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Three new polar species of *Sternaspis* Otto, 1821 (Polychaeta: Sternaspidae)

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Abstract

Two sternaspid species, *Sternaspis fossor* Stimpson, 1853 and *S. scutata* (Ranzani, 1817), have been recorded from many localities including polar or subpolar environments. The study of the collections of five major institutions cannot confirm their presence in high latitudes. On the contrary, the specimens are regarded as different, undescribed species, and are herein described as one from Arctic environments, *S. buzhinskajae* **n. sp.**, and two others from Antarctic localities: *S. monroi* **n. sp.**, and *S. sendalli* **n. sp.** A key to identify all *Sternaspis* species is included.

Key words: Beaufort Sea, Bering Sea, Chukchi Sea, Scotia Sea, Weddell Sea, key

Introduction

Sternaspid polychaetes are commonly found among sedimentary substrates all over the world. Polar and subpolar sternaspid species are poorly known, although they can be dominant in some Arctic regions (Balsom et al. 2002). Malmgren (1867:87) made the first description for a subpolar sternaspid: *Sternaspis islandica*, from a fjord on the central eastern Iceland coast. The description was short, but included eight illustrations of diagnostic features; however, without giving any explanation Levinsen (1883:211) regarded this species as a junior synonym of *S. fossor* Stimpson, 1853. This latter species was originally described from off the Bay of Fundy, Canada with a single illustration (Stimpson 1853:29). Jirkov (2001) recorded *S. scutata* Ranzani, 1817 (sic) from the Arctic Ocean, and regarded *S. islandica* as a junior synonym, although the former species was described from the Mediterranean Sea and probably because the Mediterranean species was regarded as cosmopolitan. Recently, *S. islandica* has been reinstated and redescribed by Sendall & Salazar-Vallejo (2013:37), but was not included in their key.

The next contribution from the Arctic region specifically the Bering Sea was made by von Marenzeller (1890); who undertook a review of the status of *S. fossor* by comparing it with three other species (*S. affinis* Stimpson, 1864, *S. costata* von Marenzeller, 1879, and *S. scutata* (Ranzani, 1817)), and changed his mind regarding the validity of his previously described species from Japan. This change in the status of his own species is difficult to explain because von Marenzeller regarded Stimpson's description of very little utility. He made a comprehensive description of specimens he had seen from the Bering Sea housed in Vienna, and provided fine illustrations showing subtle and consistent differences between different species (von Marenzeller 1890:5–8). The ventral shields of *S. fossor* (von Marenzeller 1890: Pl. 1, Fig. 4) show significant differences in relation to *S. costata*. For example, the specimens he identified as *S. fossor* had a fan clearly projected from the posterolateral shield corners, with a crenulated margin**.** A recent redescription of *S. fossor* has shown that the fan is not **as** projected (Sendall & Salazar-Vallejo 2013, Fig. 9). Consequently, this material from the Bering Sea is different from *S. fossor* and is described below as *S. buzhinskajae* **n. sp.**

Despite a series of expeditions to Antarctic or subantarctic localities during the late 1890s or early 1900s, the first records of sternaspids from the Southern Seas were made by Monro (1930); he recorded *S. scutata*, and subsequent authors followed him. However, Antarctic specimens include two distinct morphological patterns and are herein described as two new species. Most known sternaspid species have been redescribed and reinstated elsewhere (Sendall & Salazar-Vallejo 2013). Some records for other species deserve further study, especially those reported as being cosmopolitan. Recently it has been shown that even in boreal environments, marked genetic

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