Biodiversity Data Journal 9: e65970
doi: 10.3897/BDJ.9.e65970

Taxonomic Paper

Reef benthos of Seychelles - A field guide

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Academic editor: Danwei Huang

Received: 15 Mar 2021 | Accepted: 03 Jul 2021 | Published: 26 Aug 2021

Citation: Fassbender N, Stefanoudis PV, Filander ZN, Gendron G, Mah CL, Mattio L, Mortimer JA, Moura CJ, Samaai T, Samimi-Namin K, Wagner D, Walton R, Woodall LC (2021) Reef benthos of Seychelles - A field guide. Biodiversity Data Journal 9: e65970. https://doi.org/10.3897/BDJ.9.e65970

Abstract

Background

During the 2019 First Descent: Seychelles Expedition, shallow and deep reef ecosystems of the Seychelles Outer Islands were studied by deploying a variety of underwater technologies to survey their benthic flora and fauna. Submersibles, remotely operated vehicles (ROVs) and SCUBA diving teams used stereo-video camera systems to record benthic communities during transect surveys conducted at 10 m, 30 m, 60 m, 120 m, 250 m and 350 m depths. In total, ~ 45 h of video footage was collected during benthic transect

surveys, which was subsequently processed using annotation software in order to assess reef biodiversity and community composition. Here, we present a photographic guide for the visual identification of the marine macrophytes, corals, sponges and other common invertebrates that inhabit Seychelles' reefs. It is hoped that the resulting guide will aid marine biologists, conservationists, managers, divers and naturalists with the coarse identification of organisms as seen in underwater footage or live in the field.

New information

A total of 184 morphotypes (= morphologically similar individuals) were identified belonging to Octocorallia (47), Porifera (35), Scleractinia (32), Asteroidea (19), Echinoidea (10), Actiniaria (9), Chlorophyta (8), Antipatharia (6), Hydrozoa (6), Holothuroidea (5), Mollusca (2), Rhodophyta (2), Tracheophyta (2), Annelida (1), Crinoidea (1), Ctenophora (1), Ochrophyta (1) and *Zoantharia* (1). Out of these, we identified one to phylum level, eight to class, 14 to order, 27 to family, 110 to genus and 24 to species. This represents the first attempt to catalogue the benthic diversity from shallow reefs and up to 350 m depth in Seychelles.

Keywords

coral reefs, mesophotic coral ecosystems, benthos, morphotype, Seychelles, Indian Ocean

Introduction

Coral reef ecosystems are some of the most diverse hotspots for life on our planet. Both shallow and deep water coral reefs are valued for their incredible diversity and species richness, yet little is known about the processes and functions of mesophotic coral ecosystems (MCEs; reefs ~ 30–150 m depth, as proposed by Rocha et al. 2018) and rariphotic reefscapes (~ 150–300 m depth, as proposed by Baldwin et al. 2018). While shallow and deeper coral reef ecosystems exist in close proximity to one another, the different conditions to which they are exposed have led to the formation of distinct forms of life and ecosystem functions within them (Holstein et al. 2019, Stefanoudis et al. 2019).

Deeper coral ecosystems provide a number of ecosystem services to support their shallow-water (< 30 m depth) counterparts and oceanic processes, harbouring unique assemblages of life and preserving biodiversity by supporting shallow reef systems (Cacciapaglia and van Woesik 2015, Muir et al. 2018, Weiss 2017). In times of severe disturbance to shallow-water coral reef ecosystems, deeper reefs have been proposed to act as refugia (Semmler et al. 2016, Smith et al. 2014), promoting the recovery of heavily impacted shallow reefs (Holstein et al. 2016). With their depth shielding them from most bleaching and hurricane events (Baird et al. 2018, Bridge et al. 2014), they are a crucial source of larval supply for many shallow-water coral reef systems (Holstein et al. 2016, Hughes et al. 2017, Norström et al. 2016). However, even deeper reefs have been found to

be affected by various disturbances (Smith et al. 2019), including climate change (Rocha et al. 2018), ocean acidification (Cerrano et al. 2013) and invasive species (Andradi-Brown et al. 2016). To sustain these services in the future, mesophotic and rariphotic ecosystems should, where present, be incorporated into marine spatial planning initiatives to ensure their protection and sustainable management (Bridge et al. 2013).

To effectively protect and manage an ecosystem, it also needs to be documented and monitored. Knowledge of mesophotic and rariphotic reefscapes in Seychelles waters remains poorly known. Gaining a better understanding of deeper reef ecosystems and their communities was identified as a crucial step towards effectively protecting 30% of Seychelles' waters as part of the Seychelles Marine Spatial Planning Initiative (2020). To effectively do so, the organisms living in those environments need to be documented, assessed and classified. This Field Identification Guide marks an important first step towards surveying and understanding these systems, encompassing benthic organisms of a variety of taxa that occur beyond depths accessible by SCUBA divers. This open-access Field ID Guide will be a valuable tool for scientists studying shallow, mesophotic and rariphotic coral reef environments in the Seychelles in the future.

Materials and methods

The Seychelles consists of 115 islands located in the Western Indian Ocean, between 480 to 1600 km from the African coast (Fig. 1).

The multidisciplinary First Descent: Seychelles Expedition, from which images in this guide were drawn, provided an opportunity to understand patterns of diversity and connectivity between the various shallow and deep reef marine ecosystems.

During the expedition, benthic and fish communities were surveyed across seven sites around Seychelles Outer Islands (Fig. 1). The fieldwork was conducted between March to April 2019 onboard the vessel *Ocean Zephyr*. SCUBA divers, remotely operated vehicles (ROVs) and submersibles were deployed to conduct transect surveys and specimen collections at ~10, 30, 60, 120, 250 and 350 m. The shallowest dives at a depth of 10 m were conducted primarily by SCUBA divers (occasionally mini-ROVs). Dives between 30–250 m were conducted primarily by submersibles, whilst an ROV was used for some dives at 250–350 m. Paralenz cameras were used for all dives, recording with a minimum resolution of 1920 × 1080 and a minimum frame rate of 30 fps. The transect survey dives followed a strict horizontal depth contour, running roughly parallel to the shore. Individual transect length hereby varied between gear types, with SCUBA transect lengths ~ 100 m and submersible and ROV transects ~ 250 m long. All gear types aimed to keep a constant altitude of 1-2 m above the benthos, allowing sufficient overlap between stereo cameras, yet staying close enough to the bottom to observe smaller benthic organisms. During sample collection dives, a maximum of five specimens from each depth per location were collected to verify some of our identifications. Hereby, a maximum of three samples were collected per morphotype, as per our permit.

All of the collected video footage was screened during and straight after the expedition in order to create image-based morphotype lists. These, along with collected specimens, were then reviewed during a taxonomic workshop that took place in the South African Institute of Aquatic Biodiversity in August 2019 (Stefanoudis et al. 2020). This process was really useful and speeded up the subsequent annotation of the transect survey video data in order to estimate the biodiversity and community composition of benthic and demersal fish assemblages of the Seychelles. For the annotation, we used the SeaGIS software EventMeasure and TransectMeasure and the results are currently being prepared for a separate publication.

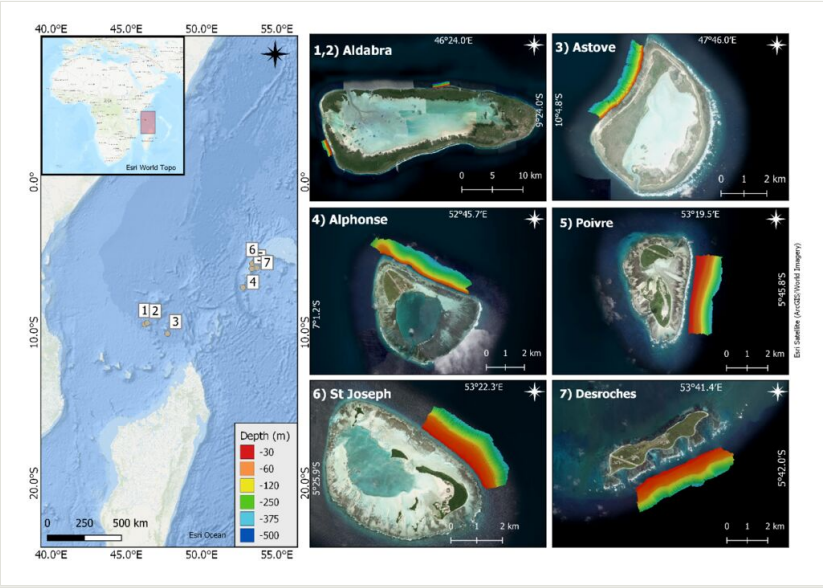

Figure 1. doi

Map of the seven surveyed sites around Seychelles Outer Islands. Multibeam data were overlaid to show survey areas. Sites are listed from west to east.

Survey site mean coordinates:

1) Aldabra West 1 (9°26'50.5284"S, 46°12'49.3632"E)

2) Aldabra North 1 (9°21'57.8844"S, 46°22'43.1148"E)

3) Astove West 1 (10°4'25.1652"S, 47°43'58.2024"E)

4) Alphonse North 1 (6°59'58.1424"S, 52°43'44.3856"E)

5) Poivre East 1 (5°45'52.236"S, 53°19'3.6732"E)

6) St. Joseph* North 1 (5°25'20.9316"S, 53°21'30.672"E)

7) Desroches South 1 (5°41'41.7444"S, 53°40'35.67"E)

*St. Joseph was hereafter referred to as D'Arros due to initial naming when compiling datasets and the islands close proximity to one another.

Maps were created in ESRI using the basemaps "World Topographic Map", "Ocean Basemap" and "World Imagery".

Data resources

Authors' note

This guide is designed to aid with the identification of organisms as seen in underwater footage or in the field. For each entry, we provide a taxonomic identification and higher-order classification, information on distribution across our surveyed sites and observed depth ranges and sizes, based on our work only, a short morphological description as observed from the video footage and some representative images extracted from the video footage. Where available, an additional *ex-situ* (off-site) image of collected specimens is also provided.

Identifying taxa from images is challenging. Well-trained researchers use a combination of traditional taxonomic features and ecological information (e.g. depth, location, knowledge of the local species pool) to arrive at decisions on a taxon identification. The taxonomic level of each identification will vary depending on the type of organism in question, but in general, rarely reaches species level. This is due to a number of challenges, one of which being the often reduced quality of frames exported from video footage due to the camera moving fast or suspended sediment present within the frame. Additionally, some groups either have enormous morphological plasticity (e.g. sponges) or their unique characters are too small to be distinguished on video footage alone without the use of high-power microscopes (e.g. corals, algae). We have, therefore, placed each taxon into visually distinct morphotypes (i.e. aggregation of morphologically similar individuals) that can correspond to species or higher taxonomic level (genus, family etc.).

How to use the Guide

All observed morphotypes are divided into 18 major classification groups, ranging from phylum to order. The choice of the taxonomic level for each major group corresponds with groups commonly recognised by the general public and experts alike, such as hard corals (Order: Scleractinia) or sponges (Phylum: Porifera). Members of each major group are then further classified into the lowest taxonomic level practical and then assigned to morphotypes. Table 1 provides an overview of all 184 recorded morphotypes.

Table 1.

List of the 184 morphotypes observed in shallow and deeper reef habitats in the Seychelles during the First Descent: Seychelles 2019 expedition. Open nomenclature (ON) signs applicable to image-based faunal analyses (e.g. indet., stet., inc.), as suggested by Horton et al. (2021), are also provided in the cases where species-level identification was not possible.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	*Caulerpa*	*Caulerpa* sp. indet. 1

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Chlorophyta	Ulvophyceae	Bryopsidales	Caulerpaceae	*Caulerpa*	*Caulerpa* sp. indet. 2
Chlorophyta	Ulvophyceae	Bryopsidales	Codiaceae	*Codium*	*Codium* sp. indet.
Chlorophyta	Ulvophyceae	Bryopsidales	Halimedaceae	*Halimeda*	*Halimeda* spp. indet.
Chlorophyta	Ulvophyceae	Bryopsidales	Udoteaceae	*Udotea*	*Udotea* spp. indet.
Chlorophyta	Ulvophyceae	Cladophorales	Anadyomenaceae	*Microdictyon*	*Microdictyon* sp. indet.
Chlorophyta	Ulvophyceae	Cladophorales	Siphonocladaceae	*Dictyosphaeria*	*Dictyosphaeria* sp. indet.
Chlorophyta	Ulvophyceae	Ulvales	Ulvaceae	*Ulva*	*Ulva* sp. indet.
Ochrophyta	Phaeophyceae	Dictyotales	Dictyotaceae	*Lobophora*	*Lobophora* sp. indet.
Rhodophyta	Florideophyceae	Ceramiales	Dasyaceae	*Amphisbetema*	*Amphisbetema indica*
Rhodophyta	Florideophyceae	Corallinales			Corallinales stet.
Tracheophyta	Tracheophyta	Alismatales	Cymodoceaceae	*Thalassodendron*	*Thalassodendron ciliatum*
Tracheophyta	Tracheophyta	Alismatales	Hydrocharitaceae	*Halophila*	*Halophila* sp. indet
Cnidaria	Anthozoa	Actiniaria	Stichodactylidae	*Heteractis*	*Heteractis magnifica*
Cnidaria	Anthozoa	Actiniaria	Stichodactylidae	*Stichodactyla*	*Stichodactyla mertensii*
Cnidaria	Anthozoa	Actiniaria			Actiniaria fam. indet. sp. 1
Cnidaria	Anthozoa	Actiniaria			Actiniaria fam. indet. sp. 2
Cnidaria	Anthozoa	Actiniaria			Actiniaria fam. indet. sp. 3
Cnidaria	Anthozoa	Actiniaria			Actiniaria fam. indet. sp. 6
Cnidaria	Anthozoa	Antipatharia	Antipatharia	*Antipathes*	*Antipathes* sp. indet.
Cnidaria	Anthozoa	Antipatharia	Leiopathidae	*Leiopathes*	*Leiopathes* sp. indet.
Cnidaria	Anthozoa	Antipatharia	Myriopathidae	*Cupressopathes*	*Cupressopathes* sp. indet.
Cnidaria	Anthozoa	Antipatharia	Myriopathidae	*Myriopathes*	*Myriopathes* sp. indet.
Cnidaria	Anthozoa	Antipatharia	Schizopathidae	*Bathypathes*	*Bathypathes* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Cnidaria	Anthozoa	Antipatharia	Stylopathidae	*Stylopathes*	*Stylopathes* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Acanthogorgiidae	*Muricella*	*Muricella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Alcyoniidae	*Lobophytum*	*Lobophytum* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Alcyoniidae	*Paraminabea*	*Paraminabea* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Alcyoniidae	*Sarcophyton*	*Sarcophyton* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Alcyoniidae	*Sinularia*	*Sinularia* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Anthothelidae	*Solenocaulon*	*Solenocaulon* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae		Ellisellidae gen. indet. sp. 1
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae		Ellisellidae gen. indet. sp. 2
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae	*Dichotella*	*Dichotella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae	*Ellisella*	*Ellisella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae	*Nicella*	*Nicella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Ellisellidae	*Verrucella*	*Verrucella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Gorgoniidae	*Rumphella*	*Rumphella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Isididae	*Isis*	*Isis* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Melithaeidae		Melithaeidae gen. indet. sp. 1
Cnidaria	Octocorallia	Alcyonacea	Melithaeidae		Melithaeidae gen. indet. sp. 2
Cnidaria	Octocorallia	Alcyonacea	Melithaeidae		Melithaeidae gen. indet. sp. 3
Cnidaria	Octocorallia	Alcyonacea	Nephtheidae	*Dendronephthya*	*Dendronephthya* sp. indet. 1
Cnidaria	Octocorallia	Alcyonacea	Nephtheidae	*Dendronephthya*	*Dendronephthya* sp. indet. 2
Cnidaria	Octocorallia	Alcyonacea	Nephtheidae	*Litophyton*	*Litophyton* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Nephtheidae	*Scleronephthya*	*Scleronephthya* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Cnidaria	Octocorallia	Alcyonacea	Nidaliidae		Nidaliidae gen. indet. sp.
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 2
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 4
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 5
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 6
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 7
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 8
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 9
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 11
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 13
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*		*Plexauridae* gen. indet. sp. 14
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*	*Astrogorgia*	*Astrogorgia* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*	*Echinogorgia*	*Echinogorgia* gen. inc.
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*	*Paracis*	*Paracis* gen. inc.
Cnidaria	Octocorallia	Alcyonacea	*Plexauridae*	*Trimuricea*	*Trimuricea* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Primnoidae	*Primnoa*	*Primnoa* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Primnoidae	*Narella*	*Narella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Subergorgiidae	*Annella*	*Annella* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Tubiporidae	*Tubipora*	*Tubipora* sp. indet.
Cnidaria	Octocorallia	Alcyonacea	Xeniidae	*Xenia*	*Xenia* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Cnidaria	Octocorallia	Alcyonacea			Alcyonacea fam. indet. sp. 1
Cnidaria	Octocorallia	Alcyonacea			Alcyonacea fam. indet. sp. 2
Cnidaria	Octocorallia	Alcyonacea			Alcyonacea fam. indet. sp. 3
Cnidaria	Octocorallia	Alcyonacea			Alcyonacea fam. indet. sp. 4
Cnidaria	Octocorallia	Alcyonacea			Alcyonacea fam. indet. sp. 5
Cnidaria	Octocorallia	Helioporacea	*Helioporidae*	*Heliopora*	*Heliopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Acroporidae	*Acropora*	*Acropora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Acroporidae	*Astreopora*	*Astreopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Acroporidae	*Isopora*	*Isopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Acroporidae	*Montipora*	*Montipora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Agariciidae	*Gardineroseris*	*Gardineroseris* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Agariciidae	*Leptoseris*	*Leptoseris* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Agariciidae	*Pavona*	*Pavona* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Dendrophyllidae	*Tubastraea*	*Tubastraea* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Dendrophyllidae	*Tubastraea*	*Tubastraea micranthus*
Cnidaria	Octocorallia	Scleractinia	Dendrophyllidae	*Turbinaria*	*Turbinaria* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Euphylliidae	*Galaxea*	*Galaxea* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Fungiidae		Fungiidae gen. indet. sp. 1
Cnidaria	Octocorallia	Scleractinia	Fungiidae		Fungiidae gen. indet. sp. 2
Cnidaria	Octocorallia	Scleractinia	Fungiidae	*Halomitra*	*Halomitra* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Leptastreidae	*Leptastrea*	*Leptastrea* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Lobophylliidae	*Echinophyllia*	*Echinophyllia* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Lobophylliidae	*Lobophyllia*	*Lobophyllia* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Dipsastraea*	*Dipsastraea* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Echinopora*	*Echinopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Favites*	*Favites* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Goniastrea*	*Goniastrea* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Hydnophora*	*Hydnophora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Pectinia*	*Pectinia* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Platygyra*	*Platygyra* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Merulinidae	*Oulophyllia*	*Oulophyllia* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Plerogyridae	*Physogyra*	*Physogyra* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Pocilloporidae	*Pocillopora*	*Pocillopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Pocilloporidae	*Pocillopora*	*Pocillopora damicornis*
Cnidaria	Octocorallia	Scleractinia	Pocilloporidae	*Stylophora*	*Stylophora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Poritidae	*Porites*	*Porites* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Poritidae	*Goniopora*	*Goniopora* sp. indet.
Cnidaria	Octocorallia	Scleractinia	Scleractinia incertae sedis	*Pachyseris*	*Pachyseris* sp. indet.
Cnidaria	Octocorallia	*Zoantharia*			*Zoantharia* stet.
Cnidaria	Hydrozoa				Hydrozoa stet.
Cnidaria	Hydrozoa	Anthoathecata	Milleporidae	*Millepora*	*Millepora* sp. indet.
Cnidaria	Hydrozoa	Anthoathecata	Solanderiidae	*Solanderia*	*Solanderia* sp. indet.
Cnidaria	Hydrozoa	Leptolida	Stylasteridae		Stylasteridae gen. indet. sp. 1
Cnidaria	Hydrozoa	Leptolida	Stylasteridae		Stylasteridae gen. indet. sp. 2
Cnidaria	Hydrozoa	Leptothecata	Thyroscyphidae	*Thyroscyphus*	*Thyroscyphus* sp. indet.
Ctenophora	Tentaculata	Platyctenida	Lyroctenidae	*Lyrocteis*	*Lyrocteis* sp. indet.
Echinodermata	Asteroidea				Asteroidea ord. indet. sp. 1
Echinodermata	Asteroidea				Asteroidea ord. indet. sp. 2

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Echinodermata	Asteroidea	Forcipulatida	Asteriidae	*Coronaster*	*Coronaster volsellatus*
Echinodermata	Asteroidea	Forcipulatida	Asteriidae	*Coronaster*	*Coronaster* sp. indet.
Echinodermata	Asteroidea	Forcipulatida	Asteriidae	*Sclerasterias*	*Sclerasterias* sp. indet.
Echinodermata	Asteroidea	Paxillosida	Astropectinidae		Astropectinidae gen. indet. sp.
Echinodermata	Asteroidea	Valvatida	Asterinidae	*Nepanthia*	*Nepanthia* sp. indet.
Echinodermata	Asteroidea	Valvatida	Asterodiscididae	*Asterodiscides*	*Asterodiscides* sp. indet.
Echinodermata	Asteroidea	Valvatida	Goniasteridae	*Astroceramus*	*Astroceramus* sp. indet.
Echinodermata	Asteroidea	Valvatida	Goniasteridae	*Calliaster*	*Calliaster chaos*
Echinodermata	Asteroidea	Valvatida	Goniasteridae	*Fromia*	*Fromia nodosa*
Echinodermata	Asteroidea	Valvatida	Goniasteridae	*Peltaster*	*Peltaster cycloplax*
Echinodermata	Asteroidea	Valvatida	Goniasteridae	*Sphaeriodiscus*	*Sphaeriodiscus* sp. indet.
Echinodermata	Asteroidea	Valvatida	*Ophidiasteridae*		*Ophidiasteridae* gen. indet. sp.
Echinodermata	Asteroidea	Valvatida	*Ophidiasteridae*	*Heteronardoa*	*Heteronardoa diamantinae*
Echinodermata	Asteroidea	Valvatida	*Ophidiasteridae*	*Leiaster*	*Leiaster* sp. indet.
Echinodermata	Asteroidea	Valvatida	Oreasteridae		Oreasteridae sp. indet.
Echinodermata	Asteroidea	Valvatida	Oreasteridae	*Culcita*	*Culcita schmideliana*
Echinodermata	Asteroidea	Valvatida	Oreasteridae	*Halityle*	*Halityle regularis*
Echinodermata	Crinoidea				Crinoidea stet.
Echinodermata	Echinoidea	Arbacioida	Arbaciidae	*Coelopleurus*	*Coelopleurus* sp. indet.
Echinodermata	Echinoidea	Aspidodiadematoida	*Aspidodiadematidae*		Aspidodiadematidae gen. indet. sp.
Echinodermata	Echinoidea	Cidaroida			Cidaroida fam. indet. sp. 1
Echinodermata	Echinoidea	Cidaroida			Cidaroida fam. indet. sp. 2
Echinodermata	Echinoidea	Cidaroida	Cidaridae	*Acanthocidaris*	*Acanthocidaris* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Echinodermata	Echinoidea	Clypeasteroida	Clypeasteridae	*Clypeaster*	*Clypeaster* sp. indet.
Echinodermata	Echinoidea	Diadematoida	Diadematidae	*Echinothrix*	*Echinothrix diadema*
Echinodermata	Echinoidea	Micropygoida	Micropygidae	*Micropyga*	*Micropyga* sp. indet.
Echinodermata	Echinoidea	Pedinoida	Pedinidae	*Caenopedina*	*Caenopedina* sp. indet.
Echinodermata	Echinoidea	Spatangoida			Spatangoida fam. indet. sp.
Echinodermata	Holothuroidea	Holothuriida	Holothuriidae	*Bohadschia*	*Bohadschia* sp. indet.
Echinodermata	Holothuroidea	Holothuriida	Holothuriidae	*Holothuria*	*Holothuria* (*Halodeima*) *atra*
Echinodermata	Holothuroidea	Holothuriida	Holothuriidae	*Holothuria*	*Holothuria* (*Halodeima*) *edulis*
Echinodermata	Holothuroidea	Synallactida	Stichopodidae	*Stichopus*	*Stichopus* sp. indet.
Echinodermata	Holothuroidea	Synallactida	Stichopodidae	*Thelenota*	*Thelenota ananas*
Annelida	Annelida	Sabellida	*Sabellidae*		*Sabellidae stet.*
Mollusca	Mollusca	Cardiida	Cardiidae	*Tridacna*	*Tridacna* sp. indet.
Porifera	Calcarea	Clathrinida	Leucettidae	*Leucetta*	*Leucetta chagosensis* sp. inc.
Porifera	Demospongiae	Axinellida	Axinellidae	*Axinella*	*Axinella weltnerii*
Porifera	Demospongiae	Clionaida	Clionaidae	*Spheciospongia*	*Spheciospongia* sp. indet. 1
Porifera	Demospongiae	Clionaida	Clionaidae	*Spheciospongia*	*Spheciospongia* sp. indet. 2
Porifera	Demospongiae	Clionaida	Clionaidae	*Spheciospongia*	*Spheciospongia* sp. indet. 3
Porifera	Demospongiae	Dendroceratida	Darwinellidae	*Aplysilla*	*Aplysilla* sp. indet.
Porifera	Demospongiae	Haplosclerida	Callyspongiidae	*Callyspongia*	*Callyspongia* sp. indet.
Porifera	Demospongiae	Haplosclerida	Chalinidae	*Haliclona*	*Haliclona* sp. indet. 1
Porifera	Demospongiae	Haplosclerida	Chalinidae	*Haliclona*	*Haliclona* sp. indet. 2
Porifera	Demospongiae	Haplosclerida	Chalinidae	*Haliclona*	*Haliclona* sp. indet. 3
Porifera	Demospongiae	Haplosclerida	*Petrosiidae*		*Petrosiidae* gen. indet. sp. 1

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Porifera	Demospongiae	Haplosclerida	*Petrosiidae*		*Petrosiidae* gen. indet. sp. 2
Porifera	Demospongiae	Haplosclerida	*Petrosiidae*	*Petrosia* (*Strongylophora*)	*Petrosia* (*Strongylophora*) sp. indet.
Porifera	Demospongiae	Haplosclerida	*Petrosiidae*	*Xestospongia*	*Xestospongia* sp. indet.
Porifera	Demospongiae	Haplosclerida	Phloeodictyidae	*Oceanapia*	*Oceanapia* sp. indet.
Porifera	Demospongiae	Poecilosclerida	Iotrochotidae	*Iotrochota*	*Iotrochota nigra*
Porifera	Demospongiae	Poecilosclerida	Iotrochotidae	*Iotrochota*	*Iotrochota sinki*
Porifera	Demospongiae	Poecilosclerida	Microcionidae	*Calthria*	*Clathria* sp. indet.
Porifera	Demospongiae	Scopalinida	Scopalinidae	*Stylissa*	*Stylissa carteri*
Porifera	Demospongiae	Tetractinellida	Ancorinidae	*Stelletta*	*Stelletta* sp. indet.
Porifera	Demospongiae	Tetractinellida	Corallistidae	*Corallistes*	*Corallistes* sp. indet.
Porifera	Demospongiae	Tetractinellida	Pachastrellidae	*Pachastrella*	*Pachastrella* sp. indet.
Porifera	Demospongiae	Tetractinellida	Scleritodermidae	*Scleritoderma*	*Scleritoderma* sp. indet.
Porifera	Demospongiae	Tetractinellida	Tetillidae	*Tetilla*	*Tetilla* sp. indet.
Porifera	Demospongiae	Tetractinellida	Theonellidae	*Theonella*	*Theonella* cf. *swinhoei*
Porifera	Demospongiae	Tetractinellida	Theonellidae	*Theonella*	*Theonella* sp. indet.
Porifera	Demospongiae				Demospongiae order indet. sp. 1
Porifera	Demospongiae				Demospongiae order indet. sp. 2
Porifera	Demospongiae				Demospongiae order indet. sp. 3
Porifera	Demospongiae				Demospongiae order indet. sp. 4
Porifera	Hexactinellida	Amphidiscosida	Hyalonematidae	*Hyalonema*	*Hyalonema* sp. indet.
Porifera	Hexactinellida	Lyssacinosida	Euplectellidae	*Heterotella*	*Heterotella corbicula*
Porifera	Hexactinellida	Sceptrulophora	Tretodictyidae	*Sclerothamnus*	*Sclerothamnus* sp. indet.
Porifera	Homoscleromorpha	Homosclerophorida	Plakinidae	*Plakortis*	*Plakortis* sp. indet.

Phylum	Class	Order	Family	Genus	Species / Morphospecies Scientific Name with ON signs
Porifera					Unknown lettuce-like green sponge

Wherever species-level identifications are not possible, organisms are provided with a higher classification ranking (e.g. genus, family, class) followed by the use of open nomenclature (ON) signs applicable to image-based faunal analyses (e.g. indet., stet., inc.) as suggested by Horton et al. (2021). The use of ON signs allows standardisation and clarification of the uncertainty inherent in identification from image-based studies, thus enabling the subsequent use and comparability of generated datasets.

Finally, whenever *ex-situ* images of collected specimens are provided, they are accompanied by their unique sample number (e.g. SEY1_1377).

Chlorophyta

Class Ulvophyceae K.R. Mattox & K.D. Stewart, 1978

Order Bryopsidales J.H. Schaffner, 1922

Family Caulerpaceae Kützing, 1843

Genus *Caulerpa* J.V. Lamouroux, 1809

Caulerpa sp. indet. 1

Material

a. scientificName: *Caulerpa* sp. 1; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Bryopsidales; family: Caulerpaceae; genus: *Caulerpa*; scientificNameAuthorship: J. V. Lamouroux, 1809; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, D'Arros N1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 47.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A green seaweed that grows in twig-like, branched plants with a creeping stolon and multiple erect fonds. The stolon is attached to the seabed by several bunches of rhizoids. Species of *Caulerpa* are known for their plastic morphologies, which may vary

greatly within the same species and between different environmental conditions (Fig. 2).

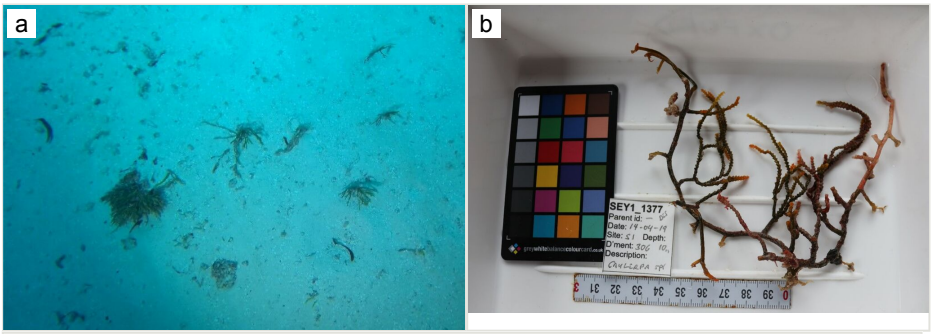

Figure 2.

Caulerpa sp. indet. 1

a: D'Arros N1, 60 m. doi
b: Desroches S1, 10 m, collected specimen (SEY1_1377). doi

Figure 3. doi

Caulerpa sp. indet. 2. Astove W1, 30 m.

Caulerpa sp. indet. 2

Material

a. scientificName: *Caulerpa* sp. 2; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Bryopsidales; family: Caulerpaceae; genus: *Caulerpa*; scientificNameAuthorship: Lamouroux, 1809; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 30 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender,

Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A green seaweed with creeping stolon and erect fronds with branchlets consisting of a short pedicel ending in a rounded, disc-like to spherical appendage. Stolons are attached to the substratum by bunches of rhizoids. Species of *Caulerpa* are known for their plastic morphologies, that may vary greatly within the same species and between different environmental conditions (Fig. 3).

Family Codiaceae Kützing, 1843

Genus *Codium* Stackhouse, 1797

Codium sp. indet.

Material

a. scientificName: *Codium*; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Bryopsidales; family: Codiaceae; genus: *Codium*; scientificNameAuthorship: Stackhouse, 1797; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 33.4 m; maximumDepthInMeters: 65.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Seaweed whose thallus can display erect or prostrate forms, usually stiff. Erect forms (as observed here) display dichotomous branching, attached to the substratum by groups of rhizoids. The colour is dark green, sometimes with a brownish tint (Fig. 4).

Figure 4. doi

Codium sp. indet. Poivre E1, 60 m.

Family Halimedaceae Link, 1832

Genus *Halimeda* J.V.Lamouroux, 1812

Halimeda spp. indet.

Material

a. scientificName: *Halimeda*; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Bryopsidales; family: Halimedaceae; genus: *Halimeda*; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Alphonse N1, D'Arros N1, Poivre E1, Desroches S1; minimumDepthInMeters: 9.5 m; maximumDepthInMeters: 70.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

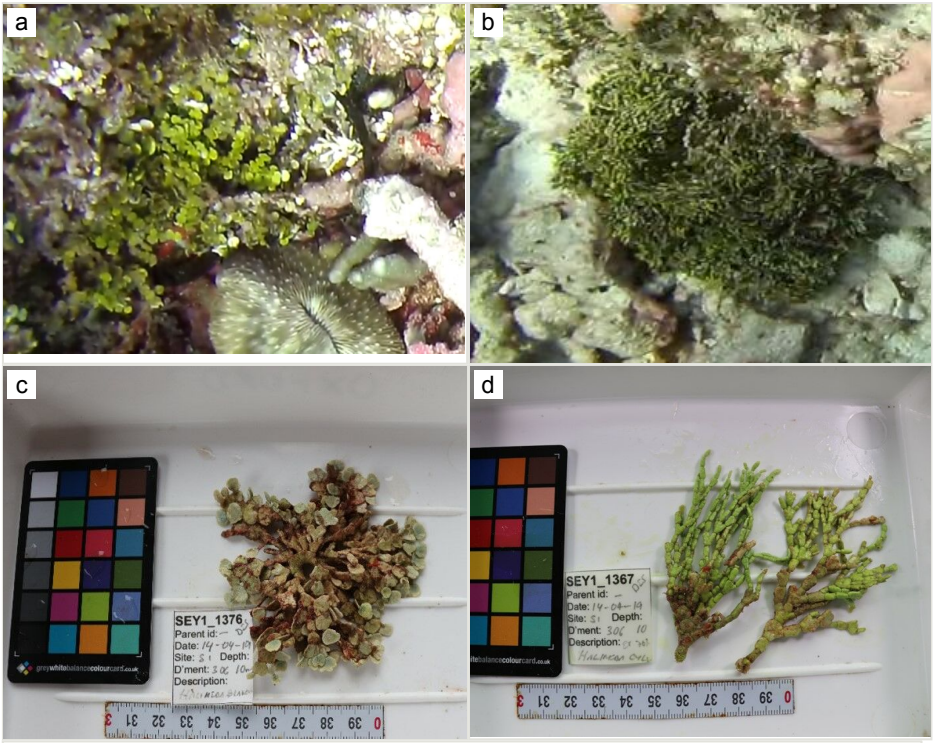

Figure 5.

Halimeda spp. indet.

a: Aldabra N1, 10 m. doi
b: Aldabra N1, 10 m. doi
c: *Halimeda* sp. indet. Desroches S1, 10 m, collected specimen (SEY1_1376). doi
d: *Halimeda cylindracea*. Desroches S1, 10 m, collected specimen (SEY1_1367). doi

Notes: Conspicuous, cactus-like macroalgae with jointed, disc-like and calcified segments. Individual segments can vary in shape that ranges from round to kidney-, wedge- or even cylindrical-shaped. The thallus anchors to the bottom by a dense tuft of rhizoids which varies in shape depending on the substratum. Dead specimens have been observed to lose their green colour, revealing their white calcium carbonate skeletons. Five species were identified from collections (*Halimeda cylindracea*, *H.* aff. *gracilis* / *H.* aff. *opuntia*, *H. minima*, *H. micronesica*, *Halimeda* sp. indet); however, it was not possible to distinguish between them from underwater images alone (Fig. 5).

Family Udoteaceae J. Agardh, 1887

Genus *Udotea* J.V.Lamouroux, 1812

Udotea spp. indet.

Material

a. scientificName: *Udotea*; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Bryopsidales; family: Udoteaceae; genus: *Udotea*; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 3 m; maximumDepthInMeters: 36.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

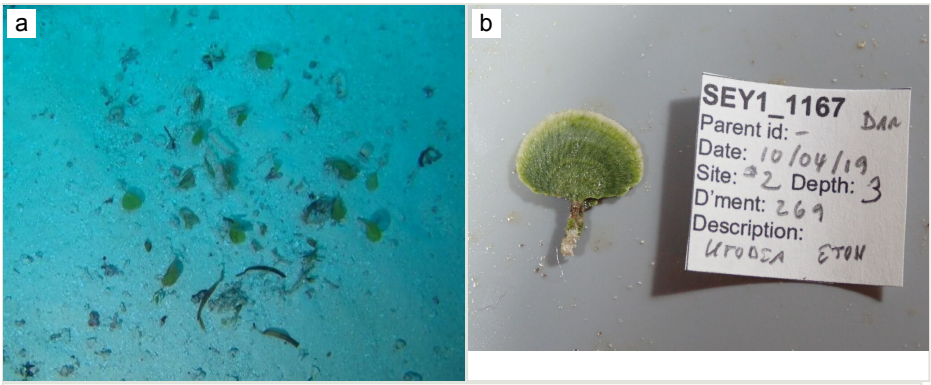

Figure 6.

Udotea spp. indet.

a: *Udotea* sp. indet. 1. D'Arros N1, 30 m. doi
b: *Udotea* sp. indet. 2. D'Arros N1, 3 m, collected specimen (SEY1_1167). doi

Notes: A green calcified seaweed composed of a stipe and either a single or several fan-shaped blades. It is anchored to the bottom by uncalcified tufts of rhizoids, which vary in shape depending on the substratum, most commonly sand. *Udotea* species are

common in coral reef ecosystems and occur globally from tropical to subtropical latitudes. Two species were identified from collections (*Udotea* sp. indet. 1 and sp. indet. 2); however, it was not possible to distinguish between them from underwater images alone (Fig. 6).

Order Cladophorales Haeckel, 1894

Family Anadyomenaceae Kützing, 1843

Genus *Microdictyon* Decaisne, 1841

Microdictyon sp. indet.

Material

a. scientificName: *Microdictyon*; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Cladophorales; family: Anadyomenaceae; genus: *Microdictyon*; scientificNameAuthorship: Decaisne, 1841; waterBody: Indian Ocean; country: Seychelles; locality: Poivre E1; minimumDepthInMeters: 33.4 m; maximumDepthInMeters: 36.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thin, leaf-like green algae made of complanate, monostromatic, reticulate blades that occasionally form dense mats (Fig. 7).

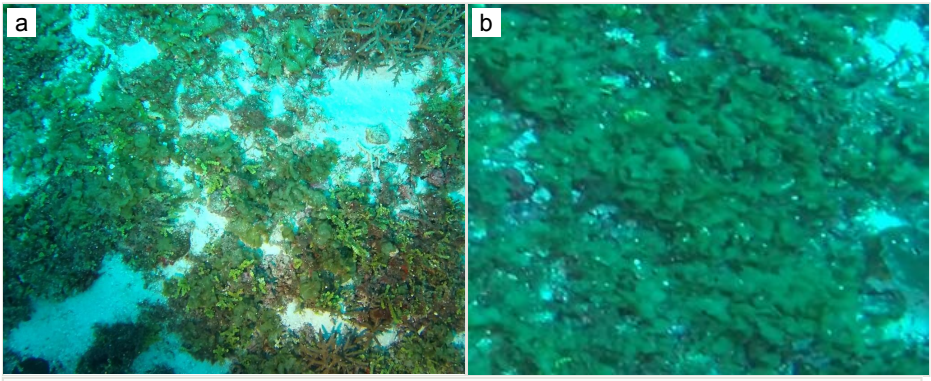

Figure 7.

Microdictyon sp. indet.

a: Poivre E1, 30 m. doi
b: Poivre E1, 30 m. doi

Family Siphonocladaceae Schmitz, 1879

Genus *Dictyosphaeria* Decaisne, 1842

Dictyosphaeria sp. indet.

Material

a. scientificName: *Dictyosphaeria*; kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Cladophorales; family: Siphonocladaceae; genus: *Dictyosphaeria*; scientificNameAuthorship: Decaisne, 1842; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 12 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A green algae that forms somewhat encrusting, hollow or solid, globose or flattened thalli made of vesicular segments (pseudoparenchymatous cushion of polygonal cells). They are attached to the substratum by rhizoids produced by basal vesicles (Fig. 8).

Order Ulvales Blackman & Tansley, 1902

Family Ulvaceae J.V. Lamouroux ex Dumortier, 1822

Genus *Ulva* Linnaeus, 1753

Ulva sp. indet.

Material

a. scientificName: *Ulva* (cf.); kingdom: Plantae; phylum: Chlorophyta; class: Ulvophyceae; order: Ulvales; family: Ulvaceae; genus: *Ulva*; scientificNameAuthorship: Linnaeus, 1753; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 61.8 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thallus can vary in shape and resemble lettuce leaves. The thallus is composed of two layers of cells attached to the substratum by a holdfast made of rhizoidal proliferations. The overall shape of the algae is very variable depending on the environmental conditions. Colour varies from light to dark green (Fig. 9).

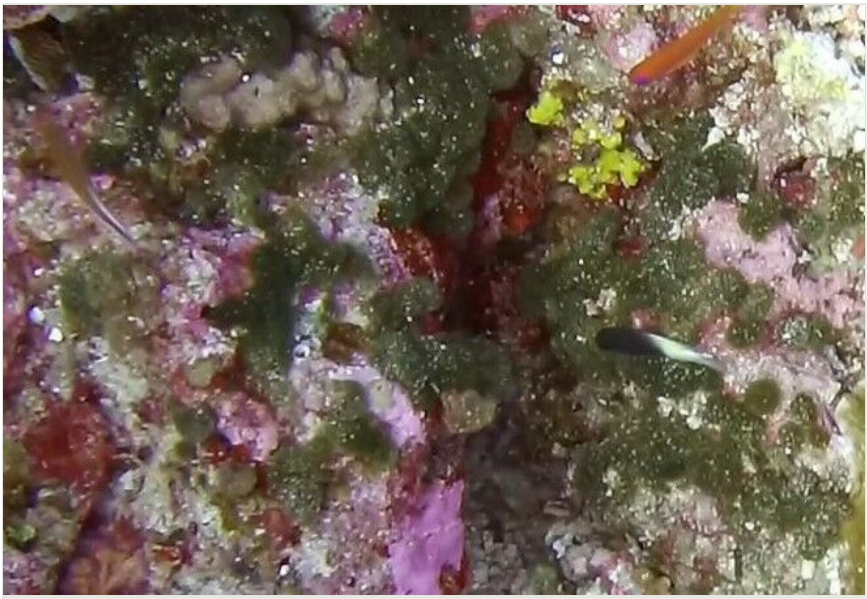

Figure 8. doi

Dictyosphaeria sp. indet. Astove W1, 10 m.

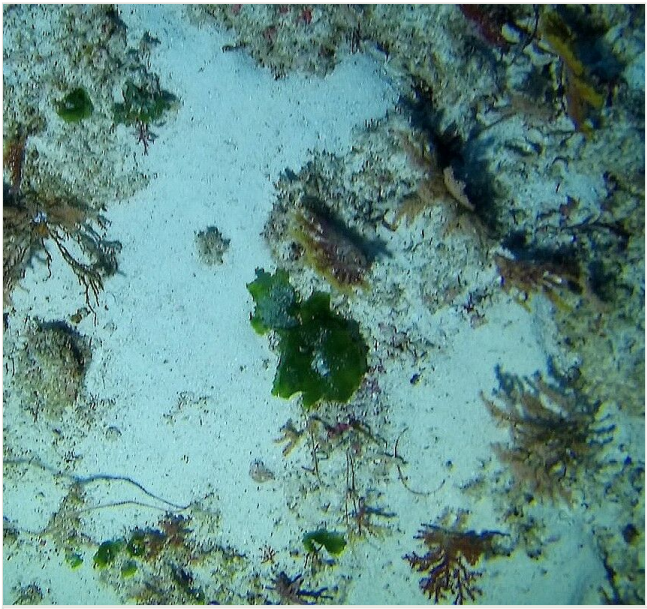

Figure 9. doi

Ulva sp. indet. Desroches S1, 60 m.

Ochrophyta

Class Phaeophyceae Kjellman, 1891

Order Dictyotales Bory de Saint-Vincent, 1828

Family Dictyotaceae Lamouroux ex Dumortier, 1822

Genus *Lobophora* J.Agardh, 1894

Lobophora sp. indet.

