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Remarks on the deep-sea genus *Chalarostylis* (Cumacea: Lampropidae)

NATALIA A. ALBERICO[1], DANIEL ROCCATAGLIATA[1] & UTE MÜHLENHARDT-SIEGEL[2]

[1,] *Instituto de Biodiversidad y Biología Experimental y Aplicada (IBBEA, CONICET), Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Ciudad Universitaria, C1428EGA, Buenos Aires, Argentina.*

[2,] *Universität Hamburg, Biozentrum Grindel und Zoologisches Museum, Martin-Luther-King-Platz 3, D-20146 Hamburg, Germany*
Corresponding author. E-mail: nalberico@bg.fcen.uba.ar

Abstract

Chalarostylis is a deep-sea genus close to *Hemilamprops* but easily distinguished from the latter mainly by its robust first pereopod. However, this appendage is frequently broken off at the anterior margin of the basis, making the identification of the species of the genus difficult. Regarding *Hemilamprops brenkei*, both the adult male holotype and the additional specimens herein reported from the Weddell Sea and the Guinea, Argentine and Brazilian Basins exhibit a huge first pereopod. Thus, this species is transferred to *Chalarostylis* and its description completed. Two other species until now in *Hemilamprops*, *H. canadensis* and *H. longisetae* are also transferred to *Chalarostylis*. In addition, an unknown species of *Chalarostylis* from the Bay of Biscay for which no name is given is briefly described. The diagnosis of this genus is emended.

Key words: *Chalarostylis*, *Hemilamprops*, taxonomy, deep-sea Atlantic

Introduction

Norman (1879) erected the genus *Chalarostylis* to accommodate *C. elegans*, a new species he described based on a single adult male collected off Rockall, North East Atlantic (199 m). This old description consists of a short text, with no accompanying figures. In addition, this specimen has its first pereopod broken off at the basis-ischium articulation. Gerken & McCarthy (2007) redescribed and illustrated *C. elegans* based on the re-examination of the male holotype and a female collected off the Porcupine Bank (1564 m). This female has a robust first pereopod bearing a brush of setae on its dactylus. Based on this information, Gerken & McCarthy (2007) emended the diagnosis of the genus and transferred *Dasylamprops guanchi* Reyss, 1978 from the Canary Islands to *Chalarostylis*, making *C. guanchi* the second species of the genus.

In the present contribution *Hemilamprops brenkei* Mühlenhardt-Siegel, 2005 is partially redescribed, and since this species also has a strong first pereopod, it is transferred to the genus *Chalarostylis* as well. Two other species until now in *Hemilamprops*, i.e., *H. canadensis* Vassilenko, 1988 and *H. longisetae* Corbera, 2006 are also transferred to *Chalarostylis*. In addition, an unknown species of *Chalarostylis* from the Bay of Biscay (2138–2246 m), provisionally identified as *Chalarostylis* sp. A, is briefly described. Finally, the diagnosis of the genus is emended.

Material and methods

The material examined was collected by (1) the RV "Polarstern" during the Antarctic deep-sea expeditions ANDEEP II (ANT-XIX/4) and ANDEEP III (ANT-XXII/3) carried out in 2002 and 2005, respectively; (2) the RV "Meteor" deep-sea expeditions to the Angola and Guinea Basins (DIVA II, 2005), and to the Argentine and Brazilian Basins (DIVA III, 2009); and (3) the RV "Jean Charcot" POLYGAS survey to the Bay of Biscay done in 1972.

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Chalarostylis brenkei (Mühlenhardt-Siegel, 2005) n. comb. is the only species of this genus recorded up to now from the South Atlantic. This species, formerly reported by Mühlenhardt-Siegel (2005) from the Angola Basin, is now recorded also from the Guinea Basin (less than one degree north of the Equator), the Weddell Sea, the Argentine and the Brazilian Basins. All these records are mapped in Fig. 6.

Chalarostylis is a deep-sea genus close to *Hemilamprops* but easily distinguished from the latter mainly by its robust first pereopod. In addition, this appendage shows useful diagnostic characters to separate the species of the genus, viz.,

(1) the ischium is rectangular, i.e., with inner and outer margin equal in length (*C. guanchi*), or wedge-shaped, i.e., with inner margin tapering and obliquely articulated with the merus (*C. elegans*, *C. brenkei*, *C. canadensis*, and the POLYGAS material herein studied);

(2) the carpus and propodus are armed with serrations (*C. elegans*) or strong teeth (*C. canadensis* and the POLYGAS specimens herein studied), or are unarmed (C. brenkei and C. guanchi); and

(3) the number of strong simple setae on dactylus vary from 6 to 9, and the propodus may have a strong simple seta too.

The strong setae of dactylus are simple, and thus are not expected to act as a filter. In addition, the first pereopod is not sexually dimorphic, therefore this appendage doesn't seem to be involved with courtship behaviour.

Unfortunately, the first pereopod is usually broken off at the basis-ischium joint. In the absence of this appendage, the species of *Chalarostylis* can be separated from those of *Hemilamprops* by having the accessory flagellum of the first antenna shorter than the main flagellum, the telson distinctly shorter than the uropod peduncle, and the male second antenna not extending beyond the second abdominal segment. Besides, the first maxilliped is herein proposed as a diagnostic appendage by having a short basis and a merus / carpus joint at an angle greater than 45 degrees (see Fig. 1D).

Norman (1879) stated that the first antenna of *C. elegans* has "the basal joint covered with numerous spines [teeth], especially on the underside". However, in the redescription presented by Gerken & McCarthy (2007) the margins of the first antenna of the holotype are described as smooth. Most probably, these authors have overlooked these teeth since this old preserved specimen is, as noted by them, in a poor shape and soft.

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