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***Rhinobatos whitei*, a new shovelnose ray (Batoidea: Rhinobatidae) from the Philippine Archipelago**

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Abstract

A new shovelnose ray, *Rhinobatos whitei* sp. nov., is described from material collected at fish markets of the southern Philippines. This ray was first formally indentified as an undescribed species more than a decade ago as part of a WWF funded survey of sharks and rays of the Philippines. It was considered to be most closely related to another shovelnose ray found nearby in the western North Pacific, *R. schlegelii*, but differs from that species in body shape and aspects of coloration, meristics and morphometry. It differs from all other shovelnose rays of the region in its NADH2 sequence, clustering together with an Indonesian species *R. jimbaranensis*, and another undescribed species from Borneo.

Key words: *Rhinobatos*, Rhinobatidae, new species, Philippines, western Pacific

Introduction

The rich ichthyofauna of the Philippine Archipelago has been the subject of ongoing faunal investigation by local and international research teams for more than half a century. The region holds significant interest from a conservation aspect because it lies within the megadiverse coral triangle (Allen & Werner, 2002). Four nominal species of the family Rhinobatidae, *Glaucostegus granulatus* (Cuvier, 1829), *Glaucostegus halavi* (Forsskål, 1775), *Glaucostegus typus* (Bennett, 1830), and *Rhinobatos formosensis* Norman, 1926, have been recorded from the Philippines, but the validity of three of these records are uncertain and need confirmation.

A major survey of fish markets in the southern Philippines, initiated by the World Wildlife Fund in 1998, led to the collection of 54 chondrichthyan species of which 41 were new records for the Philippines. Surprisingly, none of the previously listed guitarfish species was collected during this survey, despite a large species, *Glaucostegus typus*, being common in nearby Indonesia and Malaysian Borneo (White *et al.*, 2006; Last *et al.*, 2010). However, included in these landings was a species not included by Herre (1953) in his Philippine fish checklist and provisionally identified by one of us (PL) in Compagno *et al.* (2005), as *Rhinobatos* cf. *schlegelii* Müller & Henle, 1841. Material referred to by Casto de Elera (1895) and listed by Fowler (1941) may have been this species. Guitarfishes referred to as *Rhinobatos schlegelii* Müller & Henle appear to comprise a species complex in the Indo-Pacific. The Philippine species is not conspecific with *R. schlegelii* (which occurs off Japan and Taiwan, Seret *et al.* pers comm), differing from it in body form, squamation, colour pattern and the NADH2 gene.

Material and Methods

Specimens were collected from local fish markets bordering the Sulu Sea (Cebu, Bacood, Dipolog and Dumaguete cities) as part of a WWF—initiated project to investigate the chondrichthyan fauna of the Philippines (Compagno *et al.*, 2005). Most of these specimens were originally held at the Silliman University Marine Laboratories

Sea and central Philippines. We thank in particular, Andy Oliver and Moonyeen Alava (formerly WWF), John Stevens (CSIRO), and Leonard Compagno (formerly SAM), who were key taxonomic contributors to aspects of this project. Local biologists, May Luchavez-Maypa, Joe Guadiano and Badi Samaniego, were largely responsible for building a scientifically valuable collection of sharks and rays from local fish markets of the Philippines, including the type material of our new species. Laboratory work for the WWF project was based out of Silliman University; we thank the director, Dr Hilconida Calumpong, and in particular collection curators, Ms Clarissa Reboton and Ms Jean Utzurum, for providing access to this material; Don Dumale (Philippine National Museum, Manila), kindly provided a registration number for the holotype. We also acknowledge the support of managers of the former CSIRO Wealth from Oceans Flagship, Charleston University and the National Science Foundation (NSF), who co-funded taxonomic and molecular work for the Tree of Life for Chondrichthyan fishes project (award DEB-01132229). We also acknowledge John Pogonoski (CSIRO) for taking radiographs and obtaining meristic data for types, Alastair Graham (CSIRO) for vetting collection data for types, and Carlie Devine (CSIRO) for preparing, etching and enhancing the text figures. Louise Conboy took microphotographs of denticles.

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