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

Jean-Claude Dauvin, Denise Bellan-Santini, Richard Kaïm-Malka

*Biodiversity Journal*, 2017, 8 (2): 409–410

**MONOGRAPH**

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

Jean-Claude Dauvin[1*], Denise Bellan-Santini[2] & Richard Kaïm-Malka[2]

[1]Normandie Univer., UNICAEN, Laboratoire Morphodynamique Continentale et Côtière, CNRS UMR 6143M2C, 24 rue des Tilleuls, 14000 Caen, France
[2]Université d'Aix-Marseille, IMBE, Station Marine d'Endoume, Rue Batterie des Lions, F-13007 Marseille, France
[*]Corresponding author, email: jean-claude.dauvin@unicaen.fr

**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 17th International Colloquium on Amphipoda (17th ICA), September 4th-7th 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 &

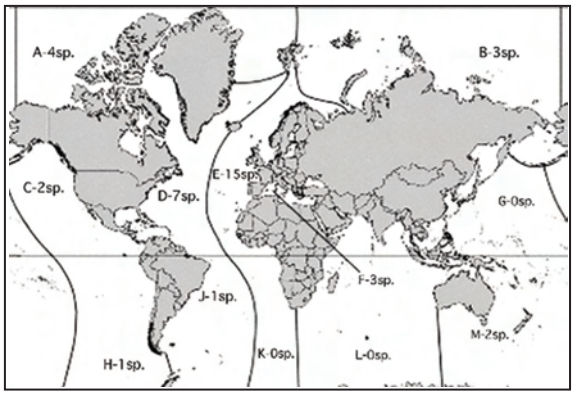


Figure 1. Geographical distribution of the 23 species of *Haploops* from the world's Ocean: *H. abyssorum* (E); *H. antarctica* (H); *H. antennata* (E); *H. carinata* (D, E); *H. dellavallei* (F); *H. descansa* (M); *H. fundiensis* (D); *H. gas-cogni* (E); *H. islandica* (D, E); *H. laevis* (A, B); *H. longiseta* (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).

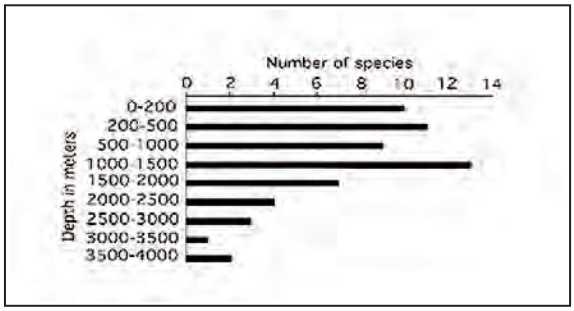


Figure 2. Samples depth range of the 23 species of *Haploops* from the world's Ocean. Nine species were only recorded in a single depth range: 3 (0–200 m); 2 (500–1000 m); 3 (1000–1500 m); 1 (3500–4000 m).

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.

## REFERENCES

Barry J.P., Buck K.R., Lovera C., Brewer P.G., Seibel B.A., Drazen J.C., Tamburri M.N., Whaling P.J., Kuhnz L. & Pane E.F., 2013. The response of abyssal organisms to low pH conditions during a series of CO2-release experiments simulating deep-sea carbon sequestration. Deep-Sea Research II, 92: 249–260.

Bellan-Santini D. & Dauvin J.C., 2008b. Contribution to knowledge of the genus *Haploops*, a new location for *Haploops lodo* (Crustacea: Amphipoda: Ampeliscidae) from the bathyal North Atlantic Ocean with a complement to the description of the species. Journal of Natural History, 42: 1065–1077.

Conlan K., Hendrycks E., Aitken A., Williams B., Blasco S. & Crawford E., 2013. Macrofaunal biomass distribution on the Canadian Beaufort Shelf. Journal of Marine Systems, 127: 76–87.

Dauvin J.C. & Bellan-Santini D., 1990. An overview of the amphipod genus *Haploops* (Ampeliscidae). Journal of the Biological Association of the United Kingdom, 70: 887–903.

Dubois S.F., Dérian, F., Caisey X., Rigolet C., Caprais J.C. & Thiébaut E., 2015. Role of pockmarks in diversity and species assemblages of coastal macrobenthic communities. Marine Ecology Progress Series, 529: 91–105.

Highsmith R.C., Coyle K.O., 1992. Productivity of arctic amphipods relative to gray whale energy requirements. Marine Ecology Progress Series, 83: 141–150.

Kaim-Malka R., Bellan-Santini D. & Dauvin J.C., 2016. On some *Haploops* species collected in the North Atlantic Ocean with the description of *Haploops islandica* n. sp. (Crustacea: Gammaridea: Ampeliscidae) [Contribution to the knowledge of the *Haploops* genus. 8.]. Zootaxa, 4179: 42–76.

Kopp D., Le Bris H., Grimaud L., Nérot C. & Brind' Amour A., 2013. Spatial analysis of the trophic interactions between two juvenile fish species and their preys along a coastal–estuarine gradient. Journal of Sea Research, 81: 40–48.

Rigolet C., Le Souchu P., Caisey X. & Dubois S.F., 2011. Group sweeping: feeding activity and filtration rate in the tubiculous amphipod *Haploops nirae*. Journal of Experimental Marine Biology and Ecology, 406: 29–37.

Rigolet C., Dubois S.F., Droual G., Caisey X. & Thiébaut E., 2012. Life history and secondary production of *Haploops nirae* in the Bay of Concarneau (South Brittany). Estuarine, Coastal and Shelf Science, 113: 259–271.

Rigolet C., Dubois S.F. & Thiébaut E., 2014a. Benthic control freaks: Effects of the tubiculous amphipod *Haploops nirae* on the specific diversity and functional structure of benthic communities. Journal of Sea Research 85, 413–427

Rigolet C., Thiébaut E. & Dubois S.F., 2014b. Food web structures of subtidal benthic muddy habitats: evidence of microphytobenthos contribution supported by an engineer species. Marine Ecology Progress Series, 500: 25–41.

Shields M.A. & Hughes D.J., 2009. Large-scale variation in macrofaunal communities along the eastern Nordic Seas continental margin: comparison of four stations with contrasting food supply. Progress in Oceanography, 82: 125–136.

Valério-Berardo M.T., 2008. Six new species of deep water Ampeliscidae (Crustacea: Amphipoda) from Brazilian Coast. Zootaxa, 1844: 1–24.