



Three new sea stars (Asteroidea: Solasteridae & Pterasteridae) from the Aleutian Islands

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Abstract

Two new species of *Solaster*, and a new species of *Pteraster* are described from the nearshore waters of the Aleutian Islands and compared to congeners from the region. *Solaster hexactis* **sp. nov.**, *S. spectabilis* **sp. nov.**, and *Pteraster willsi* **sp. nov.**, are distinguished by the characteristics of the paxillar, marginal and adambulacral spines, and (in *Solaster*), the number of rays. The distributions of the new species and keys are provided.

Key words: *Solaster*, *Pteraster*, Biodiversity, New species, AKMAP, Alaska

Introduction

Since the monograph of W.K. Fisher (1911), little taxonomic research on sea stars in the Aleutian Islands has been published with the exception of A. H. Clark (1939), and the recent works by Clark and Jewett (2010; 2011). Fisher (1911) recognized seven species of *Solaster* Forbes, 1839, which had ranges that include the Aleutian Islands: *S. endeca* (Linnaeus, 1771); *S. stimpsoni* Verrill, 1880; *S. dawsoni* Verrill, 1880; *S. paxillatus* Sladen, 1889; *S. hypothyris* Fisher, 1910; *S. papposus* (Linnaeus, 1767); and *S. borealis* (Fisher, 1906). Similarly, D'yakonov (1950) included four species of *Solaster* with distributions that presumably include the Aleutians: *S. endeca*, *S. stimpsoni*, *S. dawsoni*, and *S. paxillatus*. Recent work on the molecular phylogeny of the Valvatacea by Mah and Foltz (2011) removes the family Solasteridae from the order Velatida, and places it in the order Valvatida.

Fisher (1911) and D'yakonov (1950) both listed six species of the genus *Pteraster* Müller and Troschel, 1842, with ranges that include the Aleutians: *P. militaris* (O. Müller, 1776); *P. marsippus* Fisher, 1910; *P. temnochiton* Fisher, 1910; *P. tessellatus* Ives, 1888; *P. pulvillus* Sars, 1861; and *P. obscurus* (Perrier, 1891) (with *P. octaster* Verrill, 1909 as synonym).

The present report describes three new sea stars from the Aleutian Islands, two in the genus *Solaster*, *S. hexactis*, **sp. nov.** and *S. spectabilis* **sp. nov.** and one in the genus *Pteraster*, *Pteraster willsi* **sp. nov.**

In 2006–2007 the Alaska Department of Environmental Conservation (ADEC) and the University of Alaska, Fairbanks conducted the Alaska Monitoring and Assessment Program (AKMAP), sampling the nearshore (< 20 m) waters of the Aleutian Islands, mainly by scuba divers. In the course of this survey numerous new species of marine organisms were discovered (Kawai *et al.* 2008; Clark & Jewett 2010; Eash-Loucks *et al.* 2010; Clark & Jewett 2011), including the three new species described here.