Material

a. scientificName: *Lobophora*; kingdom: Plantae; phylum: Ochrophyta; class: Phaeophyceae; order: Dictyotales; family: Dictyotaceae; genus: *Lobophora*; scientificNameAuthorship: Agardh, 1894; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Astove W1, Alphonse N1, D'Arros N1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

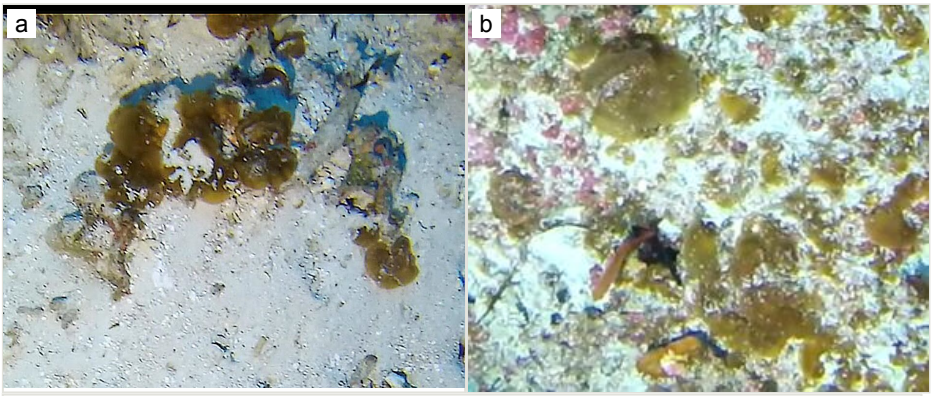

Figure 10.

Lobophora sp. indet.

a: Astove W1, 60 m. doi
b: Alphonse N1, 60 m. doi

Notes: Brown fan-shaped blade with a firm texture. The creeping, ascendant or erect fonds can range from foliose to rounded and are attached to the substratum by rhizoids. Previously thought to be represented by only one species (*Lobophora variegata*), genetics (Vieira et al. 2016) have recently revealed a much wider species

diversity than conventional methods of identification, based on macromorphological characters alone (Fig. 10).

Rhodophyta

Class Florideophyceae Cronquist, 1960

Order Ceramiales Oltmanns, 1904

Family Dasyaceae Kützing, 1843

Genus *Amphisbetema* Weber-van Bosse, 1913

Amphisbetema indica (J.Agardh) Weber-van Bosse, 1913

Material

a. scientificName: *Amphisbetema indica*; kingdom: Plantae; phylum: Rhodophyta; class: Florideophyceae; order: Ceramiales; family: Dasyaceae; genus: *Amphisbetema*; scientificNameAuthorship: Weber-van Bosse, 1913; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 13 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

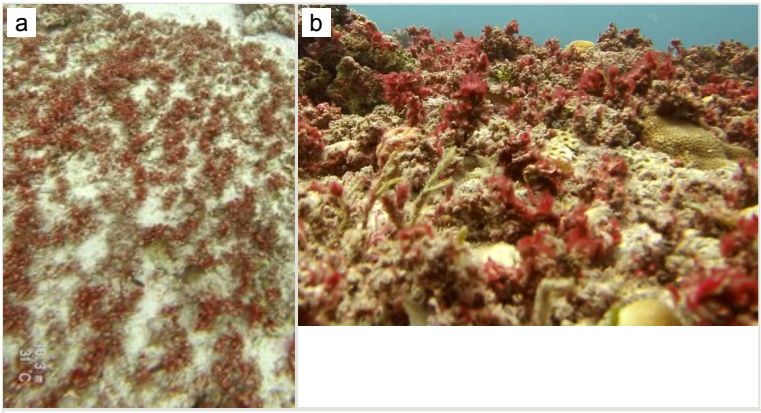

Figure 11.

Amphisbetema indica

a: Desroches S1, 10 m. doi
b: Desroches S1, 10 m. doi

Notes: Creeping red fleshy algae with small, arborescent and feather-like fonds arising from a decumbent rhizome-like base (Fig. 11).

Order Corallinales P.C. Silva & H.W. Johansen, 1986

"ord. Corallinales" stet.

Material

a. scientificName: Corallinales; kingdom: Plantae; phylum: Rhodophyta; class: Florideophyceae; order: Corallinales; scientificNameAuthorship: P.C. Silva & H.W. Johansen, 1986; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Commonly known as crustose coralline algae, these encrusting algae grow on rocks, coral fragments, shells, other algae or seagrasses. Hard and rock-like, their surface can be smooth or rough. Colours range from bright pink to purple. This group contains a variety of species that are difficult to identify from images, hence, no attempt was made to identify them at a lower taxonomic level (Fig. 12).

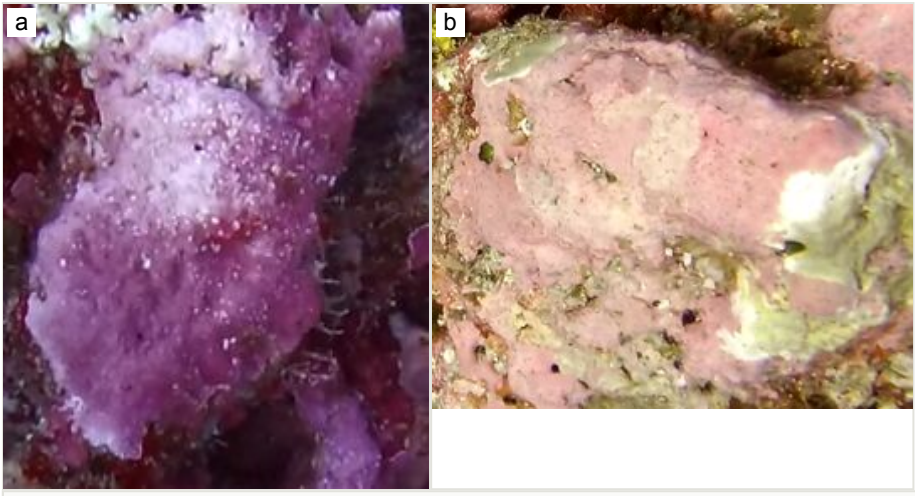

Figure 12.

Corallinales stet.

a: Astove W1, 10 m. doi
b: Astove W1, 10 m. doi

Tracheophyta

Class Magnoliopsida

Order Alismatales R.Br. ex Bercht. & J.Presl, 1820

Family Cymodoceaceae Vines, 1895

Genus *Thalassodendron* Hartog, 1970

Thalassodendron ciliatum (Forsskål) Hartog, 1970

Material

a. scientificName: *Thalassodendron ciliatum*; kingdom: Plantae; phylum: Tracheophyta; class: Magnoliopsida; order: Alismatales; family: Cymodoceaceae; genus: *Thalassodendron*; scientificNameAuthorship: (Forsskål) Hartog, 1970; waterBody: Indian Ocean; country: Seychelles; locality: Poivre E1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: This seagrass species can form dense meadows and is identified by its linear and falcate leaves arising from a rooted rhizome. Its colour is a rich green. One species (*Thalassodendron ciliatum*) was identified from collections (Fig. 13).

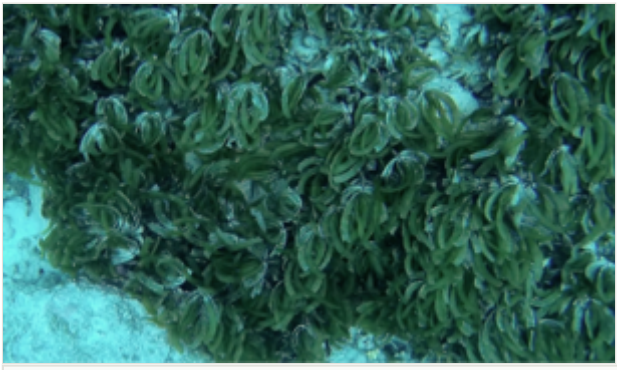

Figure 13. doi

Thalassodendron ciliatum. Poivre E1, 10 m.

Family Hydrocharitaceae Jussieu, 1789

Genus *Halophila* Du Petit-Thouars, 1806

Halophila sp. indet.

Material

a. scientificName: *Halophila*; kingdom: Plantae; phylum: Tracheophyta; class: Magnoliopsida; order: Alismatales; family: Hydrocharitaceae; genus: *Halophila*; scientificNameAuthorship: Du-Petit Thouars, 1806; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1; minimumDepthInMeters: 31.7 m; maximumDepthInMeters: 36.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Lydiane Mattio, Jeanne Mortimer, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Species of seagrass with a creeping bifurcated stem from which arise distichously arranged linear, oblong or rounded delicate leaves. Colour light green (Fig. 14).

Figure 14. doi

Halophila sp. indet. D'Arros N1, 30 m.

Actiniaria

Family Stichodactylidae Andres, 1883

Genus *Heteractis* Milne-Edwards & Haime, 1851

Heteractis magnifica (Quoy & Gaimard, 1833)

Material

a. scientificName: *Heteractis magnifica*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Stichodactylidae; genus: *Heteractis*; scientificNameAuthorship: Quoy & Gaimard, 1833; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1; minimumDepthInMeters: 31.8 m; maximumDepthInMeters: 34.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Oval oral disc that is flat or slightly undulating and densely covered with finger-like tentacles. Tentacles are hardly tapered or blunt, sometimes with a swollen end. Oral disc white; tentacles light brown to green. Typically found growing in comparably exposed positions. They can host anemonefish and are associated with the anemonefish species *Amphiprion akallopisos* (pictured below), in Seychelles waters. Furthermore, *Dascyllus trimaculatus* and various shrimp species may live inside the anemone. Similar-looking species include *Stichodactyla mertensii*, with *H. magnifica* being much more substantial and its oral disc and tentacles of uniform colouration, with a brightly coloured column (where visible) (Fig. 15).

Figure 15. doi

Heteractis magnifica. D'Arros N1, 30 m.

Genus *Stichodactyla* Brandt, 1835

Stichodactyla mertensii Brandt, 1835

Material

a. scientificName: *Stichodactyla mertensii*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Stichodactylidae; genus: *Stichodactyla*; scientificNameAuthorship: Brandt, 1835; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Poivre E1; minimumDepthInMeters: 32.4 m; maximumDepthInMeters: 35.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Meandering oral disc; surface covered in small tentacles (~ 1-2 cm), sometimes longer (~ 5 cm). Dark brown colouration with whitish stripes throughout the colony. Hosts several species of anemonefish, associated with *Amphiprion clarkii* or *Amphiprion fuscocaudatus* (see Fig. 16) in Seychelles waters.

Figure 16. doi

Stichodactyla mertensii. Poivre E1, 30 m.

Order Actiniaria Hertwig, 1882

"ord. Actiniaria" fam. indet. sp. 1

Material

a. scientificName: Actiniaria sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, D'Arros N1; minimumDepthInMeters: 230 m; maximumDepthInMeters: 254.1 m; locationRemarks:

First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Round oral disc (~ 4 cm in diameter) with numerous short tentacles (~ 1.5 cm) along the outer edge of the disc. Colour orange to reddish. Further microscopic examination is necessary for positive taxonomic identification (Fig. 17).

Figure 17. doi

Actiniaria fam. indet. sp. 1. Aldabra W1, 250 m.

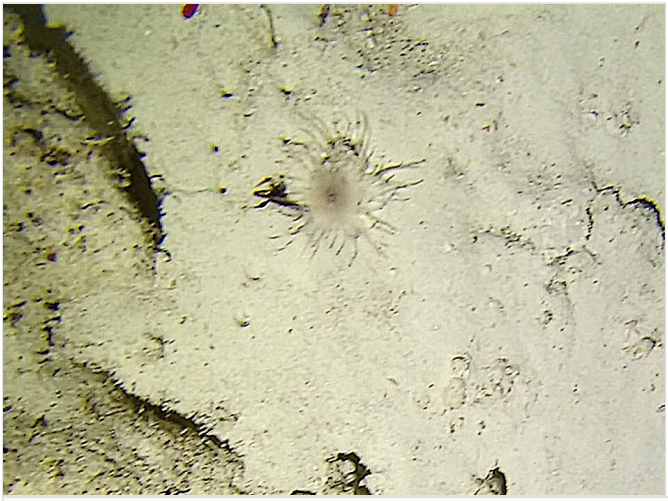

Figure 18. doi

Actiniaria fam. indet. sp. 2. Aldabra W1, 250 m.

"ord. Actiniaria" fam. indet. sp. 2

Material

a. scientificName: Actiniaria sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 249.3 m; maximumDepthInMeters: 251.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Round oral disc (~ 2.5 cm in diameter) with numerous, thin (~ 2.5 cm long) tentacles along the outer edge of the disc. Colour translucent to white. Further microscopic examination is needed for positive taxonomic identification (Fig. 18).

"ord. Actiniaria" fam. indet. sp. 3

Material

a. scientificName: Actiniaria sp. 3; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 132 m; maximumDepthInMeters: 140.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

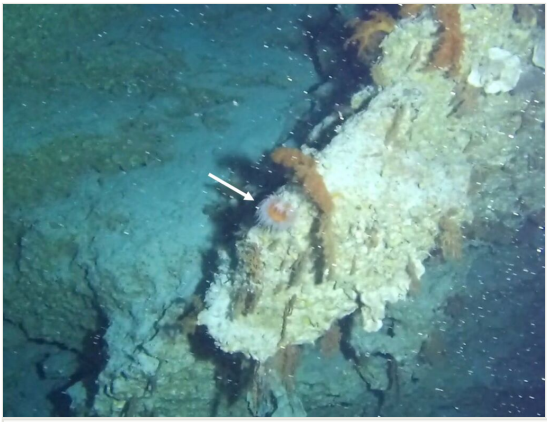

Figure 19. doi

Actiniaria fam. indet. sp. 3. Aldabra W1, 120 m.

Notes: Round oral disc (7 cm in diameter) with numerous thin tentacles (~ 6 cm long) along the outer edge of the disc. Oral disc pale to bright orange, tentacles translucent to pale white. Further microscopic examination is needed for positive taxonomic identification (Fig. 19).

"ord. Actiniaria" fam. indet. sp. 6

Material

a. scientificName: Actiniaria sp. 6; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Round oral disc entirely covered by thick, long (with respect to the size of the disc) tentacles. Colour of oral disc unknown; tentacles dark brown to dark red with white tips. Further microscopic examination is needed for positive taxonomic identification (Fig. 20).

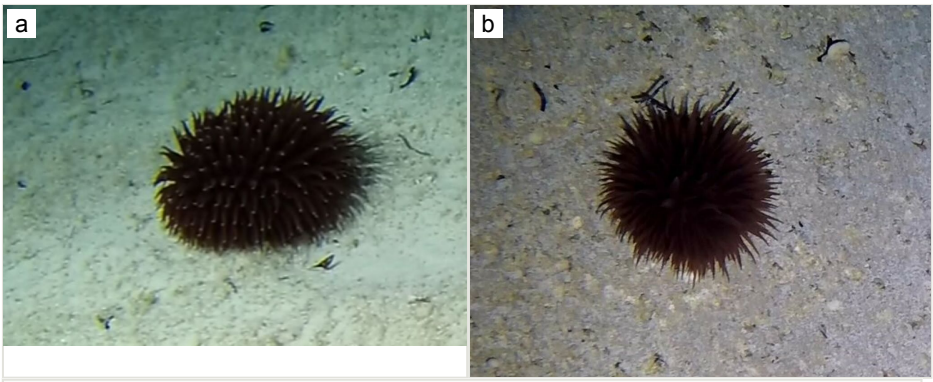

Figure 20.

Actiniaria fam. indet. sp. 6.

a: Aldabra W1, 250 m. doi
b: Astove W1, 250 m. doi

Antipatharia

Family Antipathidae Ehrenberg, 1834

Genus *Antipathes* Pallas, 1766

Antipathes sp. indet.

Material

a. scientificName: *Antipathes*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Antipathidae; genus: *Antipathes*; scientificNameAuthorship: Pallas,

1766; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, Desroches S1; minimumDepthInMeters: 21.7 m; maximumDepthInMeters: 122 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 1.7 m in height, mainly bushy and bramble-like, sparsely to densely-branched with fine, elongate branches. Light to dark brown colour (Fig. 21).

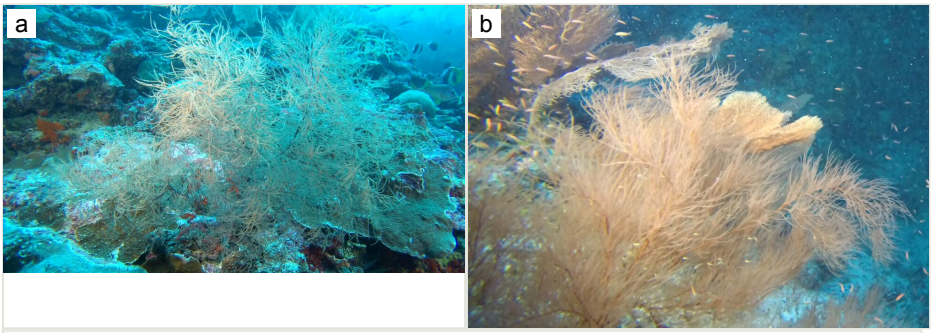

Figure 21.

Antipathes sp. indet.

a: Aldabra N1, 30 m. doi
b: Aldabra N1, 60 m. doi

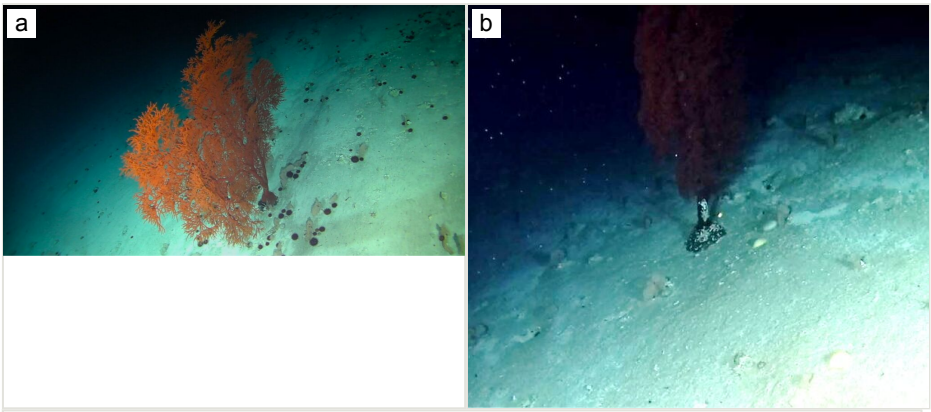

Figure 22.

Leiopathes sp. indet.

a: Alphonse N1, 250 m. doi
b: Alphonse N1, 250 m. doi

Family Leiopathidae Haeckel, 1896

Genus *Leiopathes* Haime, 1849

Leiopathes sp. indet.

Material

a. scientificName: *Leiopathes*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Leiopathidae; genus: *Leiopathes*; scientificNameAuthorship: Haime, 1849; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies observed were large (> 2 m in height), fan-shaped and uniplanar. With thick, central stalk and several finer branches. Colour dark red to orange (Fig. 22).

Family Myriopathidae Opresko, 2001

Genus *Cupressopathes* Opresko, 2001

Cupressopathes sp. indet.

Material

a. scientificName: *Cupressopathes*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Myriopathidae; genus: *Cupressopathes*; scientificNameAuthorship: Opresko, 2001; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 31.1 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 20 cm in height, columnar, monopodial or very sparsely branched. Thick bottlebrush-like appearance. Irregularly pinnulate. Brownish to grey colouration. Darker coloured central axis enclosed by bushy, lighter coloured branches and polyps (Fig. 23).

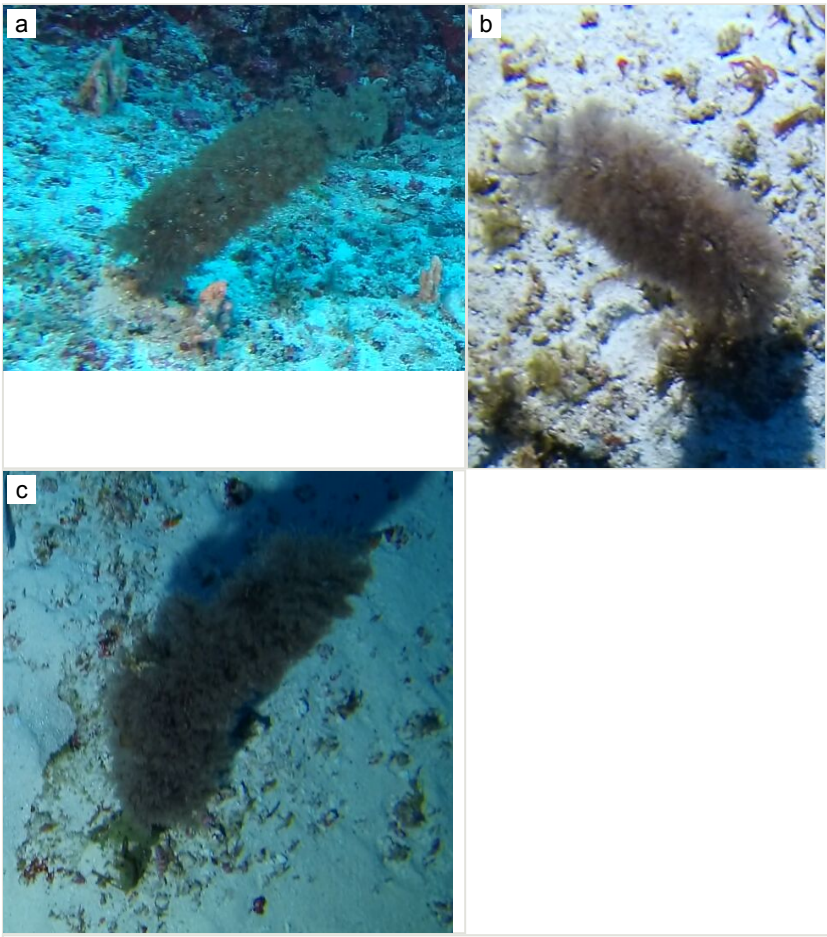

Figure 23.

Cupressopathes sp. indet.

a: Desroches S1, 30 m. doi
b: D'Arros N1, 60 m. doi
c: Desroches S1, 60 m. doi

Genus *Myriopathes* Opresko, 2001

Myriopathes sp. indet.

Material

a. scientificName: ***Myriopathes***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Myriopathidae; genus: ***Myriopathes***; scientificNameAuthorship: Opresko, 2001; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 122.6 m; locationRemarks: First

Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 1.8 m in height, densely branched, appearing rather bushy. Colouration ranges from brownish to grey and orange, with polyps coloured lighter than the branches (Fig. 24).

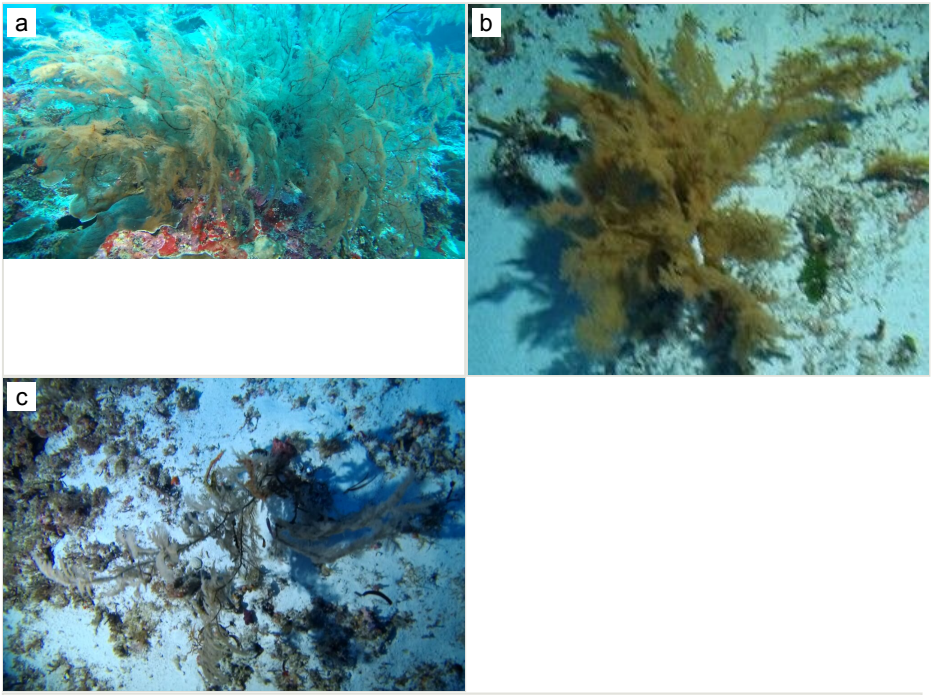

Figure 24.

Myriopathes sp. indet.

a: Aldabra N1, 30 m. doi
b: Desroches S1, 60 m. doi
c: D'Arros N1, 60 m. doi

Family Schizopathidae Brook, 1889

Genus *Bathypathes* Brook, 1889

Bathypathes sp. indet.

Material

a. scientificName: *Bathypathes*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Schizopathidae; genus: *Bathypathes*;

scientificNameAuthorship: Brook, 1889; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1; minimumDepthInMeters: 344 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies have two rows of fine and long branches on either side of the central axis and grow up to ~ 15–20 cm in height. Branches are thin and rounded, giving the colony a feather-like appearance. Colonies are pink to purple coloured (Fig. 25).

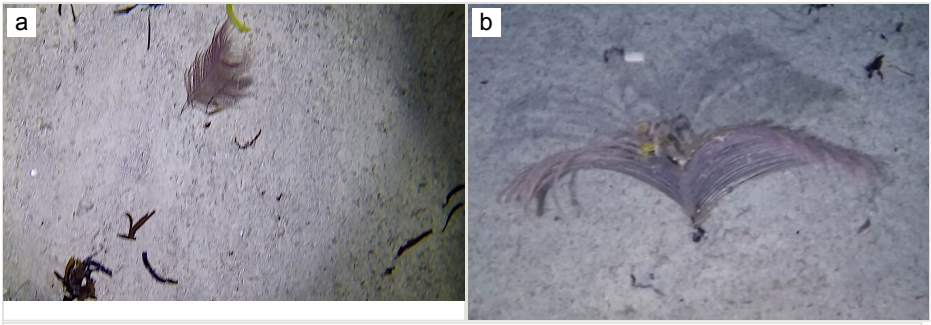

Figure 25.

Bathypathes sp. indet.

a: D'Arros N1, 350 m. doi

b: D'Arros N1, 350 m. doi

Family Stylopathidae Opresko, 2006

Genus *Stylopathes* Opresko, 2006

Stylopathes sp. indet.

Material

a. scientificName: *Stylopathes*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Stylopathidae; genus: *Stylopathes*; scientificNameAuthorship: Opresko, 2006; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, D'Arros N1, Poivre E1; minimumDepthInMeters: 245.6 m; maximumDepthInMeters: 350 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis, Daniel Wagner; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 50 cm in height, columnar, monopodial or very sparsely branched. Thin bottlebrush-like appearance. Irregularly pinnulate. Whitish to pink colouration. Darker coloured central axis enclosed by bushy, lighter coloured branches

and polyps. Appears similar to *Cupressopathes*, but the latter has a much more pronounced bottlebrush appearance (Fig. 26).

Figure 26. doi

Stylopathes sp. indet. D'Arros N1, 350 m.

Octocorallia

Order Alcyonacea Lamouroux, 1812

Family Acanthogorgiidae Gray, 1859

Genus *Muricella* Verrill, 1868

Muricella sp. indet.

Material

a. scientificName: *Muricella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Acanthogorgiidae; genus: *Muricella*; scientificNameAuthorship: Verrill, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Desroches S1; minimumDepthInMeters: 44 m; maximumDepthInMeters: 117 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 1 m in height, fan-shaped and uniplanar with a high degree of ‘anastomosis’ (branch joins), giving the colonies a net-like appearance. In larger

colonies, smaller branches may grow perpendicular to the main plane. Colour bright green to yellow. Occasionally with crinoid commensals (Fig. 27).

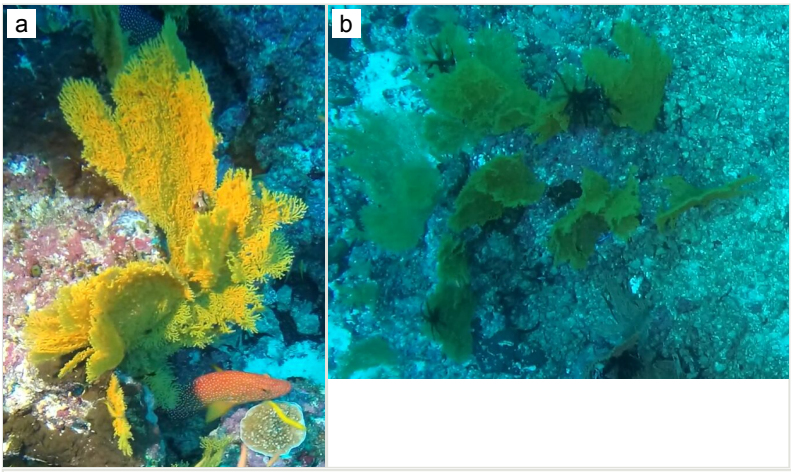

Figure 27.

Muricella sp. indet.

a: Alphonse N1, 60 m. doi
b: Alphonse N1, 60 m. doi

Family Alcyoniidae Lamouroux, 1812

Genus *Lobophytum* Marenzeller, 1886

Lobophytum sp. indet.

Material

a. scientificName: *Lobophytum*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; genus: *Lobophytum*; scientificNameAuthorship: Marenzeller, 1886; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies thickly encrusted with lobed projections, typically < 50 cm across (= in the longest dimension). Some species are bowl-shaped or stand more erect. Generally following the substrate, colonies look like large plates. Some form small individual bumps (1), others have long valleys and walls (2). Polyps are only present on the upper surface. Colouration brown to grey. The tips of the individual lobes are often coloured lighter than the sides. Similar species include *Pectinia*, which has deeper valleys

towards the centre of the colony. *Sinularia* looks similar, but has smaller gaps between bumps (Fig. 28).

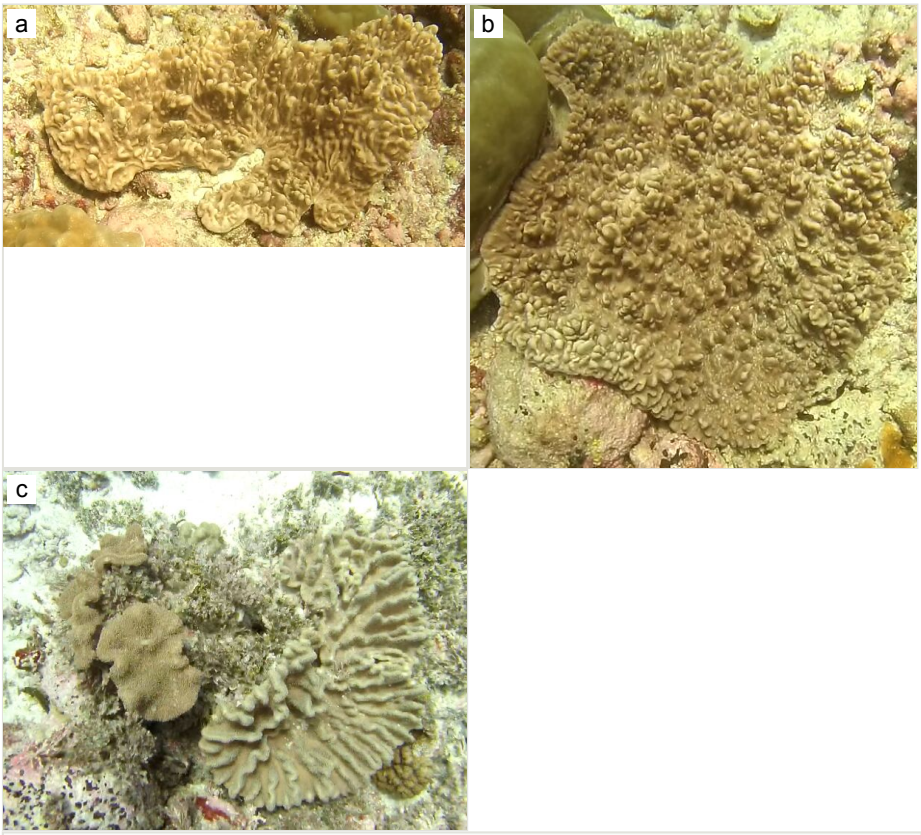

Figure 28.

Lobophytum sp. indet.

a: Poivre E1, 10 m. doi
b: Poivre E1, 10 m. doi
c: Aldabra N1, 10 m. doi

Genus *Paraminabea* Williams & Alderslade, 1999

Paraminabea sp. indet.

Material

a. scientificName: ***Paraminabea***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; genus: ***Paraminabea***; scientificNameAuthorship: Williams & Alderslade, 1999; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1; minimumDepthInMeters: 123 m; maximumDepthInMeters: 128 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender,

Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are digitiform, with a short tapered stalk resembling a carrot, up to 10 cm long. Polyps are only extended at night. Colouration yellow, orange or red, with white polyps (Fig. 29).

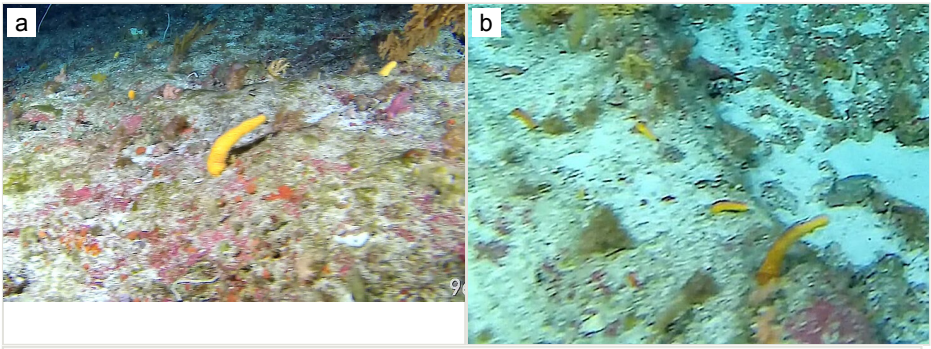

Figure 29.

Paraminabea sp. indet.

a: Alphonse N1, 97 m. doi

b: Alphonse N1, 97 m. doi

Genus *Sarcophyton* Lesson, 1834

Sarcophyton sp. indet.

Material

a. scientificName: *Sarcophyton*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; genus: *Sarcophyton*; scientificNameAuthorship: Lesson, 1834; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are lobate with conspicuous bare stalks merging into a wide, fleshy, disc-like head (polypary). The polypary is concave at the centre and wavy around the edges, giving it a mushroom appearance (especially in juveniles). Polyps are only found on top of the polypary. Colouration shades of brown, beige, yellow or green. Polyps are generally of the same colour as the colonies, but can be yellow or white in brown individuals. In downward facing videos typical for benthic surveys, the stalk will not always be visible. Maximum recorded size: 20 cm across. Similar species include *Lobophytum*, lacking the prominent stalk and the folds around the periphery (Fig. 30).

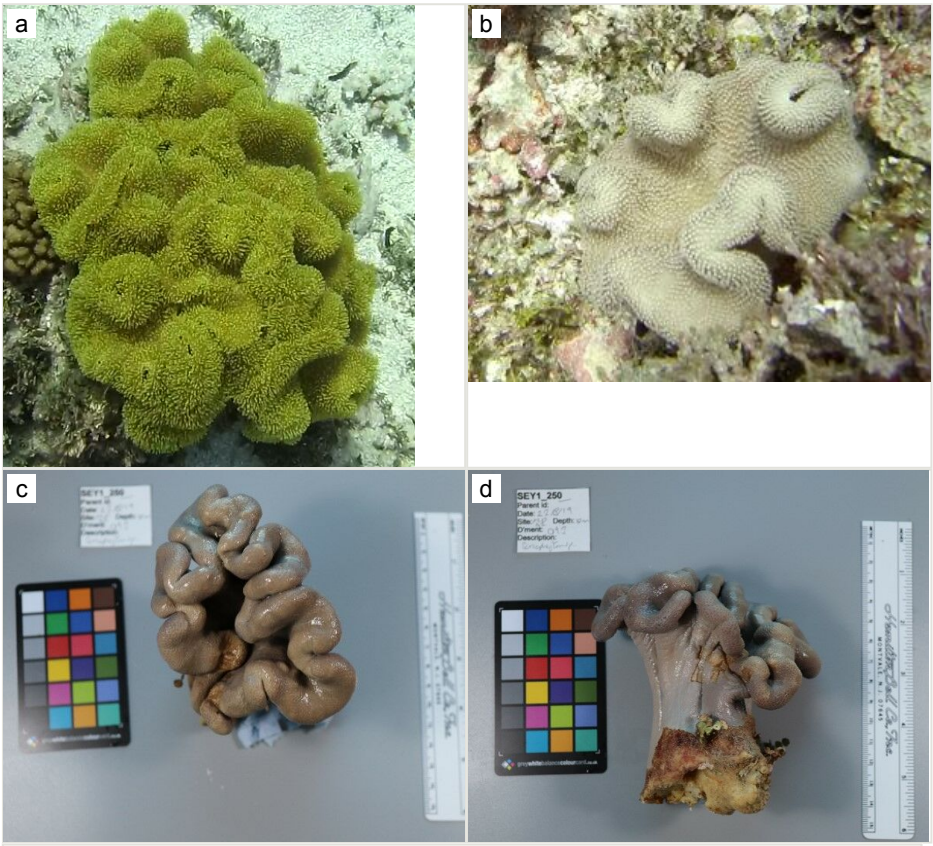

Figure 30.

Sarcophyton sp. indet.

a: Aldabra N1, 10 m. doi
b: Aldabra N1, 10 m. doi
c: Aldabra N1, 10 m, collected specimen (SEY1_250) doi
d: Aldabra N1, 10 m, collected specimen (SEY1_250) doi

Genus *Sinularia* May, 1898

Sinularia sp. indet.

Material

a. scientificName: *Sinularia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; genus: *Sinularia*; scientificNameAuthorship: May, 1898; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 39.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy:

Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: *Sinularia* colonies have the largest morphological variation amongst all soft corals. Colonies form low tabular mounds that can have ridged or digitate surfaces. Growth forms can be low encrusting, branching, tall and lobed,or lead and dish-like. Colonies form finger-like projections. Polyps are fully retractable. In this survey, colonies were typically < 50 cm across and their colouration ranged from grey and pale brown to pinkish and green. Similar species include *Cladiella* and *Lobophytum*, with *C.* and *L.* colonies typically having wider ridges between lobes (Fig. 31).

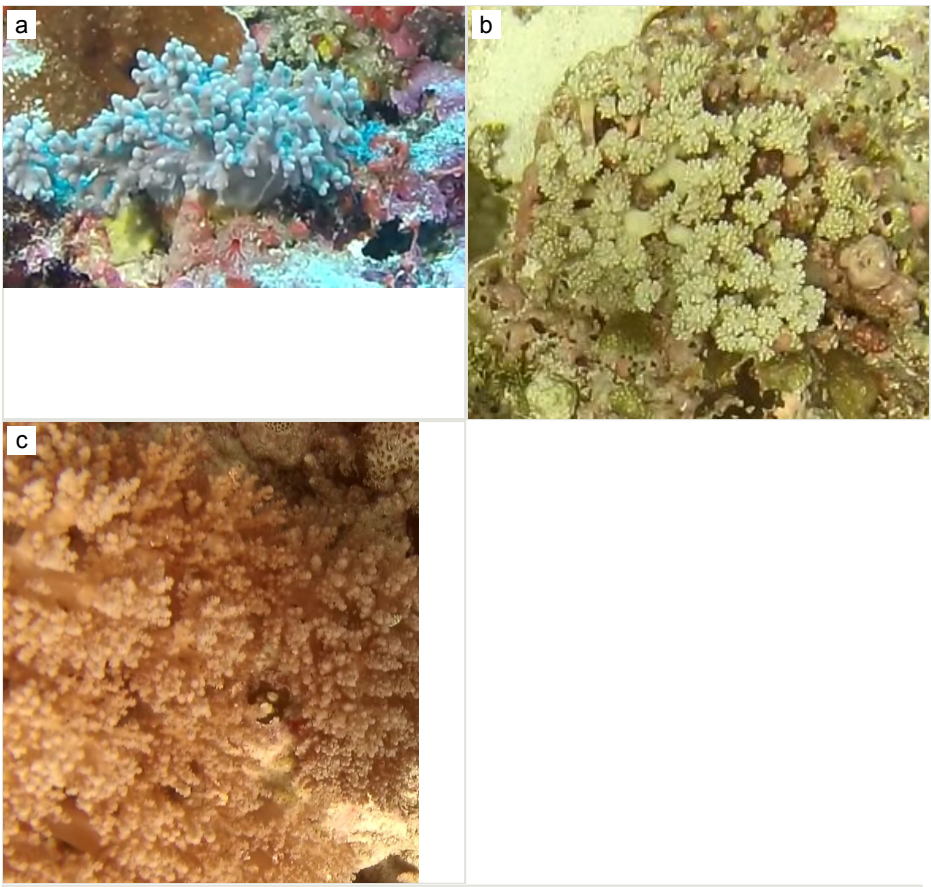

Figure 31.

Sinularia sp. indet.

a: Aldabra N1, 30 m. doi
b: Poivre E1, 10 m. doi
c: Aldabra W1, 10 m. doi

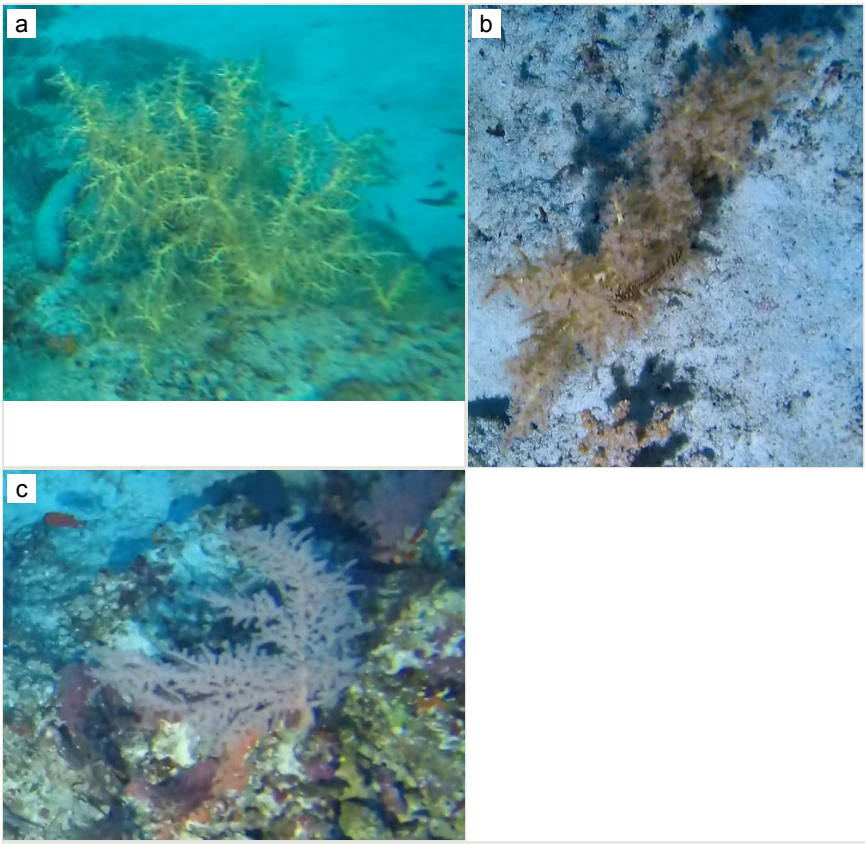

Figure 32.

Solenocaulon sp. indet.

a: Aldabra W1, 60 m. doi
b: Aldabra W1, 60 m. doi
c: Astove W1, 60 m. doi

Family Anthothelidae Broch, 1916

Genus *Solenocaulon* Gray, 1862

Solenocaulon sp. indet.

Material

a. scientificName: *Solenocaulon*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Anthothelidae; genus: *Solenocaulon*; scientificNameAuthorship: Gray, 1862; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 21 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA;

identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies were up to 40 cm in height (Fig. 32b) and identified by their irregular and uniplanar branches. Polyps are conspicuous and give the colony a fuzzy appearance. Colouration ranges from red or light brown to pink and yellow, the latter two commonly encountered during this survey. Polyps are normally whitish (Fig. 32).

Family Ellisellidae Gray, 1859

"fam. Ellisellidae" gen. indet. sp. 1

Material

a. scientificName: Ellisellidae sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Astove W1, D'Arros N1, Poivre E1; minimumDepthInMeters: 52.9 m; maximumDepthInMeters: 120.7 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are small (< 25 cm in height) and growing as stubby, finger-shaped branches. No central stalk was visible on the captured footage. Surface covered with polyps giving it a fuzzy appearance. Colony colour was orange with orange polyps (Fig. 33).

Figure 33. doi

Ellisellidae gen. indet. sp. 1. Alphonse N1, 103 m.

"fam. Ellisellidae" gen. indet. sp. 2

Material

a. scientificName: Ellisellidae sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 19.2 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Individuals are whip-like, forming single, unbranched colonies growing up to 2 m in height. Distal parts can be straight, heavily bent or coiled. Colour ranges from red to orange, pink, white, orange-yellow with red polyps or red with white polyps. Individuals most likely belong to the genus *Junceella* or *Viminella*, but are impossible to distinguish from video footage alone, as identification features might be extremely small and not visible on video footage. However, some might be unbranched colonies of *Ellisella* or uncoiled colonies of the black wire coral *Stichopathes* (Fig. 34).

