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Revision of the bryozoan genus *Gephyrotes* Norman, 1903 (Cheilostomata, Cribrilinidae) with the description of two new taxa

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Abstract

The finding of a new species of *Gephyrotes*, *G. moissettei* n. sp., in Miocene deposits of southern Italy, prompted a revision of this distinctive cribrimorph taxon, leading to the redescription and first SEM documentation of the type material of nine species. Five of them are retained in *Gephyrotes*, namely the type species, *G. nitidopunctatus*, and *G. fortunensis*, *G. spectabilis*, *G. quadriserialis*, and *G. convexus*, to which *G. moissettei* n. sp. is added. The only Recent species is the genotype, while all the others are fossils from North America, Europe and northwest Africa. Two further species are transferred to the genus *Tricephalopora*, namely *T. saillans* and *T. levigata*, whereas *Spiniflabellum* n. gen., is established to accommodate a species from the Caribbean area, *S. spinosum*, previously assigned to *Gephyrotes*.

Key words: Bryozoa, Cenozoic, Recent, *Gephyrotes*, *Tricephalopora*, *Spiniflabellum* n. gen., Atlantic-Mediterranean area

Introduction

The cheilostome bryozoan genus *Gephyrotes* Norman, 1903 was established to accommodate Recent *Escharipora figularis* f. *nitido-punctata* Smitt, 1868, common in Norman's 1875–1878 collections from West Greenland and the Bergen Fjord. Derived from the Greek *gephyra*, bridge, the genus name alludes to its main diagnostic character, viz the elevated bridge formed by the fusion of the two distalmost pairs of costae that project frontalwards and form the proximal rim of the peristome. The same feature was subsequently recognized in some fossil species from North America by Canu & Bassler (1920) and from southern Spain by Pouyet (2000). Nevertheless, since its introduction, this genus has only been infrequently cited in the literature because its representatives appear to be rare, either in number of species or number of specimens. The finding of a new species in Miocene samples from southern Italy has provided the opportunity to thoroughly revise the genus. The present paper, besides the description of the new Miocene species, documents the revision and redescription of all species included to date in the genus *Gephyrotes*. SEM studies of original type material has led to the transfer of some of the fossil species to *Tricephalopora* Lang, 1916, the species of which have a similar collar-like structure, which, however, has a completely different origin and in which the species better fit. A new genus is introduced herein for a unique Recent species previously also included in *Gephyrotes*.

Material and methods

Existing material in museum collections, including type specimens, as well as specimens newly collected in the field have been used for this study. Fossils of a new species of *Gephyrotes* were collected in 2005 in the course of collaborative work with researchers from Calabria University. The specimens came from a layer of quartz sand at the top of a small coral reef. The section (38.649072° N, 16.038541° E) is located near the military airport of Vibo Valentia (Calabria, Italy). Based on larger benthic foraminifera and ostracods, this section is dated as late

eastward in the Tethys, for which comparable data for *Gephyrotres* are still lacking, whether fossil or in the Recent Indo-Pacific (e.g. Di Martino & Taylor 2015; Di Martino *et al.* 2015).

Comparative morphological affinities and geographical distribution may suggest the derivation of *Gephyrotres* from *Tricephalopora*. Species of the two genera share the presence of the kenozooidal network that partly covers and protects frontal parts of zooids and tends to be reduced in *Gephyrotres*. Whereas kenozooids are implicated in the construction of the proximal peristome in *Tricephalopora*, the equivalent structure in *Gephyrotres* is formed from the bifurcations of the distalmost pair of costae. Based on the kenozooidal model proposed by Gordon & Voigt (1996), the frontally expanded kenozooids in Cretaceous pematoporine cribrilinids (e.g. *Tricephalopora*) seem to have played an important role in the evolution of umbunuloid and, ultimately, lepralioid frontal shields in ascophoran bryozoans.

The new genus *Spiniflabellum* appears unrelated to *Gephyrotres*, showing affinities with other genera of cribrimorphs such as *Cribrilina*, *Collarina* and *Reginelloides*.

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