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New and lesser known species of Chrysopetalidae, Phyllodocidae and Syllidae from south California (Phyllodocida, Aciculata, Annelida)

FREDRIK PLEIJEL¹, MARIA TERESA AGUADO² & GREG W. ROUSE³

¹University of Gothenburg, Department of Biological and Environmental Sciences – Tjärnö, SE-45296 Strömstad, Sweden.

E-mail: fredrik.pleijel@gu.se

²Departamento de Biología (Zoología), Facultad de Ciencias, Universidad Autónoma de Madrid, Canto Blanco, 28049 Madrid, Spain.

³Scripps Institution of Oceanography, UCSD, 9500 Gilman Drive, La Jolla CA 92093-0202, USA.

Abstract

Two species are described from shallow waters in La Jolla in southern California, the chrysopetalid *Dysponetus populonectens*, new species, and the phyllodocid *Pterocirrus burtoni*, new species. The syllid *Brachysyllis lagunae* (Hartman, 1961), new combination (previously in *Dioplosyllis*), and the phyllodocids *Eulalia aviculiseta* Hartman, 1936, *Eulalia gracilior* (Chamberlin, 1919), new combination (previously in *Steggoa*), *Pterocirrus montereyensis* (Hartman, 1936), and *Eumida longicornuta* (Moore, 1906) are redescribed from types and newly collected specimens. *Sige californiensis* Chamberlin, 1919 is treated as a *nomen dubium*. COI sequences are provided for all included species.

Key words: Chrysopetalidae, Phyllodocidae, Syllidae, new species, redescrptions, California

Introduction

This study is based on material collected by SCUBA in the vicinity of Scripps Institution of Oceanography (Scripps) in La Jolla in southern California. The majority of the specimens are from holdfasts of *Macrocystis pyrifera* that were collected and studied in the laboratory and from scrapings from the pilons of Scripps pier. All relevant type material was also studied for comparison with the newly collected specimens. We describe two new species, one chrysopetalid and one phyllodocid, and redescribe four poorly known phyllodocids and one syllid. For comparisons with closely related taxa we also included COI sequences of all the studied species. All specimens are deposited at the Scripps Institution of Oceanography Benthic Invertebrate Collection (SIO-BIC).

Material and methods

All specimens were collected by SCUBA. The specimens were obtained, either by decantation, or by letting the samples stand covered with sea water and collecting them as they come to the surface. Live specimens were relaxed with 7% magnesium chloride in fresh water and photographed prior to fixation. Specimens for standard microscopy were fixed in 10% formaldehyde in sea water for a few days, rinsed in fresh water and transferred to 70% alcohol, and specimens for scanning electron microscopy (SEM) were fixed in 1% osmium tetroxide in the magnesium chloride solution for one hour, rinsed in fresh water, conserved in 70% alcohol, critical point-dried and sputter-coated. Specimens preserved for SEM (scanning electron microscopy) were relaxed, fixed in 1% osmium tetroxide in seawater for one hour, cleaned in distilled water, stored in 80% ethanol, critical point dried, sputter coated with gold, and examined at Scripps Institution of Oceanography in a FEI Quanta 600 Scanning Electron Microscope (chrysopetalids and phyllodocids) and at the Servicio Interdepartamental de Investigación (SIDI) of the Universidad Autónoma de Madrid, Spain (syllids). Specimens for DNA sequencing were fixed directly in 95% alcohol. DNA extraction and amplification of a fragment of the mitochondrial Cytochrome oxidase subunit 1(COI)