Genus *Dichotella* Gray, 1870

Dichotella sp. indet.

Material

a. scientificName: *Dichotella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; genus: *Dichotella*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1; minimumDepthInMeters: 62.1 m; maximumDepthInMeters: 71.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies with sparse or rich dichotomous branching - in this survey, the sparsely branched form, seen in Fig. 35 below, was more common. Colonies can appear bushy to planar. The maximum recorded colony size was 50 cm in height. Branches are thick and relatively short and split into smaller branches towards the periphery of the colony. Colouration is red to orange. *Ellisella* looks similar, but its colonies branch from the bottom and branches tend to be longer and whip-like (Fig. 35).

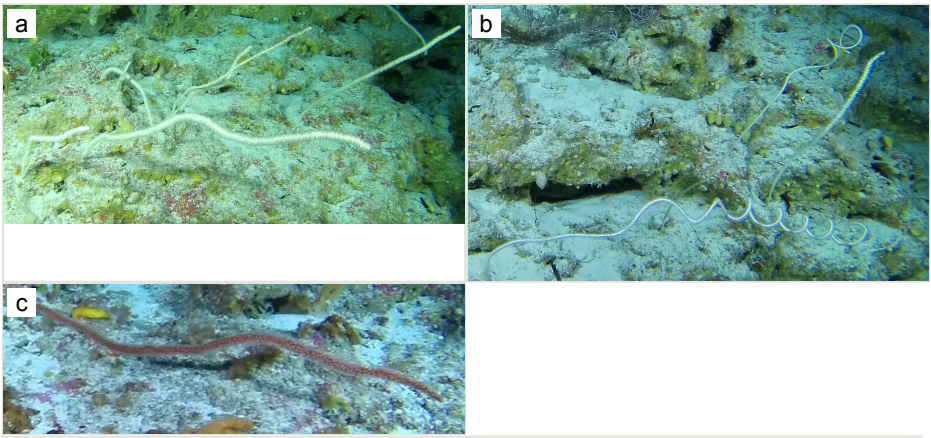

Figure 34.

Ellisellidae gen. indet. sp. 2.

a: Aldabra N1, 120 m. doi
b: Aldabra N1, 120 m. doi
c: Alphonse N1, 120 m. doi

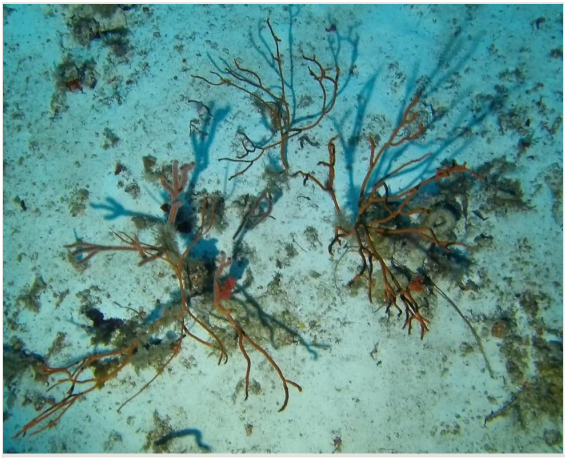

Figure 35. doi

Dichotella sp. indet. D'Arros N1, 60 m.

Genus *Ellisella* Gray, 1858

Ellisella sp. indet.

Material

a. scientificName: ***Ellisella***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; genus: ***Ellisella***; scientificNameAuthorship: Gray, 1858; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove

W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 2 m in height, bush-like, with whip-like branches; branching can range from sparse to densely packed. Colouration is red to orange, pink, white, orange-yellow with red or white polyps. Similar-looking species include *Dichotella*, which in general has thicker and shorter branches that display dichotomous branching. *Dichotella* branches also become shorter towards the periphery of the colony (Fig. 36).

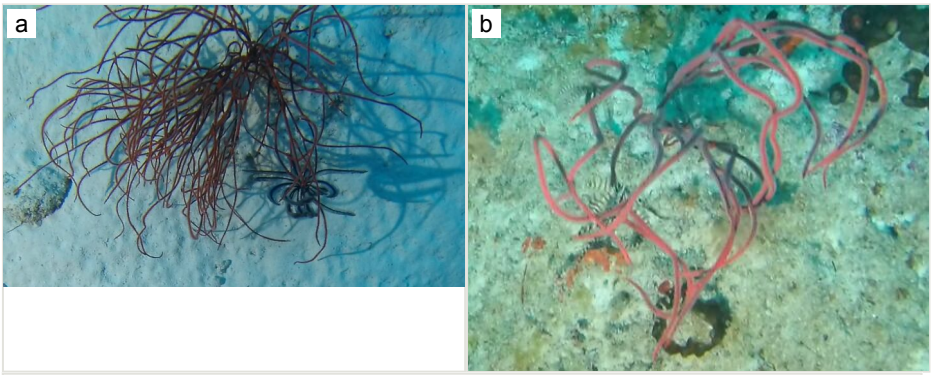

Figure 36.

Ellisella sp. indet.

a: Aldabra W1, 30 m. doi
b: Aldabra W1, 60 m. doi

Genus *Nicella* Gray, 1870

Nicella sp. indet.

Material

a. scientificName: *Nicella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; genus: *Nicella*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 1.5 m in height, fan-shaped, with sparse, fine branches typically growing in one plane. Colonies sometimes show dichotomous branching and never show anastomoses. Branching starts from the bottom, hence, the stalk is rarely visible. Colour white with dark-brown to black coloured polyps (Fig. 37)

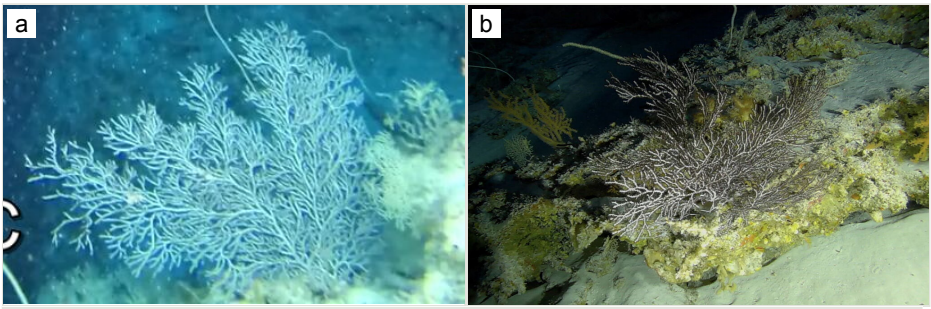

Figure 37.

Nicella sp. indet.

a: Aldabra N1, 100 m. doi
b: Aldabra N1, 100 m. doi

Genus *Verrucella* Milne Edwards & Haime, 1857

Verrucella sp. indet.

Material

a. scientificName: *Verrucella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Ellisellidae; genus: *Verrucella*; scientificNameAuthorship: Milne Edwards & Haime, 1857; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1; minimumDepthInMeters: 21 m; maximumDepthInMeters: 64.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Large sea fans (~ 1 m in height and width), with dense, uniplanar branches that create a mesh-like appearance; conspicuous central stalk. Colouration observed here was exclusively purple; however red, orange, yellow and shades of brown are also common. More sparsely branched colonies can resemble *Nicella* (Fig. 38).

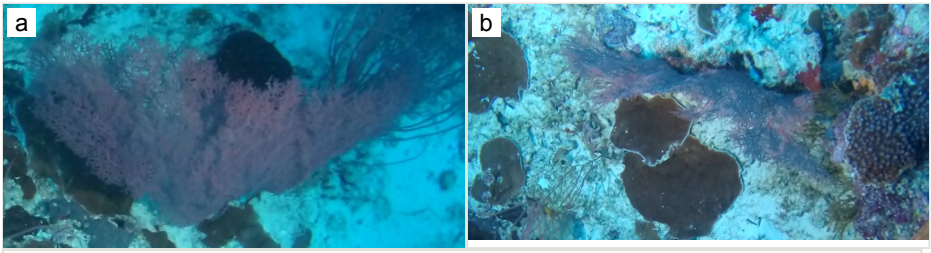

Figure 38.

Verrucella sp. indet.

a: Aldabra N1, 30 m. doi
b: Aldabra N1, 30 m. doi

Family Gorgoniidae Lamouroux, 1812

Genus *Rumphella* Bayer, 1955

Rumphella sp. indet.

Material

a. scientificName: *Rumphella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Gorgoniidae; genus: *Rumphella*; scientificNameAuthorship: Bayer, 1955; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 11.3 m; maximumDepthInMeters: 13 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically < 1 m across, appear bushy, with either sparse, whip-like branches or dense shrub-like branches that have a smooth surface and blunt tips. Light brown to greyish colour (Fig. 39).

Figure 39. doi

Rumphella sp. indet. Desroches S1, 11 m.

Family Isididae Lamouroux, 1812

Genus *Isis* Linnaeus, 1758

Isis sp. indet.

Material

a. scientificName: *Isis*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; genus: *Isis*; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, D'Arros N1; minimumDepthInMeters: 89 m; maximumDepthInMeters: 95 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 40 cm in height, can appear fan or bush-like, with thick branches covered in fuzzy-looking polyps. Colour ranges from yellow to green or brownish (Fig. 40).

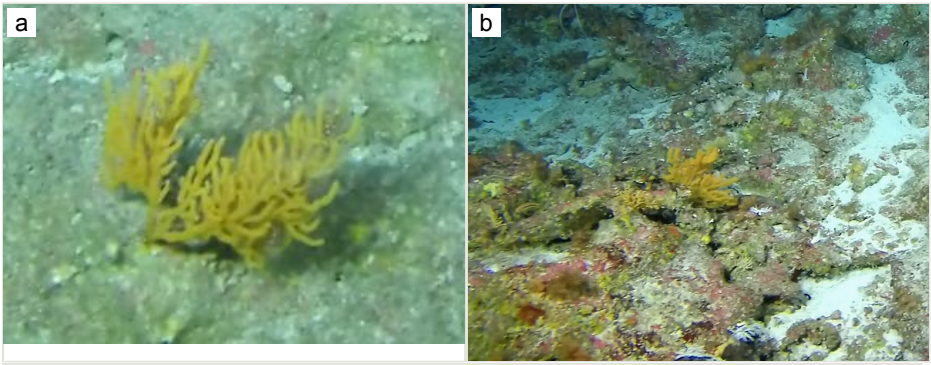

Figure 40.

Isis sp. indet.

a: D'Arros N1, 120 m. doi
b: Alphonse N1, 103 m. doi

Family Melithaeidae Gray, 1870

"fam. Melithaeidae" gen. indet. sp. 1

Material

a. scientificName: Melithaeidae sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Melithaeidae; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 36.2 m; maximumDepthInMeters: 71.5 m;

locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 20 cm in height, mostly fan-shaped and uniplanar, sometimes slightly bushy. Mostly dichotomously branched, where branches originate from the nodes. Colouration rich purple-reddish colour at the base that becomes lighter towards the tips of the branches. The centre of the colony always appears darker than the edges (Fig. 41).

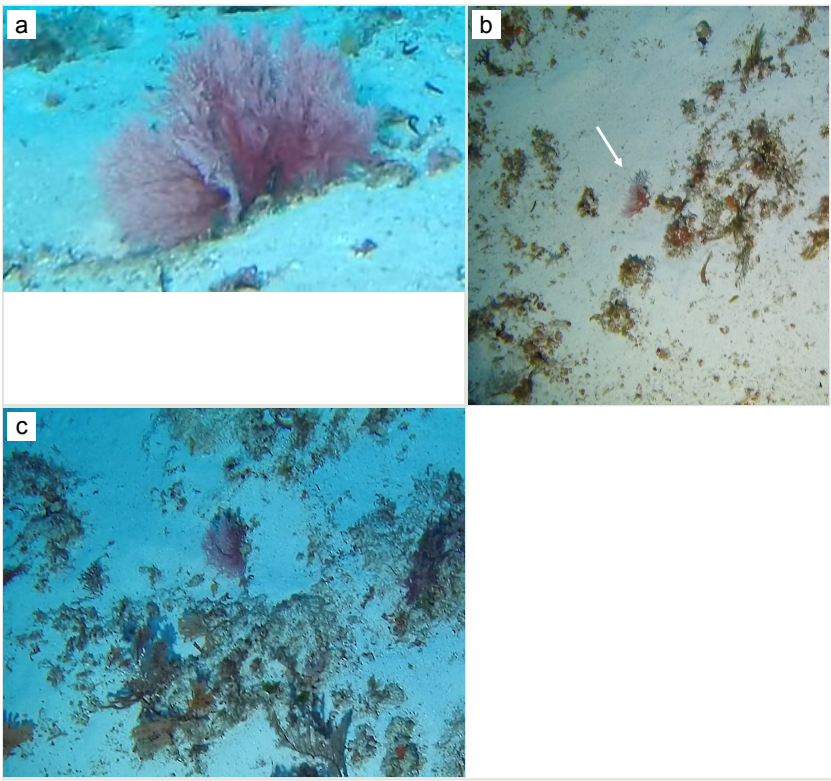

Figure 41.

Melithaeidae gen. indet. sp. 1

a: Poivre E1, 60 m. doi
b: D'Arros N1, 60 m. doi
c: Desroches S1, 60 m. doi

"fam. Melithaeidae" gen. indet. sp. 2

Material

a. scientificName: Melithaeidae sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Melithaeidae; scientificNameAuthorship: Gray,

1870; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1; minimumDepthInMeters: 120 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 60 cm in height, mostly fan-shaped, multiplanar with irregular branching. The periphery of the colony is rather sinuous. The main stem has a distinct orange colour with additional branches becoming successively lighter; tips of the branches appear almost white (Fig. 42).

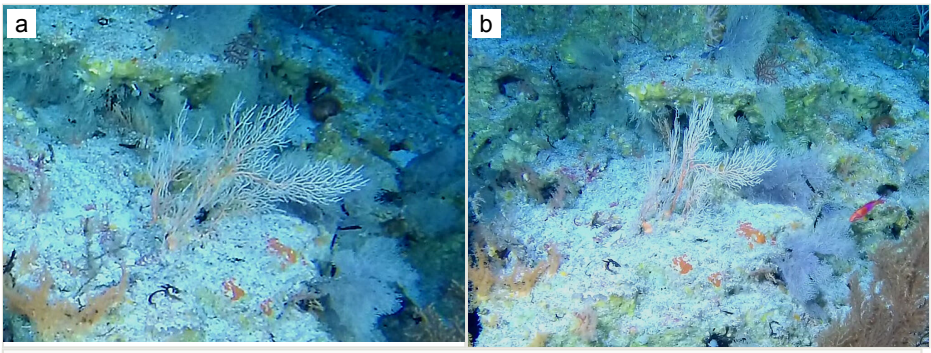

Figure 42.

Melithaeidae gen. indet. sp. 2

a: Aldabra N1, 120 m. doi
b: Aldabra N1, 120 m. doi

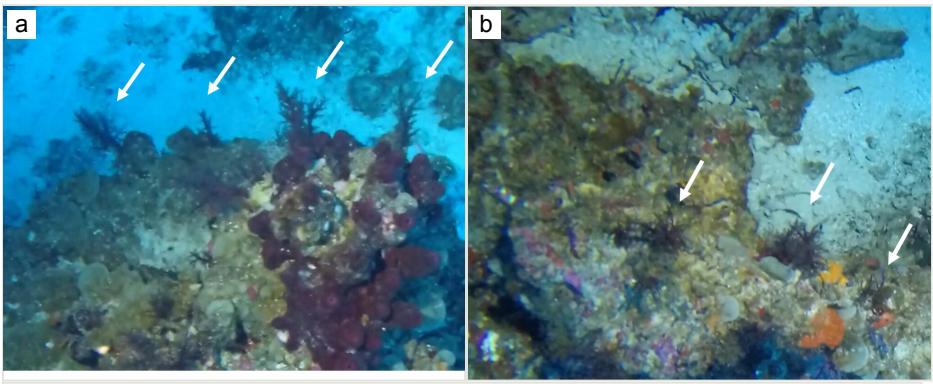

Figure 43.

Melithaeidae gen. indet. sp. 3

a: Astove W1, 60 m. doi
b: Astove W1, 60 m. doi

"fam. Melithaeidae" gen. indet. sp. 3

Material

a. scientificName: Melithaeidae sp. 3; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Melithaeidae; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 49.1 m; maximumDepthInMeters: 63.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies less than 20 cm in height, arborescent with dichotomous branching; sometimes appear slightly bushy when heavily branched. Colour deep purple with slightly lighter polyps (Fig. 43).

Family Nephtheidae Gray, 1862

Genus *Dendronephthya* Kükenthal, 1905

Dendronephthya sp. indet. 1

Material

a. scientificName: *Dendronephthya* sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Nephtheidae; genus: *Dendronephthya*; scientificNameAuthorship: Kükenthal, 1905; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 85 m; maximumDepthInMeters: 123.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Bushy colonies up to 20 cm in height, with close, short branching and distinct, large, round polyp bunches at the end of each branch. Colonies can show one of three growth forms: divaricate (sparse, arborescent branching with bundled polyps), glomerate (close, short branching with polyps forming rounded bunches) or umbellate (polyps forming umbrella-like crowns that may combine to form hemispheres). White stalk with polyps of red, orange, purple, yellow, pink or white colour (Fig. 44).

Dendronephthya sp. indet. 2

Material

a. scientificName: *Dendronephthya* sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Nephtheidae; genus: *Dendronephthya*; scientificNameAuthorship: Kükenthal, 1905; waterBody: Indian Ocean; country:

Seychelles; locality: Desroches S1, Poivre E1; minimumDepthInMeters: 20 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies umbellate up to 20 cm in height, with polyp bunches closely arranged at the same level on the end of small branches (twigs), forming umbrella-like crowns. Creamy-white colour (Fig. 45).

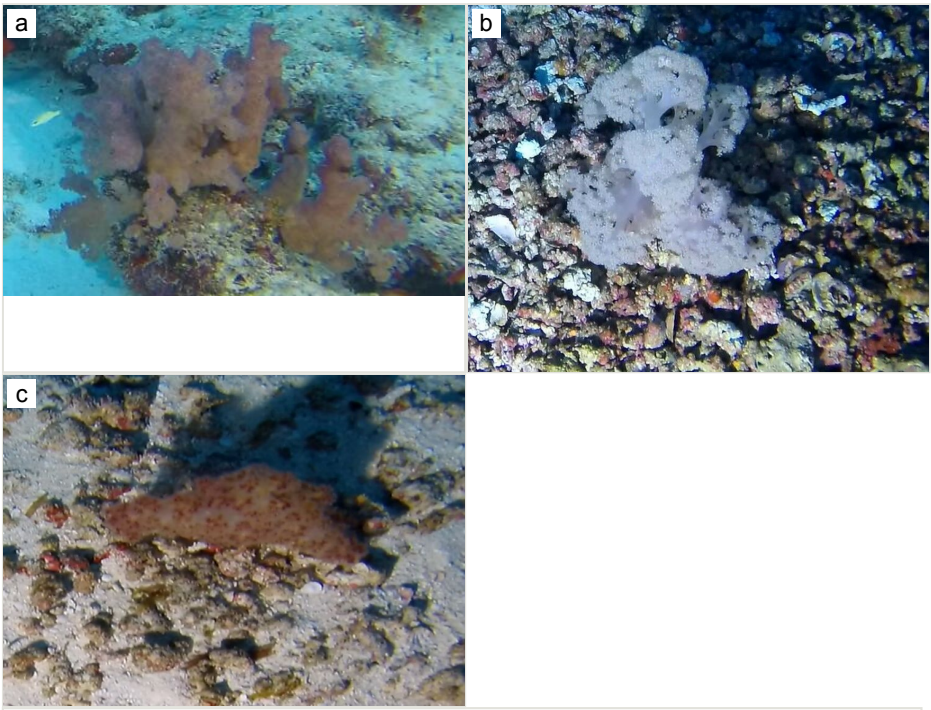

Figure 44.

Dendronephthya sp. indet. 1

a: Aldabra W1, 30 m. doi
b: D'Arros N1, 60 m. doi
c: D'Arros N1, 60 m. doi

Genus *Litophyton* Forskål, 1775

Litophyton sp. indet.

Material

a. scientificName: *Litophyton*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Nephtheidae; genus: *Litophyton*; scientificNameAuthorship: Forskĺl, 1775; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1,

Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

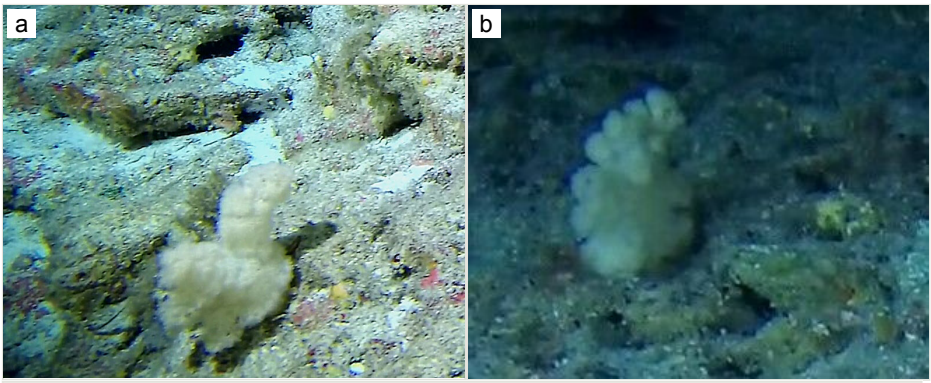

Figure 45.

Dendronephthya sp. indet. 2

a: Desroches S1, 120 m. doi
b: Desroches S1, 120 m. doi

Notes: Colonies are tree-like with branched polyparium, growing out from one single stem, growing up to 55 cm in height. Polyps are non-retractile and clustered at the end of the terminal branches, forming catkins. Colouration orange to yellow, cream, brown or purple. *Litophyton* can be confused with the similar-looking *Nepthea*. They can be distinguished by their general appearance, with *Litophyton* being very soft compared to the firm *Nepthea* (Fig. 46).

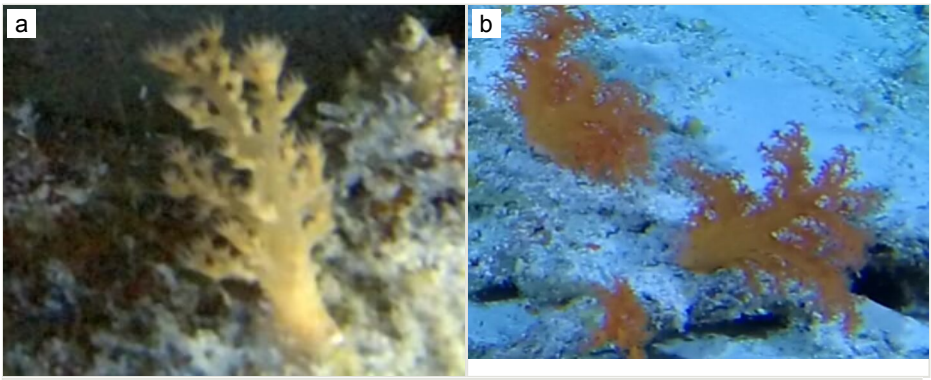

Figure 46.

Litophyton

a: Aldabra N1, 160 m. doi
b: Aldabra W1, 120 m. doi

Genus *Scleronephthya* Studer, 1887

Scleronephthya sp. indet.

Material

a. scientificName: *Scleronephthya* sp.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Nephtheidae; genus: *Scleronephthya*; scientificNameAuthorship: Studer, 1887; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 32 m; maximumDepthInMeters: 120.7 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 25 cm in height, sparsely branched and arborescent, often planar. Polyps only on the branched part of the colony and are normally expanded at night and in strong currents. Colouration translucent-white with bluish-purple polyps. Can be confused with *Dendronephthya*, which has a similar appearance, but its polyps typically form bunches that cover the entire colony surface (Fig. 47).

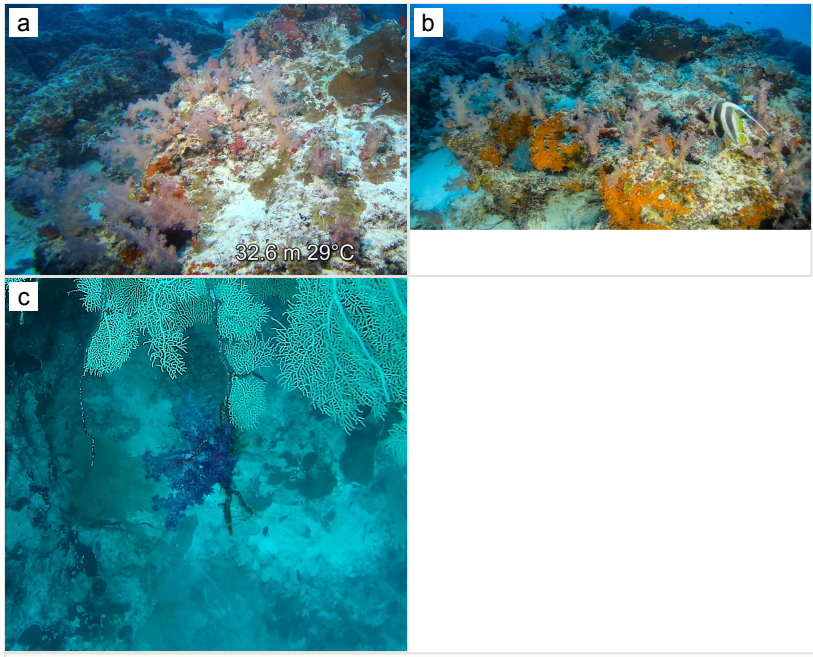

Figure 47.

Scleronephthya sp. indet.

a: Aldabra W1, 32 m. doi
b: Aldabra W1, 30 m. doi
c: Aldabra N1, 30 m. doi

Family Nidaliidae Gray, 1869

"fam. Nidaliidae" gen. indet. sp.

Material

a. scientificName: Nidaliidae sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Nidaliidae; scientificNameAuthorship: Gray, 1869; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 65.6 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 50 cm in height, typically heavily branched with a bushy appearance. Colouration orange-brown with similar coloured polyps (Fig. 48).

Figure 48. doi

Nidaliidae gen. indet. sp. Alphonse N1, 250 m.

Family Plexauridae Gray, 1859

"fam. Plexauridae" gen. indet. sp. 2

Material

a. scientificName: *Plexauridae* sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 89 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA;

identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies fan-shaped, mostly uniplanar, with a thick main stem and several thinner branches. Overall, there is a strong tree-like resemblance with branches growing upwards. Anastomoses are never observed. Colony size typically < 50 cm in height but can occasionally reach > 1 m. The colour is bright green to yellow. Young colonies grow upright into branched stalks and do not yet have a fan morphology. Belongs to either *Paraplexaura* or *Paracis*, but positive identification requires microscopic examination. Colonies can be mistaken for *Acanthogorgia*, but the latter forms bushy colonies growing omnidirectionally (Fig. 49).

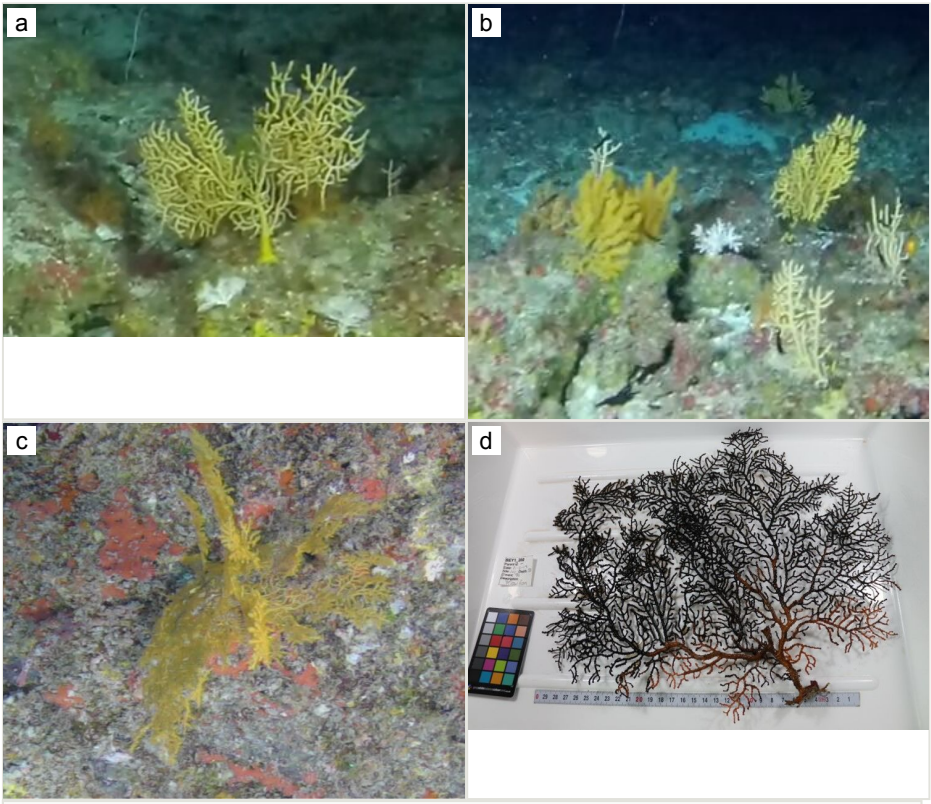

Figure 49.

Plexauridae gen. indet. sp. 2.

a: Alphonse N1, 104 m. doi
b: Alphonse N1, 97 m. doi
c: Aldabra N1, 91 m. doi
d: Aldabra N1, 91 m, collected specimen (SEY1_200) corresponding to the in-situ colony of Fig. 61c. doi

"fam. Plexauridae" gen. indet. sp. 4

Material

a. scientificName: *Plexauridae* sp. 4; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1; minimumDepthInMeters: 100 m; maximumDepthInMeters: 100 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies large (typically > 1 m in height), slightly bushy, with dichotomous to pinnate branching. Branches covered with small polyps and appear fuzzy. Colour shades of brown to greenish-grey (Fig. 50).

Figure 50. doi

Plexauridae gen. indet. sp. 4. Aldabra N1, 100 m.

"fam. Plexauridae" gen. indet. sp. 5

Material

a. scientificName: *Plexauridae* sp. 5; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 67.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 30 cm in height, uniplanar, branching dichotomously from the bottom of the colony with no clear mainstem visible. Conspicuously monodirectional upward branching pattern. Branches covered in small polyps and appear fuzzy. Dark brown with grey-brow polyps (Fig. 51).

Figure 51. doi

Plexauridae gen. indet. sp. 5. Desroches S1, 60 m.

"fam. Plexauridae" gen. indet. sp. 6

Material

a. scientificName: *Plexauridae* sp. 6; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 66.3 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 60 cm in height, fan-shaped, uniplanar with irregular branching. The stem is coloured brown with yellow to pale-grey polyps that tend to be more brightly coloured towards the end of the colony's branches (Fig. 52).

"fam. Plexauridae" gen. indet. sp. 7

Material

a. scientificName: *Plexauridae* sp. 7; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Astove W1; minimumDepthInMeters: 32 m; maximumDepthInMeters: 60 m; locationRemarks: First

Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 50 cm in height, bushy, with dense, short branches. Polyps are small, but numerous, giving the colony a fuzzy appearance. Dark brown to black with pale white to purple polyps (Fig. 53).

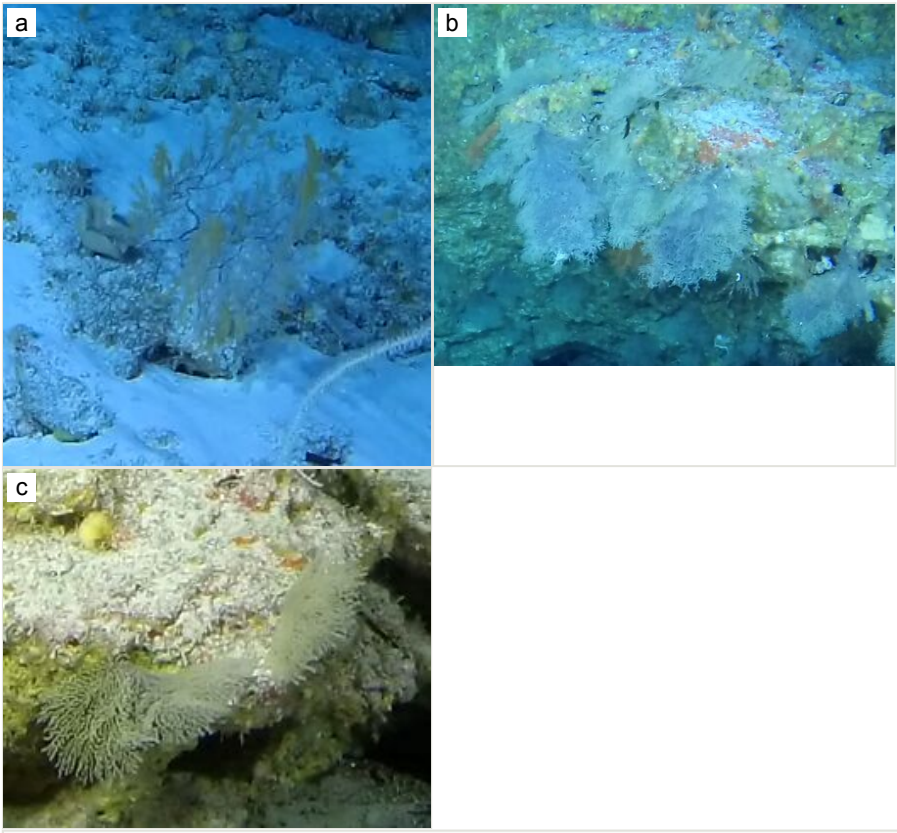

Figure 52.

Plexauridae gen. indet. sp. 6

a: Aldabra W1, 120 m. doi
b: Aldabra N1, 140 m. doi
c: Aldabra N1, 148 m. doi

"fam. Plexauridae" gen. indet. sp. 8

Material

a. scientificName: *Plexauridae* sp. 8; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859;

waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 128 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

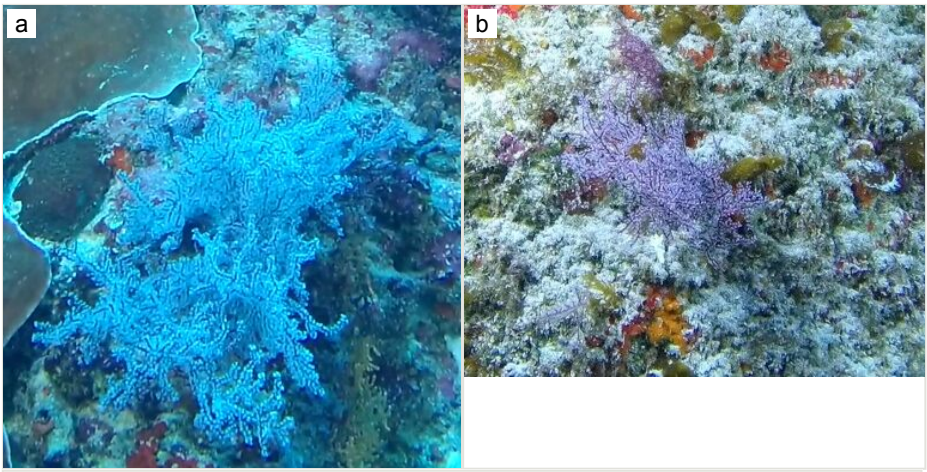

Figure 53.

Plexauridae gen. indet. sp. 7.

a: Aldabra N1, 30 m. doi
b: Astove W1, 60 m. doi

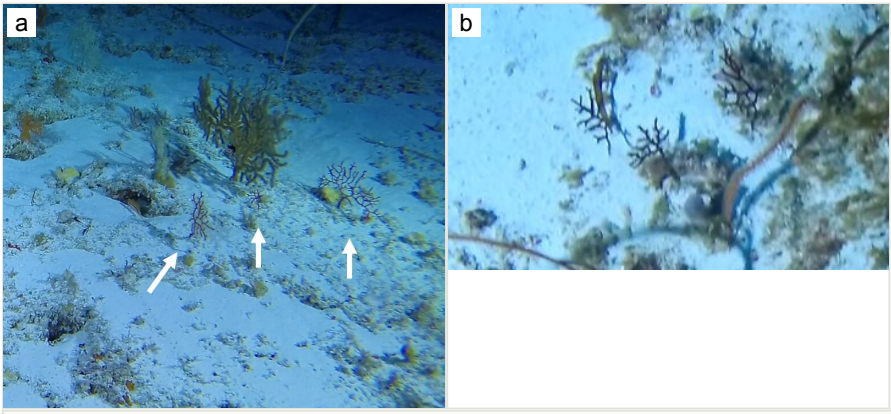

Figure 54.

Plexauridae gen. indet. sp. 8.

a: Aldabra W1, 120 m. doi
b: D'Arros N1, 120 m. doi

Notes: Colonies small (typically ~ 10 cm in height), with sparse, dichotomous branching and a twig-like appearance. No visible polyp calices. Dark red to dark brown.

Astrogorgia appears similar, but that genus has highly developed and conspicuous polyp calices (Fig. 54).

"fam. Plexauridae" gen. indet. sp. 9

Material

a. scientificName: *Plexauridae* sp. 9; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Desroches S1; minimumDepthInMeters: 61.8 m; maximumDepthInMeters: 140.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 40 cm in height, fan-shaped, appearing mostly uniplanar and heavily branched. With conspicuous polyps giving the colony a fuzzy appearance. Multi-coloured with a pale white base, a dark-red to purple middle area and a bright yellow outer edge. This colouration is mostly well-developed in larger colonies (Fig. 55).

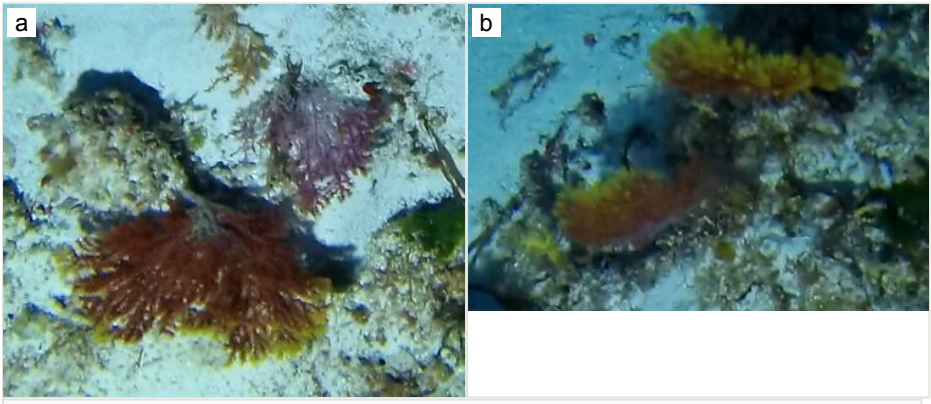

Figure 55.

Plexauridae gen. indet. sp. 9

a: Desroches S1, 60 m. doi

b: Desroches S1, 60 m. doi

"fam. Plexauridae" gen. indet. sp. 11

Material

a. scientificName: *Plexauridae* sp. 11; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1; minimumDepthInMeters: 85 m; maximumDepthInMeters: 108 m; locationRemarks: First

Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 40 cm in height, fan-shaped to slightly bushy and heavily branched. Large polyps are giving the colony a fuzzy appearance. Purple to dark brown stem with yellow-orange polyps (Fig. 56).

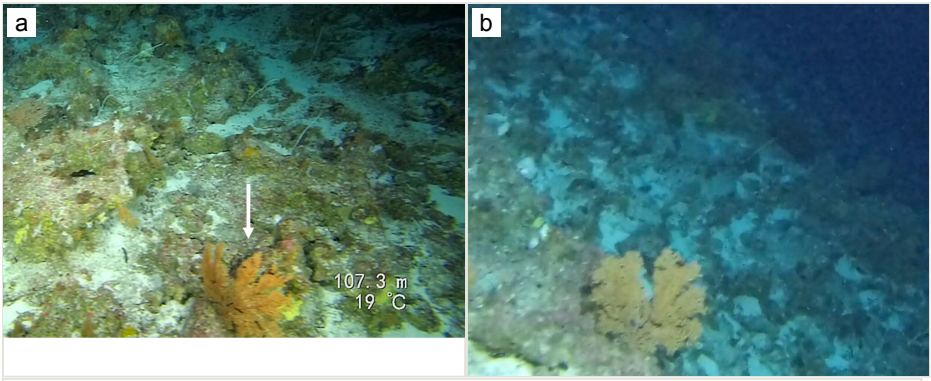

Figure 56.

Plexauridae gen. indet. sp. 11.

a: Alphonse N1, 108 m. doi

b: Alphonse N1, 100 m. doi

"fam. Plexauridae" gen. indet. sp. 13

Material

a. scientificName: *Plexauridae* sp. 13; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 61.9; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are short (~ 15 cm in height), irregularly branched, forming small bushes. Branches are thin and almost twig-like, giving an overall delicate and brittle appearance. The colouration is bright yellow. Observed to grow in sedimented habitats around 60 m. The species could be confused with *Plexauridae* sp. 2; however, the latter has thicker, fuzzier-looking branches and is found under overhangs and ledges in around 120 m of depth (Fig. 57).

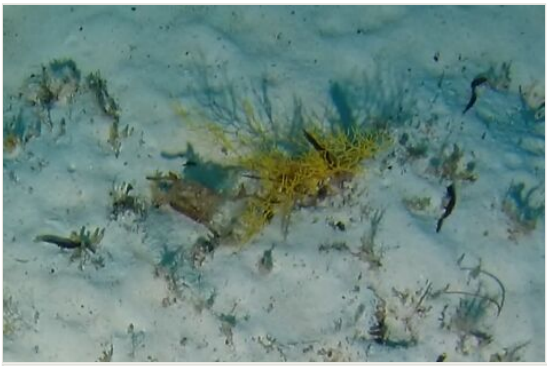

Figure 57. doi

Plexauridae gen. indet. sp. 13. Aldabra W1, 72 m.

"fam. Plexauridae" gen. indet. sp. 14

Material

a. scientificName: *Plexauridae* sp. 14; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, D'Arros N1, Desroches S1; minimumDepthInMeters: 61.9 m; maximumDepthInMeters: 122 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 40 cm in height, displaying uniplanar to bushy branching. Conspicuous polyps give the colony a rather fuzzy appearance. The colouration is a pale yellow to brown, with the polyps slightly darker coloured than the colony main colour (Fig. 58).

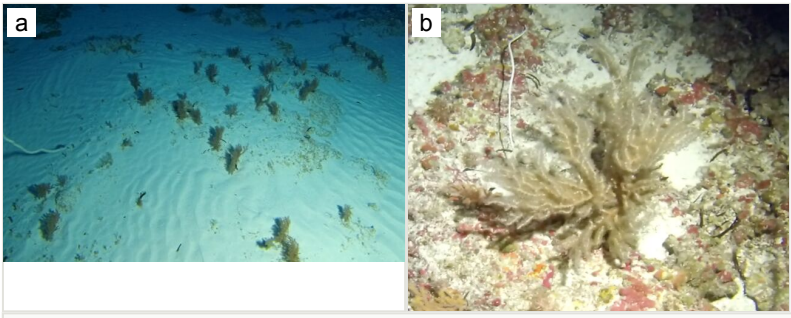

Figure 58.

Plexauridae gen. indet. sp. 14.

a: Aldabra N1, 120 m. doi
b: Alphonse N1, 107 m. doi

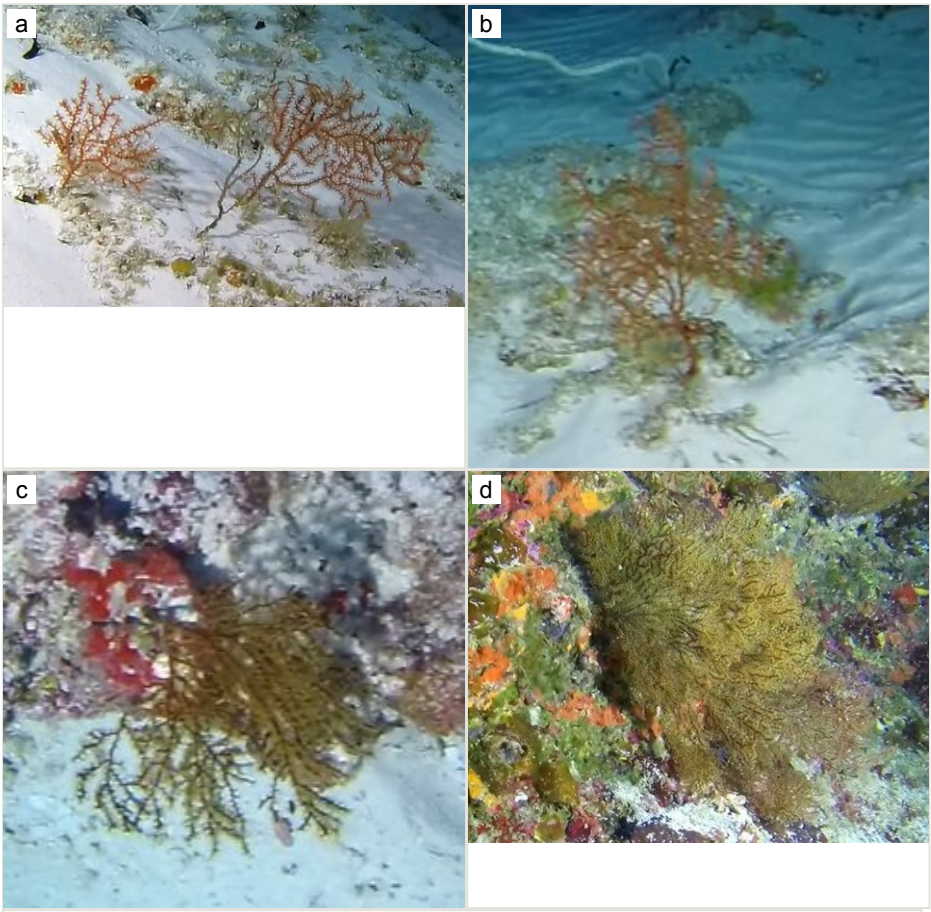

Figure 59.

