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Decapod Crustacea of the Californian and Oregonian Zoogeographic Provinces

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Abstract

Approximately 325 species of decapod crustaceans are reported from the Californian and Oregonian zoogeographic provinces, a figure that includes all freshwater, estuarine, and marine (intertidal zone to 4000 m) decapods from the area. At least six of these species have not been reported from California since 1921, three species cannot be recognized from their descriptions and lack type material and illustrations and another five species may have ben reported from mistaken localities or are the result of misidentification.

The area is mostly inhabited by cold-temperate species. Genera endemic to the northeastern Pacific include the anomurans *Janetogalathea* (Galatheidae), *Acantholithodes*, *Phyllolithodes*, and *Rhinolithodes* (Lithodidae); and the brachyurans *Mimulus* (Epialtidae), *Loxorhynchus*, and *Scyra* (Pisidae). Families that are particularly diverse in species include carideans of the families Thoridae, Pandalidae, and Crangonidae; anomurans of the families Hapalogasteridae, Lithodidae, and Paguridae and brachyurans of the families Epialtidae, Cancridae, and Pinnotheridae. Crayfishes of the genus *Pacifastacus* (Astacidae) were endemic to the area prior to human introductions elsewhere. At least three estuarine and two freshwater decapods belonging to the families Palaemonidae, Cambaridae, Panopeidae and Varunidae have been introduced into the area and maintain reproducing populations.

Keys are provided to all the families, genera, and species treated. A major synonymy, short description, and information on habitat, biogeography, type locality, and color in life are provided for each species. References are provided to the original descriptions of all taxa mentioned. Additional remarks on taxonomy, symbiotic associations, characteristic behavior, and other information that may help in identification also are given.

New generic designations for *Hippolyte affinis* Owen, 1839 and *H. layi* Owen, 1839 (Thoridae) are supported. Expanded diagnoses are given for *Heptacarpus franciscanus* (Schmitt, 1921) (Thoridae), *Isocheles pilosus* (Holmes, 1900), and *Paguristes parvus* Holmes, 1900 (Diogenidae).

Key words: Decapoda, Dendrobranchiata, Penaeoidea, Sergestoidea, Pleocyemata, Stenopodidea, Caridea, Astacidea, Palinura, Polychelida, Axiidea, Gebiidea, Anomura, Brachyura, Californian zoogeographic province, Oregonian zoogeographic province.

Introduction

Approximately 325 species of decapod crustaceans live along the west coast of North America between Puget Sound, Washington, U.S.A. and Magdalena Bay, Baja California, Mexico, the Californian and Oregonian zoogeographic provinces. Garth & Wicksten (1993) gave an account of the history of crustacean studies in the area. Studies of northeastern Pacific decapods started in the early 1800's. The last complete guide to the decapods of California was *Marine Decapod Crustacea of California*, by W.L. Schmitt (1921). Schmitt's pioneering book, largely based on collections by the U.S. Fisheries steamer *Albatross*, is now badly out of date. Shallow-water decapods are also mentioned in more recent guidebooks to intertidal animals, such as those by Morris *et al*. (1980), Ricketts *et al*. (1985), and Carlton (2007). Jensen (1995) published good color photographs of shallow-water species, along with brief information on range and identifying features. These more recent works nevertheless provide limited information on the species. There are few recent works on the species of deeper benthic habitats (outside of the range of scuba diving, or 40 m). Wicksten (2002) listed pelagic species. Revisions of the nomenclature, new systematic interpretations of families and higher taxa, descriptions of new species, range extensions, and natural history information published since 1921 are scattered in the literature of at least seven nations and written in four languages. Many valuable works on decapods are old and unavailable except through major libraries. Even with the use of the Internet, information may be difficult to find because many works have not been scanned.

Starting in 1991, J. Haig and J. Garth of the University of Southern California and I initiated plans to write an updated synthesis on the decapods of California. Changes in editors, loss of funding, constant changes in computer format and other problems delayed publication. Other potential co-authors declined to undertake the task of writing the sections of the manuscript after the deaths of Garth and Haig. I eventually enlarged and updated the original manuscript to include areas to the north and south of California. The Scripps Institution of Oceanography Library produced the manuscript as a website (http://repositories.cdlib.org/sio/lib/26) in 2008. The present work updates, corrects, and expands on the material in the website in a format suitable for publication.