; maxilla 2 inner plate is much shorter than the outer plate; coxae are all similar in size and pereopod 5 coxa is without lobes; pereopods 3–4 merus is linear and much longer than the propodus; pereopods 5–7 basis is linear; uropods 1–2 are without apical robust setae and uropod 3 has styliform rami. It is not a pontogeneiid because all coxae are about the same size; carinae occur on the pleonites; there are no apical robust setae on the rami of uropods 1–2; uropod 3 rami are styliform; and the telson is entire.

Podosirus vaderi is in fact most similar to amathillopsid amphipods (fig. 1). They share many core characters such as: similarly shaped heads, particularly the lateral cephalic lobes and the anteroventral corners; long mandibular palps with elongate third articles; long maxillipedal palps with stabbing dactyli; subcylindrical bodies; gnathopods 1 and 2 subchelate; pereopods 5–7 with basis linear; pleonites with dorsal carinae. The curved pereopods with elongate meri occur in both groups. Urosomite 1 is elongate in both taxa, but longer in *Podosirus*. *Podosirus vaderi* shares the following group of diagnostic character states with the Amathillopsidae: coxa 1 smaller than coxa 2, pereopods 5–7 of equal length, pleon with dorsal carina, uropod 3 outer ramus subequal in length with peduncle, telson entire.

Podosirus cannot be placed within the Amathillopsidae, however, because of the following significant differences: accessory flagellum absent; gnathopod 1 carpus longer than propodus; gnathopod 1 smaller than gnathopod 2; no coxae acuminate; coxa 4 and 5 subequal in size and urosomite 1 elongate. The family **Podosiridae fam. nov.** is therefore erected here for *Podosirus vaderi* Bellan-Santini.

Methods

The description of Podosiridae is generated from a DELTA database (Dallwitz 2005) to world amphipod families and subfamilies. The diagnostic characters, **bolded** in the description, are generated from DETA program Intkey. The study is based entirely on the literature. Attempts to borrow the original material were unsuccessful.