Astrogorgia sp. indet.

a: Aldabra N1, 100 m. doi
b: Aldabra N1, 100 m. doi
c: Aldabra N1, 60 m. doi
d: Astove W1, 60 m. doi

Genus *Astrogorgia* Verrill, 1868

Astrogorgia sp. indet.

Material

a. scientificName: ***Astrogorgia***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; genus: ***Astrogorgia***; scientificNameAuthorship: Verrill, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol:

Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically < 20 cm in height, but some up to 55 cm tall, growing as uniplanar, irregularly branched fans. Branches thin with large polyp calices giving the colony a spiky appearance. Anastomoses are never observed. Colour shades of red to brown with yellow polyps. Species of *Acanthogorgia* and *Muricella* can have similar growth forms; therefore particular attention should be paid to whether calices, the identifying feature of *Astrogorgia*, are present (Fig. 59).

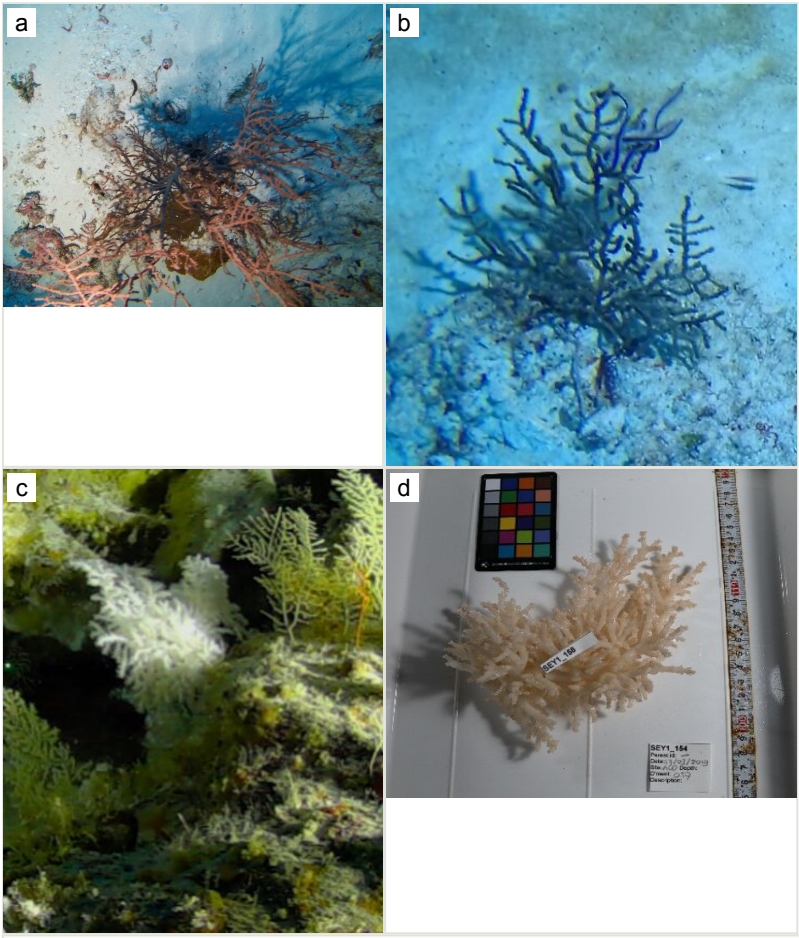

Figure 60.

Echinogorgia gen. inc.

a: Aldabra N1, 60 m. doi
b: Aldabra W1, 60 m. doi
c: Aldabra N1, 120 m. doi
d: Aldabra N1, 120 m, collected specimen (SEY1_158) corresponding to the in-situ colony of Fig. 63c. doi

Genus *Echinogorgia* Kölliker, 1865

Echinogorgia gen. inc.

Material

a. scientificName: *Echinogorgia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; genus: *Echinogorgia*; scientificNameAuthorship: Kölliker, 1865; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, D;Arros N1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 50 cm in height, with thin branches and uniplanar growth form, with side branches much shorter than main branches. Some degree of anastomoses should always be present. Polyp calices are conspicuous and give branches a bumpy appearance. Colonies are red-brown to grey, with one white individual recorded. The similar-looking *Muricella* may appear superficially similar in terms of colony shape, yet perpendicular branching should be visible compared to *Echinogorgia* (Fig. 60).

Figure 61. doi

Paracis gen. inc. Aldabra N1, 60 m.

Genus *Paracis* Kükenthal, 1919

Paracis gen. inc.

Material

a. scientificName: *Paracis* (cg.); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; genus: *Paracis*; scientificNameAuthorship: Kükenthal, 1919; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Desroches S1; minimumDepthInMeters: 31.1 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 60 cm in height, uniplanar and profusely branched. With a thick central stem and visibly thinner branches. Colour observed here was a distinctly bright red, with pink, yellow and pale-blue also common (Fig. 61).

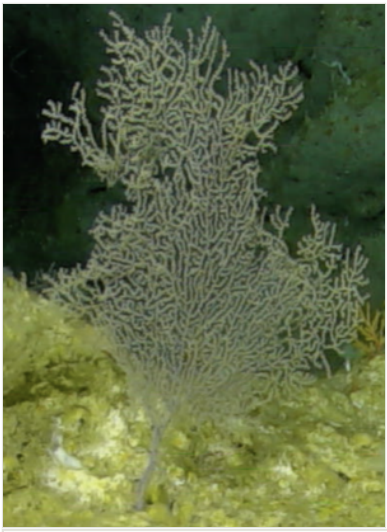

Figure 62. doi

Trimuricea sp. indet. Aldabra N1, 120 m.

Genus *Trimuricea* Gordon, 1926

Trimuricea sp. indet.

Material

a. scientificName: *Trimuricea*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Plexauridae; genus: *Trimuricea*; scientificNameAuthorship: Gordon, 1926; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1,

Astove W1, D'Arros N1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies < 50 cm in height, fan-shaped and uniplanar. Dense, fine branches displaying a high degree of anastomoses, giving the colony a mesh-like appearance. Colour pale yellow-green to grey (Fig. 62).

Family Primnoidae Milne Edwards, 1857

Genus *Primnoa* Lamouroux, 1812

Primnoa sp. indet.

Material

a. scientificName: *Primnoa*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Primnoidae; genus: *Primnoa*; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1; minimumDepthInMeters: 132 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically ~ 20 cm in height, fan-shaped, densely-branched, with fine branches and a strong tree-like appearance. The colouration of the branches is a light orange that tends to have a reddish tint (Fig. 63).

Genus *Narella* Gray, 1870

Narella sp. indet.

Material

a. scientificName: *Narella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Primnoidae; genus: *Narella*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, D'Arros N1; minimumDepthInMeters: 190 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 40 cm in height, sparsely branched, with thick branches starting from the base of the colony; large polyp calyces give branches a serrated appearance. The colouration of the colony is light pink (Fig. 64).

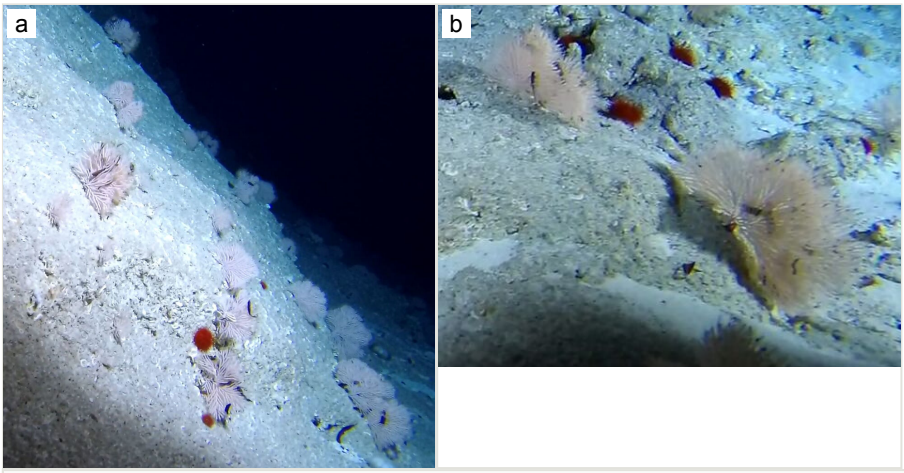

Figure 63.

Primnoa sp. indet.

a: Alphonse N1, 250 m. doi
b: Alphonse N1, 242 m. doi

Family Subergorgiidae Gray, 1859

Genus *Annella* Gray, 1858

Annella sp. indet.

Material

a. scientificName: *Annella*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Subergorgiidae; genus: *Annella*; scientificNameAuthorship: Gray, 1858; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 21.7 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are fan-shaped and uniplanar. Branches display a high degree of anastomoses, forming net-like fans. Stalks are always attached to hard substrates. Colouration ranges from red to orange and yellow. Some colonies are larger than 2 m across. Often with crinoids commensals. The three known species of *Annella* are distinguished by the shape of the mesh (elongate or polygonal) (Fig. 65).

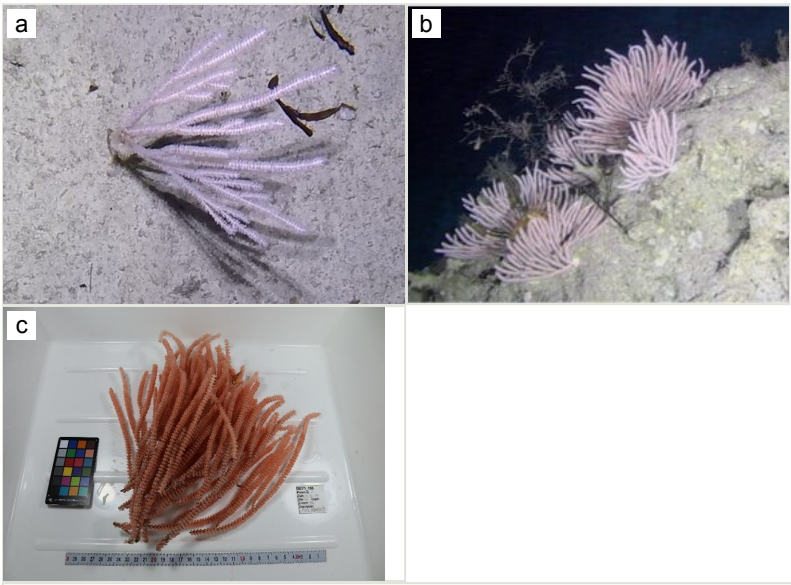

Figure 64.

Narella sp. indet.

a: D'Arros N1, 350 m. doi
b: Aldabra N1, 190 m. doi
c: Aldabra N1, 190 m, collected specimen (SEY1_195) corresponding to the in-situ colony of Fig. 67b. doi

Family Tubiporidae Ehrenberg, 1828

Genus *Tubipora* Linnaeus, 1758

Tubipora sp. indet.

Material

a. scientificName: *Tubipora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Tubiporidae; genus: *Tubipora*; scientificNameAuthorship: Linnaeus, 1758; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are thickly encrusted to massive and hemispherical, made up of upright, connected, parallel tubes that house a single polyp. Colonies can form step-like morphologies, growing on multilevel, horizontal platforms. Polyps are typically extended and visible. The skeleton of live individuals is always covered by polyps. The

colouration of the skeleton is bright to dark red, with tentacles coloured in variations of pale, cream, green and white. Maximum recorded size: 55 cm across (Fig. 66).

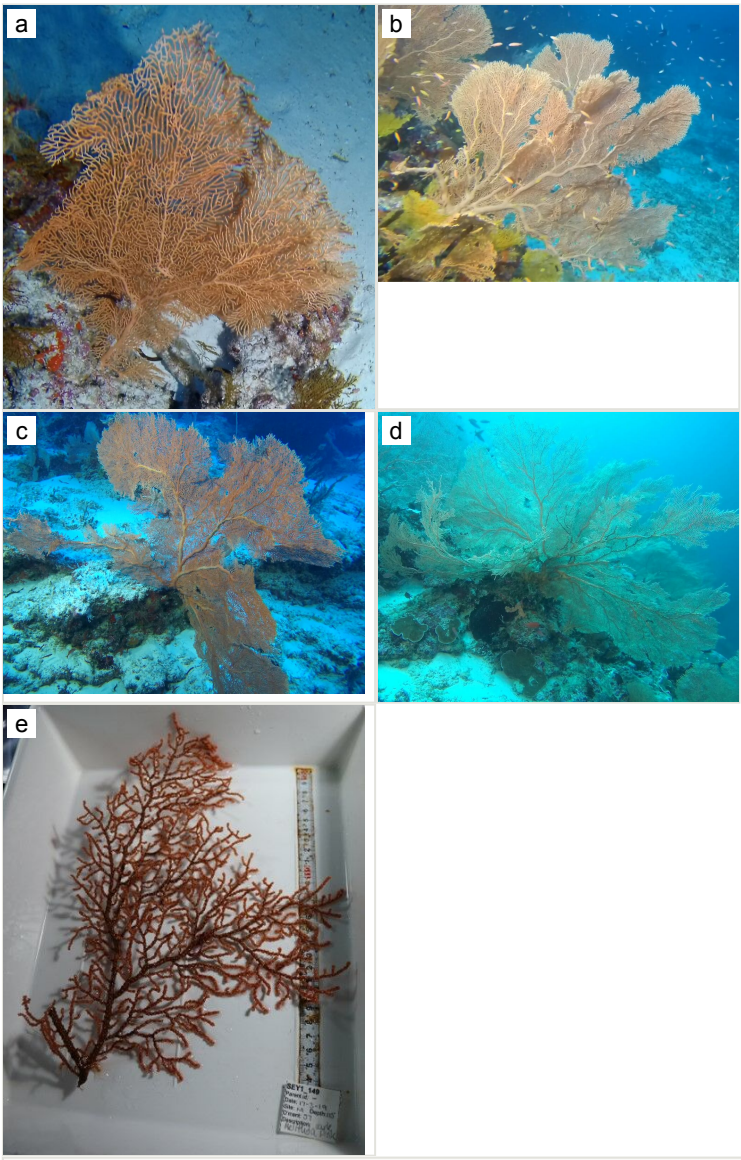

Figure 65.

Annella sp. indet.

a: Aldabra N1, 60 m. doi
b: Alphonse N1, 60 m. doi
c: Aldabra N1, 60 m. doi
d: Aldabra N1, 30 m. doi
e: Aldabra N1, 30 m, collected specimen (SEY1_149). doi

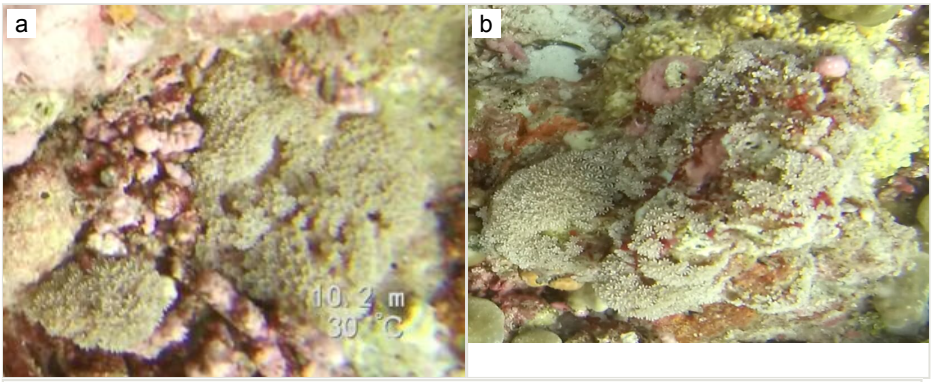

Figure 66.

Tubipora sp. indet.

a: Alphonse N1, 10 m. doi
b: Alphonse N1, 10 m. doi

Family Xeniidae Ehrenberg, 1828

Genus *Xenia* Lamarck, 1816

Xenia sp. indet.

Material

a. scientificName: *Xenia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Xeniidae; genus: *Xenia*; scientificNameAuthorship: Lamarck, 1816; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Astove W1, Poivre E1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 30 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 30 cm, cylindrical with dome-shaped summits. Can sometimes show branching (not observed here). Polyps found exclusively on the upper colony surface. Polyps have varying contractility, but are never fully retracted. The colouration of stalks is often similar to the polyps' colouration, ranging from white, yellow, cream, brown to dark brown (Fig. 67).

"ord. Alcyonacea" fam. indet. sp. 1

Material

a. scientificName: Alcyonacea sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1; minimumDepthInMeters: 114.5

m; maximumDepthInMeters: 120.7 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 20 cm in height, flat and fan-shaped, displaying dense, dichotomous branching. Polyps are numerous, giving the colony a fuzzy appearance. Light blue colouration with dark blue polyps (Fig. 68).

Figure 67. doi

Xenia sp. indet. Poivre E1, 30 m.

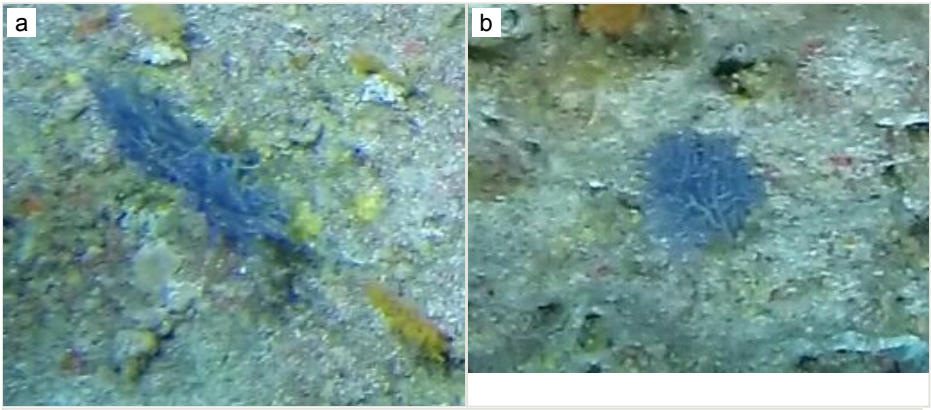

Figure 68.

Alcyonacea fam. indet. sp. 1.

a: D'Arros N1, 120 m. doi

b: D'Arros N1, 120 m. doi

"ord. Alcyonacea" fam. indet. sp. 2

Material

a. scientificName: Alcyonacea sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1; minimumDepthInMeters: 66.3 m; maximumDepthInMeters: 123.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically ~15–20 cm in height, fan-shaped and heavily branched. Colour deep purple with lighter coloured polyps (Fig. 69).

Figure 69. doi

Alcyonacea fam. indet. sp. 2. D'Arros N1, 120 m.

"ord. Alcyonacea" fam. indet. sp. 3

Material

a. scientificName: Alcyonacea sp. 3; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; scientificNameAuthorship: Gray, 1859; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1; minimumDepthInMeters: 61.8 m; maximumDepthInMeters: 123.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Branching colonies up to 20 cm in height. Branching starts from the base of the stalk. Colour in shades of red to brown and orange (Fig. 70).

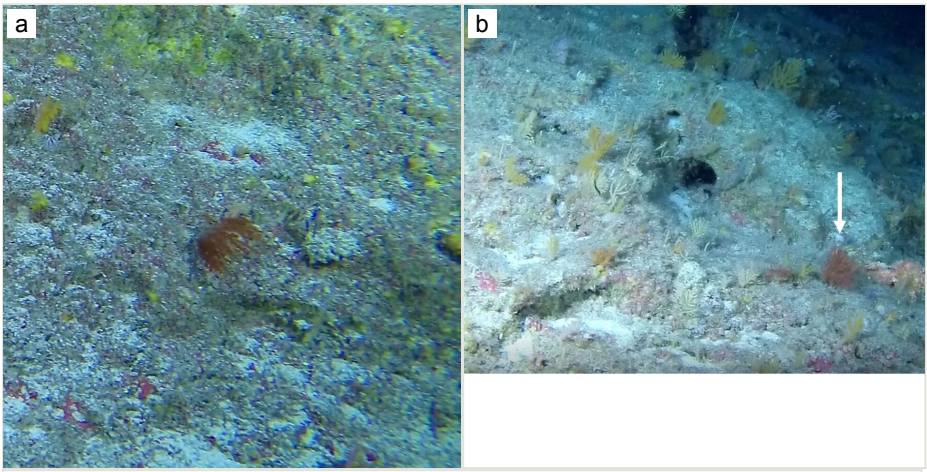

Figure 70.

Alcyonacea fam. indet. sp. 3.

a: D'Arros N1, 120 m. doi
b: D'Arros N1, 120 m. doi

"ord. Alcyonacea" fam. indet. sp. 4

Material

a. scientificName: Alcyonacea sp. 4; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 114.5 m; maximumDepthInMeters: 122.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 30 cm in height, fan-shaped, growing uniplanar. Dichotomously branched. Dark grey to black colour (Fig. 71).

"ord. Alcyonacea" fam. indet. sp. 5

Material

a. scientificName: Alcyonacea sp. 5; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 49.1 m; maximumDepthInMeters: 62.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies up to 50 cm in height, fan-shaped, growing in multiple planes. Conspicuous central stem with many side branches. Branches appear fuzzy due to conspicuous polyps. Colour pink to fuchsia with polyps covered similar to the main colour, yet slightly lighter (Fig. 72).

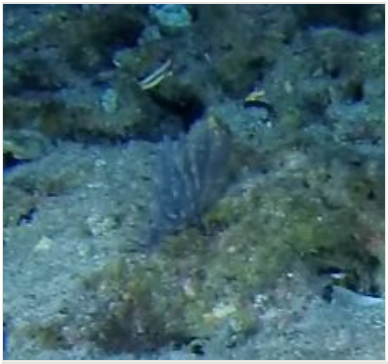

Figure 71. doi

Alcyonacea fam. indet. sp. 4. Desroches S1, 120 m.

Figure 72. doi

Alcyonacea fam. indet. sp. 5. Astove W1, 60 m.

Order Helioporacea Bock, 1938

Family Helioporidae Moseley, 1876

Genus *Heliopora* de Blainville, 1830

Heliopora sp. indet.

Material

a. scientificName: ***Heliopora***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Helioporacea; family: Helioporidae; genus: ***Heliopora***; scientificNameAuthorship: de

Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 25.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Kaveh Samimi-Namin, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are columnar, plating or branching. Maximum recorded size: 60 cm across. As the only octocoral genus with a massive aragonite skeleton, it is often mistaken for a scleractinian coral. However, its colonies have a unique blue to green colouration with large pore-like polyps of white colour that are often visible, both in-situ and on video footage (Fig. 73).

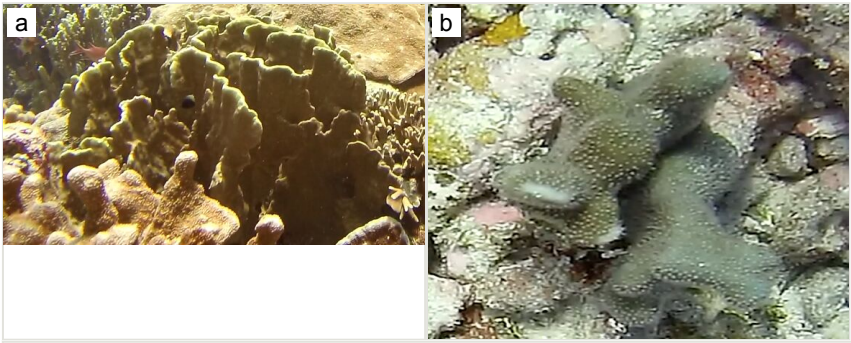

Figure 73.

Heliopora sp. indet.

a: Astove W1, 10 m. doi
b: Aldabra N1, 10 m. doi

Scleractinia

Family Acroporidae Verrill, 1901

Genus *Acropora* Oken, 1805

Acropora sp. indet.

Material

a. scientificName: *Acropora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Acroporidae; genus: *Acropora*; scientificNameAuthorship: Oken, 185; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified:

2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

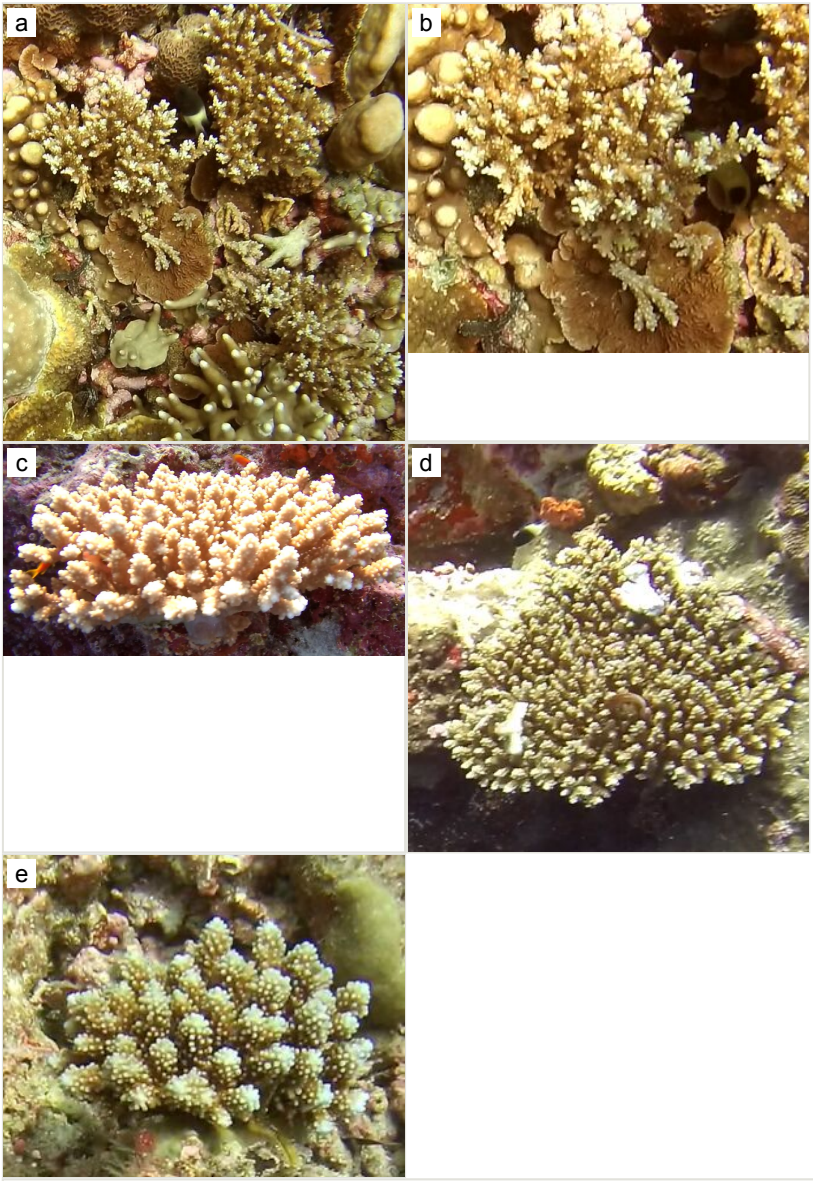

Figure 74.

Acropora sp. indet.

a: Branching colony. Astove W1, 10 m. doi
b: Branching colony. Astove W1, 10 m. doi
c: Tabulate colony. Astove W1, 10 m. doi
d: Tabulate colony. Astove W1, 10 m. doi
e: Digitate colony. Alphonse N1, 10 m. doi

Notes: Wide range of morphologies; in the present survey, commonly digitate, branching or tabular. In this survey, colony size was typically < 40 cm across. Visually distinct corallites, 0.7 to 1.3 mm in diameter, cylindrical in appearance. A key feature of this taxon are its differentiated axial corallites located at the tips of branches that are often pale or white; this should not be confused with bleaching-induced colour changes. Commonly in shades of brown, although other colours can occur (Fig. 74).

Genus *Astreopora* Blainville, 1830

Astreopora sp. indet.

Material

a. scientificName: *Astreopora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Acroporidae; genus: *Astreopora*; scientificNameAuthorship: Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.5 m; maximumDepthInMeters: 36.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

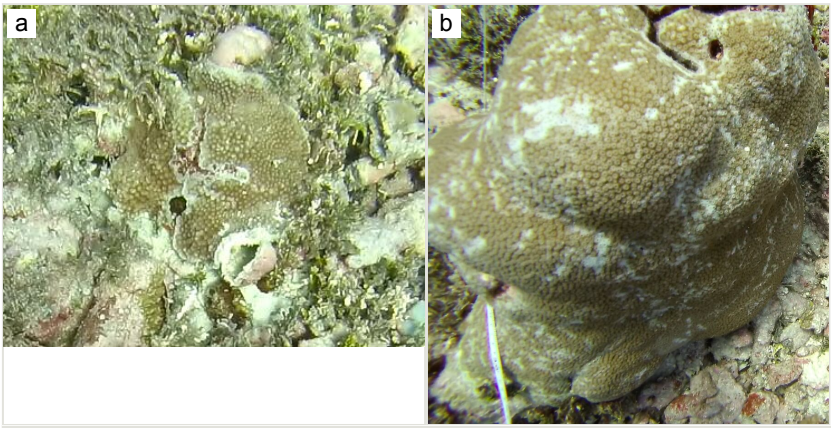

Figure 75.

Astreopora sp. indet.

a: Encrusting colony. Aldabra N1, 10 m. doi
b: Massive colony. Aldabra N1, 10 m. doi

Notes: Colonies are massive, plating or encrusting. Maximum recorded size: 80 cm across. Polyps are conspicuous with corallites between 1.6 to 2.2 mm (typically distinguishable on video footage); resembling jet engines, sometimes of irregular sizes, always tightly packed. Coenosteum is typically spinous or flaky, giving colonies a granular appearance. Colourations range from pale-brown tones to dark orangy-brown.

Can be confused with *Turbinaria*, but the latter has a smooth coenosteum with no elaborations, which gives it a smoother appearance (Fig. 75).

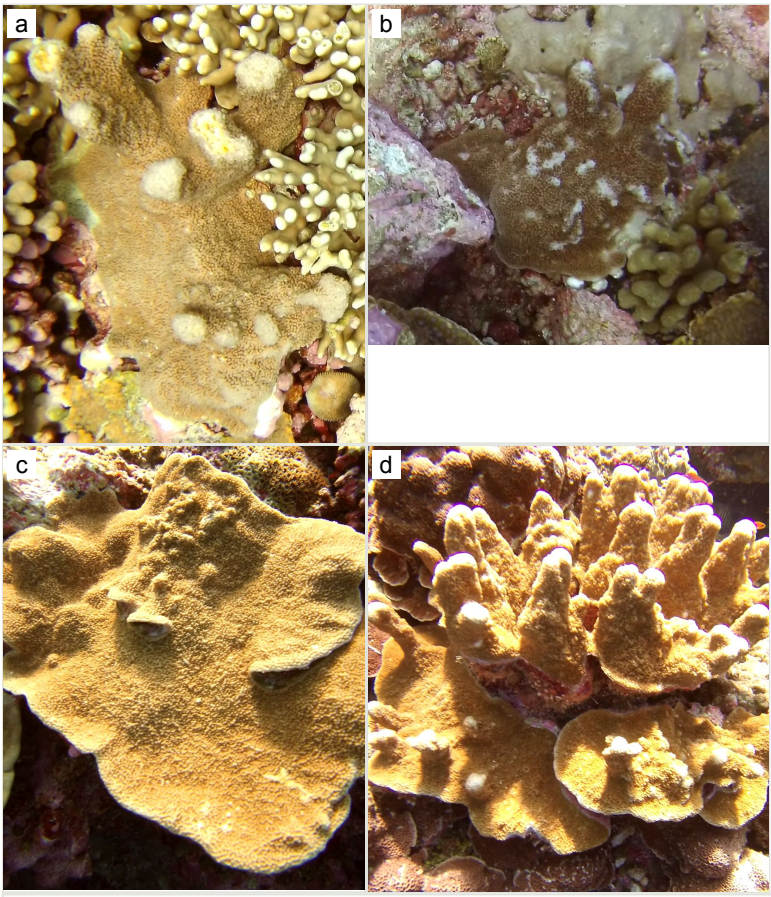

Figure 76.

Isopora sp. indet.

a: Encrusting-columnar colony. Astove W1, 10 m. doi
b: Encrusting-columnar colony. Astove W1, 10 m. doi
c: Encrusting colony. Astove W1, 10 m. doi
d: Columnar colony. Astove W1, 10 m. doi

Genus *Isopora* Studer, 1879

Isopora sp. indet.

Material

a. scientificName: *Isopora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Acroporidae; genus: *Isopora*; scientificNameAuthorship: Studer,

1879; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Astove W1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 15 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are sub-massive or thickly encrusted often with thick club-like branches or robust cylindrical branches. Maximum recorded size: 1 m across. Corallites up to 4.0 mm in diameter. Colours range from cream, pale brown to green. Can be confused with *Montipora* or *Acropora* spp., with *Montipora* having much smaller corallites. *Acropora* forms thinly encrusting colonies without the robust columns that *Isopora* forms (Fig. 76).

Genus *Montipora* Blainville, 1830

Montipora sp. indet.

Material

a. scientificName: *Montipora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Acroporidae; genus: *Montipora*; scientificNameAuthorship: Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 63.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are thickly encrusting, sub-massive, plating. Maximum recorded size: 1.2 m across. Corallites are extremely small (0.25 to 1.0 mm) and thus not visible on video footage. Very rough, grainy texture, often with several bumps on colony surface. Colours ranging from beige to dark shades of brown, some species with variable additional pigmentation like purple, red and violet (Fig. 77).

Family Agariciidae Gray, 1847

Genus *Gardineroseris* Scheer & Pillai, 1974

Gardineroseris sp. indet.

Material

a. scientificName: *Gardineroseris*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Agariciidae; genus: *Gardineroseris*; scientificNameAuthorship: Scheer & Pillai, 1974; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1; minimumDepthInMeters: 8.8

m; maximumDepthInMeters: 15 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagerySubmersible OR Remotely Operated Vehicle OR SCUBA; basisOfRecord: Human observation

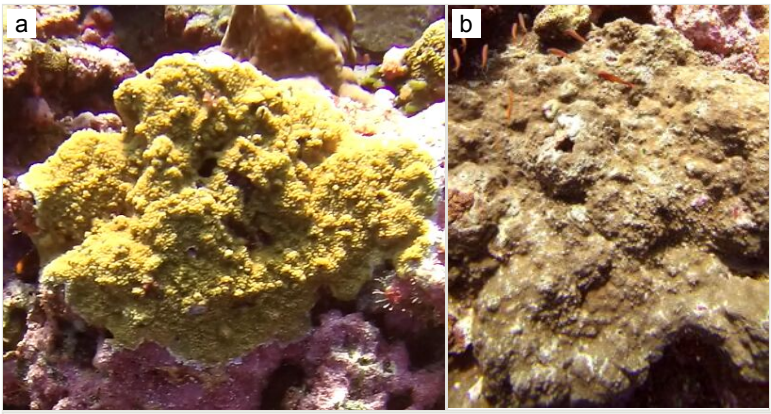

Figure 77.

Montipora sp. indet.

a: Encrusting colony. Astove W1, 10 m. doi
b: Encrusting colony. Astove W1, 10 m. doi

Figure 78. doi

Gardineroseris sp. indet. Astove W1, 10 m.

Notes: Colonies are massive or encrusting with laminar margins. Maximum recorded size: 35 cm across. Corallites are immersed with distinct, steeply sloping acutely ridged walls whose ridges can appear pale, giving the colony a honeycomb-like appearance. Corallite size 3.0 mm in diameter. Colours range from yellowish to shades of light and dark brown. *Goniastrea* appears similar, but has highly visible septa that give the

colony walls a serrated appearance, with colonies coloured more pale brown-whitish, rather than the uniform brown of *Gardineroseris* (Fig. 78).

Genus *Leptoseris* Milne Edwards & Haime, 1849

Leptoseris sp. indet.

Material

a. scientificName: *Leptoseris*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Agariciidae; genus: *Leptoseris*; scientificNameAuthorship: Milne Edwards & Haine, 1849; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically small (~ 20 cm in the longest dimension), although some were up to 90 cm, encrusting or plating, unifacial and contorted. Polyps usually without distinct walls and larger than 5 mm in diameter. Growth form tends to change with depth: deeper colonies found in mesophotic depths are often laminar with a white edge. Widely spaced corallites that may be inclined to the margin, that can cluster within pockets (raised rounded walls). Appearance is wavy, granulated or waxy; deeper plating forms with small bumps on the colony surface. Colour ranges from pale to lighter shades of yellow-brown. *Pavona* looks similar, but is mostly bifacial with a rougher appearance; can be confused with plating colonies of *Pachyseris*, but the latter has clearly defined parallel ridges, lacks bumps at the surface and tends to form metre-long colonies. However, small plating colonies at depth might be difficult to separate if seen from a distance. For *Pachyseris* colonies, the corallite walls always run to the edge of the colony; however, in *Leptoseris*, these walls do not always run to the edge and are not uniform (Fig. 79).

Genus *Pavona* Lamarck, 1801

Pavona sp. indet.

Material

a. scientificName: *Pavona*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Agariciidae; genus: *Pavona* ; scientificNameAuthorship: Lamarck, 1801; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 33.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified:

2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies typically < 40 cm in the longest dimension, massive, columnar, laminar or encrusting, sometimes contorted. Laminar colonies are bifacial. Corallites between 0.5 to 3.0 mm in size, walls poorly developed or absent, centres in small shallow depressions surrounded by acute ridges. Colours range from beige to darker shades of brown. Might be confused with *Leptoseris*, but the latter has less acute ridges between corallites and colonies are unifacial. Massive and columnar colonies were not observed here (Fig. 80).

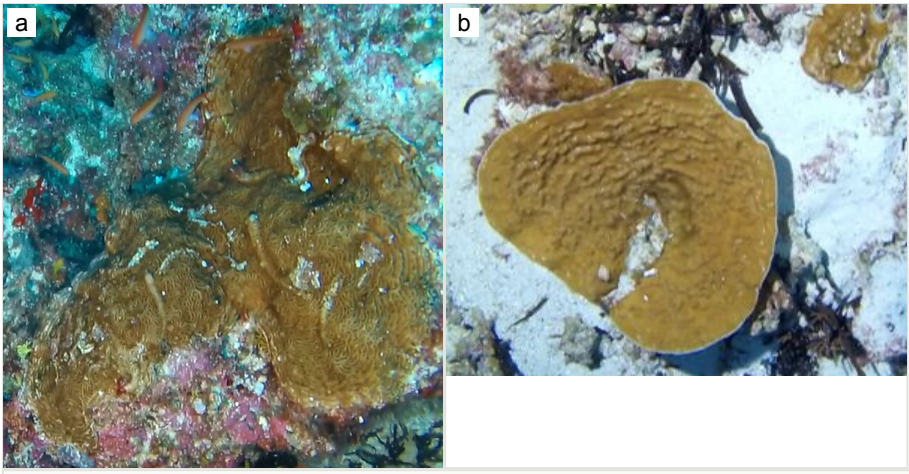

Figure 79.

Leptoseris sp. indet.

a: Encrusting colony. Alphonse N1, 60 m. doi
b: Plating colony. Alphonse N1, 60 m. doi

Family Dendrophyllidae Gray, 1847

Genus *Tubastraea* Lesson, 1830

Tubastraea sp. indet.

Material

a. scientificName: *Tubastraea*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Dendrophyllidae; genus: *Tubastraea*; scientificNameAuthorship: Lesson, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.7 m; maximumDepthInMeters: 67.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton;

dateIdentified: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Small (typically < 10 cm) branching colonies. Branches ending in tubular corallites. Corallites have high, thin walls with well-defined septa. Colouration normally dark green or black, in our survey orange or grey (Fig. 81).

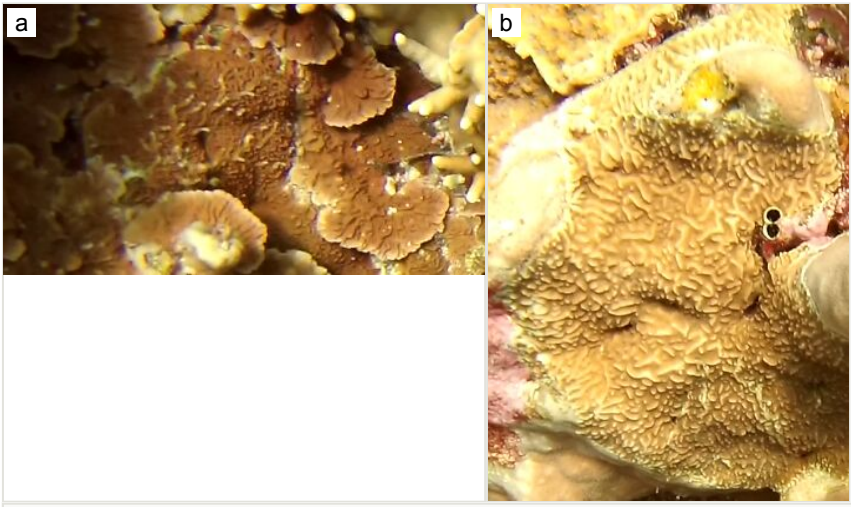

Figure 80.

Pavona sp. indet.

a: Laminar colony. Astove W1, 10 m. doi
b: Encrusting colony. Astove W1, 10 m. doi

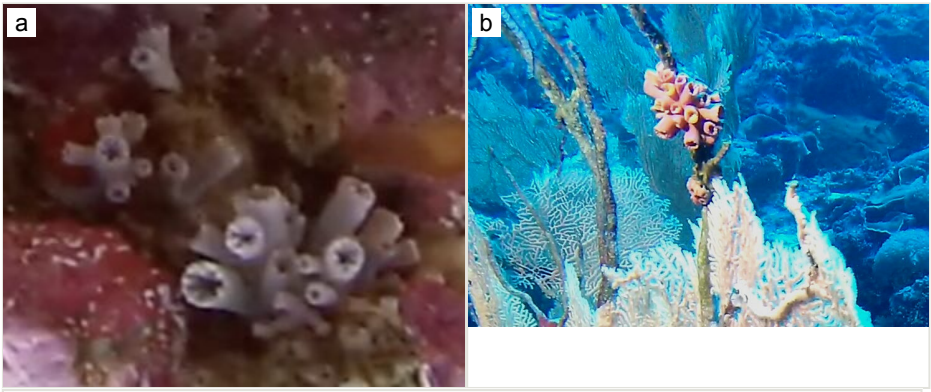

Figure 81.

Tubastraea sp. indet.

a: Astove W1, 10 m. doi
b: Aldabra N1, 30 m. doi

Tubastraea micranthus (Ehrenberg, 1834)

Material

a. scientificName: *Tubastraea micranthus*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Dendrophyllidae; genus: *Tubastraea*; scientificNameAuthorship: Ehrenberg, 1834; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1; minimumDepthInMeters: 21 m; maximumDepthInMeters: 53 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are tall with thick, erect branches. Maximum recorded size: 30 cm across. Corallites sparse, tubular and are clearly discernible both in-situ and on video footage. Colouration is dark green or black. *T. micranthus* is the only species of *Tubastraea* observed that could be continuously identified to species level (Fig. 82).

Figure 82. doi

Tubastraea micranthus. Alphonse N1, 60 m.

Genus *Turbinaria* Oken, 1815

Turbinaria sp. indet.

Material

a. scientificName: *Turbinaria*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Dendrophyllidae; genus: *Turbinaria*; scientificNameAuthorship: Oken, 1815; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 35 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are laminar, columnar, dome-shaped or foliaceous. Maximum recorded size: 1.3 m across. Frequently contorted; laminar and foliaceous growth forms often with paler margins. Corallites usually only on one surface, round and well-spaced from each other; often form tubular raised mounts giving the coral a bumpy texture. Corallite size 1.5 to 4.0 mm. Smooth coenosteum. Colouration ranging from beige to shades of brown and green. *Astreopora* appears similar; however, has a granulated coenosteum (Fig. 83).

