



Five new species of the damselfish genus *Chromis* (Perciformes: Labroidei: Pomacentridae) from deep coral reefs in the tropical western Pacific

RICHARD L. PYLE*, JOHN L. EARLE[†] & BRIAN D. GREENE[‡]

Department of Natural Sciences, Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817-2704, USA.¹

E-mail: *deepreef@bishopmuseum.org, [†]earlej001@hawaii.rr.com, [‡]bgreene@hawaii.edu.

Table of contents

Abstract	3
Introduction	3
Material and methods	4
<i>Chromis abyssus</i> , new species	6
<i>Chromis brevirostris</i> , new species	10
<i>Chromis circumaurea</i> , new species	15
<i>Chromis degruyi</i> , new species	18
<i>Chromis earina</i> , new species	21
Acknowledgements	25
References	26
Appendix: Embedded external hyperlinks	29

Abstract

Five new species of the damselfish genus *Chromis*² (Perciformes³: Labroidei⁴: Pomacentridae⁵) are described from specimens collected from deep (>60 m) coral-reef habitat in the western Pacific by divers using mixed-gas closed-circuit rebreather gear. Two of the five new species (*C. abyssus* and *C. circumaurea*) are each described from specimens taken at a single locality within the Caroline Islands (Palau and Yap, respectively); one (*C. degruyi*) is described from specimens collected or observed throughout the Caroline Islands, and two (*C. brevirostris* and *C. earina*) are described from specimens collected from several localities throughout the Caroline Islands, Fiji, and Vanuatu. All five species can easily be distinguished from other known *Chromis*, and from each other, on the basis of color and morphology. These new species represent the first five scientific names prospectively registered in the official ICZN ZooBank registry⁶. Moreover, the electronic online edition of this document has been specially formatted with many embedded links to additional resources available online via the internet to enhance access to taxonomically-relevant information, and as a demonstration of the utility of international standards for biodiversity informatics.

Key words: *Chromis abyssus*, *Chromis brevirostris*, *Chromis circumaurea*, *Chromis degruyi*, *Chromis earina*, new species, taxonomy, cybertaxonomy, mesophotic, mixed-gas diving, rebreather, ZooBank

Introduction

Over the past two decades, the authors have developed and refined techniques for using advanced dive gear and various gas mixtures to allow safe excursions to depths of 50–150 m, which exceeds the depths that can be safely reached using conventional SCUBA. Initial exploratory deep dives by the authors at various localities throughout the tropical Pacific have revealed a rich diversity of coral-reef-associated fishes inhabiting