

LUMPY BUMPY THE SEA STAR: REVISITING AN INTERNAL MOLLUSCAN PARASITE OF SEA STARS.**Vanessa Lowe.**

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During annual NOAA Fisheries stock assessment surveys, the Fisheries Resources Pathobiology team monitors diseases of fish and shellfish in the Bering Sea, Alaska. As a routine practice, we record rare cases and new anomalies. In summer 2010, a grossly misshapen sea star of the species *Leptasterias polaris* was encountered with large swollen regions and will be presented as a case study. The sea star arms were parasitized by multiple individuals of a gastropod in the family Eulimidae, known to be the only gastropod group parasitizing echinoderms. The body plan of the endoparasite, likely a species of *Asterophila*, is modified from most gastropods. Within the arm of the sea star, females deposit and brood an egg mass, leading to the physical distortions of the host as eggs develop into veliger larvae. Parasitism of sea stars by *Asterophila japonica* in the Chukchi Sea, Alaska was examined in 1980, but currently the range of this parasite in the Bering Sea is unknown. We will present molecular and morphological data on this case.

HETEROSIS ANALYSIS ON INTERSPECIFIC HYBRIDS BETWEEN *HALIOTIS DISCUS HANNAI* AND *H. GIGANTEA*.**Xuan Luo, Caihuan Ke, Weiwei You.**

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Haliotis discus hannai is the most important species of gastropods in aquaculture for China, however many abalone farms have been particularly affected by germplasm degradation of *H. discus hannai*. *H. gigantea*, which possesses excellent disease resistance, is a valued commercial species along the coast of Japan. This species was introduced from Japan to China for mariculture in 2003. A 2 × 2 complete diallele cross was conducted between *H. discus hannai* (D) and *H. gigantea* (G) to produce hybrid abalones. Growth performance and survival of the reciprocal hybrids of *H. discus hannai* and *H. gigantea* were investigated. Results showed that the fertilization and hatching rate of the reciprocal hybrids were significantly lower than those of the parental species ($P < 0.05$). At grow-out stage, both reciprocal hybrids grew at similar rates ($P > 0.05$), but significantly faster than their parents ($P < 0.05$). Moreover, survival was similar in reciprocal hybrids and one of conspecific group *H. gigantea*, while a significantly higher mortality occurred in the other conspecific group *H. discus hannai* ($P < 0.05$). The superiority of growth and survival of the reciprocal hybrids over their parental controls indicates hybrid vigor and has significant implications for the improvement of abalone aquaculture in China.

DIFFERING SUSCEPTIBILITY TO COMMENSALS AND POTENTIAL PATHOGENS COULD GIVE *MYTILUS GALLOPROVINCIALIS* AN ADVANTAGE OVER *MYTILUS EDULIS*.**Sharon Lynch, E. Morgan, O. Hegarty, M. Galvin, S.C. Culloty.**

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In Ireland, both wild and cultured *Mytilus* spp. are widely distributed on all coasts. *Mytilus edulis*, *Mytilus galloprovincialis* and hybrids of both species are found on the west and south coast of Ireland while *M. edulis* is found on the east coast. In Wales, it is believed that only *M. edulis* is present. This study investigated the health status of these mussels. Samples of wild and cultured *Mytilus* spp. were collected from twenty-four sites encompassing all coasts of Ireland and the Welsh Coast, at different times of the year over several years. In total, eight hundred and forty-one *Mytilus* spp. were examined. Habitat description and the environmental factors influencing the study sites were recorded. All *Mytilus* spp. samples were screened using histology to determine health status and the presence of any potential pathogens/parasites. At certain study sites a cPCR was carried out to differentiate which mytilid species were being screened. Copepods, ciliates, trematode spp. prokaryote inclusion bodies and *Nematopsis* spp. were detected in the mussels. The prevalence of infection and/ pathological changes varied among the sites and were observed in both mytilid species and hybrids.

AN UPDATE ON SURVEY FINDINGS AND RESEARCH EFFORTS ON OLYMPIA OYSTERS (*OSTREA LURIDA*) IN CANADA.**Sean E. M. MacConnachie.**

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Olympia oysters, *Ostrea lurida* Carpenter, 1864, were first assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2000 and were listed under the Species At Risk Act in 2003 as a species of Special Concern. Fisheries and Oceans Canada posted a five-year management plan in response to the listing. The goal of the plan is to maintain stable populations of Olympia oysters in BC. The indicator used to measure success in attaining that goal is to measure the relative abundance of Olympia oysters at index sites over the six year period 2008–2013. Thirteen index sites were identified, based on a combination of pre-determined criteria (previous data, accessibility, collaborative interest and representative of potential threats) and random selection. All 13 sites have had baseline surveys completed. Surveys have also been conducted to verify historical records; beaches with historical records were targeted and adjacent sites were added opportunistically. A total of 196 beaches were surveyed between