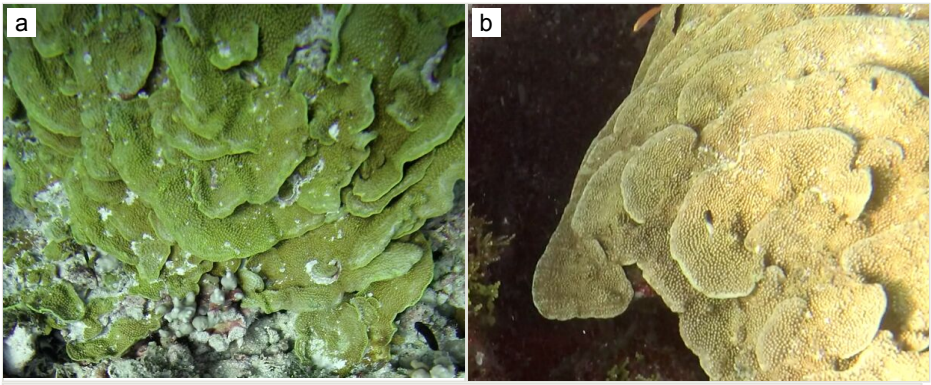

Figure 83.

Turbinaria sp. indet.

a: Laminar colony. Aldabra N1, 10 m. doi
b: Laminar colony. Astove W1, 10 m. doi

Family Euphylliidae Milne Edwards & Haime, 1857

Genus *Galaxea* Oken, 1815

Galaxea sp. indet.

Material

a. scientificName: *Galaxea*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Euphylliidae; genus: *Galaxea*; scientificNameAuthorship: Oken, 1815; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, Desroches S1; minimumDepthInMeters: 9.6 m; maximumDepthInMeters: 36.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Massive or encrusting colonies, predominantly cushion-shaped or irregularly following the substrate. Maximum recorded size: 20 cm across. Corallites are between 3.5 to 6.0 mm, plocoid, cylindrical with relatively large, visible gaps. Septa are large and form tall, sharp points that are visible underwater. Tentacles can be extended during the day. Colours can be green to brown with yellow variants observed at Desroches (Fig. 84).

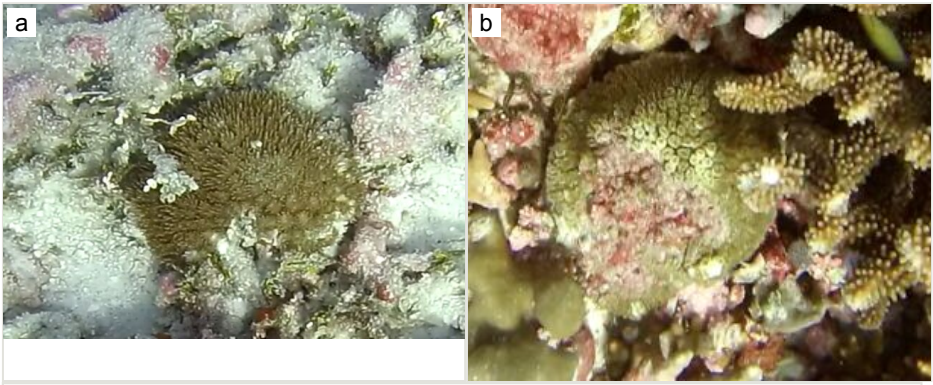

Figure 84.

Galaxea sp. indet.

a: Massive colony. Aldabra N1, 10 m. doi

b: Massive colony. Alphonse N1, 10 m. doi

Family Fungiidae Dana, 1846

"fam. Fungiidae" gen. indet. sp. 1

Material

a. scientificName: Fungiidae *sp. 1*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Fungiidae; scientificNameAuthorship: Verrill, 1864 / Eschscholtz, 1825; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Solitary, free-living. Forms elongated discs with an axial furrow that may extend to reach the colony edge. Septa are alternating and are non-continuous from the axial furrow to the sides. The maximum recorded size in this survey was 30 cm (length), although specimens can grow >1 m and also appear y- or x-shaped. Belongs to either *Ctenactis* or *Herpolitha*; however, these two genera are not easy to distinguish from video footage alone, as that requires a close-up examination of individuals underwater. Corallite size 5.0 to 10.0 mm (Fig. 85).

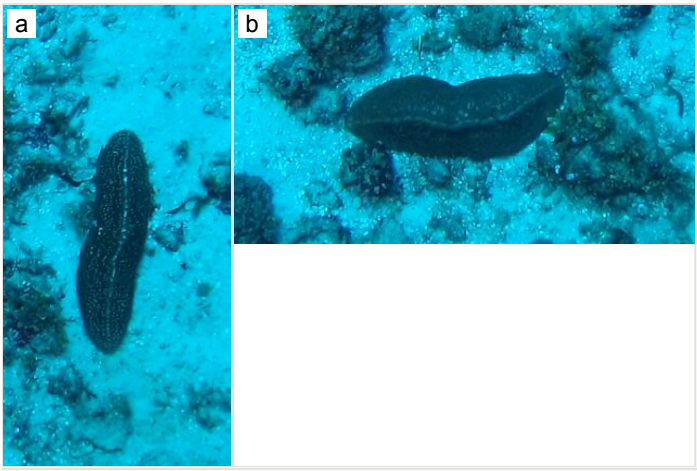

Figure 85.

Fungiidae gen. indet. sp. 1.

a: Desroches S1, 30 m. doi
b: Desroches S1, 30 m. doi

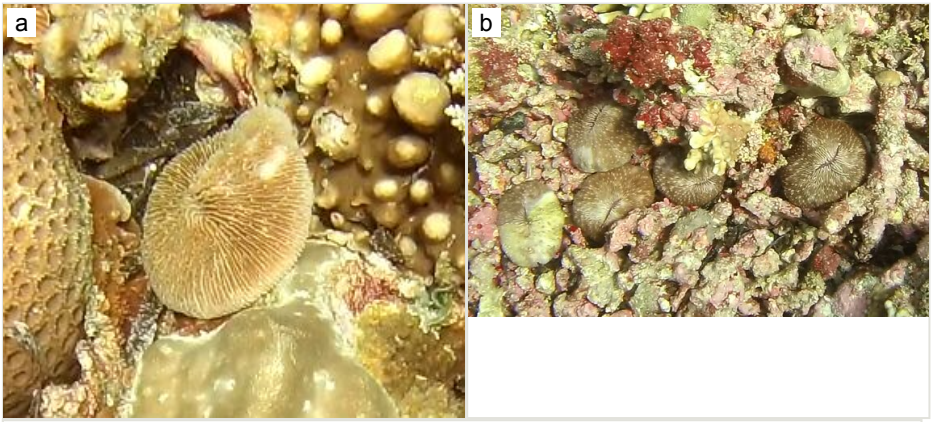

Figure 86.

Fungiidae gen. indet. sp. 2.

a: Astove W1, 10 m. doi
b: Aldabra N1, 10 m. doi

"fam. Fungiidae" gen. indet. sp. 2

Material

a. scientificName: Fungiidae sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Fungiidae; scientificNameAuthorship: Milne Edwards & Haime, 1849 / Lamarck, 1801; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1;

minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Solitary, free-living, except juveniles of *Fungia* that are firmly attached to substrates. Forms oval to round discs. Maximum recorded size: 19 cm across. Septa radiating out from the slit-like central mouth. Individuals belong to either Cycloseis or *Fungia*; however, these two genera cannot be consistently distinguished from video footage alone. *Fungia* tends to be more prominent on reef areas and its septa are serrated. Corallite size up to 300 mm. *Cycloseris* tends to be more prominent in non-reef environments and has smooth septa. Corallite size between 40.0 and 80.0 mm (Fig. 86).

Genus *Halomitra* Eschscholtz, 1825

Halomitra sp. indet.

Material

a. scientificName: *Halomitra*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Fungiidae; genus: *Halomitra*; scientificNameAuthorship: Dana, 1846; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Desroches S1, Poivre E1; minimumDepthInMeters: 11.3 m; maximumDepthInMeters: 36.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Free-living, flat, domed or bell-shaped and oval growth forms are commonly observed. Maximum recorded size: 30 cm across. Corallites 6.0 mm. No axial furrow, but septo-costae radiate out from the centre towards the margin. Corallites are often white. Colouration pale brown with bright pink or purple margin (Fig. 87).

Family Leptastreidae Rowlett, 2020

Genus *Leptastrea* Milne Edwards & Haime, 1849

Leptastrea sp. indet.

Material

a. scientificName: *Leptastrea*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Leptastreidae ; genus: *Leptastrea*; scientificNameAuthorship: Milne Edwards & Haime, 1849; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 33 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies can be massive, flat or dome-shaped or, as observed here, encrusting. Maximum recorded size: 50 cm across. Corallites raised unevenly from the coenosteum, giving the colonies a bumpy appearance. Corallites are 2.5 to 6.0 mm in diameter. Colouration shades of brown, but tends to have a white upper surface with darker corallites. *Goniastrea* looks similar, but tends to be of uniform colour (Fig. 88).

Figure 87. doi

Poivre E1, 30 m.

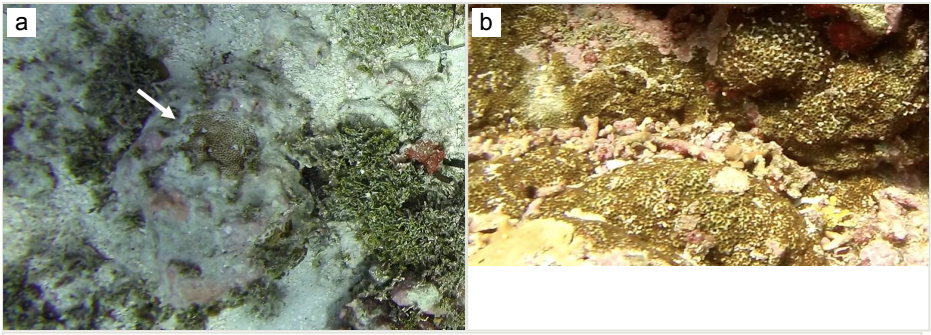

Figure 88.

Leptastrea sp. indet.

a: Encrusting colony. Aldabra W1, 10 m. doi

b: Encrusting colony. Astove W1, 10 m. doi

Family Lobophylliidae Dai & Horng, 2009

Genus *Echinophyllia* Klunzinger, 1879

Echinophyllia sp. indet.

Material

a. scientificName: *Echinophyllia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Lobophylliidae; genus: *Echinophyllia* ; scientificNameAuthorship: Klunzinger, 1879; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.7 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are thickly encrusting or laminar. Maximum recorded size: 1 m across. Large, round or oval protuberant corallites that are visible underwater, 4.0 to 15.0 mm in diameter. Septa are numerous and form visible ridges running along the surface towards the edge of the colony; the colony edge appears serrated. Septa resemble dripping candle wax. Corallites are scattered and often separated by a gap of several mm. Colouration brown, commonly with pale or whitish scalloped edges. *Mycedium* looks similar, but can be distinguished by its larger corallites that are facing towards the edges of the colonies and are shaped like noses (Fig. 89).

Genus *Lobophyllia* Blainville, 1830

Lobophyllia sp. indet.

Material

a. scientificName: *Lobophyllia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Lobophylliidae; genus: *Lobophyllia*; scientificNameAuthorship: Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 39.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are massive, sub-massive or flat-topped. Maximum recorded size: 50 cm across. Most colonies in this survey with corallites forming valleys of varying length, resembling ear-lobes or meandering ridges. Often with spiky appearance due to large skeletal teeth. Large corallites that range in size from 13.0 to 35.0 mm. Colours range from brown and greyish-green to bright orange and shades of purple. *Platygyra* looks

similar, but has narrower valleys deepening towards the colony centres, whereas *Lobophyllia* has evenly deep ridges (Fig. 90).

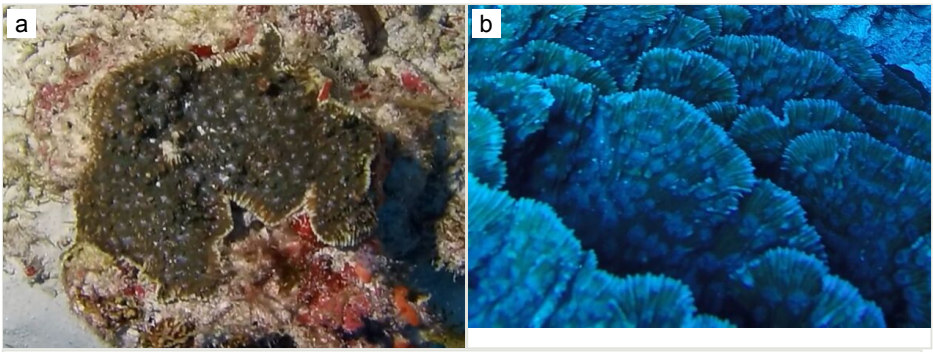

Figure 89.

Echinophyllia

a: Encrusting colony. Aldabra N1, 60 m. doi
b: Laminar colony. Astove W1, 30 m. doi

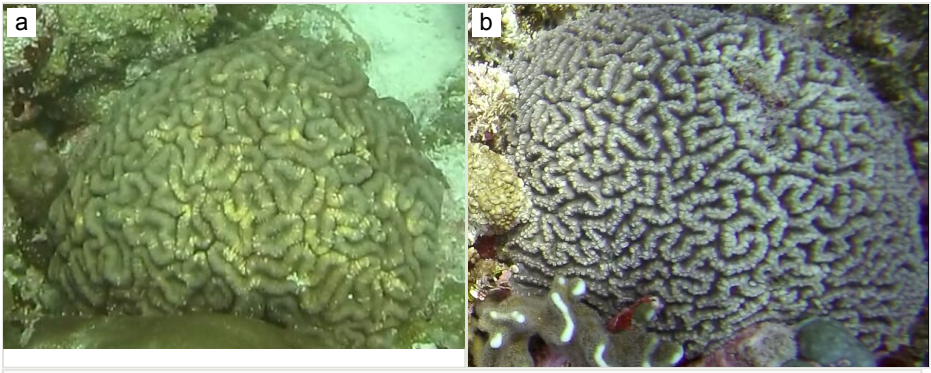

Figure 90.

Lobophyllia

a: Massive colony. Aldabra W1, 10 m. doi
b: Massive colony. Aldabra N1, 10 m. doi

Family Merulinidae Verrill, 1865

Genus *Dipsastraea* Blainville, 183

Dipsastraea sp. indet.

Material

a. scientificName: ***Dipsastraea***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: ***Dipsastraea***; scientificNameAuthorship:

Blainvile, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 39.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Massive, sub-massive or encrusting colonies. Maximum recorded size: 50 cm across. Corallites are highly plocoid to almost-cerioid, roughly equal in size and do not share walls. Corallite size can range from 3.0 to 25.0 mm. Colouration shades of beige, brown or green. Sometimes confused with *Montastrea* whose corallites are squeezed into more irregular shapes. *Favites* colonies look similar, but their corallites share walls (Fig. 91).

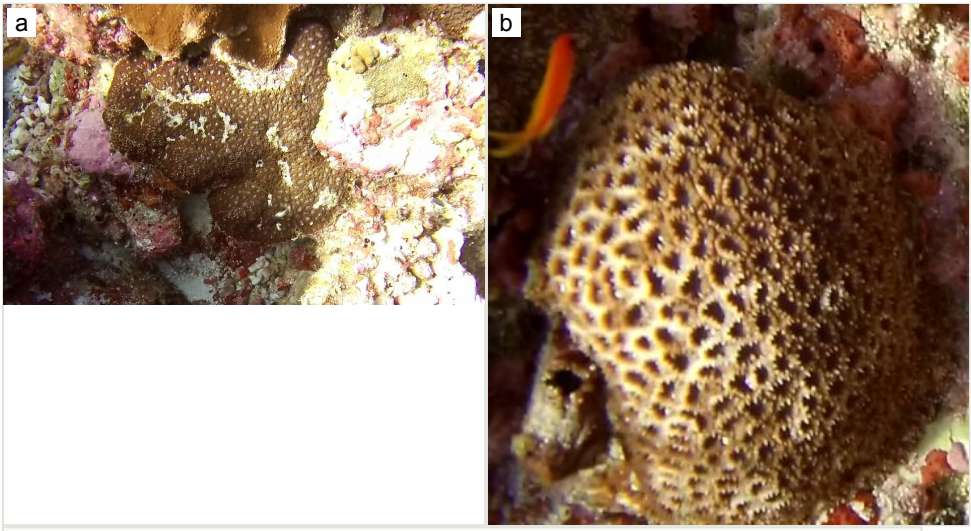

Figure 91.

Dipsastraea sp. indet.

a: Encrusting colony. Astove W1, 10 m. doi
b: Massive colony. Aldabra N1, 10 m. doi

Genus *Echinopora* Lamarck, 1816

Echinopora sp. indet.

Material

a. scientificName: *Echinopora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Echinopora*; scientificNameAuthorship: Lamarck, 1816; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 52 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies encrusting, laminar or branching. Maximum recorded size: 1 m across. Corallites are plocoid, uniformly shaped and elevated from the colony surface, 3.5 to 4.5 mm; they are often visible on video footage. The surface of the colony appears rough due to irregularly shaped septo-costae with spines. Colour shades of brown to grey with brightly coloured corallite centres (green) and white growing edges. *Echinophyllia* looks similar, but has larger corallites with spines that are arranged in distinct rows. *Astreopora* has smaller corallites (Fig. 92).

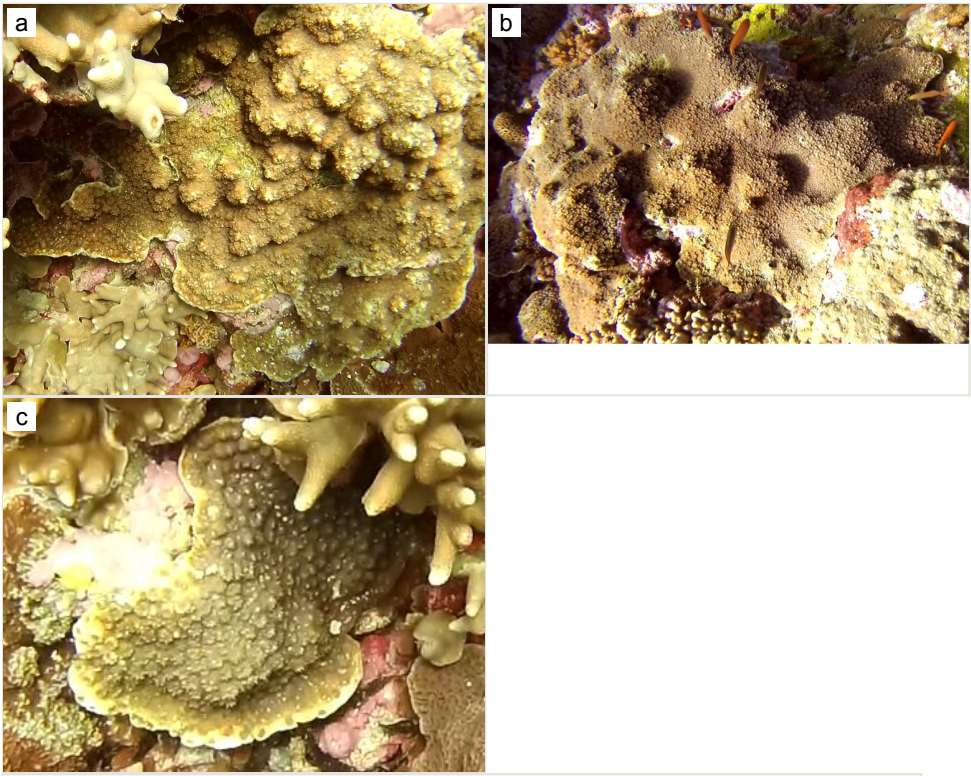

Figure 92.

Echinopora sp. indet.

a: Encrusting colony. Astove W1, 10 m. doi
b: Encrusting colony. Astove W1, 10 m. doi
c: Laminar colony. Astove W1, 10 m. doi

Genus *Favites* Link, 1807

Favites sp. indet.

Material

a. scientificName: *Favites*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Favites*; scientificNameAuthorship: Link, 1807; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 52 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies massive, sub-massive or encrusting. Maximum recorded size: 60 cm across. Corallites are cerioid, with oblong or polygonal calyces of even size, between 3.0 to 25.0 mm across; they share walls that can be smooth or serrated-looking. Colours vary from brown to yellow and sometimes orange or green. *Dipsastraea* appears superficially similar, but corallites do not share walls (Fig. 93).

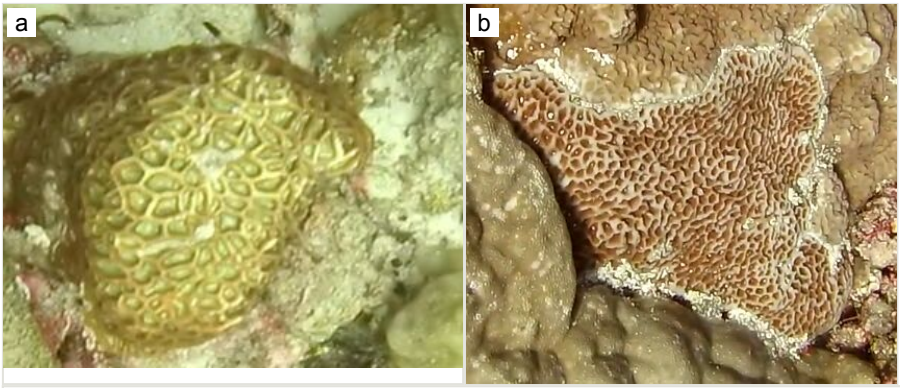

Figure 93.

Favites sp. indet.

a: Massive colony. Alphonse N1, 10 m. doi
b: Encrusting colony. Astove W1, 10 m. doi

Genus *Goniastrea* Milne Edwards & Haime, 1848

Goniastrea sp. indet.

Material

a. scientificName: *Goniastrea*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Goniastrea*; scientificNameAuthorship: Milne

Edwards & Haime, 1848; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 35.8 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

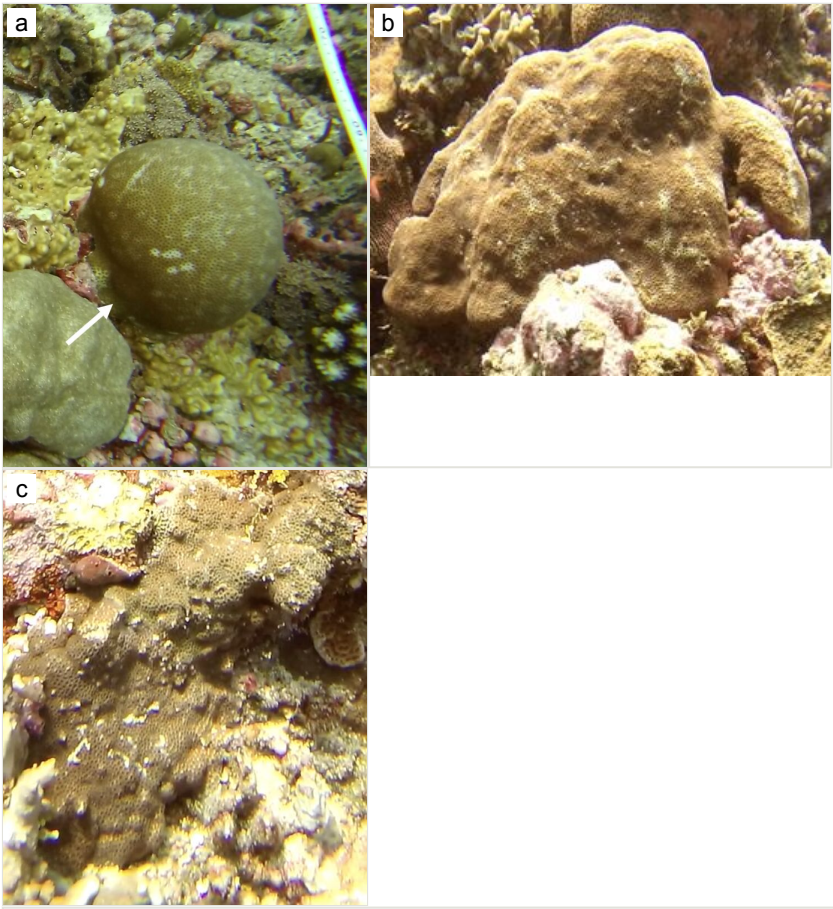

Figure 94.

Goniastrea sp. indet.

a: Massive colony. Alphonse N1, 10 m. doi
b: Massive colony. Astove W1, 10 m. doi
c: Encrusting colony. Astove W1, 10 m. doi

Notes: Colonies massive, sub-massive, plate-like or encrusting. Maximum recorded size: 80 cm across. Corallites are cerioid, uniformly shaped and 3.5 to 14 mm in diameter. The septo-costae are neatly arranged around the corallite chalices, giving them a serrated appearance. Colour shades of brown. *Gardineroseris* looks similar, but

has corallites with smooth walls. *Favites* superficially similar, but has less regular septa (Fig. 94).

Genus *Hydnophora* Fischer von Waldheim, 1807

Hydnophora sp. indet.

Material

a. scientificName: *Hydnophora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Hydnophora*; scientificNameAuthorship: Fischer von Waldheim, 1807; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies massive, encrusting or branching. Maximum recorded size: 30 cm across. The colony surface is covered in skeletal bumps (‘hydnophores’) that appear as lemon-squeezers or juicers, with small corallites, 3.0 to 4.0 mm in size, clustered in between. Hydnophores are often brighter than the corallites, with the latter being commonly brown to grey-green (Fig. 95).

Figure 95. doi

Hydnophora sp. indet. Massive colony. Alphonse N1, 10 m.

Genus *Pectinia* Blainville, 1825

Pectinia sp. indet.

Material

a. scientificName: *Pectinia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Pectinia*; scientificNameAuthorship: Blainvile,

1825; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 11.3 m; maximumDepthInMeters: 15 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Dome-shaped or laminar colonies, forming thick plates. Maximum recorded size: 30 cm across. Corallites 4.5 to 24.0 mm. With thin-walled, meandering valleys that increase in depth towards the centre of the colony. Some colonies branch towards the centre. Colour ranges from light brown to grey or green. *Platygyra* can appear similar from afar; however, has valleys of uniform depth. Its valleys tend to have a rougher texture due to its highly developed septa, often with a flattened top and green mouths (*Fig. 96*).

Figure 96. doi

Pectinia sp. indet. Astove W1, 10 m.

Genus *Platygyra* Ehrenberg, 1834

Platygyra sp. indet.

Material

a. scientificName: *Platygyra*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Platygyra*; scientificNameAuthorship: Ehrenberg, 1834; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies massive, dome-shaped or encrusting. Corallites forming dense meandroid valleys, giving the colony a maze-like appearance. Maximum recorded size: 40 cm across. Corallite size between 4.0 to 6.0 mm. Colour typically shades of brown or green. Can look similar to some meandering colonies of *Lobophyllia*, but the latter has typically wider ridges that are often serrated. Some colonies look also similar to *Leptoria*; however, the latter has much thinner and more meandroid walls with more uniform valleys (Fig. 97).

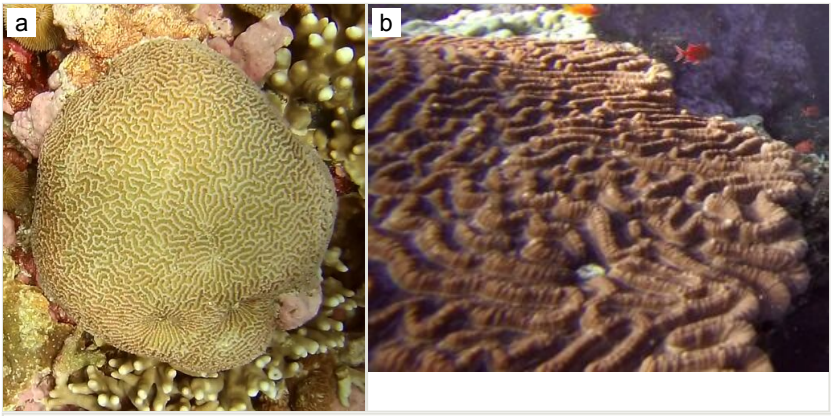

Figure 97.

Platygyra sp. indet.

a: Massive colony. Astove W1, 10 m. doi

b: Encrusting colony. Astove W1, 10 m. doi

Genus *Oulophyllia* Milne Edwards & Haime, 1848

Oulophyllia sp. indet.

Material

a. scientificName: *Oulophyllia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Merulinidae; genus: *Oulophyllia*; scientificNameAuthorship: Milne Edwards & Haime, 1848; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies massive appearing thickly encrusting. Maximum recorded size: 20 cm across. The colony surface consists of monocentric to meandroid, thin and ragged walls forming large valleys. Paliform lobes are commonly observed. Corallites between 12.0 to 15.0 mm in diameter. Colouration shades of brown. *Platygyra* and *Favites* appear similar, but both possess finer skeletal features (Fig. 98).

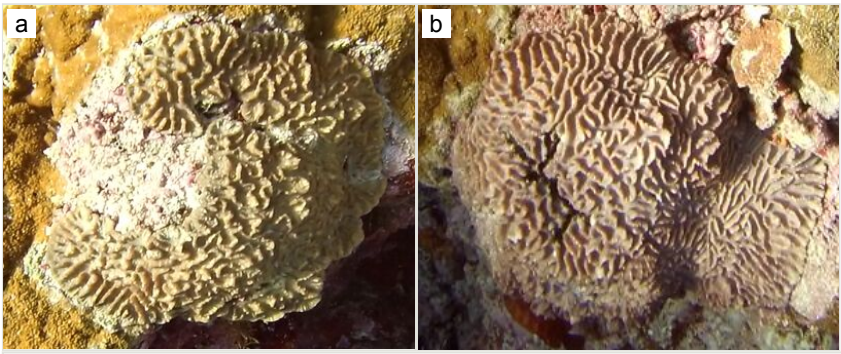

Figure 98.

Oulophyllia sp. indet.

a: Encrusting colony. Astove W1, 10 m. doi
b: Encrusting colony. Astove W1, 10 m. doi

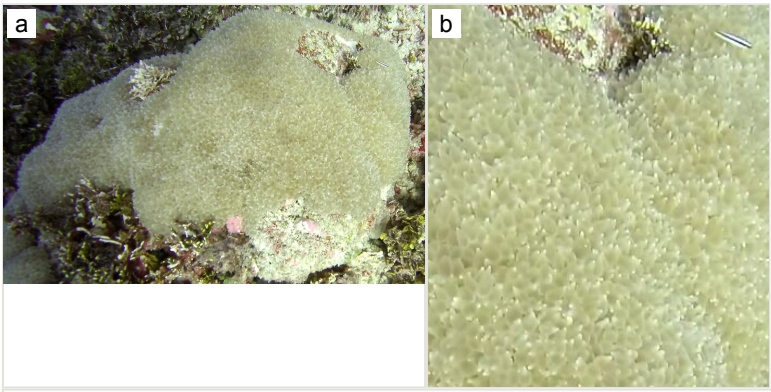

Figure 99.

Physogyra sp. indet.

a: Massive colony. Aldabra N1, 10 m. doi
b: Massive colony. Aldabra N1, 10 m. doi

Family Plerogyridae Rowlett, 2020

Genus *Physogyra* Quelch, 1884

Physogyra sp. indet.

Material

a. scientificName: ***Physogyra***; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Plerogyridae ; genus: ***Physogyra***; scientificNameAuthorship: Quelch, 1884; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Desroches S1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters:

53 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are massive or form thick plates. Colony surface entirely covered in bubble-like, teardrop-shaped vesicles. Meandroid with short widely spaced valleys that are only visible when vesicles retract. Maximum recorded size: 1.5 m across. Corallites 18.0 mm in diameter. The colouration of the vesicles is always pale-whitish (Fig. 99).

Family Pocilloporidae Gray, 1840

Genus *Pocillopora* Lamarck, 1816

Pocillopora sp. indet.

Material

a. scientificName: *Pocillopora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Pocilloporidae; genus: *Pocillopora*; scientificNameAuthorship: Lamrack, 1816; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 23.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies branching. Morphology depends on the environment, with thicker, stubby branches common in high-energy environments. Maximum recorded size: 30 cm across. Corallite size is 1.1 mm. In deeper, more sheltered waters, branches are thinner and more open. Colony surface covered in skeletal bumps (‘verrucae’) giving a rather spiky/rough appearance. The corallites’ darker colouration gives the coral a “black peppered” appearance (Fig. 100).

Pocillopora damicornis (Linnaeus, 1758)

Material

a. scientificName: *Pocillopora damicornis*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Pocilloporidae; genus: *Pocillopora*; scientificNameAuthorship: Linnaeus, 1758; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 32 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are branching with branches shorter than those of other species of its genus. Morphology correlated to environmental parameters with colonies in calmer waters being more open and branched and colonies in high-energy environments appearing more compact. Maximum recorded size: 35 cm across. Colouration normally pale-brown, but can appear greenish and pink. *P. damicornis* is the only species of *Pocillopora* that we saw during our dives that could be continuously identified to species level (Fig. 101).

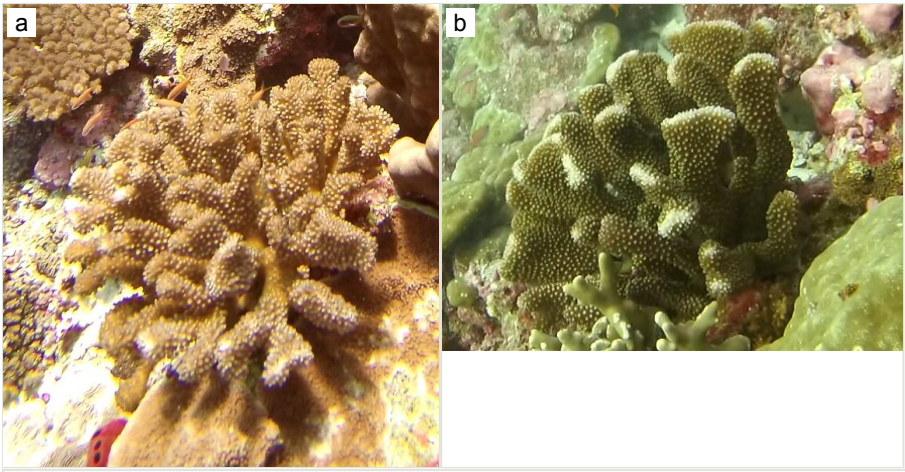

Figure 100.

Pocillopora sp. indet.

a: Branching colony. Astove W1, 10 m. doi
b: Branching colony. Alphonse N1, 10 m. doi

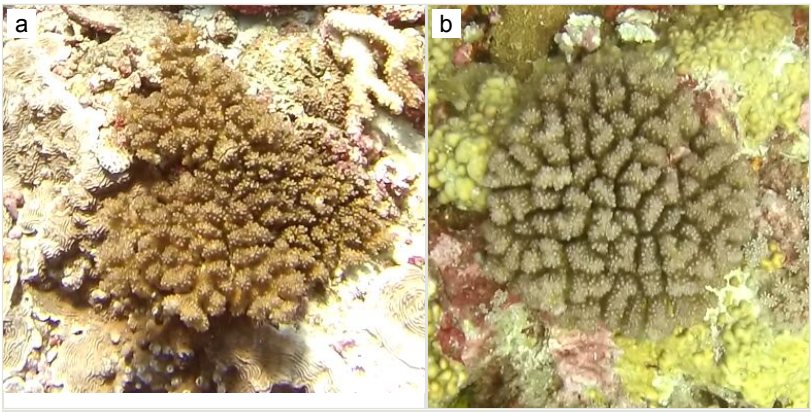

Figure 101.

Pocillopora damicornis

a: Branching colony. Astove W1, 10 m. doi
b: Branching colony. Alphonse N1, 10 m. doi

Genus *Stylophora* Schweigger, 1820

Stylophora sp. indet.

Material

a. scientificName: *Stylophora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Pocilloporidae; genus: *Stylophora*; scientificNameAuthorship: Schweigger, 1820; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, Poivre E1; minimumDepthInMeters: 9.6 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies branching or encrusting. Morphology is correlated to wave action energy levels of the surrounding environment - higher wave action leads to a more compact and dense growth of the colony. Branches have blunt ends and can be very thick. The surface appears rough and the corallites are very small, 1.0 mm in diameter and hooded towards the end of each branch. No verrucae present. Branches resemble teddy bear legs due to their thick appearance. Maximum recorded size: 30 cm across. Colouration pale brown. *Pocillopora* appears similar, but has verrucae on its surface and black corallites (Fig. 102).

Family Poritidae Gray, 1840

Genus *Porites* Link, 1807

Porites sp. indet.

Material

a. scientificName: *Porites*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Poritidae; genus: *Porites*; scientificNameAuthorship: Link, 1807; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 63.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Massive, sub-massive, encrusting or branching colonies. Maximum recorded size up to 1 m across, except for some colonies that become hemispherical to helmed-shaped and can be several metres across. Branching colonies have stubby branches with pale tips. Corallites are very small, 0.6 to 1.3 mm and a close-up or a high-resolution camera is needed to distinguish them underwater; the surface of the colony

is smooth, giving the coral an almost rock-like appearance. Colours include shades of brown or green (Fig. 103).

Figure 102. doi

Stylophora sp. indet. Branching colony. Astove W1, 10 m.

Genus *Goniopora* de Blainville, 1830

Goniopora sp. indet.

Material

a. scientificName: *Goniopora*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Poritidae; genus: *Goniopora*; scientificNameAuthorship: de Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 36.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies with a range of growth forms; in this survey, mostly massive. This genus is easily recognised by the long, fleshy polyps that are extended day and night. Maximum recorded size: 1 m across. Corallites between 2.2 and 5.0 mm in size. *Alveopora* appears very similar and, if in close view, can be distinguished by the number of polyp tentacles (*Goniopora*: 24, *Alveopora*: 12) (Fig. 104).

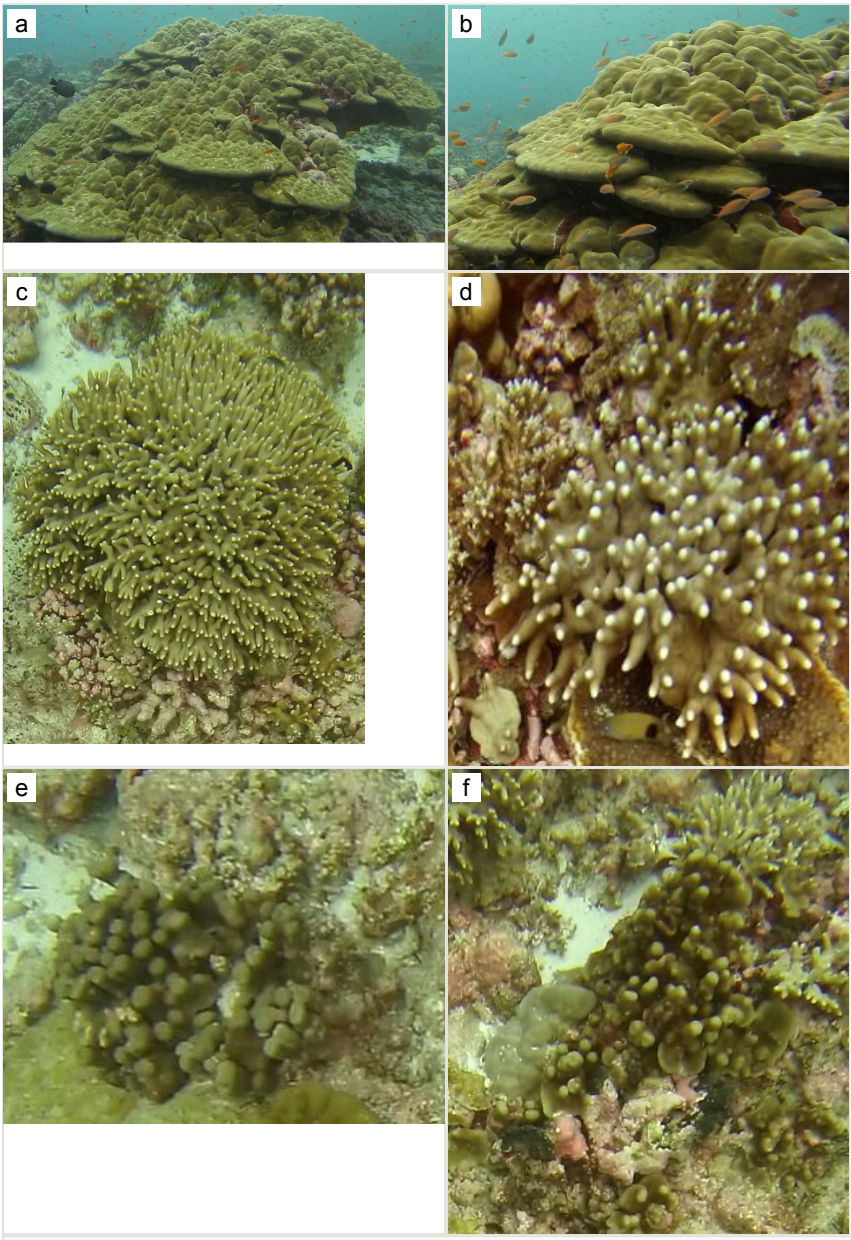

Figure 103.

Porites sp. indet.

a: Massive colony. Alphonse N1, 10 m. doi
b: Massive colony. Alphonse N1, 10 m. doi
c: Branching colony. Poivre E1, 10 m. doi
d: Branching colony. Astove W1, 10 m. doi
e: Sub-massive colony. Poivre E1, 10 m. doi
f: Sub-massive colony. Poivre E1, 10 m. doi

Figure 104. doi

Goniopora sp. indet. Massive colony. Aldabra W1, 10 m.

Family Scleractinia

Genus *Pachyseris* Milne Edwards & Haime, 1849

Pachyseris sp. indet.

Material

a. scientificName: *Pachyseris*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Scleractinia; family: Scleractinia incertae sedis; genus: *Pachyseris*; scientificNameAuthorship: Milne Edwards & Haime, 1849; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 63.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Gilberte Gendron, Nico Fassbender, Paris Stefanoudis, Rowana Walton; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies laminar and unifacial to branched and bifacial; also encrusting. Surface covered in a series of concentric ridges that are either parallel to colony margins or contorted. Corallites 0.5 mm in diameter. Most abundant in mesophotic waters, where it forms plating colonies several metres long. Colouration shades of brown with white laminar margins. *Pavona* looks similar, but possesses thicker septo-costae. Small plates can sometimes be confused with *Leptoseris*; however, the latter lacks the parallel ridges and has a bumpier, uneven surface (Fig. 105).

Zoantharia

Order Zoantharia Gray, 1832

Zoantharia stet.

Material

a. scientificName: *Zoantharia*; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Zoantharia; scientificNameAuthorship: Gray, 1832; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 31.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies thickly encrusting to massive. Conspicuous, elliptical to round polyps, typically discernible underwater. Colour shades of creamy-white. Maximum recorded size: 50 cm across. This group likely contains a variety of species that are difficult to identify from video footage; hence, no attempt was made to identify them at a lower taxonomic level. Zoanthids can be distinguished from other Anthozoans by their tendency to incorporate sand and small pieces of the substrate into their tissue (Fig. 106).

Hydrozoa

Class Hydrozoa Owen, 1843

"class Hydrozoa" stet.

Material

a. scientificName: Hydrozoa; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 15.5 m; maximumDepthInMeters: 138.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Often colonial, with varied branching forms and dimensions (few millimetres to few tenths of centimetres). Colouration variable. Aggregations of hydroid colonies commonly overgrow rocks and portions of dead corals. Some hydrozoans bear resemblance to octocorals, but the latter have a much more solid structure and tend to

be larger. This group likely contains a variety of species that are difficult to identify from video footage; hence, no attempt was made to identify them at a lower taxonomic level. Members of the Milleporidae, Stylasteridae and Thyroscyphidae families may be more easily identifiable from video footage (see below). Commonly known as hydroids (Fig. 107).

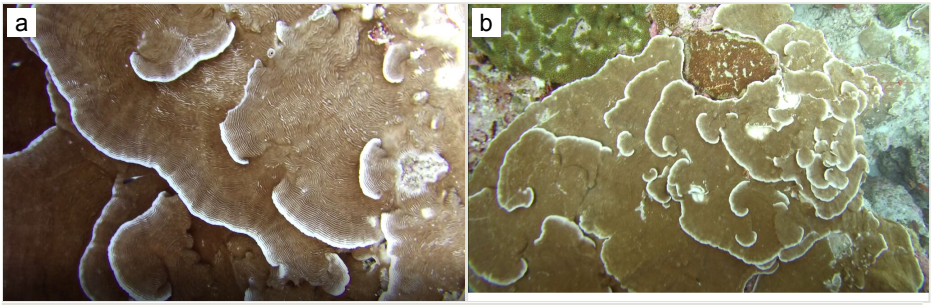

Figure 105.

Pachyseris sp. indet.

a: Laminar colony. Astove W1, 10 m. doi
b: Laminar colony. Astove W1, 10 m. doi

Order Anthoathecata Cornelius, 1992

Family Milleporidae Fleming, 1828

Genus *Millepora* Linnaeus, 1758

Millepora sp. indet.

