

ZOOTAXA

1419

**A revision of the genus *Leptogorgia* Milne Edwards & Haime, 1857
(Coelenterata: Octocorallia: Gorgoniidae)
in the eastern Pacific**

ODALISCA BREEDY & HECTOR M. GUZMAN



Magnolia Press
Auckland, New Zealand

ODALISCA BREEDY & HECTOR M. GUZMAN

A revision of the genus *Leptogorgia* Milne Edwards & Haime, 1857 (Coelenterata: Octocorallia: Gorgoniidae) in the eastern Pacific

(*Zootaxa* 1419)

90 pp.; 30 cm.

8 March 2007

ISBN 978-1-86977-078-5 (paperback)

ISBN 978-1-86977-079-2 (Online edition)

FIRST PUBLISHED IN 2007 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

<http://www.mapress.com/zootaxa/>

© 2007 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)



A revision of the genus *Leptogorgia* Milne Edwards & Haime, 1857 (Coelenterata: Octocorallia: Gorgoniidae) in the eastern Pacific

ODALISCA BREEDY^{1,2,3} & HECTOR M. GUZMAN³

¹Centro de Investigación en Ciencias del Mar limnología, Universidad de Costa Rica. ²Museo de Zoología, Escuela de Biología, Universidad de Costa Rica, San José, Costa Rica odalisca@racsa.co.cr

³Smithsonian Tropical Research Institute, Unit 0948, APO AA, 34002, USA guzmanh@naos.si.edu

Table of contents

Abstract	3
Introduction	4
Materials and Methods	5
Family Gorgoniidae Lamouroux, 1812	6
Genus <i>Leptogorgia</i> Milne Edwards & Haime, 1857	6
<i>Leptogorgia aequatorialis</i> Bielschowsky, 1929	6
<i>Leptogorgia alba</i> (Duchassaing and Michelotti, 1864)	12
<i>Leptogorgia californica</i> (Verrill, 1868)	19
<i>Leptogorgia chilensis</i> (Verrill, 1868)	22
<i>Leptogorgia clavata</i> (Horn, 1860)	25
<i>Leptogorgia cofrini</i> Breedy & Guzman, 2005	28
<i>Leptogorgia cuspidata</i> Verrill, 1865	28
<i>Leptogorgia diffusa</i> (Verrill, 1868)	32
<i>Leptogorgia exigua</i> Verrill, 1870	37
<i>Leptogorgia flexilis</i> (Verrill, 1868)	40
<i>Leptogorgia laxa</i> Hickson, 1928	53
<i>Leptogorgia obscura</i> Bielschowsky, 1929	57
<i>Leptogorgia parva</i> Bielschowsky, 1929	60
<i>Leptogorgia peruviana</i> (Verrill, 1868)	62
<i>Leptogorgia ramulus</i> (Milne Edwards & Haime, 1857)	69
<i>Leptogorgia regis</i> Hickson, 1928	76
<i>Leptogorgia rigida</i> Verrill, 1864	80
<i>Leptogorgia taboguilla</i> (Hickson, 1928) comb. nov.	84
Final remarks	87
Acknowledgements	88
References	88

Abstract

The species of the widespread gorgoniid genus *Leptogorgia*, which occur along the eastern Pacific, are taxonomically revised based on original type material of all species described until now and reference specimens from recent surveys and expeditions along the Pacific coast of Panama, and Costa Rica. As a result, 21 species are recognized as valid and one as dubious. Lectotypes are assigned for eight species in order to establish their taxonomic status. All the species are

described and illustrated. The fauna herein reported does not represent overall diversity or geographical range of each species but adds new reports. The present count is 16 species for Panama, 11 for Costa Rica, 7 for Mexico, 6 for El Salvador, 4 for Peru, 4 for Ecuador, 3 for Colombia, 2 for California, 2 for Nicaragua, and 2 for Chile.

Key words: Cnidaria, Coelenterata, Costa Rica, eastern Pacific, gorgonian, octocoral, *Leptogorgia*, sea fans, Panama, soft corals, taxonomy

Introduction

The genus *Leptogorgia* Milne Edwards & Haime, 1857, (Gorgoniidae) comprises approximately 54 valid species. It is distributed throughout most of the Panamic Province, the Atlantic Ocean, the Caribbean, the Mediterranean seas, around southern Africa, and one species is found in the subantarctic (Williams & Lindo 1997). Bayer (2000) described one species from deeper waters (> 1900 m) of the East Pacific Rise. Regarding the Indo-Pacific species, Williams & Vennam (2001) consider them in the genus *Pseudopterogorgia* Kükenthal, 1919.

A number of authors from the last two centuries dealt with the shallow water octocoral fauna of the eastern Pacific including Valenciennes (1846, 1855), Milne Edwards and Haime (1857), Horn (1860), Duchassaing and Michelotti (1864), Verrill (1864, 1865, 1868a,b, 1869a,b, 1870), Hickson (1928), Bielschowsky (1918, 1929), Kükenthal (1919, 1924), Stiasny (1941, 1943), Prah *et al.* (1986), Breedy (2001), Breedy & Guzman (2002, 2003a,b, 2004, 2005a,b), and Williams & Breedy (2004). Verrill made the most significant contributions to the knowledge of the eastern Pacific octocoral fauna (Breedy & Guzman 2002).

Leptogorgia is one of the most abundant genera of the shallow water octocoral fauna in the eastern Pacific. About 30 nominal species were described in this genus, for the region, but not without problems. Most of the authors failed to provide detailed illustrations with the species descriptions, delineations are not clear and in most cases holotypes were not designated or were subsequently lost. In some cases, the type material is represented just by one specimen, or by a small fragment, or it has been lost. Consequently, a complete evaluation of the genus with the available type material as well as recent collections is needed to establish the taxonomic status of the species (Prah *et al.* 1986; Williams & Lindo 1997; Breedy & Guzman 2002). Several of the species treated in this paper occur frequently and have a wide geographical distribution while for others only a few specimens are known, and some species have been found just in one locality. We record the distribution of species known at the present, which will probably expand if more extensive surveys are conducted.

This study represents the second contribution in a series proposed to reevaluate the genera of gorgonians reported for the shallow eastern Pacific waters. The first contribution (Breedy & Guzman 2002) revised the genus *Pacificorgia*. Herein, we revise the genus *Leptogorgia*.

Abbreviations

BM: The Natural History Museum (former British Museum), London, UK; CASIZ: California Academy of Science, Invertebrate Zoology, San Francisco, USA; CIMAR: Centro de Investigación en Ciencias del Mar y Limnología, Universidad de Costa Rica, San Jose, Costa Rica; CIEMIC: Centro de Investigación en Estructuras Microscópicas, Universidad de Costa Rica; CDRS: Charles Darwin Research Station, Galapagos, Ecuador; ICZN: International Code of Zoological Nomenclature; MZUT: Museo Regionale di Scienze Naturali, Torino, Italy; MZUF: Museo Zoologico dell'Università di Firenze, Firenze, Italy; MNHN: Muséum National d'Histoire Naturelle, Paris, France; MCZ: Museum of Comparative Zoology, Harvard University, Boston, USA; SEM: Scanning Electron Microscopy; STRI: Smithsonian Tropical Research Institute, Panama; UCR: Museo de Zoología, Escuela de Biología, Universidad de Costa Rica; USNM: National Museum of Natural History (former United States National Museum), Smithsonian Institution, Washington, USA; YPM: Yale