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### ► **To cite this version:**

Jean-Claude Dauvin, Denise Bellan-Santini, Richard Kaïm-Malka. Importance of systematic in knowledge and protection of biodiversity, the case of the genus Haploops Liljeborg, 1856 (Ampeliscidae). 17th International Colloquium on Amphipoda (17th ICA), Sep 2017, Trapani, Italy. pp.409-410. <hal-02060969>

**HAL Id: hal-02060969**

**<https://normandie-univ.hal.science/hal-02060969v1>**

Submitted on 7 Mar 2019

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## Importance of systematic in knowledge and protection of biodiversity, the case of the genus *Haploops* Liljeborg, 1856 (Ampeliscidae)

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### ABSTRACT

A complete revision of the *Haploops* Liljeborg, 1856 (Ampeliscidae) species is in course with important collections coming from the North Atlantic mainly during the BIOICE and BIOFAR programmes. Till today, *Haploops* accounted 23 species; several species remained to describe. We propose a review of the available data on this genus including taxonomy, biogeography, ecology and biology and some ways of research in the future on this genus.

### KEY WORDS

*Haploops*; Ampeliscidae; systematic; ecology; biodiversity.

Received 30.04.2017; accepted 31.05.2017; printed 30.06.2017

Proceedings of the 17<sup>th</sup> International Colloquium on Amphipoda (17<sup>th</sup> ICA), September 4<sup>th</sup>-7<sup>th</sup> 2017, Trapani (Italy)

Since the overview of the genus *Haploops* Liljeborg, 1856 (Ampeliscidae) at the end of the 1980's (Dauvin & Bellan-Santini, 1990), several new species of this genus had been described in the Atlantic Ocean (see Kaim-Malka et al., 2016 and reference therein). So, the number of species have increased from 15 at the end of the 1980s to 23 nowadays. New records were mainly acquired during the BIOICE and BIOFAR programmes for the North Atlantic Ocean or the Bay of Biscay. With 15 species the North Atlantic Ocean is the richest (Fig. 1). Several species were re-described and other new species remained to be describe.

Moreover, some recent ecological studies mainly from the North-eastern Atlantic (Rigolet et al., 2011, 2012, 2014a,b; Koop et al., 2013; Dubois et al., 2015) and in the North-Atlantic and Arctic Ocean focused on the role of the *Haploops* high density as an 'ecosystem engineer' in the macrobenthic communities functioning (Highsmith &

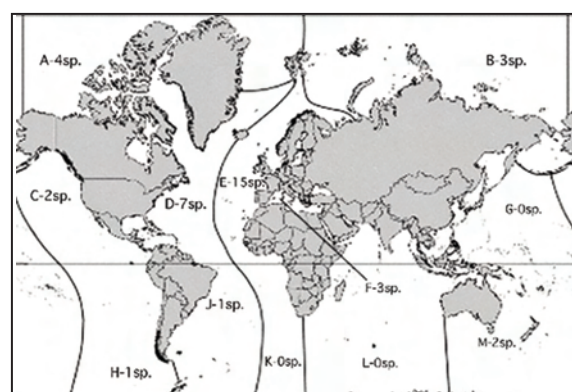


Figure 1. Geographical distribution of the 23 species of *Haploops* from the world's Ocean: *H. abyssorum* (E); *H. antarctica* (H); *H. antennata* (E); *H. carinata* (D, E); *H. dellavallei* (F); *H. descansa* (M); *H. fundiensis* (D); *H. gas-cogni* (E); *H. islandica* (D, E); *H. laevis* (A, B); *H. longisetata* (E); *H. lodo* (C, E); *H. nirae* (F, E); *H. oonah* (M); *H. proxima* (F, E); *H. robusta* (E); *H. setosa* (A, D, E); *H. sibirica* (A, B); *H. similis* (D, E); *H. tenuis* (E); *H. tubicola* (A, B, C, D, E); *H. vallifera* (D, E); *H. meloi* (J).

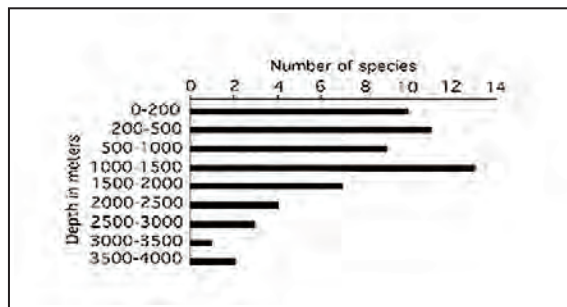


Figure 2. Samples depth range of the 23 species of *Haploops* from the world's Ocean. Nine species were only recorded in a single depth range: 3 (0–200 m); 2 (500–1000 m); 3 (1000–1500 m); 1 (3500–4000 m).

Coyle, 1992; Shields & Hughes, 2009; Conlan et al., 2013). Secondary production and relation with the pockmarks are studied in the north of the Bay of Biscay which show high link between the dense populations of the tubicolous *H. nirae* and the formation and the colonisation of the pockmarks (Rigolet et al., 2014; Dubois et al., 2015).

New biogeographical data concern also deep-sea species (Bellan-Santini & Dauvin, 2008; Barry et al., 2013). *Haploops* are found from shallow water to 3,800 m (Fig. 2). In this note, we present new available information on the genus *Haploops* since the Dauvin & Bellan-Santini (1990) overview, on the taxonomy, biogeography, ecology and biology and propose some ways of research in the future. We emphasize the importance of a high quality taxonomy process, based on precise descriptions, accompanied by topographical and ecological data, as accurate as possible. These data may be of major efficiency in the context of a reasonable estimate of the biodiversity temporal changes and the need to preserve the marine ecosystems.

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