Material

a. scientificName: *Millepora* sp.; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Anthoathecata; family: Milleporidae; genus: *Millepora*; scientificNameAuthorship: Linnaeus, 1758; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1 Desroches S1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 32 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies encrusting or branching, either thick and heavy with lobed projections or cylindrical branches. Bumpy texture with almost no gaps between bumps, but smooth surface. Generally following the substrate, colonies can appear massive or look like large plates. Colouration pale brown to yellow or whitish. Branched colonies normally have pale to whitish tips. Maximum recorded size: 1 m across. In general, *Millepora* has a very smooth surface when compared to scleractinian corals. Encrusting

colonies look similar to some species of *Sinularia*; however, the latter has wider ridges between bumps. *Millepora* is commonly known as fire coral. However, it was not possible to distinguish between distinct species from underwater images alone (Fig. 108).

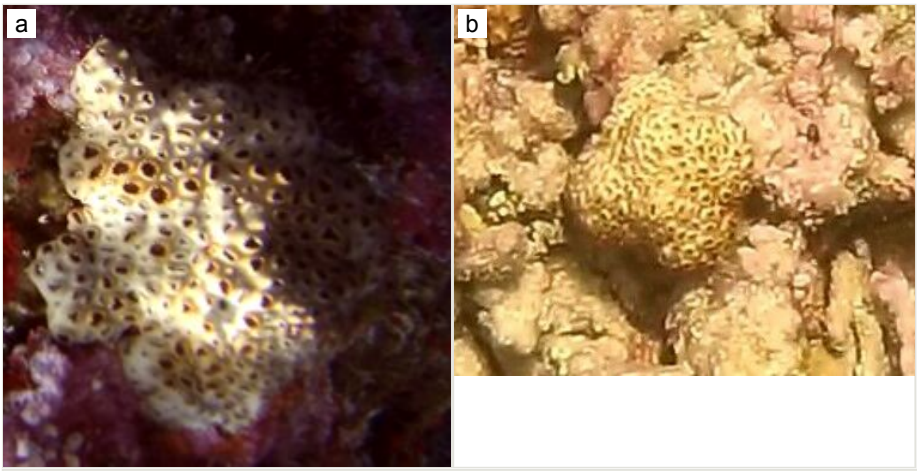

Figure 106.

Zoantharia stet.

a: Astove W1, 10 m. doi
b: Astove W1, 10 m. doi

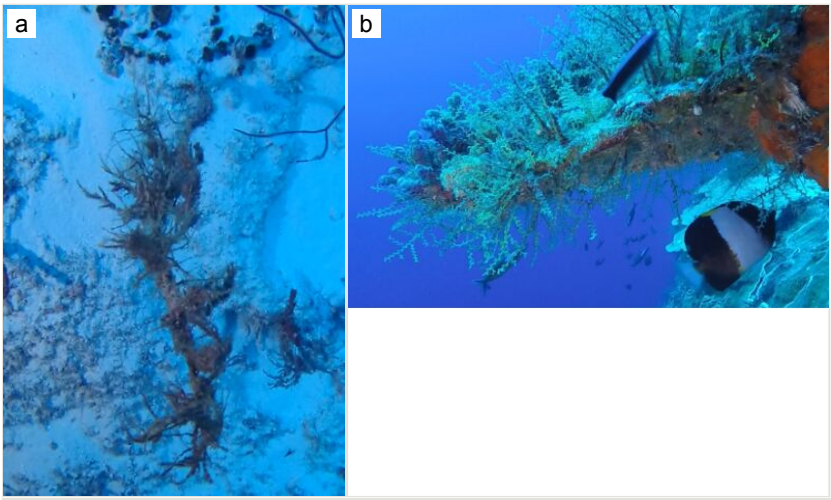

Figure 107.

Hydrozoa stet.

a: Aldabra N1, 60 m. doi
b: Astove W1, 30 m. doi

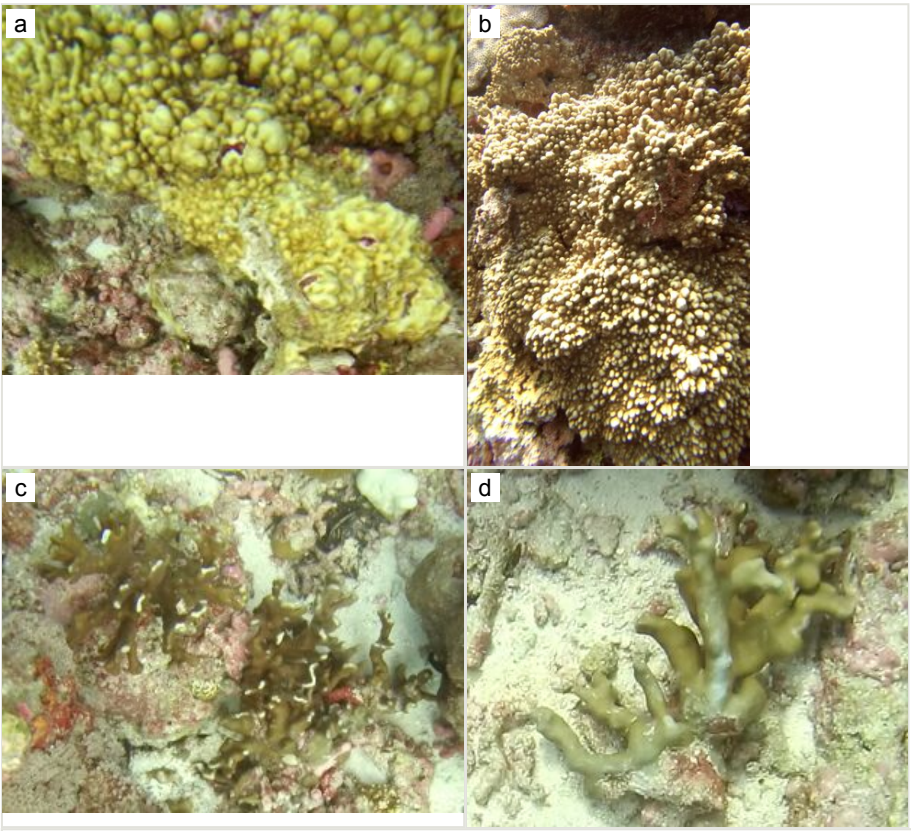

Figure 108.

Millepora sp. indet.

a: Alphonse N1, 10 m. doi
b: Astove W1, 10 m. doi
c: Alphonse N1, 10 m. doi
d: Alphonse N1, 10 m. doi

Family Solanderiidae Marshall, 1892

Genus *Solanderia* Duchassaing & Michelin, 1846

Solanderia sp. indet.

Material

a. scientificName: *Solanderia*; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Anthoathecata; family: Solanderiidae; genus: *Solanderia*; scientificNameAuthorship: Duchassaing & Michelin, 1846; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible

OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies are fan-shaped with fine branches typically growing in one plane. Colouration dark brown to black. Resemble sea fans, but can be distinguished by their extremely fine branches and very dark colouration. Commonly known as tree or sea fan hydroids (Fig. 109).

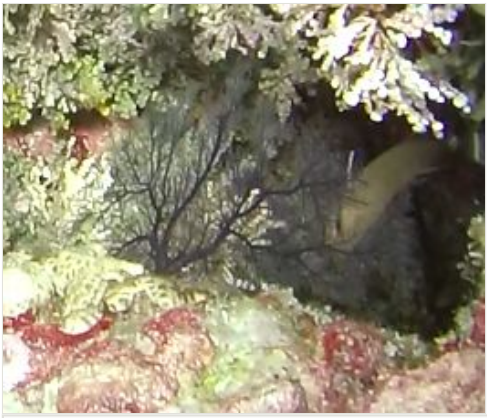

Figure 109. doi

Solanderia sp. indet. Aldabra N1, 10 m.

Family Stylasteridae Gray, 1847

"fam. Stylasteridae" gen. indet. sp. 1

Material

a. scientificName: Stylasteridae sp. 1; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Leptolida; family: Stylasteridae; scientificNameAuthorship: Gray, 1847; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 52.7 m; maximumDepthInMeters: 255.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies delicately branched with branches ending in sympodial fashion. Maximum recorded size: 60 cm tall. Commonly growing in caves or underneath ledges. Branch surfaces are covered by dactylophores. Colouration observed was pale white, with orange, red, pink, purple and yellow possible (see the colour change in the collected specimen in Fig. 110b, SEY1_213). Commonly known as lace coral (Fig. 110).

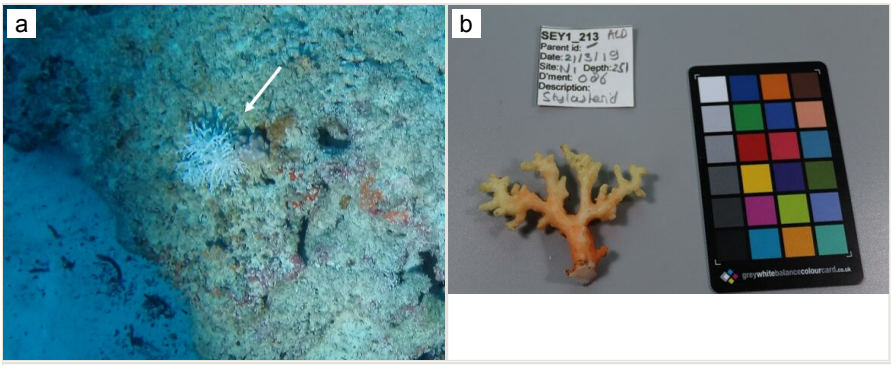

Figure 110.

Stylasteridae gen. indet. sp. 1

a: Aldabra W1, 60 m. doi
b: Aldabra N1, 250 m. (collected specimen SEY1_213) doi

"fam. Stylasteridae" gen. indet. sp. 2

Material

a. scientificName: Stylasteridae sp. 2; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Leptolida; family: Stylasteridae; scientificNameAuthorship: Gray, 1847; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 249.3 m; maximumDepthInMeters: 251.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Colonies form thin, unbranched stalks. The surface is covered in dactylopores. Colouration observed here was pale white. Maximum recorded size: 10 cm in height. Commonly known as lace coral (Fig. 111).

Order Leptothecata Cornelius, 1992

Family Thyroscyphidae Stechow, 1920

Genus *Thyroscyphus* Allman, 1877

Thyroscyphus sp. indet.

Material

a. scientificName: *Thyroscyphus*; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Macrocolonia; family: Thyroscyphidae; genus: *Thyroscyphus*; scientificNameAuthorship: Allman, 1877; waterBody: Indian Ocean; country: Seychelles;

locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 15.5 m; maximumDepthInMeters: 138.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

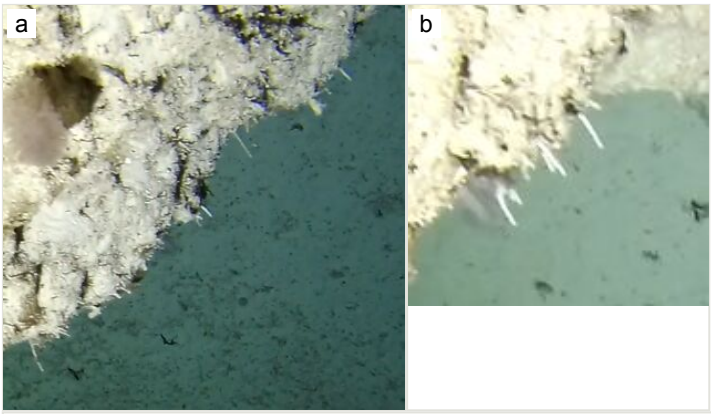

Figure 111.

Stylasteridae gen. indet. sp. 2

a: Aldabra W1, 250 m. doi

b: Aldabra W1, 250 m. Close-up of Fig. 111a. doi

Notes: Colonies irregularly branched in one plane, with stem stiff and unfascicled (i.e. with a single perisarc tube). Hydrothecae relatively prominent, pedicellated, not annulated and without nematothecae. Colouration yellowish to reddish (Fig. 112).

Ctenophora

Class Tentaculata Eschscholtz, 1825

Order Platyctenida Bourne, 1900

Family Lyroctenidae Komai, 1942

Genus *Lyrocteis* Komai, 1941

Lyrocteis sp. indet.

Material

a. scientificName: *Lyrocteis*; kingdom: Animalia; phylum: Ctenophora; class: Tentaculata; order: Platyctenida; family: Lyroctenidae; genus: *Lyrocteis*; scientificNameAuthorship:

Komai, 1941; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1; minimumDepthInMeters: 120 m; maximumDepthInMeters: 250.8 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Carlos Moura, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: While most ctenophores are present in the water column, ctenophores belonging to the order Platyctenida spend their lives on the seafloor. Those of the genus *Lyrocteis* are typically lyre-shaped and may present a great array of colours in a single species. Currently, this genus only comprises two species: *Lyrocteis flavopallidus* Robilliard & Dayton, 1972 and *Lyrocteis imperatoris* Komai, 1941, the first originally described from the Antarctic, the latter described and observed multiple times in the Pacific Ocean. Recently, an unknown species of *Lyrocteis* that resembles the present observations from Seychelles was recorded in canyons off northern KwaZulu Natal, in the Western Indian Ocean (Gibbons et al. 2021). However, it was not possible to identify these ctenophores to species level from underwater images alone without further microscopic examination (Fig. 113).

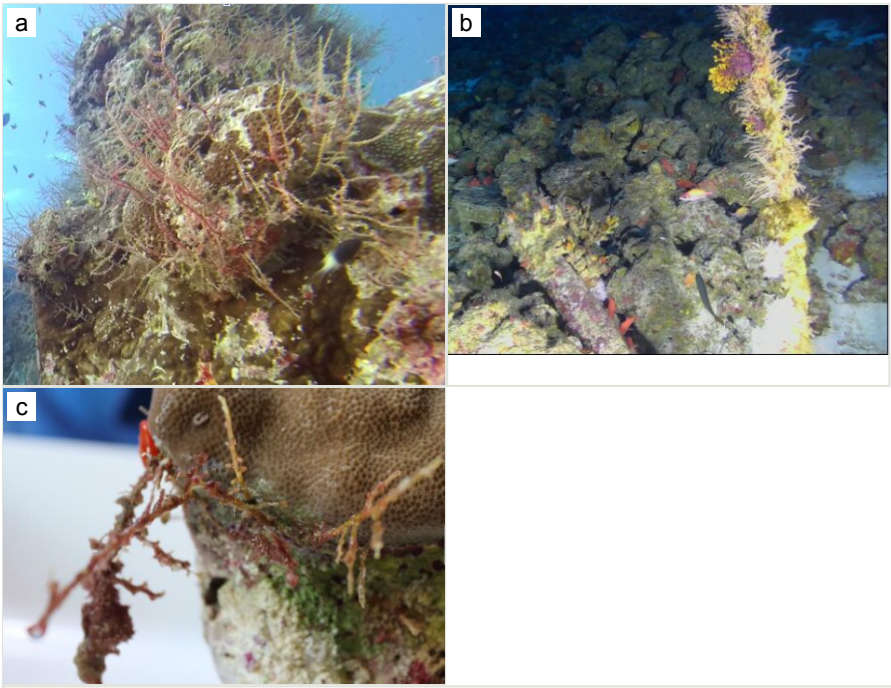

Figure 112.

Thyroscyphus sp. indet.

a: Astove W1, 10 m. doi
b: Astove W1, 60 m. doi
c: Specimen attached to a collected *Porites* coral. doi

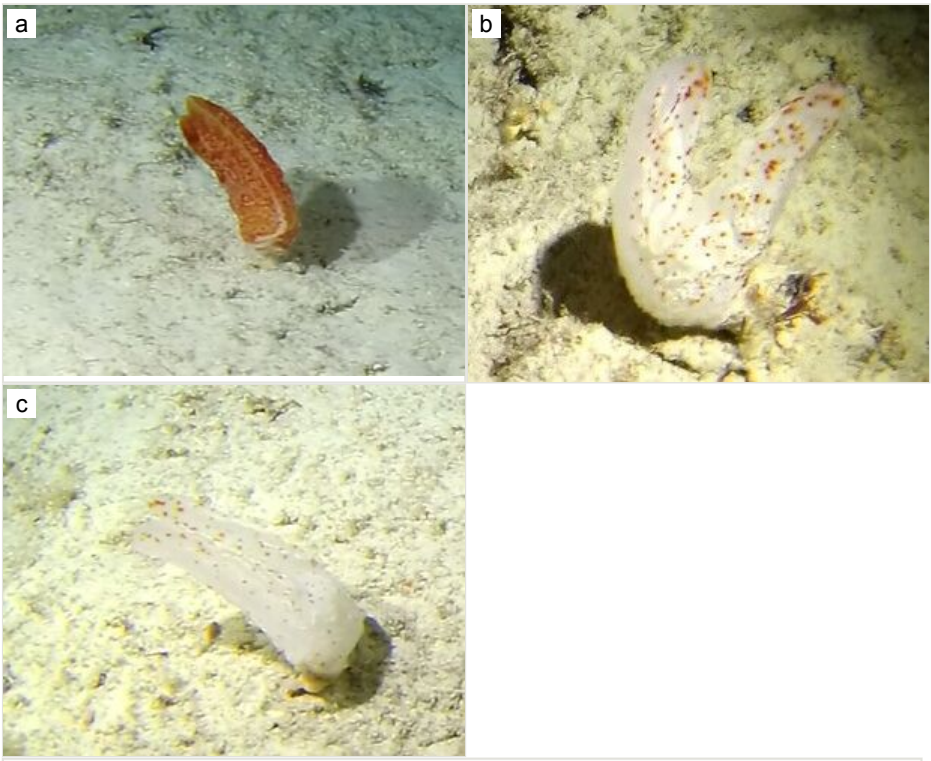

Figure 113.

Lyrocteis sp. indet.

a: Aldabra W1, 250 m. doi
b: Aldabra W1, 250 m. doi
c: Aldabra W1, 250 m. doi

Asteroidea

Class Asteroidea de Blainville, 1830

"class Asteroidea" ord. indet. sp. 1

Material

a. scientificName: Asteroidea sp. 1; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; scientificNameAuthorship: de Blainville, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1, Desroches S1; minimumDepthInMeters: 114.5 m; maximumDepthInMeters: 269.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019,

2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered, triangular arms merging into a conspicuous central disc. Smooth body surface. Arms are light orange to yellowish with the body darker. These specimens are showing a reverse colour pattern, resembling a miniature sea star in a darker orange on the central disc between the arms. Maximum recorded size: 18 cm across (Fig. 114).

Figure 114. doi

Asteroidea ord. indet. sp. 1. Desroches S1, 250 m.

"class Asteroidea" ord. indet. sp. 2

Material

a. scientificName: Asteroidea ord. indet. sp. 2; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; scientificNameAuthorship: Perrier, 1884; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1, Poivre E1; minimumDepthInMeters: 33.4 m; maximumDepthInMeters: 350 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Four to five slightly tubular, thick arms with rounded tips. The central disc is inconspicuous and the arms appear to almost seamlessly merge into one another at the base. The surface appears smooth. Dark blue colour, sometimes purple or light orange. Maximum recorded size: 11 cm across. The captured individuals could belong to the *Ophidiasteridae* or Echinasteridae families, but it was impossible to identify them to a lower taxonomic level from video footage alone (Fig. 115).

Figure 115. doi

Asteroidea ord. indet. sp. 2. Desroches S1, 250 m.

Order Forcipulatida Perrier, 1884

Family Asteriidae Gray, 1840

Genus *Coronaster* Perrier, 1885

Coronaster volsellatus (Sladen, 1889)

Material

a. scientificName: *Coronaster volsellatus*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Forcipulatida; family: Asteriidae; genus: *Coronaster*; scientificNameAuthorship: Sladen, 1889; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1; minimumDepthInMeters: 175 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Ten long and tapered arms merging into a small central disc. The surface is covered in small bumps and appears rough. Colouration is bright orange on the dorsal surface, with a lighter coloured edge around the sides of the organism (Fig. 116).

Coronaster sp. indet.

Material

a. scientificName: *Coronaster* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Forcipulatida; family: Asteriidae; genus: *Coronaster*; scientificNameAuthorship: Perrier, 1885; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1; minimumDepthInMeters: 150 m; maximumDepthInMeters: 172 m;

locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Multiple long heavily bent arms merge into a conspicuously rounded central disc. The overall surface appears smooth. Arms are of light orange colour with the central disc coloured in dark orange to red (Fig. 117).

Figure 116. doi

Coronaster volsellatus. Aldabra N1, 250 m.

Figure 117. doi

Coronaster sp. indet. Alphonse N1, 150 m.

Genus *Sclerasterias* Perrier, 1891

Sclerasterias sp. indet.

Material

a. scientificName: *Sclerasterias* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Forcipulatida; family: Asteriidae; genus: *Sclerasterias*; scientificNameAuthorship: Perrier, 1891; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered arms and a rough, spiny surface. Inconspicuous central disc. Colour of the body is beige with brown patches covering the disc and arms (Fig. 118).

Figure 118. doi

Sclerasterias sp. indet. Astove W1, 250 m.

Order Paxillosida Perrier, 1884

Family Astropectinidae Gray, 1840

"fam. Astropectinidae" gen. indet. sp.

Material

a. scientificName: Astropectinidae sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Paxillosida; family: Astropectinidae; scientificNameAuthorship: Gray, 1840; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, D'Arros N1, Desroches S1; minimumDepthInMeters: 114.5 m; maximumDepthInMeters: 269.5 m;

locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered arms merging into the central disc. Appearance varies and individuals can be slender to thick-bodied with stubby and rounded or slim and highly tapered arms. Smooth body surface. The main body is pale whitish or yellowish-orange. Approximately 7 cm across.

The individual might belong to *Dipsacaster* or *Leptychaster*; however, further microscopic examination is necessary for positive identification (Fig. 119).

Figure 119. doi

Astropectinidae gen. indet. sp. D'Arros N1, 350 m.

Order Valvatida Perrier, 1884

Family Asterinidae Gray, 1840

Genus *Nepanthia* Gray, 1840

Nepanthia sp. indet.

Material

a. scientificName: *Nepanthia*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Asterinidae; genus: *Nepanthia*; scientificNameAuthorship: Gray, 1840; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Astove W1, D'Arros N1; minimumDepthInMeters: 244.1 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy:

Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short tapered arms merge into a conspicuous central disc. Maximum recorded size: 15 cm across. The overall surface appears smooth, but the collected specimen displayed some very small bumpy projections. Orange colour (Fig. 120).

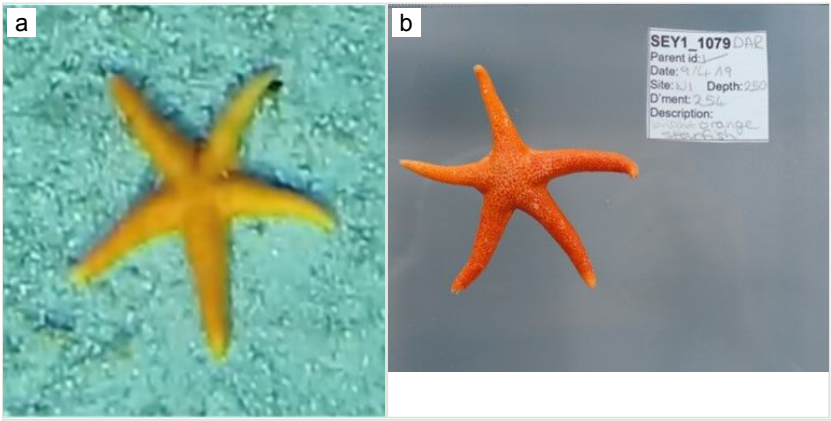

Figure 120.

Nepanthia sp. indet.

a: D'Arros N1, 350 m. doi

b: D'Arros N1, 350 m. Collected specimen SEY1_1079. doi

Family Asterodiscididae Rowe, 1977

Genus *Asterodiscides* A. M. Clark, 1974

Asterodiscides sp. indet.

Material

a. scientificName: *Asterodiscides* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Asterodiscididae; genus: *Asterodiscides*; scientificNameAuthorship: A. M. Clark, 1974; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Poivre E1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 128.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short triangular arms and a wide central disc, ~ 10 cm across. Rough surface with small bumpy projections. Colouration is a light orange mottled in darker orange patches with a conspicuous seastar-shaped darker patch in the centre (Fig. 121).

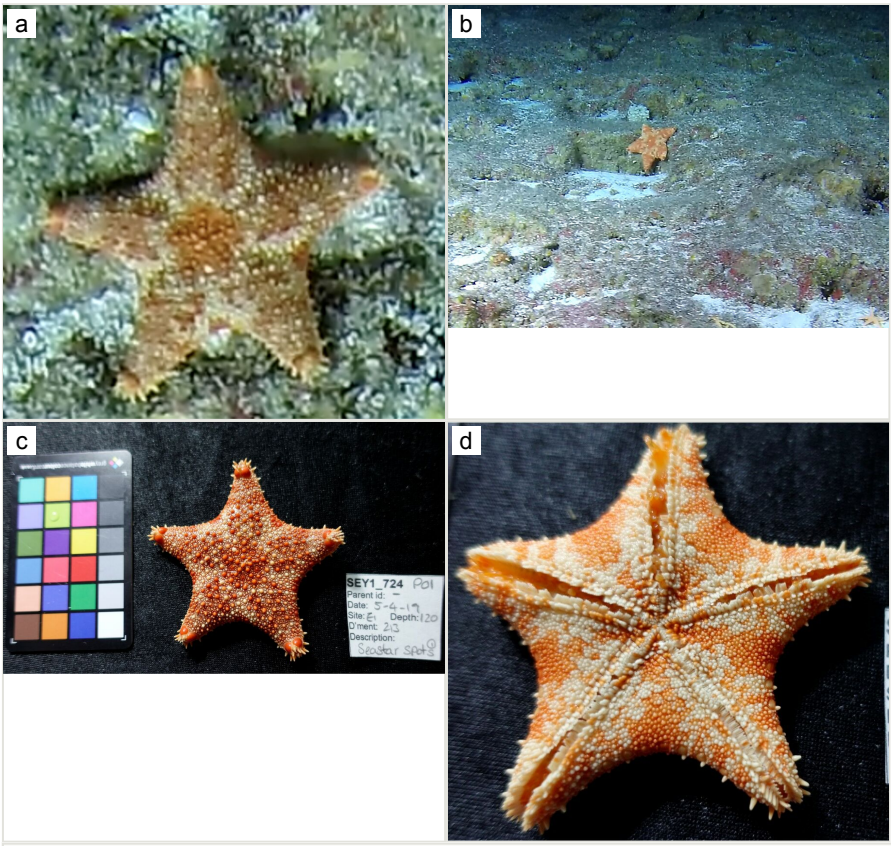

Figure 121.

Asterodiscides sp. indet.

a: Poivre E1, 120 m. doi
b: Poivre E1, 120 m. doi
c: Poivre E1, 120 m. Collected specimen (SEY1_724) doi
d: Poivre E1, 120 m. Back-side of collected specimen (SEY1_724) doi

Family Goniasteridae Forbes, 1841

Genus *Astroceramus* Fisher, 1906

Astroceramus sp. indet.

Material

a. scientificName: *Astroceramus* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; genus: *Astroceramus*; scientificNameAuthorship: Fisher, 1906; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible

OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short, tapered arms and large central disc. Maximum recorded size: 10 cm across. The Latin name of this sea star translates to "star-shaped tile", describing tile-shaped plates covering the entire dorsal body surface. The main body is darker orange or yellow with slightly lighter coloured arm tips (Fig. 122).

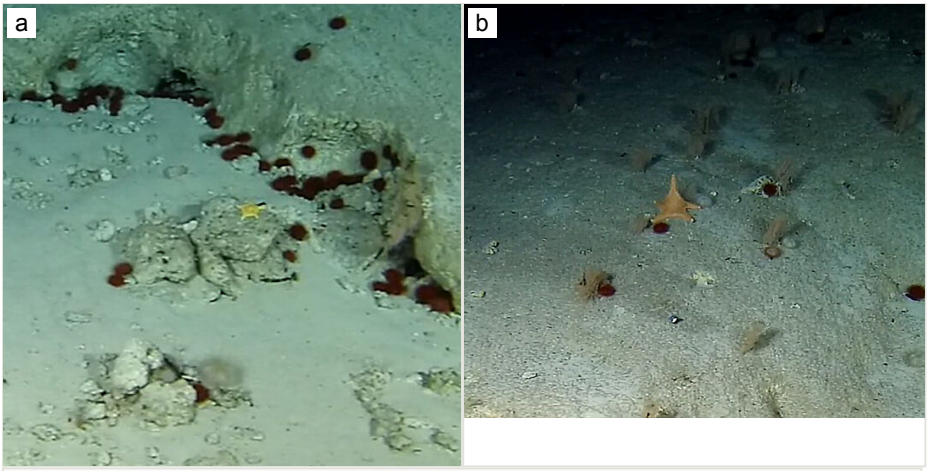

Figure 122.

Astroceramus sp. indet.

a: Alphonse N1, 252 m. doi
b: Alphonse N1, 238 m. doi

Genus *Calliaster* Gray, 1840

Calliaster chaos Mah, 2018

Material

a. scientificName: *Calliaster chaos*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; genus: *Calliaster*; scientificNameAuthorship: Gray, 1840; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1, Poivre E1; minimumDepthInMeters: 114.5 m; maximumDepthInMeters: 122.6 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered spiny arms and a large central disc. Body surface covered in short spine-like projections and bumps. The main body is pale brown with lighter brown to pale whitish spines (Fig. 123).

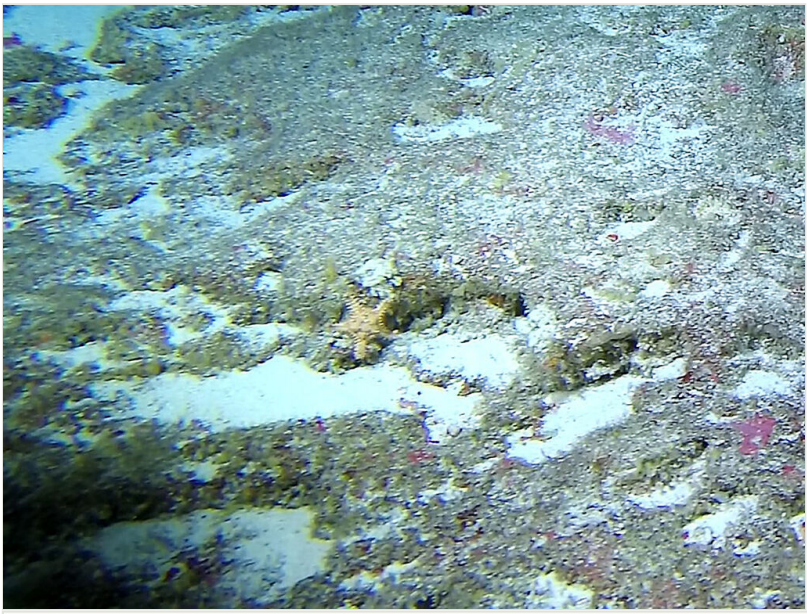

Figure 123. doi

Calliaster chaos. Poivre E1, 120 m.

Genus *Fromia* Gray, 1840

Fromia nodosa A. M. Clark, 1967

Material

a. scientificName: *Fromia nodosa*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; genus: *Fromia*; scientificNameAuthorship: A. M. Clark, 1967; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, D'Arros N1, Poivre E1; minimumDepthInMeters: 33.5 m; maximumDepthInMeters: 71.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered arms and conspicuous central disc. The main body is dark red and the plates are creamy light brown to orange. Sometimes whitish. The central disc and the tips of the arms are darker. Maximum recorded size: 10 cm across. The collected specimen was *F. nodosa*; however, we want to mention that *Fromia monilis* has a very similar appearance. They can be distinguished by looking at the red-tipped arms - the arms of *F. nodosa* have red tips only, whilst the arms of *F. monilis* are coloured red halfway (Fig. 124).

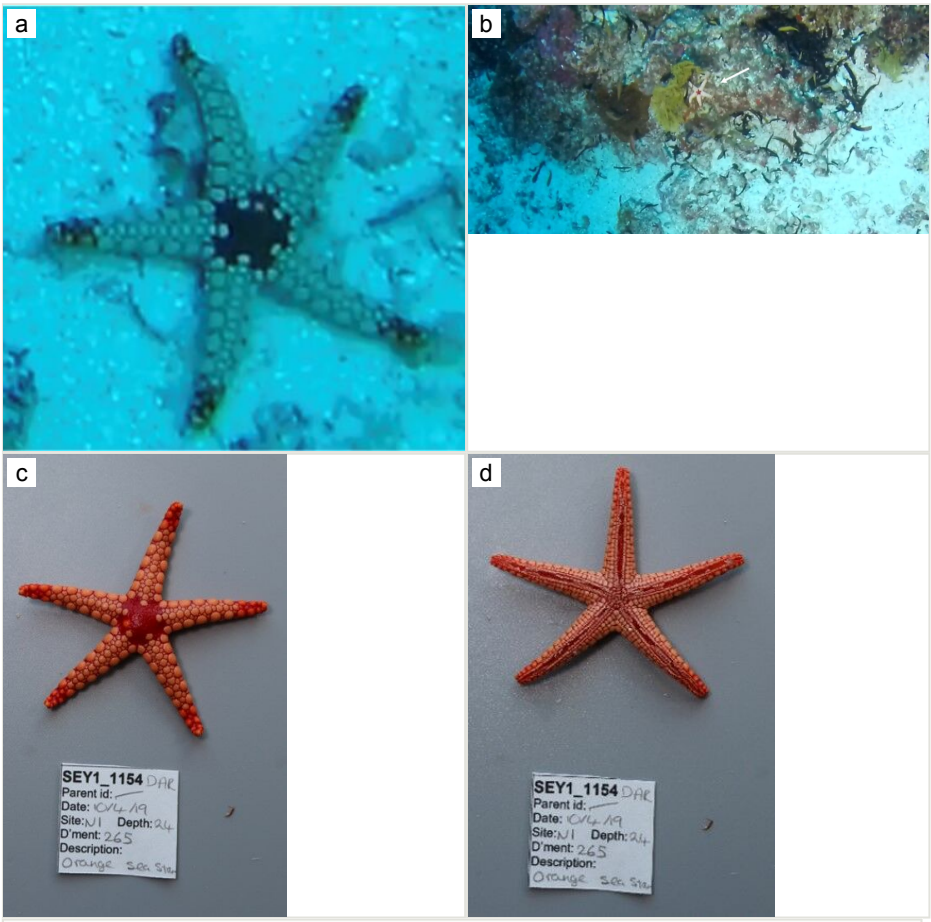

Figure 124.

Fromia nodosa

a: D'Arros N1, 30 m. doi
b: Alphonse N1, 60 m. doi
c: D'Arros N1, 30 m. Collected specimen (SEY1_1154) doi
d: D'Arros N1, 30 m. Backside of collected specimen (SEY1_1154) doi

Genus *Peltaster* Verrill, 1899

Peltaster cycloplax Fisher, 1913

Material

a. scientificName: ***Peltaster cycloplax***; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; genus: ***Peltaster***; scientificNameAuthorship: Fisher, 1913; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Astove W1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short, stubby arms and a large central disc. The edge of the starfish is slightly ridged. Maximum recorded size: 10 cm across. Darker main body with lighter edge and arm tips. Orange colour (Fig. 125).

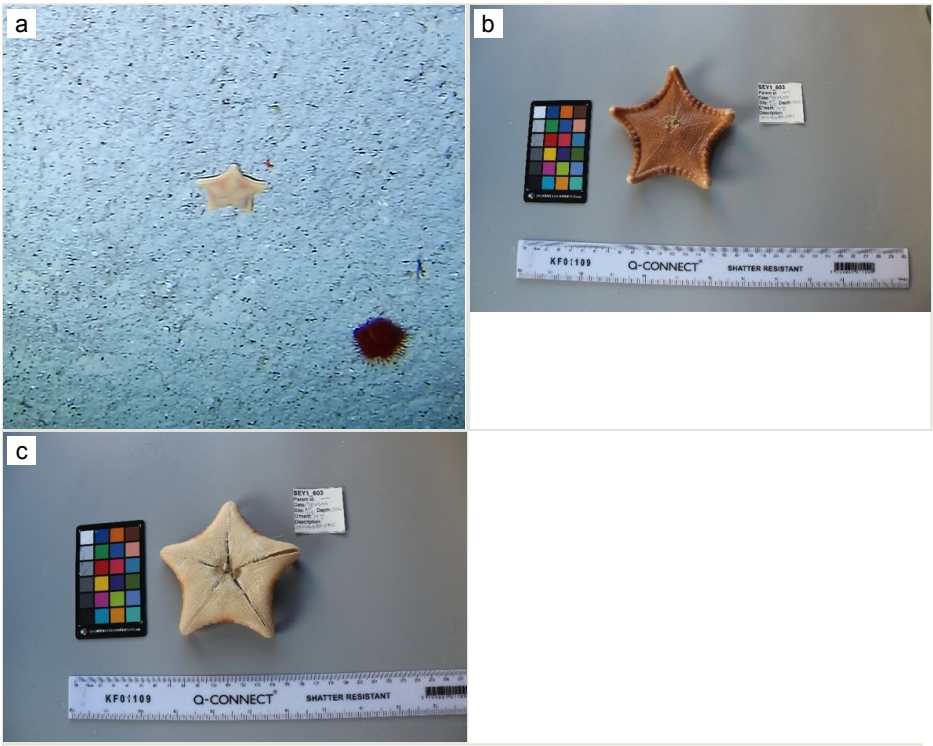

Figure 125.

Peltaster cycloplax

a: Alphonse N1, 250 m. doi
b: Astove W1, 250 m. Collected specimen (SEY1_603) doi
c: Astove W1, 250 m. Back-side of collected specimen (SEY1_603) doi

Genus *Sphaeriodiscus* Fisher, 1910

Sphaeriodiscus sp. indet.

Material

a. scientificName: *Sphaeriodiscus* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; genus: *Sphaeriodiscus*; scientificNameAuthorship: Fisher, 1910; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, D'Arros N1; minimumDepthInMeters: 230 m;

maximumDepthInMeters: 350 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short, triangular and stubby arms with a large central disc. Maximum recorded size: 8 cm across. Dark orange with arm tips appearing lighter orange to yellow (Fig. 126).

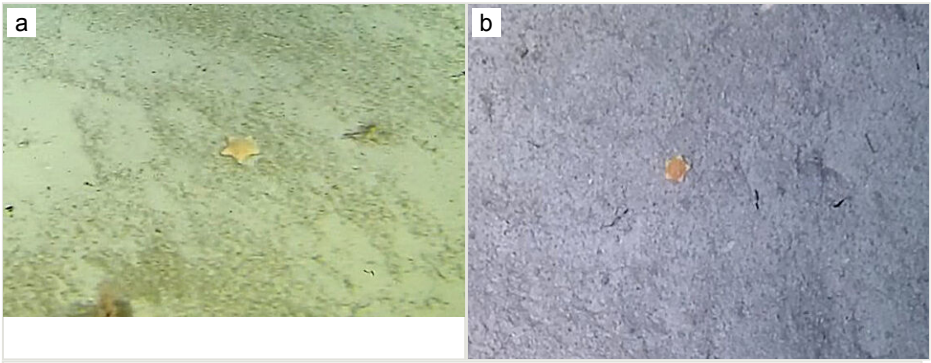

Figure 126.

Sphaeriodiscus sp. indet.

a: Alphonse N1, 255 m. doi
b: D'Arros N1, 350 m. doi

Family Ophidiasteridae Verrill, 1870

"fam. Ophidiasteridae" gen. indet. sp.

Material

a. scientificName: *Ophidiasteridae*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Ophidiasteridae; scientificNameAuthorship: Verrill, 1870; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Astove W1, D'Arros N1, Poivre E1; minimumDepthInMeters: 89 m; maximumDepthInMeters: 251.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered, slender arms and inconspicuous central disc. Maximum recorded size: 19 cm across. Rough body surface covered in small bumps. The main body is pale brown to yellow, displaying cryptic mottled colour patterns that make them blend in with the substrate (Fig. 127).

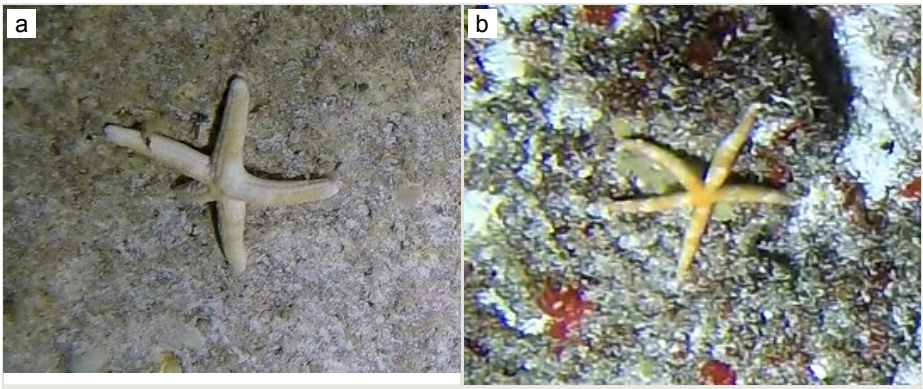

Figure 127.

Ophidiasteridae gen. indet. sp.

a: Astove W1, 250 m. doi
b: Poivre E1, 120 m. doi

Genus *Heteronardoa* Hayashi, 1973

Heteronardoa diamantinae Rowe, 1976

Material

a. scientificName: *Heteronardoa diamantinae*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Ophidiasteridae; genus: *Heteronardoa*; scientificNameAuthorship: Rowe, 1976; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 110.7 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered slender arms merging into an inconspicuous central disc. Maximum recorded size: 18 cm across. Smooth body surface. The main body is pale orange to yellow (Fig. 128).

Genus *Leiaster* Peters, 1852

Leiaster sp. indet.

Material

a. scientificName: *Leiaster* sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Ophidiasteridae; genus: *Leiaster*; scientificNameAuthorship: Peters, 1852; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1, Poivre E1; minimumDepthInMeters: 9.5 m; maximumDepthInMeters: 10.1 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five tapered and slender arms and smooth body surface. The body colour is dark green (Fig. 129).

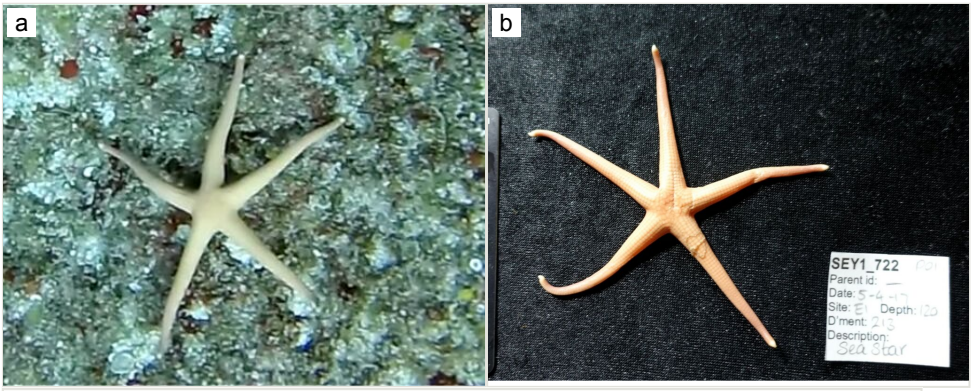

Figure 128.

Heteronardoa diamantinae

a: Poivre E1, 120 m. doi

b: Poivre E1, 120 m. Collected specimen (SEY1_722). doi

Family Oreasteridae Fisher, 1908

"fam. Oreasteridae" sp. indet.

Material

a. scientificName: Oreasteridae sp.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Oreasteridae; scientificNameAuthorship: Fisher, 1908; waterBody: Indian Ocean; country: Seychelles; locality: Poivre E1; minimumDepthInMeters: 33.4 m; maximumDepthInMeters: 35 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five short stubby arms that rarely protrude from the wide central disc. Maximum recorded size: 23 cm across. Smooth surface. Appears roughly pentagonal in shape. Colouration is a uniform light grey. Possible genera could be *Halityle* or *Astrosarkus* (Fig. 130).

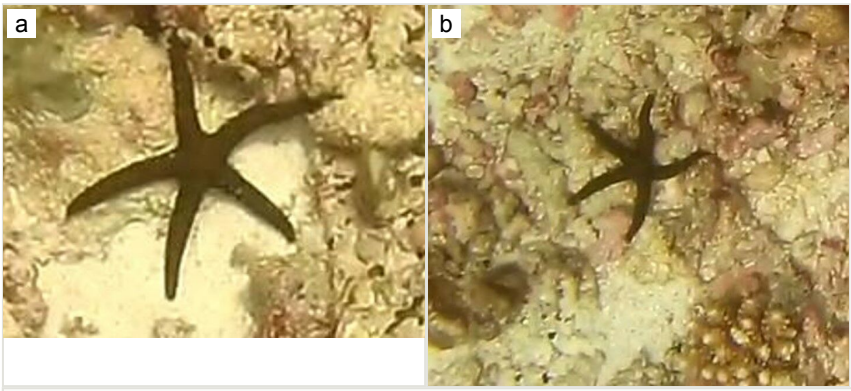

Figure 129.

Leiaster sp. indet.

a: Poivre E1, 10 m. doi
b: Poivre E1, 10 m. doi

Figure 130. doi

Oreasteridae sp. indet. Poivre E1, 30 m.

