



The mesopelagic copepod *Gaussia princeps* (Scott) (Calanoida: Metridinidae) from the Western Caribbean with notes on integumental pore patterns

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Abstract

The mesopelagic calanoid copepod *Gaussia princeps* (Scott, 1894) was originally described from the eastern Atlantic. It has been recorded in tropical and subtropical latitudes of the world, but has been reported only occasionally from the northwestern tropical Atlantic (NWTa). Comparative morphological studies, particularly of males, have not included specimens from the NWTa. Based on a collection of zooplankton from the Caribbean Sea, an adult male of *G. princeps* is illustrated in detail and its morphology compared with other sources in order to explore intra- and interoceanic differences within the species. The proportions and structure of the Caribbean specimens agree with the description of specimens from the eastern Atlantic and the Indian Ocean, except in details of the ornamentation of some appendages. Additional intra- and interspecific differences were found in the number of integumental pores on the male antennules, swimming legs 1–4, and fifth legs. Integumental pores are consistently fewer in the Caribbean male than in the Indo-Pacific and eastern Atlantic counterparts, but *G. princeps* remains as the species of the genus with the largest number of pores on the swimming legs, a potential species-defining character within the genus. The Caribbean record, at 25–50 m deep, is the shallowest occurrence known for this mesopelagic form in the NWTa and represents the first finding of the genus and species in the western Caribbean and in Mexican waters.

Key words: zooplankton, Mexico, marine diversity, integumental pores

Introduction

The marine mesopelagic copepod genus *Gaussia* Wolfenden, 1905, which belongs to the calanoid family Metridinidae Sars, 1902, was a monotypic taxon for decades. Currently, this genus contains four bioluminescent species, which have different distributional patterns in the world's ocean (Vervoort 1965; Björnberg & Campaner 1988, 1990; Soh *et al.* 1998; Defaye 1998). The most widely distributed species is *G. princeps* (Scott, 1894), known from temperate and tropical latitudes of all major oceans (Vervoort 1965; Soh *et al.* 1998). The original description of this widespread species was based on a single male from the Gulf of Guinea, in the eastern Atlantic (Scott 1894); females have been briefly illustrated from different geographical areas (Owre & Foyo 1967; Saraswathy 1973b; Björnberg & Campaner 1988). The morphological differences distinguishing the known species of *Gaussia* are subtle but consistent (Defaye 1998; Soh *et al.* 1998).

Relatively little information is available about the males of these species; they have been only superficially treated for *G. sewelli* Saraswathy, 1973 and *G. intermedia* Defaye, 1998; the male of *G. asymmetrica* Björnberg & Campaner, 1988 remains unknown. A complete redescription of *G. princeps*, published by Soh *et al.* (1998), included adult males and females from the Indian Ocean and compared the male to the holotype from the Gulf of Guinea. There are no detailed illustrations or descriptions for male specimens of *G. princeps* from the western Atlantic.