

# **Preliminary Report on the Crinoid Fauna of Ureure Cove and Lathi Island, Espiritu Santo, Vanuatu**

**By Lauren E Johnston**

## Introduction

To date almost nothing has been published about the taxonomy, distribution, or natural history of comatulid crinoids (featherstars) in Vanuatu. The primary purpose of this study was to collect a target group of these crinoids to be used in molecular phylogenetic studies to assess their taxonomic status. The intended outcome of this study is to review species-level taxonomy and subsequently create an internet guide to all Comatulida, including those found in Vanuatu.

A total of eleven different species of comatulids were identified in this study: six in the waters of Ureure Cove (visited between 23 July and 25 July 2003) and nine in the waters off the northeastern coast of Lathi (= Sakao) Island (visited during 29 July and 30 July 2003), localities in northeastern Espiritu Santo. Both collection sites were along limestone/coral reef walls that descended precipitously to 100 meters only ten meters offshore. Survey sites at Ureure included the mainland shore and the outer shore of the islet in the cove. The survey was conducted from 0 to 20 meters depth along a 500 meter span of each wall.

Comatulids appeared to increase in abundance and diversity in areas exposed to greater water movement. Abundance was approximated in relation to the total number of comatulids observed; 'low abundance' indicates that 1 to 10 individuals were observed, 'moderate abundance' 10 to 20 individuals, and 'high abundance' more than 20 individuals.

Brief descriptions of each species' location, habitat, and relative abundance are given here. Photographic records, further findings from the study of specimens taken from Vanuatu, and details about the website will be presented to the Environment Unit and Department of Fisheries when completed.

## Ureure Cove

### *Tropiometra afra*

The most abundant species at this site. Typically found in rock crevices with arms protruding upwards. Collected at 10 meters and 15 meters depth in the cove as well as along the island.

2 specimens collected, photo records taken.

### *Comanthus bennetti*

This species was found in low abundance at this site. It was found on the surface of rocks from 10 meters down to 15 meters depth along the island only.

Photographic records taken.

*Comanthus parvicirrus*

An abundant species at this site. Typically found attached to the underside of rocky ledges in the cove as well as along the island.

Photographic records taken.

*Comanthus sp.*

This unidentified species was found in low abundance at this site. It was found on the surface of rocks from 10 meters down to 15 meters depth along the island only.

One specimen collected.

*Oligometra serripinna*

This species was found in low abundance at this site. It was found attached to the underside of rocky ledges at 15 meters depth along the island only.

One specimen collected.

*Comanthus mirabilis*

This species was found in low abundance at this site. Predominantly white form with some yellow coloration of the arms. Typically found attached to the underside of rocky ledges in the cove as well as along the island.

Photographic records taken.

Lathi Island

*Comanthus mirabilis*

This species was also found in low abundance at this site. Predominantly white form with some yellow coloration of the arms. Found attached to rocky ledges at 10 to 20 metres depth.

One specimen collected and photographic records taken.

*Cenometra bella*

Found only on soft coral in low abundance. Observed to be at 20 meters and greater depths.

One specimen collected and photographic records taken.

*Oligometra serripinna*

Typically observed on soft coral at this site and moderately abundant. Present at 15 meters and deeper.

Photographic records taken.

*Comanthus parvicirrus*

Moderately abundant at this site found typically attached to the bottom of rocky ledges from 10 meters and deeper.

*Comaster multifidus*

This species was found in low abundance at this site at a depth of 20 meters. It was observed to inhabit rock crevices and holes.

Photographic records taken.

*Himerometra robustipinna*

This species was moderately abundant and typically found on the top of rocks from 15 meters and deeper.

Two specimens were collected and photographic records were taken.

*Clarkcomanthus cf. littoralis*

This species was in low abundance at this site and found at 20 meters. This species was attached to the vertical face of the rocks.

One specimen collected and photographic records taken.