Genus *Culcita* Agassiz, 1836

Culcita schmideliana (Bruzelius, 1805)

Material

a. scientificName: ***Culcita schmideliana***; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Oreasteridae; genus: ***Culcita***; scientificNameAuthorship: Bruzelius, 1805; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1, Poivre E1; minimumDepthInMeters: 33.9 m; maximumDepthInMeters: 35 m; locationRemarks: First Descent: Seychelles Expedition;

samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five stubby, triangular arms merging into a cushion-like central disc. Maximum recorded size: 16 cm across. Roughly pentagonal appearance with a leathery surface. The aboral surface is covered in small conical spines. Colouration can vary, but most commonly a light greyish base colour with small pink patches adjacent to black tubercules (Fig. 131).

Figure 131. doi

Culcita schmideliana. Poivre E1, 30 m.

Genus *Halityle* Fisher, 1913

Halityle regularis Fisher, 1913

Material

a. scientificName: *Halityle regularis*; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Oreasteridae; genus: *Halityle*; scientificNameAuthorship: Fisher, 1913; waterBody: Indian Ocean; country: Seychelles; locality: Poivre E1; minimumDepthInMeters: 60 m; maximumDepthInMeters: 60 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Five stubby, triangular arms merging into a cushion-like central disc. Approximately 15 cm across. The body appears inflated with a smooth surface. Colour is a light brownish-grey with a dark brown edge and arm tips (Fig. 132).

Figure 132. doi

Halityle regularis. Poivre E1, 60 m.

Crinoidea

Class Crinoidea Miller, 1821

"class. Crinoidea" stet.

Material

a. scientificName: Crinoidea; kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; scientificNameAuthorship: Miller, 1821; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1, Poivre E1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 350 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Christopher Mah, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Can be free-swimming or anchored to the substrate by a stalk. The mouth is located on the upper surface surrounded by a crown of feeding arms. Appendages displaying pentameral symmetry are often subdivided into ten or more arms and covered in feather-like pinnules. Colours can vary, in our survey mostly dark black and white, brown, pink and yellow. Stripes commonly observed. This group likely contains a variety of species that are difficult to identify from video footage; hence, no attempt was made to identify them at a lower taxonomic level (Fig. 133).

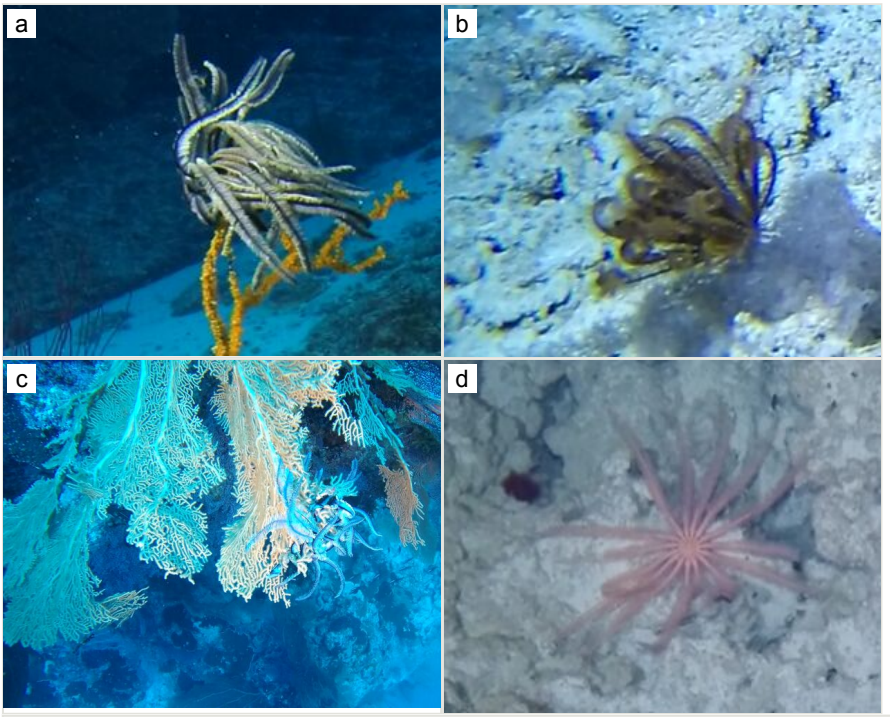

Figure 133.

Crinoidea stet.

a: Aldabra N1, 60 m. doi
b: Aldabra W1, 250 m. doi
c: Aldabra N1, 30 m. doi
d: D'Arros N1, 350 m. doi

Echinoidea

Order Arbacioida Gregory, 1900

Family Arbaciidae Gray, 1855

Genus *Coelopleurus* L. Agassiz, 1840

Coelopleurus sp. indet.

Material

a. scientificName: *Coelepleurus* sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Arbacioida; family: Arbaciidae; genus: *Coelopleurus*; scientificNameAuthorship: L. Agassiz, 1840; waterBody: Indian Ocean; country:

Seychelles; locality: Desroches S1; minimumDepthInMeters: 230 m; maximumDepthInMeters: 230 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thick spines of varying lengths. The longest spines are curved, whilst shorter ones are straight. The body surface is almost entirely covered in spines, with naked and vertical spaces alternating along the body. The main body appears in a dark brown with spines being bright red and white, some with white bands towards the tips, some coloured half and half and others uniformly red. Maximum recorded size: 30 cm across. Positive species identification requires microscopic examination. Collected specimens belonged to *Coelopleurus maillardi*.

(Fig. 134)

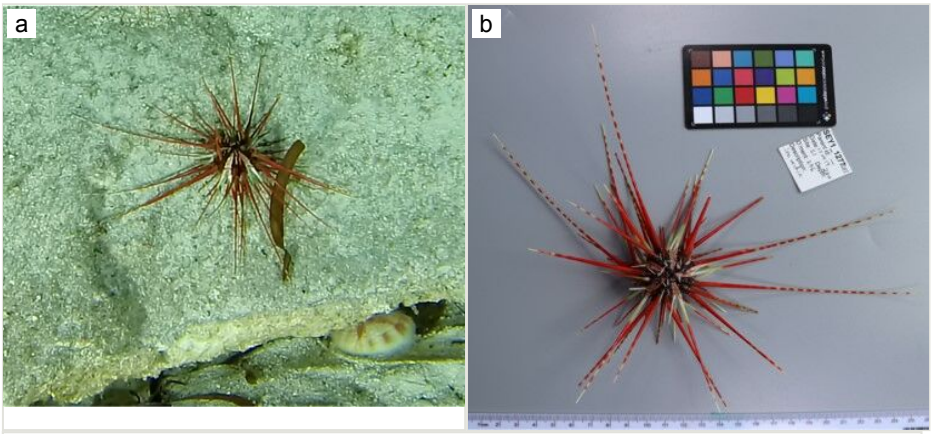

Figure 134.

Coelopleurus sp. indet.

a: Desroches S1, 230 m. doi

b: Desroches S1, 230 m. The collected specimen (SEY1_1277) has been identified as *Coelopleurus maillardi*. doi

Order Aspidodiadematoida Kroh & Smith, 2010

Family Aspidodiadematidae Duncan, 1889

"fam. Aspidodiadematidae" gen. indet. sp.

Material

a. scientificName: Aspidodiadematidae sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Aspidodiadematoida; family: Aspidodiadematidae; scientificNameAuthorship: Duncan, 1889; waterBody: Indian Ocean; country: Seychelles;

locality: D'Arros N1, Poivre E1; minimumDepthInMeters: 122.4 m; maximumDepthInMeters: 251.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: The body surface is entirely covered in fine needle-like spines that are longer than the body is wide. Maximum recorded size: 15 cm across. The main body is appearing globular, orange-brown in colour with similar coloured spines and a conspicuous predominantly white anal cone (Fig. 135).

Figure 135. doi

Aspidodiadematidae gen. indet. sp. D'Arros N1, 250 m.

Order Cidaroida Claus, 1880

"ord. Cidaroida" fam. indet. sp. 1

Material

a. scientificName: Cidaroida sp. 1; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Cidaroida; scientificNameAuthorship: Claus, 1880; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 111.2 m; maximumDepthInMeters: 351 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thick spines pointed and longer than body width. The body surface appears smooth, but is covered with shorter spines that are encircling the attachment areas of the longer spines. Maximum recorded size: 25 cm across. Colour a pale white to cream

brown. Positive species identification requires microscopic examination. Collected specimens belonged to *Histocidaris* sp. (Fig. 136).

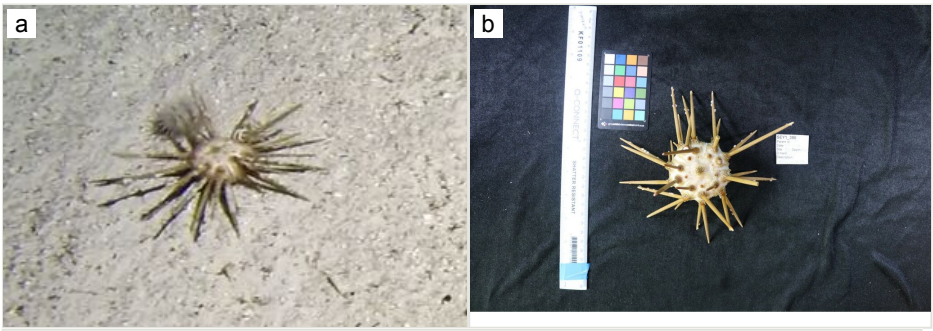

Figure 136.

Cidaroida fam. indet. sp. 1

a: Alphonse N1, 250 m. doi
b: Aldabra W1, 250 m. The collected specimen (SEY1_390) has been identified as *Histocidaris* sp. doi

"ord. Cidaroida" fam. indet. sp. 2

Material

a. scientificName: Cidaroida sp. 2; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Cidaroida; scientificNameAuthorship: Claus, 1880; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 132 m; maximumDepthInMeters: 269.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thick spines longer than body width. Length of spines varies, with ventral ones shorter and dorsal ones longer. The body surface is covered in short inconspicuous spines in between larger, more prominent ones. Maximum recorded size: 10 cm across. Colour a dark red with spines pale white (Fig. 137).

Family Cidaridae Gray, 1825

Genus *Acanthocidaris* Mortensen, 1903

Acanthocidaris sp. indet.

Material

a. scientificName: *Acanthocidaris* sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Cidaroida; family: Cidaridae; genus: *Acanthocidaris*;

scientificNameAuthorship: Mortensen, 1903; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Poivre E1; minimumDepthInMeters: 120 m; maximumDepthInMeters: 128.2 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Figure 137. doi

Cidaroida fam. indet. sp. 2. Astove W1, 250 m.

Notes: Thick, somewhat pointed spines longer than body width. The main body is very small in comparison to the spines and the body surface is almost entirely covered in spines. Maximum recorded size: 15 cm across. Colour a dark brown with the base of spines pale brown and dark brown to dark red towards the tips (Fig. 138).

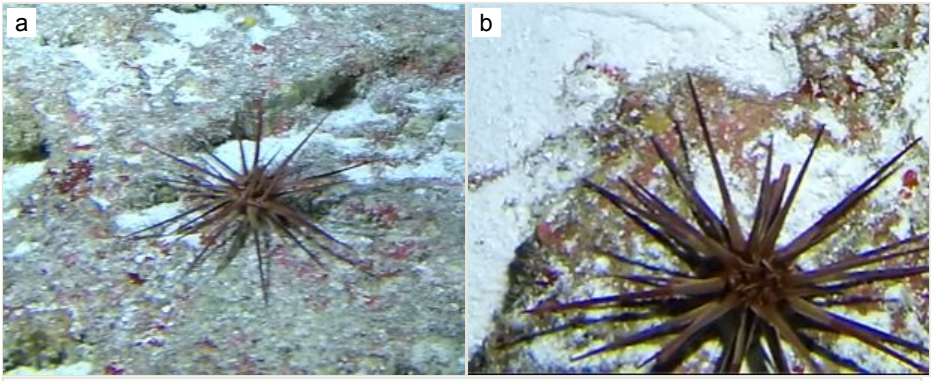

Figure 138.

Acanthocidaris sp. indet.

a: Poivre E1, 120 m. doi

b: Poivre E1, 120 m. doi

Order Clypeasteroida A. Agassiz, 1872

Family Clypeasteridae L. Agassiz, 1835

Genus *Clypeaster* Lamarck, 1801

Clypeaster sp. indet.

Material

a. scientificName: *Clypeaster* sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Clypeasteroida; family: Clypeasteridae; genus: *Clypeaster*; scientificNameAuthorship: Lamarck, 1801; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 124.8 m; maximumDepthInMeters: 269.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: The body is dome-shaped and covered in short and fine spines, giving a smooth appearance from a distance. Maximum recorded size: 15 cm across. The main body is of light brown colour with darker pores that form a pattern on the dorsal side that resembles the outline of opened petals. Found on sand or in seagrass habitats, in deeper water often covered in seagrass fragments. Positive species identification requires microscopic examination. Collected specimens belonged to *Clypeaster fervens* (Fig. 139).

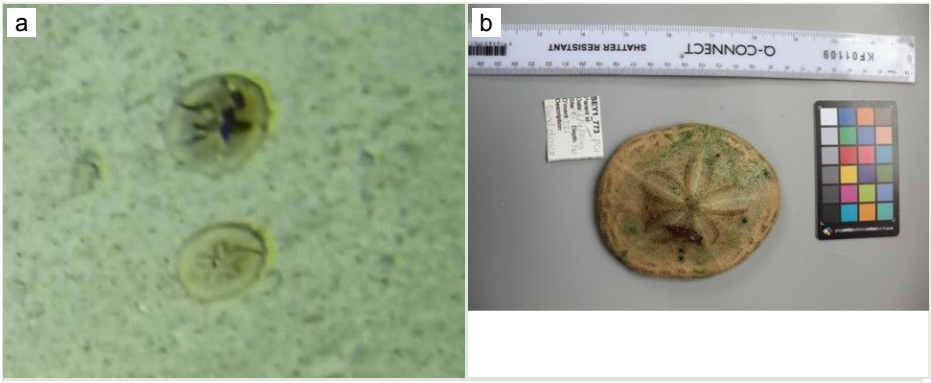

Figure 139.

Clypeaster sp. indet.

a: Desroches S1, 250 m. doi

b: Poivre E1, 250 m. The collected specimen (SEY1_0773) was identified as *Clypeaster fervens*. doi

Order Diadematoida Duncan, 1889

Family Diadematidae Gray, 1855

Genus *Echinothrix* Peters, 1853

Echinothrix diadema (Linnaeus, 1758)

Material

a. scientificName: *Echinothrix diadema*; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Diadematoida; family: Diadematidae; genus: *Echinothrix*; scientificNameAuthorship: Linnaeus, 1758; waterBody: Indian Ocean; country: Seychelles; locality: Poivre E1; minimumDepthInMeters: 33.5 m; maximumDepthInMeters: 36.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Spines are roughly equal to the diameter of the body. Maximum recorded size: 14 cm across. Primarily found in crevices, but can form aggregations in the open. Colour a uniform black, juveniles can have banded spines. Commonly known as Short Spine Urchin. Spines are noticeably shorter than those of *Diadema* sp. (Long Spine Urchin) (Fig. 140).

Figure 140. doi

Echinothrix diadema. Poivre E1, 30 m.

Order Micropygoida Kroh & Smith, 2010

Family Micropygidae Mortensen, 1903

Genus *Micropyga* A. Agassiz, 1879

Micropyga sp. indet.

Material

a. scientificName: *Micropyga* sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Micropygoida; family: Micropygidae; genus: *Micropyga*; scientificNameAuthorship: A. Agassiz, 1879; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 115.4 m; maximumDepthInMeters: 350 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Spines shorter than body width and of uniform length. Maximum recorded size: 20 cm across. Colouration variable, from dark red to pale orange with distinct white bands or a pale white with distinct red bands. Positive species identification requires microscopic examination. Collected specimens belonged to *Mircpoyga* cf. *tuberculata*. (Fig. 141).

Order Pedinoida Mortensen, 1939

Family Pedinidae Pomel, 1883

Genus *Caenopedina A*. Agassiz, 1869

Caenopedina sp. indet.

Material

a. scientificName: *Caenopedina* sp.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Pedinoida; family: Pedinidae; genus: *Caenopedina*; scientificNameAuthorship: Leske, 1778; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: The body surface is almost entirely covered in spines of varying lengths that tend to be thicker and longer towards the dorsal surface of the main body. The main

body appears in a dark red with white spines. Maximum recorded size: 6 cm across. Cidaroida fam. indet. sp. 2. appears similar, but that species has spines longer than the width of the body (Fig. 142).

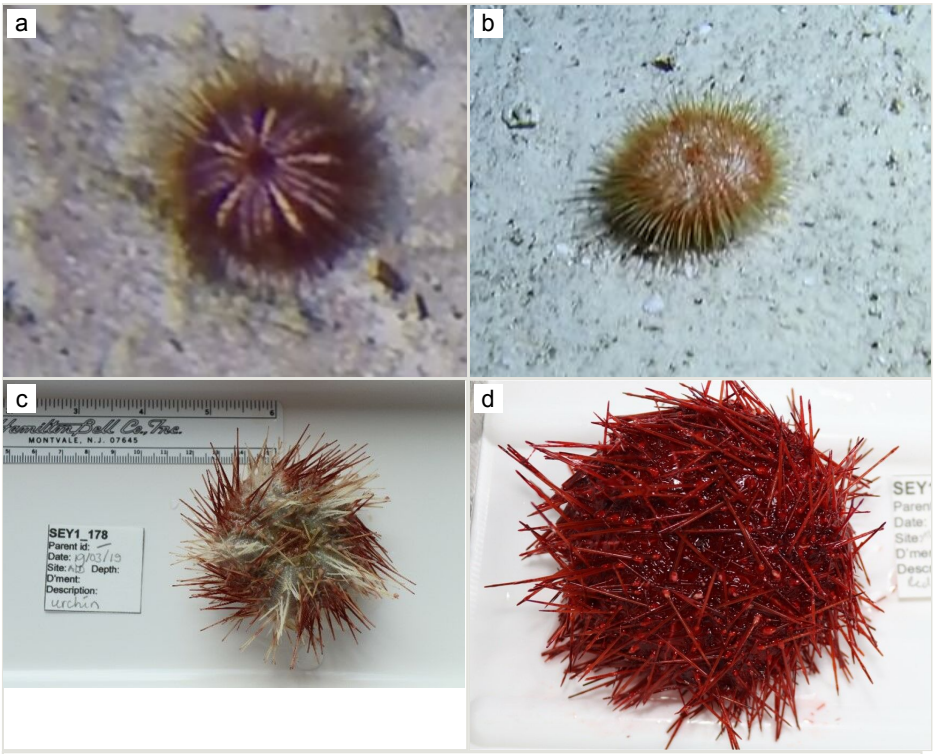

Figure 141.

Micropyga sp. indet.

a: D'Arros N1, 350 m. doi
b: Alphonse N1, 250 m. doi
c: Aldabra N1, 250 m. The collected specimen (SEY1_178) was identified as *Micropyga* cf. *tuberculata*. doi
d: Alphonse N1, 250 m. The collected specimen (SEY1_122) was identified as *Micropyga* cf. *tuberculata*. doi

Order Spatangoida L. Agassiz, 1840

"ord. Spatangoida" fam. indet. sp.

Material

a. scientificName: Spatangoida sp. 1; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Spatangoida; scientificNameAuthorship: L. Agassiz, 1840; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1, Poivre E1; minimumDepthInMeters: 124.8 m; maximumDepthInMeters: 350 m; locationRemarks:

First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Zoleka Filander, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Spines shorter than body width and of uniform length. The body appears egg-shaped and not as globular as other urchins observed here. Maximum recorded size: 12 cm across. Colour a dark red with distinct white patches. Spines all coloured dark red (Fig. 143).

Figure 142. doi

Caenopedina sp. indet. Alphonse N1, 250 m.

Figure 143.

Spatangoida fam. indet. sp.

a: Poivre E1, 120 m. doi
b: Astove W1, 350 m. doi

Holothuroidea

Order Holothuriida Miller, Kerr, Paulay, Reich, Wilson, Carvajal & Rouse, 2017

Family Holothuriidae Burmeister, 1837

Genus *Bohadschia* Jaeger, 1833

Bohadschia sp. indet.

Material

a. scientificName: *Bohadschia* sp.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Holothuriida; family: Holothuriidae; genus: *Bohadschia*; scientificNameAuthorship: Jaeger, 1833; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 65.6 m; maximumDepthInMeters: 67.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Two possible species, *Bohadschia atra* and *Bohadschia subrubra*. *B. atra* has an elongated oblong body of dark brown to black colour, covered in conspicuous red-orange spots. *B. subrubra* is of similar body shape as the former, but has a highly variable body colour, from orange-brown to golden-white or black. Often covered in seagrass or shell fragments as seen here. Maximum recorded size: 15 cm long (Fig. 144).

Figure 144. doi

Bohadschia sp. indet. Desroches S1, 60 m.

Genus *Holothuria* Linnaeus, 1767

Holothuria (*Halodeima*) *atra* Jaeger, 1833

Material

a. scientificName: *Holothuria* (*Halodeima*) *atra*; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Holothuriida; family: Holothuriidae; genus: *Holothuria*; scientificNameAuthorship: Jaeger, 1833; waterBody: Indian Ocean; country: Seychelles; locality: D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.6 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Commonly known as "Lollyfish", this holothurian has a smooth, slender body that slightly tapers towards the ends. The body is often covered in sand, only leaving out small dotted areas on its dorsal surface. Body colour is black (Fig. 145).

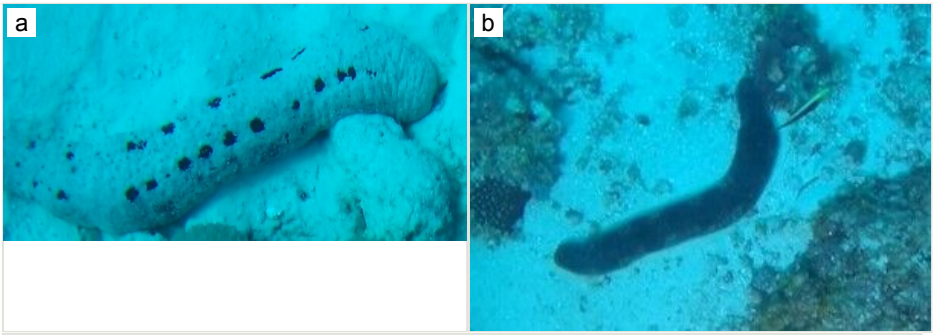

Figure 145.

Holothuria (*Halodeima*) *atra*

a: Desroches S1, 60 m. doi
b: D'Arros N1, 30 m. doi

Holothuria (*Halodeima*) *edulis* Lesson, 1830

Material

a. scientificName: *Holothuria* (*Halodeima*) *edulis*; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Holothuriida; family: Holothuriidae; genus: *Holothuria*; scientificNameAuthorship: Lesson, 1830; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 34.2 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Commonly known as "edible sea cucumber", this holothurian has a smooth body that slightly tapers towards the ends. Darker, blackish dorsal surface and reddish or beige underside. Maximum recorded size: 35 cm long (Fig. 146).

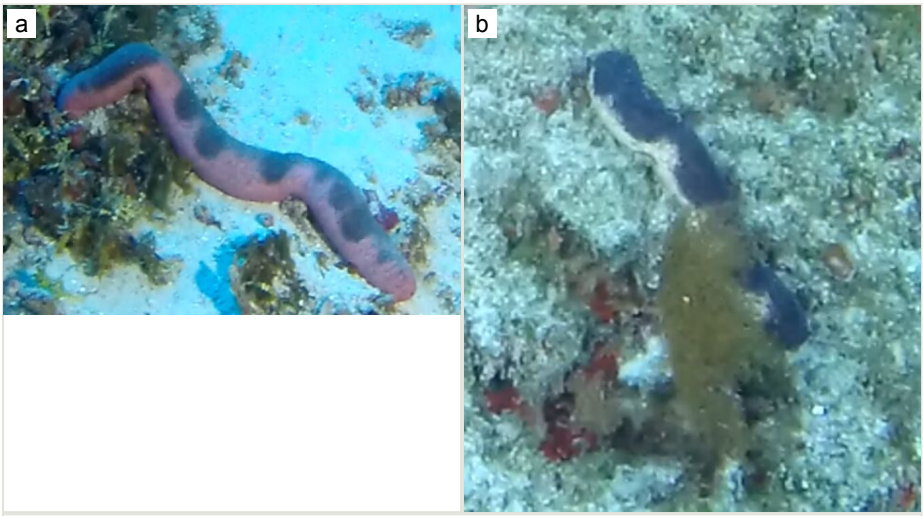

Figure 146.

Holothuria (*Halodeima*) *edulis*

a: Astove W1, 60 m. doi
b: Astove W1, 60 m. doi

Figure 147. doi

Stichopus sp. indet. Desroches S1, 250 m.

Order Synallactida

Family Stichopodidae Haeckel, 1896

Genus *Stichopus* Brandt, 1835

Stichopus sp. indet.

Material

a. scientificName: *Stichopus* sp.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Stichopodidae; genus: *Stichopus*; scientificNameAuthorship: Brandt, 1835; waterBody: Indian Ocean; country: Seychelles; locality: Desroches S1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Body surface covered in spike-like papillae, but otherwise smooth. Square body cross-section. Approximately 10 cm long. Colouration dark red (Fig. 147).

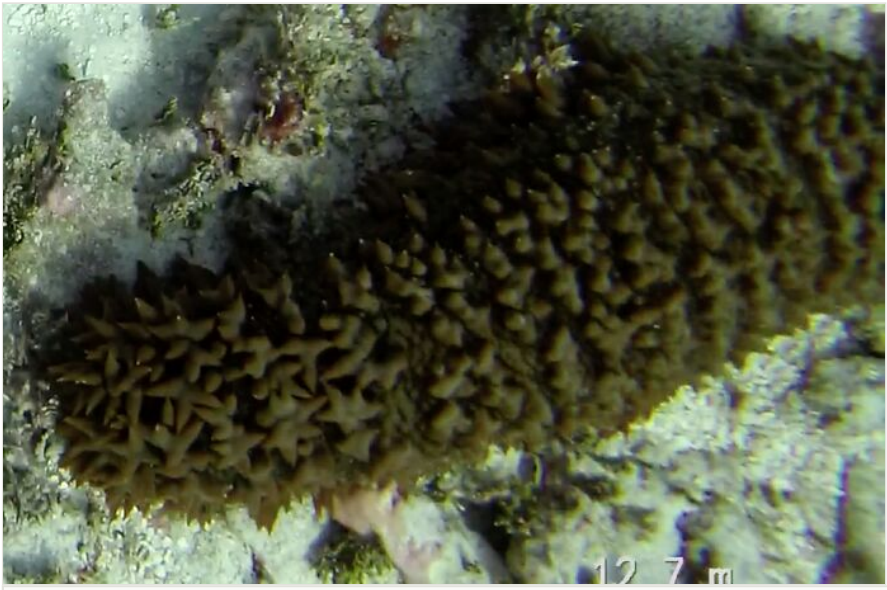

Figure 148. doi

Thelenota ananas. Aldabra N1, 10 m.

Genus *Thelenota* Brandt, 1835

Thelenota ananas (Jaeger, 1833)

Material

a. scientificName: *Thelenota ananas*; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Stichopodidae; genus: *Thelenota*; scientificNameAuthorship: Jaeger, 1833; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Commonly known as "Prickly Redfish", the body surface of this sea cucumber is almost entirely covered in spike-like papillae. Large (up to 50 cm long in this survey) and heavy-bodied with a square body cross-section. Colouration bright orange to greenish in deeper waters, with pink, red and brown common in shallow water (Fig. 148).

Annelida

Class Polychaeta Grube, 1850

Order Sabellida Levinsen, 1883

Family Sabellidae Latreille, 1825

"fam. Sabellidae" stet.

Material

a. scientificName: *Sabellidae* sp.; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Sabellida; family: Sabellidae; scientificNameAuthorship: Latreille, 1825; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Alphonse N1, Astove W1, D'Arros N1, Poivre E1; minimumDepthInMeters: 120 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Tube-dwelling worms with highly modified branchial crowns that form large fans. Crowns appear feathery and are separated into two clusters. Colours can vary and range from white to brown. Some species brightly coloured in pink, blue or green. Here orange. This group likely contains a variety of species that are difficult to identify

from images; hence, no attempt was made to identify them at a lower taxonomic level (Fig. 149).

Figure 149. doi

Sabellidae stet. Alphonse N1, 250 m.

Mollusca

Class Bivalvia Linnaeus, 1758

Order Cardiida Ferussac, 1822

Family Cardiidae Lamarck, 1809

Genus *Tridacna* Bruguière, 1797

Tridacna sp. indet.

Material

a. scientificName: *Tridacna* sp.; kingdom: Animalia; phylum: Mollusca; class: Bivalvia; order: Cardiida; family: Cardiidae; genus: *Tridacna*; scientificNameAuthorship: Bruguière, 1797; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 52 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Extremely large-bodied clams with four to five distinct folds in its shell. The mantle is always visible, even when the shell is closed and covered in hundreds of small spots. Shell colour can vary and is often determined by organisms growing on it (such as algae or CCA), the mantle is normally of a dark brown to bluish-purple colour (Fig. 150).

Figure 150. doi

Tridacna sp. indet. Desroches S1, 30 m.

Porifera

Class Calcarea Bowerbank, 1862

Order Clathrinida Hartman, 1958

Family Leucettidae Laubenfels, 1936

Genus *Leucetta* Haeckel, 1872

Leucetta chagosensis sp. inc. Dendy, 1913

Material

a. scientificName: *Leucetta chagosensis*; kingdom: Animalia; phylum: Porifera; class: Calcarea; order: Clathrinida; family: Leucettidae; genus: *Leucetta*; scientificNameAuthorship: Dendy, 1913; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek

Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A spherical sponge that resembles an upside-down teardrop with a tapered, singular oscule. Maximum recorded size: 5 cm long. Individuals emerge from a stubby conspicuous stem. Pale-whitish colouration (Fig. 151).

Figure 151. doi

Leucetta chagosensis sp. inc. Astove W1, 250 m.

Class Demospongiae Sollas, 1885

Order Axinellida Lévi, 1953

Family Axinellidae Carter, 1875

Genus *Axinella* Schmidt, 1862

Axinella weltnerii (Lendenfeld, 1897)

Material

a. scientificName: *Axinella weltnerii*; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Axinellida; family: Axinellidae; genus: *Axinella*; scientificNameAuthorship: Lendenfeld, 1897; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1; minimumDepthInMeters: 30 m; maximumDepthInMeters: 30 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Erect flabellate sometimes fan-shaped with a short stalk. Maximum recorded size: 30 cm long. The surface appears rough, convoluted and crinkly with shallow ridges. Colour dark red (Fig. 152).

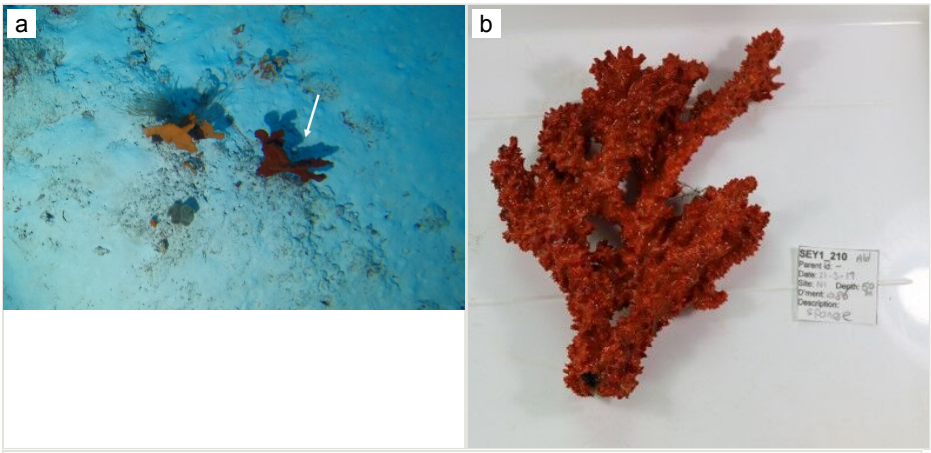

Figure 152.

Axinella weltnerii

a: Aldabra W1, 30 m. doi
b: Aldabra N1, 30 m. Collected specimen (SEY1_210) doi

Order Clionaida Morrow & Cárdenas, 2015

Family Clionaidae d'Orbigny, 1851

Genus *Spheciospongia* Marshall, 1892

Spheciospongia sp. indet. 1

Material

a. scientificName: *Spheciospongia* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Clionaida; family: Clionaidae; genus: *Spheciospongia*; scientificNameAuthorship: Marshall, 1892; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thickly encrusting, plate-like sponges; buried in sand, with groups of tubes exposed with conspicuous terminal oscules. Maximum recorded size: 1 m across.

Tubes growing more towards the centre of the individual sponge tend to be volcano-shaped and larger with multiple oscules. Colour is dark green to black (Fig. 153).

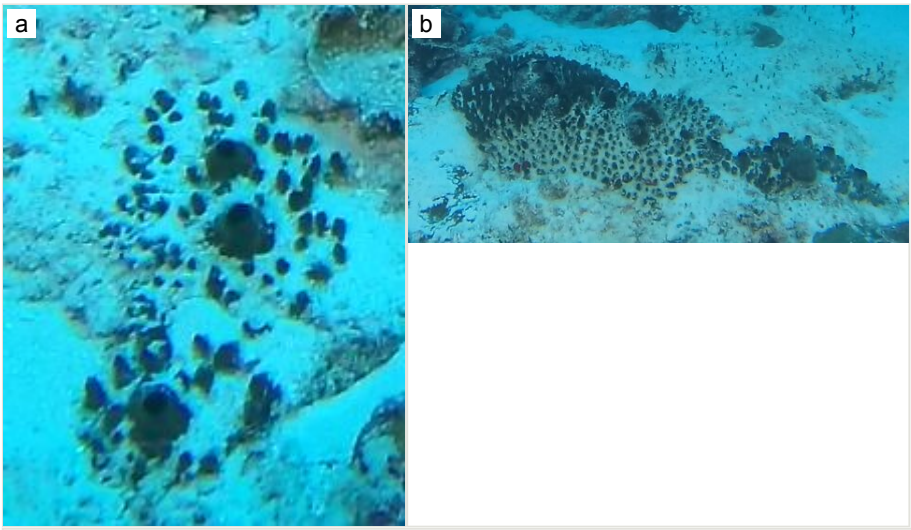

Figure 153.

Spheciospongia sp. indet. 1

a: Aldabra N1, 30 m. doi
b: Aldabra W1, 30 m. doi

Spheciospongia sp. indet. 2

Material

a. scientificName: *Spheciospongia* sp. 2; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Clionaida; family: Clionaidae; genus: *Spheciospongia*; scientificNameAuthorship: Marshall, 1892; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, D'Arros N1; minimumDepthInMeters: 10.2 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; identificationRemarks: 2019, 2020; basisOfRecord: Human observation

Notes: Thickly encrusting sponges with groups of tubes clustered around one or two central, conspicuous, volcano-shaped main tubes with multiple oscules. Maximum recorded size: 50 cm across. Surface undulating and texture tough. From the top, the sponge looks like a volcano. Colour is green (Fig. 154).

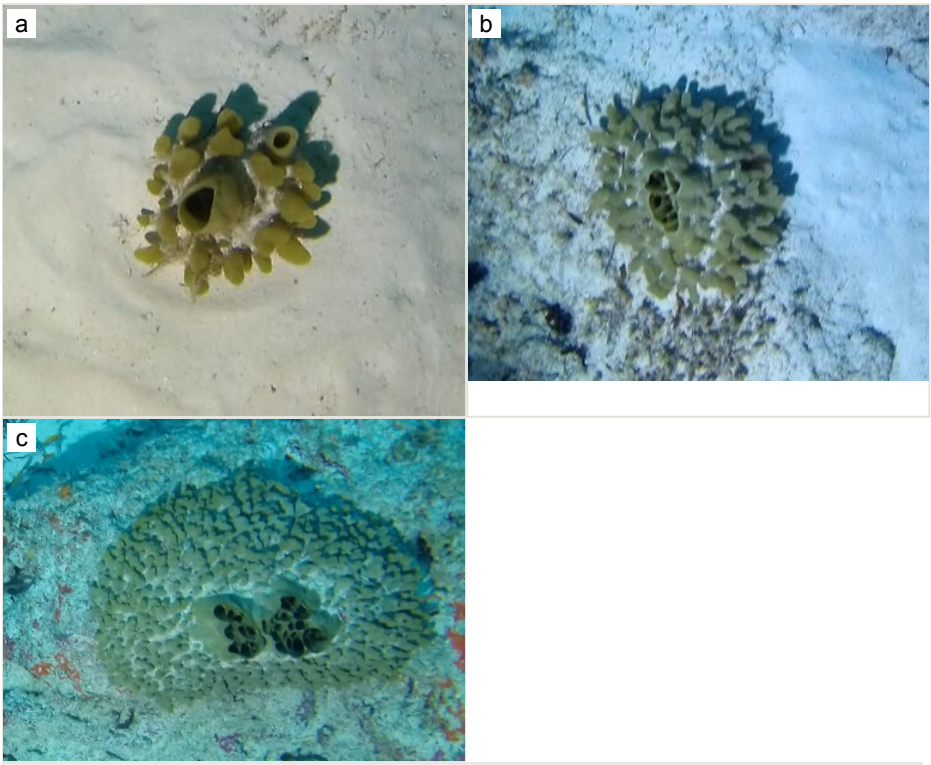

Figure 154.

Spheciospongia sp. indet. 2

a: Aldabra W1, 60 m. doi
b: Aldabra W1, 60 m. doi
c: Aldabra W1, 60 m. doi

Spheciospongia sp. indet. 3

Material

a. scientificName: *Spheciospongia* sp. 3; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Clionaida; family: Clionaidae; genus: *Spheciospongia*; scientificNameAuthorship: Marshall, 1892; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 49.1 m; maximumDepthInMeters: 71.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Barrel sponge with a smooth surface. Maximum recorded size: 20 cm across. Singular, very conspicuous terminal oscule. Can be covered in epifauna. Colouration creamy-brown (Fig. 155).

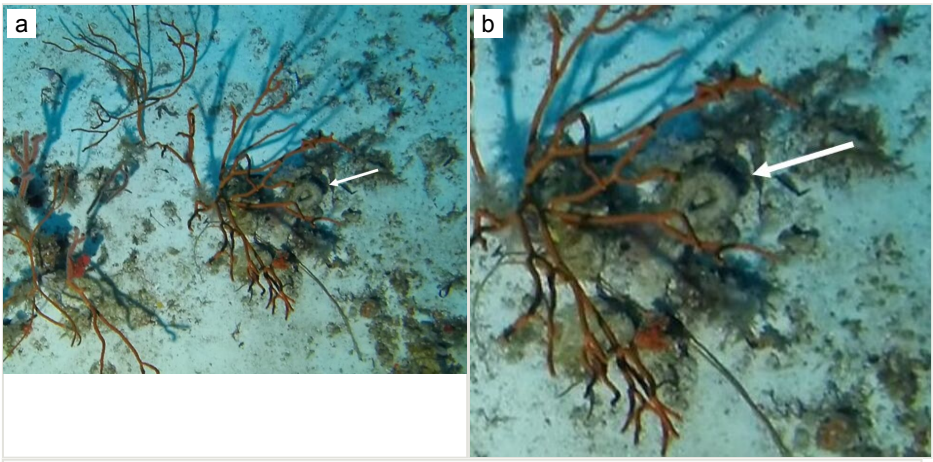

Figure 155.

Spheciospongia sp. indet. 3

a: D'Arros N1, 60 m. doi
b: D'Arros N1, 60 m. doi

Order Dendroceratida Minchin, 1900

Family Darwinellidae Merejkowsky, 1879

Genus *Aplysilla* Schulze, 1878

Aplysilla sp. indet.

Material

a. scientificName: *Aplysilla* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Dendroceratida; family: Darwinellidae; genus: *Aplysilla*; scientificNameAuthorship: Schulze 1878; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1; minimumDepthInMeters: 10.2 m; maximumDepthInMeters: 60 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thin, soft, encrusting sponge with surface uplifted into low conules, otherwise smooth. Oscules mounted at the end of oscular chimneys. Maximum recorded size: 40 cm across. Red or green colouration (Fig. 156).

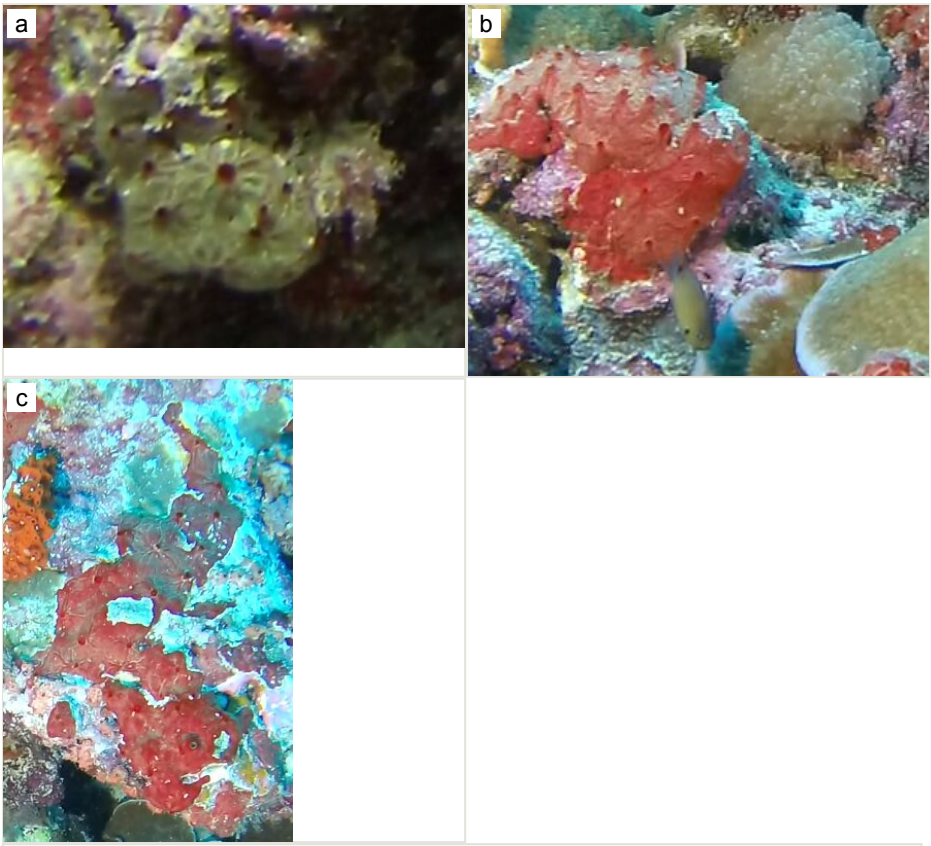

Figure 156.

Aplysilla sp. indet.

a: Aldabra N1, 10 m. doi
b: Aldabra N1, 30 m. doi
c: Aldabra N1, 60 m. doi

Order Haplosclerida Topsent, 1928

Family Callyspongiidae Laubenfels, 1936

Genus *Callyspongia* Duchassaing & Michelotti, 1864

Callyspongia sp. indet.

Material

a. scientificName: *Callyspongia* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Callyspongiidae; genus: *Callyspongia*; scientificNameAuthorship: Duchassing & Michelotti, 1864; waterBody: Indian Ocean;

country: Seychelles; locality: Aldabra W1, Desroches S1; minimumDepthInMeters: 20 m; maximumDepthInMeters: 64.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: This sponge forms groups or chains of tubes with conspicuous terminal oscules. Tubes can become very elongated, almost fan-like in some cases. Branching originates at the base. Maximum recorded size: 40 cm across. The surface is covered with small spiny projections, giving the sponge a rough appearance. Colour ash-grey (Fig. 157).

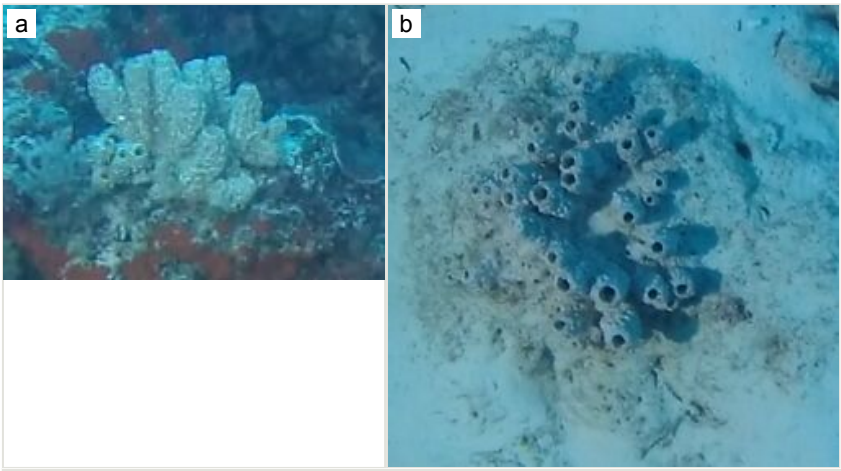

Figure 157.

