



A preliminary revision of the *Synalpheus paraneptunus* Coutière, 1909 species complex (Crustacea: Decapoda: Alpheidae)

ARTHUR ANKER¹ & EVA TÓTH²

Instituto Smithsonian de Investigaciones Tropicales, Apartado 0843–03092, Balboa, Ancón, Panamá, República de Panamá / Smithsonian Tropical Research Institute, Naos Unit 0948, APO AA 34002, USA. E-mail: ¹ankera@si.edu, ²evatoth2004@yahoo.com

Table of contents

Introduction	2
Taxonomy	3
Family Alpheidae Rafinesque, 1815	3
Genus <i>Synalpheus</i> Bate, 1888	3
<i>Synalpheus paraneptunus</i> Coutière, 1909	4
<i>Synalpheus duffyi</i> n. sp.	8
<i>Synalpheus riosi</i> n. sp.	11
<i>Synalpheus brevidactylus</i> n. sp.	14
<i>Synalpheus bocas</i> n. sp.	17
<i>Synalpheus belizensis</i> n. sp.	18
Discussion	26
Preliminary key to the six presently known species of the <i>Synalpheus paraneptunus</i> Coutière, 1909 complex	28
Acknowledgments	29
Literature cited	29

Abstract

The western Atlantic *Synalpheus paraneptunus* Coutière, 1909 species complex is revised based on the type material kept in the National Museum of Natural History, Smithsonian Institution, Washington DC (USNM), specimens from Dominica, Puerto Rico and some other Caribbean localities (USNM), and fresh material recently collected in Belize and Panama. The type material of *S. paraneptunus*, composed of three specimens, appears to include more than one species. Therefore, *S. paraneptunus* is restricted to the holotype from Morrosquillo, Colombia, dredged from 77 m. The identity of the two paratypes, one of them an abnormal female, could not be satisfyingly determined. Five species are described as new. *Synalpheus duffyi* **n. sp.** is described based on the recently collected material from Isla Grande, Panama. The colony structure of *S. duffyi* **n. sp.**, including the large number of sexually undeveloped individuals and one larger breeding female, suggests eusocial life style. A further presumably eusocial species, *S. riosi* **n. sp.**, significantly larger than *S. duffyi* **n. sp.**, is described based on 139 specimens from Dominica, all apparently forming a single colony. Furthermore, three pair-living species are recognized: *S. brevidactylus* **n. sp.** from Isla Grande and Bocas del Toro, Panama; *S. bocas* **n. sp.** from Bocas del Toro, Panama, *S. belizensis* **n. sp.** from Carrie Bow Cay, Belize. All reported species are contrasted to each other morphologically; occurrence (in large groups vs. pairwise) and colour patterns are also considered where data is available. A provisionary key to six known species of the *S. paraneptunus* complex is provided.

Key words: Caridea, Alpheidae, *Synalpheus*, snapping shrimp, cryptic taxa, new species, sponge-dwelling, eusociality, intersex, western Atlantic, Caribbean