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The genus *Zelentia* is an amphi-boreal taxon expanded to include three new species from the North Pacific and Atlantic oceans (Gastropoda: Nudibranchia: Trinchesiidae)

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Abstract

The taxonomy of *Zelentia* Korshunova, Martynov & Picton, 2017, a genus of aeolidacean nudibranchs recently separated from *Trinchesia* Ihering, 1879, is reviewed. Using previous and novel data, including the defining morphological characters of a supplementary gland inserted into the penis, which is also armed with stylet, it is demonstrated that the genus *Zelentia* is a well-established amphi-boreal taxon. A phylogenetic tree and haplotype network for species of the genus *Zelentia* are provided. A new species from the Northeastern Pacific, *Zelentia willowsi* sp. nov. and a second Northeastern Pacific species, *Zelentia nepunicea* sp. nov., previously thought to be “*Cuthona*” *pustulata* (Alder & Hancock, 1854), are described using morphological and molecular data. A new species from the North Atlantic and sub-Arctic White Sea, *Zelentia roginskae* sp. nov., is also described using morphological and molecular data. The Northeastern Pacific *Zelentia nepunicea* sp. nov. and “*Cuthona*” *punicea* Millen, 1986, which externally share a similar reddish colouration, are shown to belong to two different families since “*Cuthona*” *punicea* possesses a supplementary gland inserted into the vas deferens and an unarmed penis, characters of the genus *Cuthonella* Bergh, 1884, belonging to the Cuthonellidae family. Despite belonging to different families and having significant internal differences, externally *Cuthonella punicea* and *Zelentia nepunicea* sp. nov. appear similar, thus the new sympatric species of *Zelentia* is given the name *Z. nepunicea* sp. nov. which means non *punicea*. To facilitate identification and avoid further confusion we provide a comparative table which encompasses diagnostic morphological data for Northeastern Pacific species of the families Cuthoniidae, Cuthonellidae and Trinchesiidae which are externally similar to the described new taxa.

Keywords: morphological and molecular data, new species, nudibranchs, trinchesiids, cuthonellids, *Zelentia*

Introduction

Aeolidacea is one of the largest groups of nudibranch molluscs with members exhibiting one of the most sophisticated defensive systems in the animal kingdom—finger-like dorsal processes (cerata) armed with functional nematocysts harvested from their cnidarian prey (Martin *et al.* 2009). A major taxonomic reassessment of the aeolidacean nudibranchs has been proposed recently (Korshunova *et al.* 2017a, b, 2018), and several unexpected paraphyletic events have been revealed. Aeolidaceans also represent considerable species diversity worldwide and numerous taxa still need to be described. For instance, the North Pacific and Atlantic nudibranch faunas are among the most well-studied molluscs in the world (Alder & Hancock 1845–1855; MacFarland 1966; Thompson & Brown 1984; Picton & Morrow 1994; Behrens & Hermosillo 2005, and many others) yet recent publications indicate that further study may reveal even greater species diversity (e.g. Padula *et al.* 2014; Lindsay