Callyspongia sp. indet.

a: Aldabra W1, 30 m. doi
b: Aldabra W1, 30 m. doi

Family Chalinidae Gray, 1867

Genus *Haliclona* Grant, 1841

Haliclona sp. indet. 1

Material

a. scientificName: *Haliclona* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Chalinidae; genus: *Haliclona*; scientificNameAuthorship: Grant, 1841; waterBody: Indian Ocean; country: Seychelles; locality: Alphonse N1, Poivre E1; minimumDepthInMeters: 9.7 m; maximumDepthInMeters: 53 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy:

Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Sponges form encrusting to laterally spreading masses of branches and protrusions, shaped somewhat finger-like. Maximum recorded size ~ 30 cm. Inconspicuous oscules. Surface smooth with a velvety touch. Texture very soft. Colour greenish to grey. Other members of this group have large, irregularly spaced oscules that lack raised edges (Fig. 158).

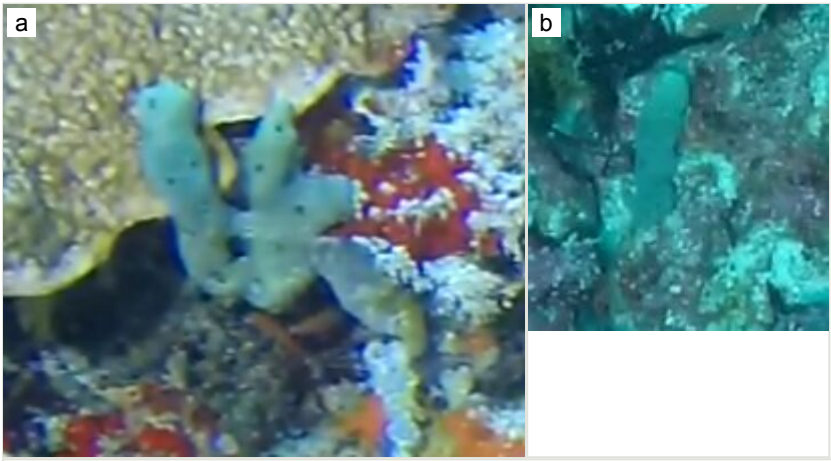

Figure 158.

Haliclona sp. indet. 1

a: Alphonse N1, 60 m. doi
b: Alphonse N1, 60 m. doi

Haliclona sp. indet. 2

Material

a. scientificName: *Haliclona* sp. 2; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Chalinidae; genus: *Haliclona*; scientificNameAuthorship: Grant, 1841; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Poivre E1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Morphology can vary from thin encrusting to laterally spreading masses of branches and protrusions. Maximum recorded size: 50 cm across. Can form tubes as seen above. Oscules either spread across the surface or at the top of tubes. Colour purple to grey (Fig. 159).

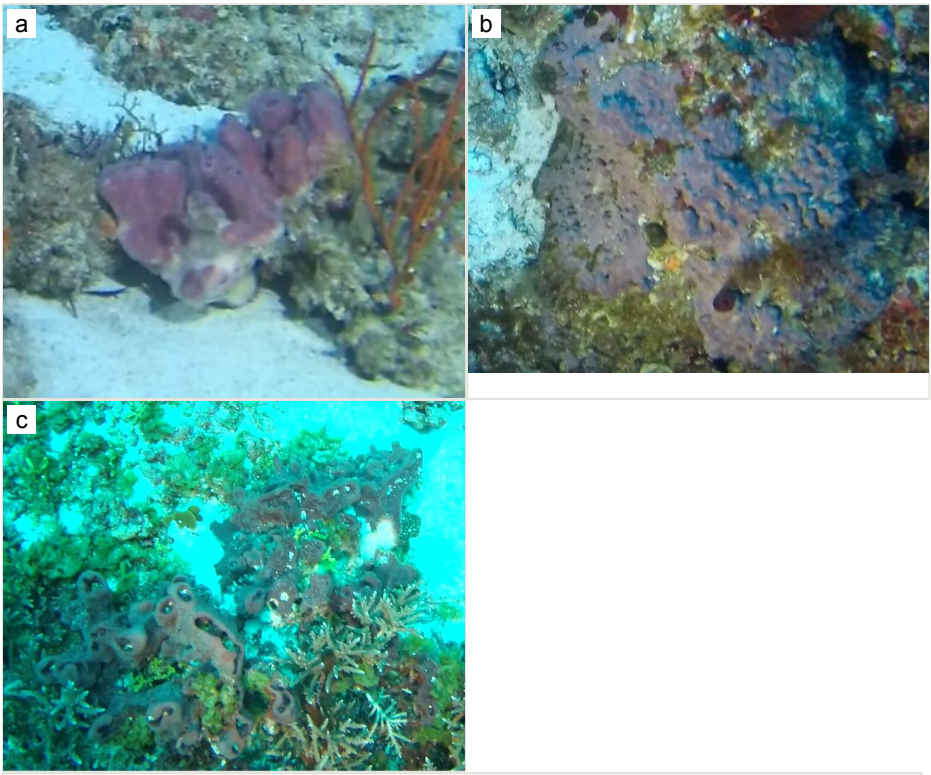

Figure 159.

Haliclona sp. indet. 2

a: D'Arros N1, 60 m. doi
b: Astove W1, 60 m. doi
c: Poivre E1, 30 m. doi

Haliclona sp. indet. 3

Material

a. scientificName: *Haliclona* sp. 3; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Chalinidae; genus: *Haliclona*; scientificNameAuthorship: Grant, 1841; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1; minimumDepthInMeters: 21.7 m; maximumDepthInMeters: 128 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thin encrusting sponges that can have singular, chimney-like protrusions. Maximum recorded size: 15 cm across. Oscules either spread across the surface or at the top of tubes. Colour greenish to pale-grey (Fig. 160).

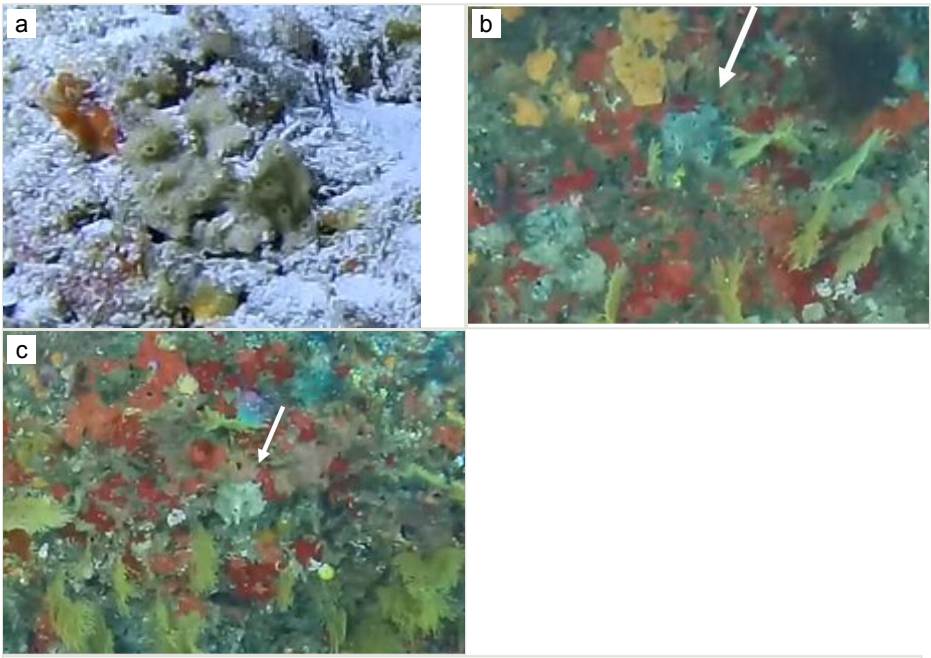

Figure 160.

Haliclona sp. indet. 3

a: Aldabra W1, 120 m. doi
b: Alphonse N1, 60 m. doi
c: Alphonse N1, 60 m. doi

Family Petrosiidae van Soest, 1980

"fam. Petrosiidae" gen. indet. sp. 1

Material

a. scientificName: *Petrosiidae* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Petrosiidae; scientificNameAuthorship: van Soest, 1980; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1; minimumDepthInMeters: 51 m; maximumDepthInMeters: 128 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponge with multiple small oscules prominent. Maximum recorded size: 20 cm across. The surface appears smooth. Irregular knobs or lobes are present. Might be covered in epifauna. Colour cream brown to greenish. Specimens belong to either *Petrosia* or *Neopetrosia*; however, it is not possible to distinguish them from video footage alone without further microscopic examination (Fig. 161).

Figure 161. doi

Petrosiidae gen. indet. sp. 1. Alphonse N1, 96 m.

"fam. Petrosiidae" gen. indet. sp. 2

Material

a. scientificName: *Petrosiidae* sp. 2; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Petrosiidae; scientificNameAuthorship: van Soest, 1980; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 52 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

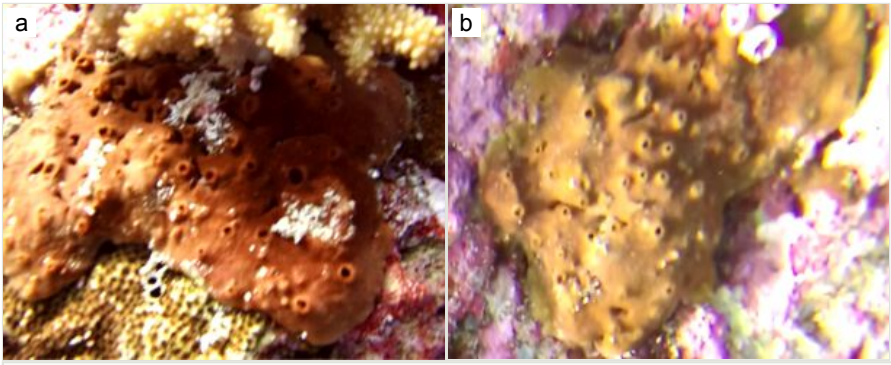

Figure 162.

Petrosiidae gen. indet. sp. 2

a: Astove W1, 10 m. doi
b: Astove W1, 10 m. doi

Notes: Encrusting sponge with multiple oscules on the surface; surface smooth with a stony appearance. Maximum recorded size: 10 cm across. Sometimes irregular knobs or lobes present. Might be covered in epifauna. Colour cream brown to orange or red. Specimens belong to either *Petrosia* or *Neopetrosia*; however, it is not possible to distinguish them from video footage alone without further microscopic examination. It differs from *Petrosiidae* sp. 1 by having more prominent and conspicuous oscules (Fig. 162).

Genus *Petrosia* Dendy, 1905

Petrosia (*Strongylophora*) sp. indet.

Material

a. scientificName: *Petrosia* (*Strongylophora*) sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Petrosiidae; genus: *Petrosia* ; subgenus: *Strongylophora*; scientificNameAuthorship: Dendy, 1905; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 60 m; maximumDepthInMeters: 60 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A massive sponge (up to 50 cm across) that appears smooth with a stony, velvety texture. Forms irregularly shaped masses that resemble rocks. Colouration mottled with yellow, greenish and brown patches (Fig. 163).

Genus *Xestospongia* Laubenfels, 1932

Xestospongia sp. indet.

Material

a. scientificName: *Xestospongia* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Petrosiidae; genus: *Xestospongia*; scientificNameAuthorship: Laubenfels, 1932; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 32.4 m; maximumDepthInMeters: 35.4 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A massive sponge that forms large barrels. The maximum recorded length was 32 cm, although they can often reach > 1 m. While the outside surface is heavily ridged, the inside appears smooth with a stony, velvety texture. Dark brown colouration (Fig. 164).

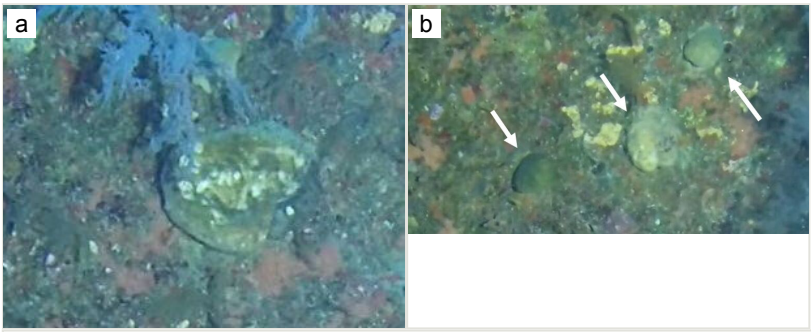

Figure 163.

Petrosia (*Strongylophora*) sp. indet.

a: Astove W1, 60 m. doi
b: Astove W1, 60 m. doi

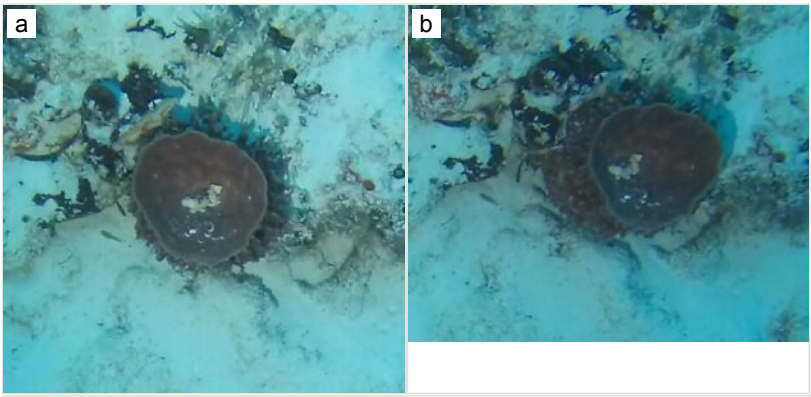

Figure 164.

Xestospongia sp. indet.

a: Aldabra W1, 30 m. doi
b: Aldabra W1, 30 m. doi

Family Phloeodictyidae Carter, 1882

Genus *Oceanapia* Norman, 1869

Oceanapia sp. indet.

Material

a. scientificName: *Oceanapia* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Haplosclerida; family: Phloeodictyidae; genus: *Oceanapia*; scientificNameAuthorship: Norman, 1869; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 110.7 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles

Expedition; samplingProtocol: identified only from imagery; identifiedBy: Submersible OR Remotely Operated Vehicle OR SCUBA; dateIdentified: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; identificationRemarks: 2019, 2020; basisOfRecord: Human observation

Notes: Thick encrusting to massive sponges with a rough surface dominated by prominent oscules. Maximum recorded size: 25 cm across. Grey-whitish colouration (Fig. 165).

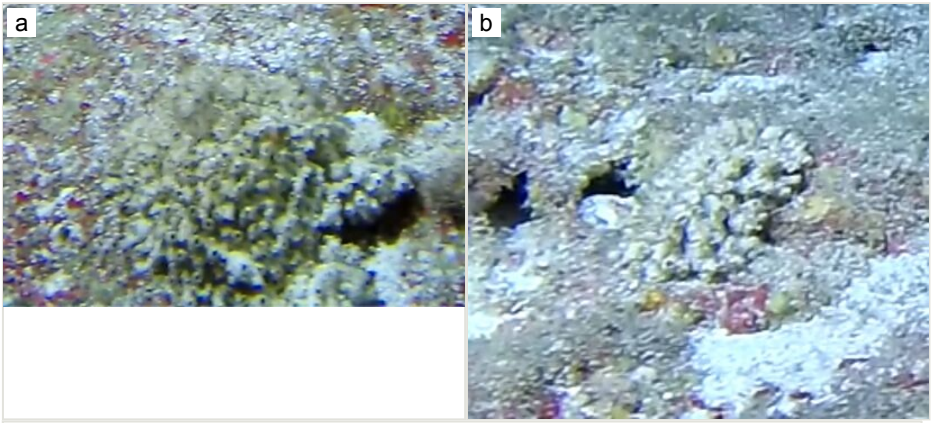

Figure 165.

Oceanapia sp. indet.

a: Poivre E1, 120 m. doi
b: Poivre E1, 120 m. doi

Order Poecilosclerida Topsent, 1928

Family Iotrochotidae Dendy, 1922

Genus *Iotrochota* Ridley, 1884

Iotrochota nigra (Baer, 1906)

Material

a. scientificName: *Iotrochota nigra*; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Poecilosclerida; family: Iotrochotidae; genus: *Iotrochota*; scientificNameAuthorship: Baer, 1906; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Desroches S1; minimumDepthInMeters: 38.4 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting or massive sponge up to 1 m long, with a smooth surface. Surface area covered in inconspicuous oscules across. Can be observed as a singular encrusting mass or as a group of multiple small sponges. Colouration black (Fig. 166).

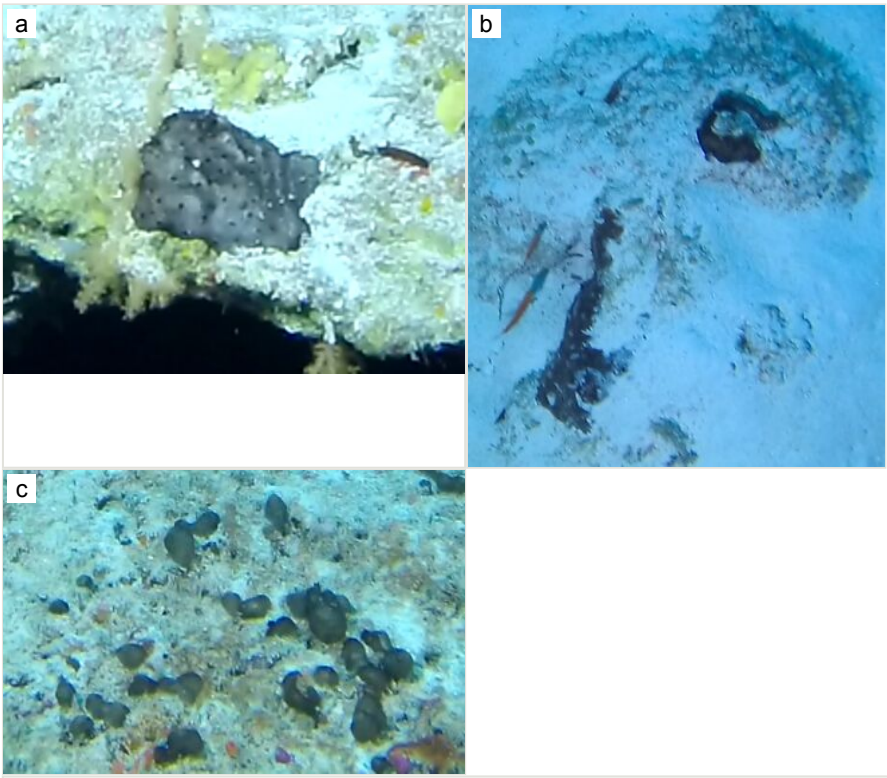

Figure 166.

Iotrochota nigra

a: Aldabra N1, 120 m. doi
b: Aldabra W1, 60 m. doi
c: Aldabra W1, 60 m. doi

Iotrochota sinki Samaai, Pillay & Janson, 2019

Material

a. scientificName: ***Iotrochota sinki***; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Poecilosclerida; family: Iotrochotidae; genus: ***Iotrochota***; scientificNameAuthorship: Samaai, Pillay & Janson, 2019; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 64.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Branching sponge with thick, ramose branches and a rough surface. Maximum recorded size: 35 cm across. Colouration dark brown, but mottled throughout with bright yellow patches (Fig. 167).

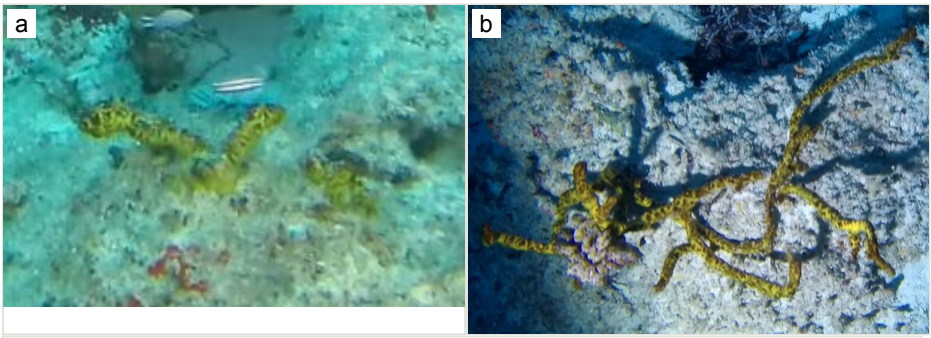

Figure 167.

Iotrochota sinki

a: Aldabra W1, 60 m. doi
b: Aldabra W1, 60 m. doi

Family Microcionidae Carter, 1875

Genus *Calthria* Schmidt, 1862

Clathria sp. indet.

Material

a. scientificName: *Clathria* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Poecilosclerida; family: Microcionidae; genus: *Clathria*; scientificNameAuthorship: Schmidt, 1862; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.7 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thickly encrusting, sub-massive to fan-shaped morphology. Short stalk present in the fan-shaped form with thick, fleshy lobes. Maximum recorded size: 30 cm across. The surface appears rough, crinkly and conulose, corrugated longitudinally with shallow ridges. Oscules are inconspicuous and spread throughout the surface. Colour dark orange to orange-yellow (Fig. 168).

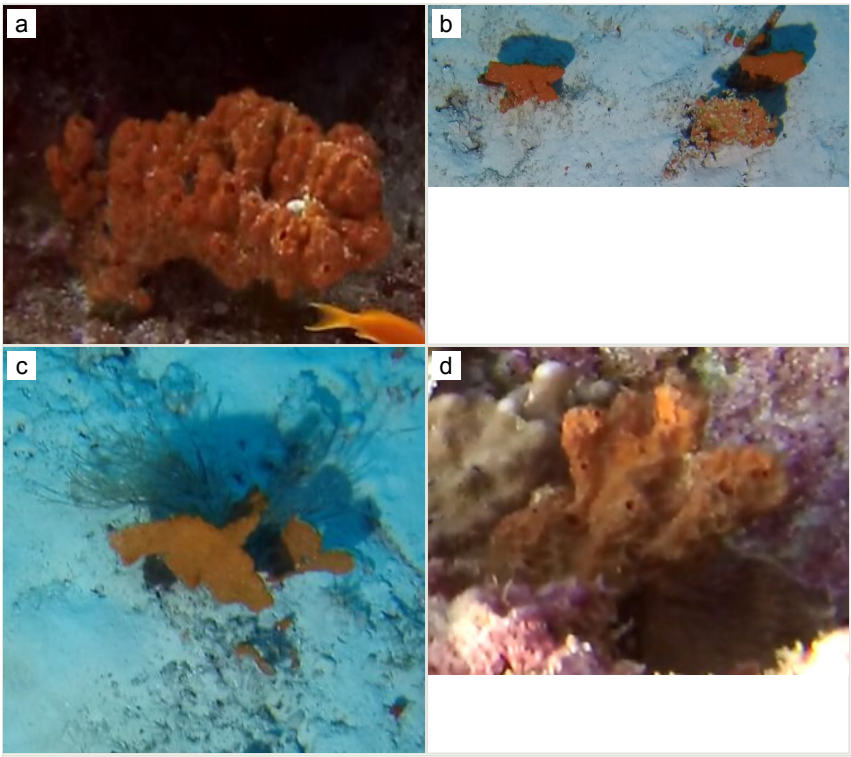

Figure 168.

Clathria sp. indet.

a: Astove W1, 10 m. doi
b: Aldabra W1, 30 m. doi
c: Aldabra W1, 30 m. doi
d: Astove W1, 10 m. doi

Order Scopalinida Morrow & Cárdenas, 2015

Family Scopalinidae Morrow, Picton, Erpenbeck, Boury-Esnault, Maggs & Allcock, 2012

Genus *Stylissa* Hallmann, 1914

Stylissa carteri (Dendy, 1889)

Material

a. scientificName: *Stylissa carteri*; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Scopalinida; family: Scopalinidae; genus: *Stylissa*; scientificNameAuthorship: Dendy, 1889; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1;

minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

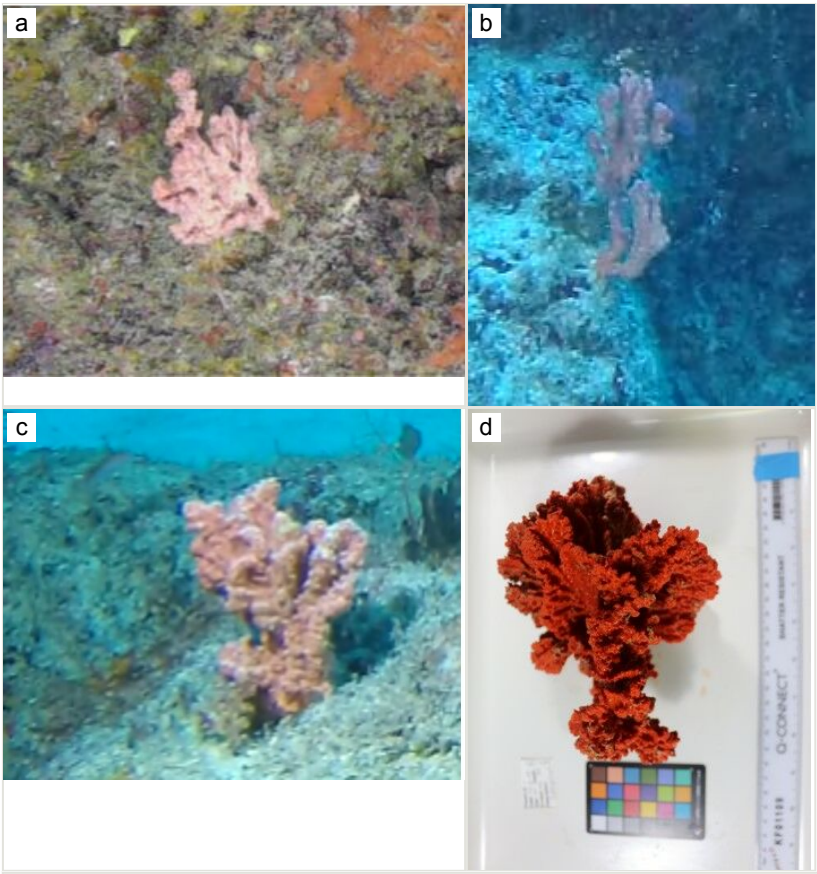

Figure 169.

Stylissa carteri

a: Aldabra N1, 30 m. doi
b: Aldabra N1 60 m. doi
c: Aldabra W1, 60 m. doi
d: Aldabra W1, 60 m. Collected specimen (SEY1_351) doi

Notes: Flabellate: either fan-shaped or branching. Forms short stalk with fleshy, blade-like lobes or erect, expanded leaves. Maximum recorded size: 31 cm across. The surface appears rough and crinkly, corrugated longitudinally with shallow ridges. Colour orange to pink.

Clathria (*Thalysias*) *vulpine* is a closely related species that cannot be distinguished from *S. carteri* without examining spicules under the microscope; however, since it has

its type locality in Australia, we are considering most specimens observed to belong to *S. carteri* (Fig. 169).

Order Tetractinellida Marshall, 1876

Family Ancorinidae Schmidt, 1870

Genus *Stelletta* Schmidt, 1862

Stelletta sp. indet.

Material

a. scientificName: *Stelletta* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Ancorinidae; genus: *Stelletta*; scientificNameAuthorship: Schmidt, 1862; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Astove W1; minimumDepthInMeters: 49.1 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Globular sponge with a smooth surface. Maximum recorded size: 17 cm across. Singular terminal oscule very conspicuous in the darker coloured morphotype. Colouration pale grey to a dark brown (Fig. 170).

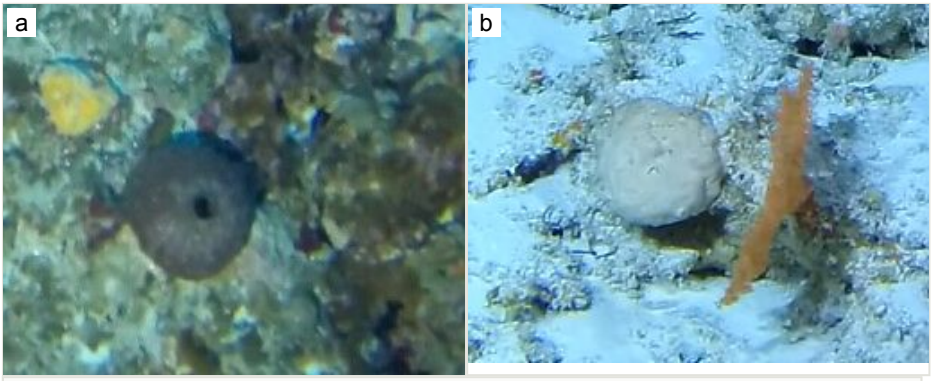

Figure 170.

Stelletta sp. indet.

a: Astove W1, 60 m. doi
b: Aldabra W1, 120 m. doi

Family Corallistidae Sollas, 1888

Genus *Corallistes* Schmidt, 1870

Corallistes sp. indet.

Material

a. scientificName: *Corallistes* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Corallistidae; genus: *Corallistes*; scientificNameAuthorship: Schmidt, 1870; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 111.2 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

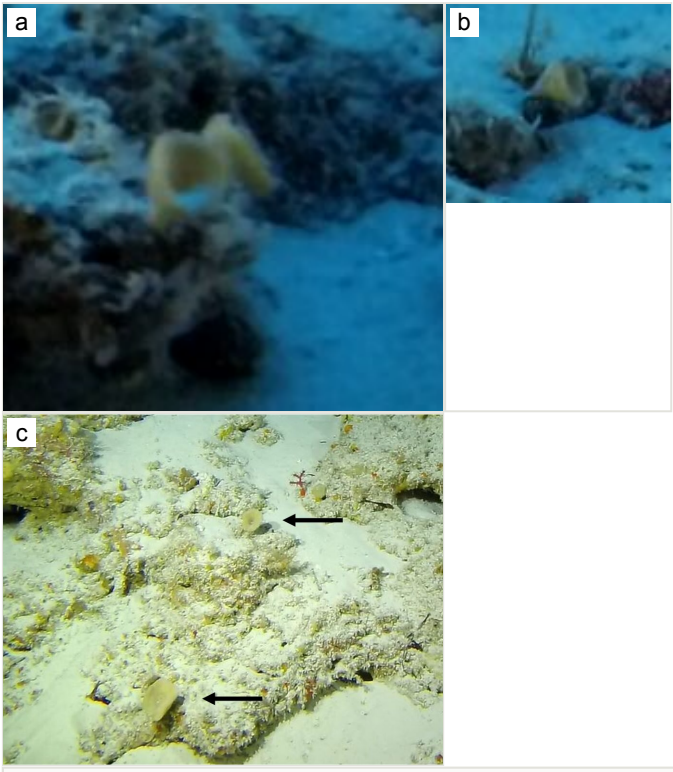

Figure 171.

Corallistes sp. indet.

a: Aldabra N1, 160 m. doi
b: Aldabra N1, 160 m. doi
c: Aldabra W1, 120 m. doi

Notes: Cup-shaped sponge with a smooth, velvety surface. Up to 22 cm across; however, the majority ~ 10 cm. The funnel-shaped cup is anchored to the substrate with a short, stubby stem. Texture hard. Colour whitish to pale yellow (Fig. 171).

Family Pachastrellidae Carter, 1875

Genus *Pachastrella* Schmidt, 1868

Pachastrella sp. indet.

Material

a. scientificName: *Pachastrella* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Pachastrellidae; genus: *Pachastrella*; scientificNameAuthorship: Schmidt, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 51 m; maximumDepthInMeters: 252.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Massive or thickly foliose sponge with very rough, hispid surface. Maximum recorded size: 50 cm across. Rock hard texture. Colouration whitish with yellow to greenish patches (Fig. 172).

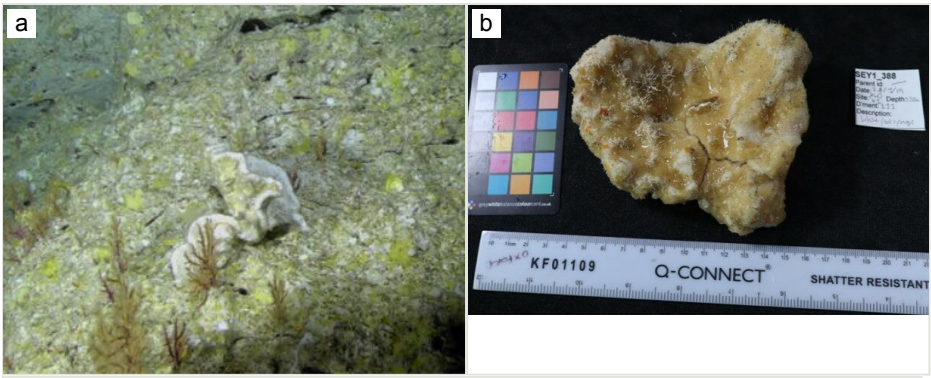

Figure 172.

Pachastrella sp. indet.

a: Aldabra W1, 120 m. doi

b: Aldabra W1, 120 m. Collected specimen SEY1_388. doi

Family Scleritodermidae Sollas, 1888

Genus *Scleritoderma* Schmidt, 1879

Scleritoderma sp. indet.

Material

a. scientificName: *Scleritoderma* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Scleritodermidae; genus: *Scleritoderma*; scientificNameAuthorship: Schmidt, 1879; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, D'Arros N1, Desroches S1; minimumDepthInMeters: 51 m; maximumDepthInMeters: 128 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting morphology, sometimes forming shallow tubes. Maximum recorded size: 10 cm across. Large oscules at the end of tubes. Colourations pale whitish to beige (Fig. 173).

Figure 173. doi

Scleritoderma sp. indet. Desroches S1, 120 m.

Family Tetillidae Sollas, 1886

Genus *Tetilla* Schmidt, 1868

Tetilla sp. indet.

Material

a. scientificName: *Tetilla* sp.; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Tetillidae; genus: *Tetilla*; scientificNameAuthorship: Schmidt, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 58.6 m; maximumDepthInMeters: 138.5 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Globular sponge with a warty surface; inconspicuous singular terminal oscule. Maximum recorded size: 20 cm across. Can be covered in epifauna or sediment. Colouration yellow (Fig. 174).

Figure 174. doi

Tetilla sp. indet. D'Arros N1, 120 m.

Family Theonellidae Lendenfeld, 1903

Genus *Theonella* Gray, 1868

Theonella cf. *swinhoei* Gray, 1868

Material

a. scientificName: *Theonella* cf. *swinhoei*; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Theonellidae; genus: *Theonella*; scientificNameAuthorship: Gray, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, Desroches S1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Tube-shaped sponge with tubes growing in a cluster that originates from a broad base. Maximum recorded size: 40 cm across. Conspicuous oscules at the terminal end of slightly tapered tubes. Smooth, velvety surface. Maroon-brown to dark brown colouration. Can be confused with *Theonella* sp. 2, which lacks prominent tubes, appears more encrusting and is brick-red (Fig. 175).

Theonella sp. indet.

Material

a. scientificName: *Thonella* sp. 1; kingdom: Animalia; phylum: Porifera; class: Demospongiae; order: Tetractinellida; family: Theonellidae; genus: *Theonella*; scientificNameAuthorship: Gray, 1868; waterBody: Indian Ocean; country: Seychelles; locality: Astove W1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 10 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Thickly encrusting sponge, sometimes with shallow, bumpy tubes. Maximum recorded size: 15 cm across. Conspicuous, terminal oscules that can appear clustered on the surface, giving it a mammiform appearance. Smooth, velvety surface. Dark brick-red colouration (Fig. 176).

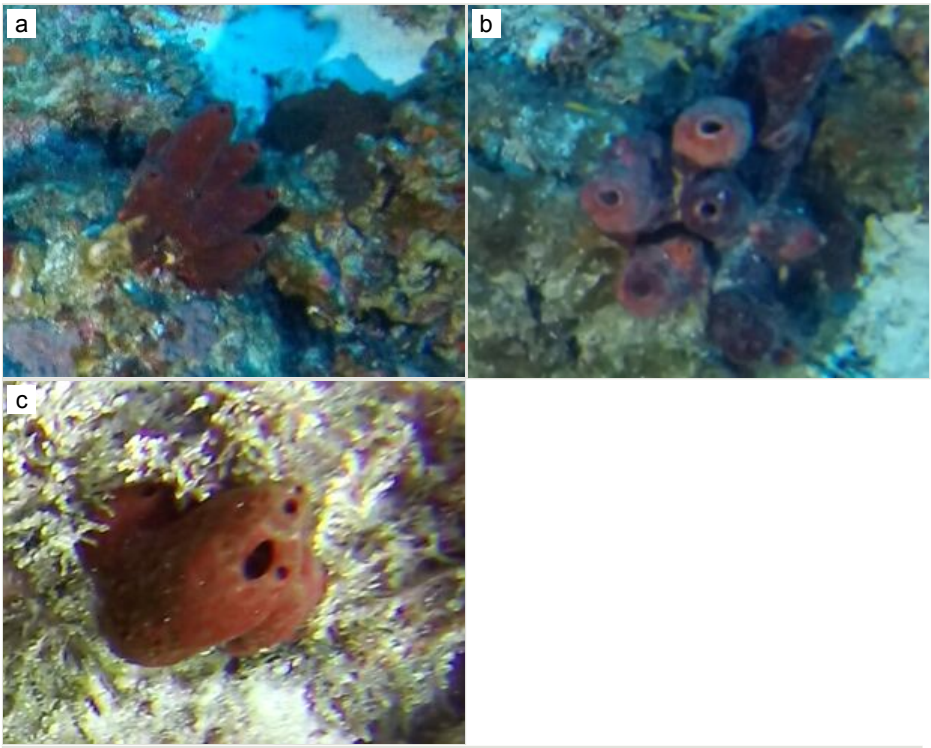

Figure 175.

Theonella cf. *swinhoei*

a: Astove W1, 60 m. doi
b: Astove W1, 60 m. doi
c: Aldabra N1, 10 m. doi

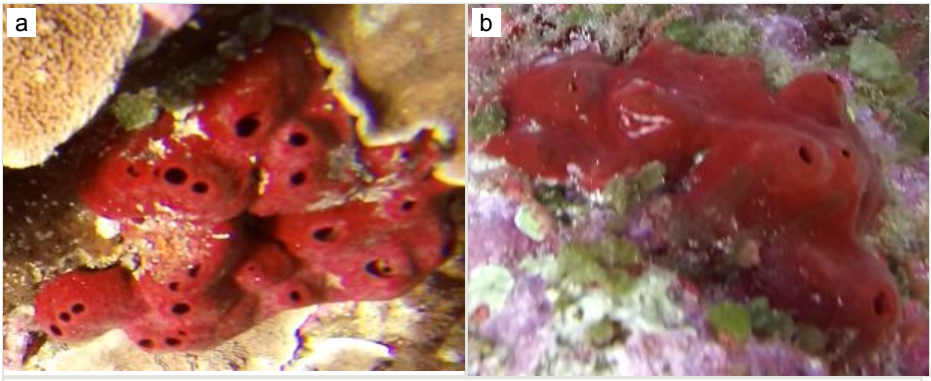

Figure 176.

Thonella sp. indet.

a: Astove W1, 10 m. doi
b: Astove W1, 10 m. doi

"class Demospongiae" order indet. sp. 1

Material

a. scientificName: Demospongiae; kingdom: Animalia; phylum: Porifera; class: Demospongiae; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 9.5 m; maximumDepthInMeters: 128.3 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponge with a velvety smooth surface texture. Colouration creamy brown, sometimes mottled with yellow patches. This group likely contains a variety of species belonging to different families; however, consistent positive identification was not always possible (e.g. due to distance from the camera) and, in most cases, requires microscopic examination. Observed genera included *Aaptos* sp. (Fig. 177).

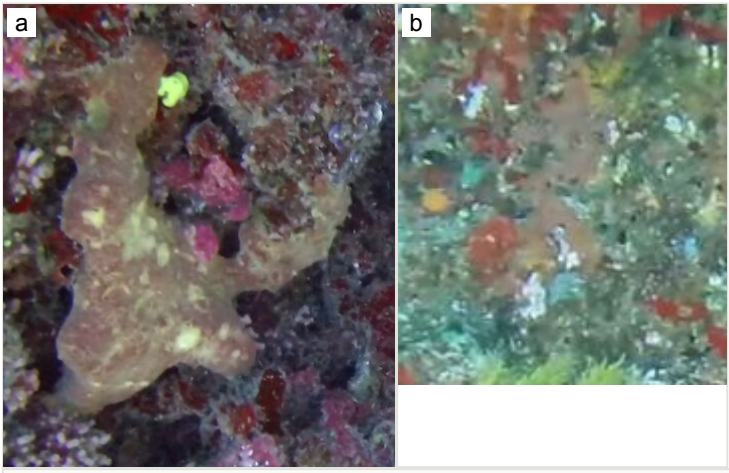

Figure 177.

Demospongiae order indet. sp. 1.

a: Astove W1, 10 m. doi
b: Alphonse N1, 60 m. doi

"class Demospongiae" order indet. sp. 2

Material

a. scientificName: Demospongiae; kingdom: Animalia; phylum: Porifera; class: Demospongiae; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely

Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponges of variable thickness and surface texture. Colouration shades of orange. This group likely contains a variety of species belonging to different families; however, consistent positive identification was not always possible (e.g. due to distance from the camera) and, in most cases, requires microscopic examination. Observed genera included *Biemna* sp., *Cliona* sp. and *Petrosia* sp. (Fig. 178).

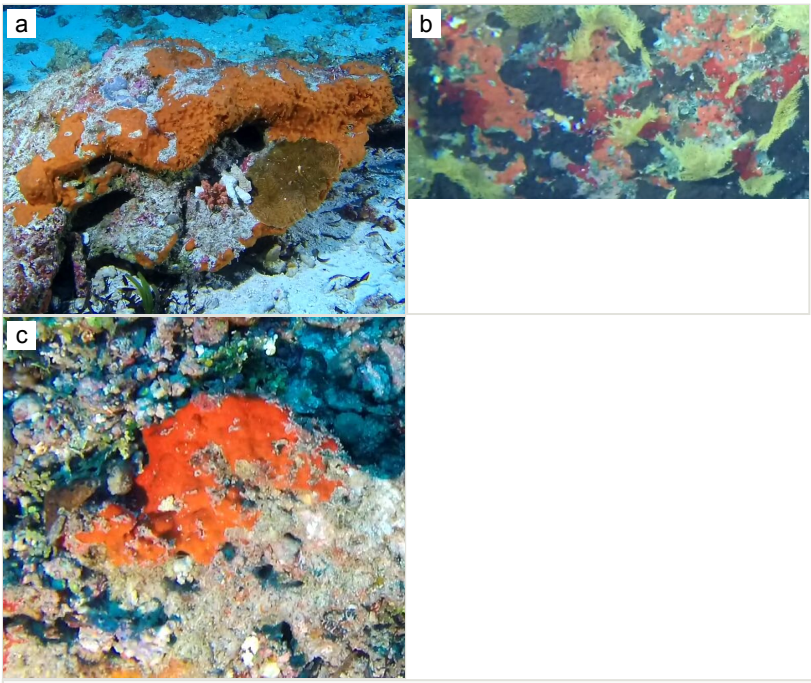

Figure 178.

Demospongiae order indet. sp. 2.

a: *Biemna* sp. Alphonse N1, 63 m. doi
b: *Petrosia* sp. Alphonse N1, 60 m. doi
c: *Clathria* sp. Desroches S1 , 30 m. doi

"class Demospongiae" order indet. sp. 3

Material

a. scientificName: Demospongiae; kingdom: Animalia; phylum: Porifera; class: Demospongiae; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 148.1 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris

Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponges of variable thickness and surface texture. Colouration bright red to dark red and red-brown. This group likely contains a variety of species belonging to different families; however, consistent positive identification was not always possible (e.g. due to distance from the camera) and, in most cases, requires microscopic examination. Observed genera included *Cliona* sp., *Raspailia* sp. and *Spirastrella* sp. (Fig. 179).

"class Demospongiae" order indet. sp. 4

Material

a. scientificName: Demospongiae; kingdom: Animalia; phylum: Porifera; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Alphonse N1, Astove W1, D'Arros N1, Desroches S1, Poivre E1; minimumDepthInMeters: 8.8 m; maximumDepthInMeters: 249.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponge with a bumpy or rough surface texture. Bright yellow to pale yellow. This group likely contains a variety of species belonging to different families; however, consistent positive identification was not always possible (e.g. due to distance from the camera) and, in most cases, requires microscopic examination. Observed genera included *Cliona* sp. and *Haliclona* sp. (Fig. 180).

Class Hexactinellida Schmidt, 1870

Order Amphidiscosida Schrammen, 1924

Family Hyalonematidae Gray, 1857

Genus *Hyalonema* Gray, 1832

Hyalonema sp. indet.

Material

a. scientificName: *Hyalonema* sp. 1; kingdom: Animalia; phylum: Porifera; class: Hexactinellida; order: Amphidiscosida; family: Hyalonematidae; genus: *Hyalonema*; scientificNameAuthorship: Gray, 1832; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1; minimumDepthInMeters: 250 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek

Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

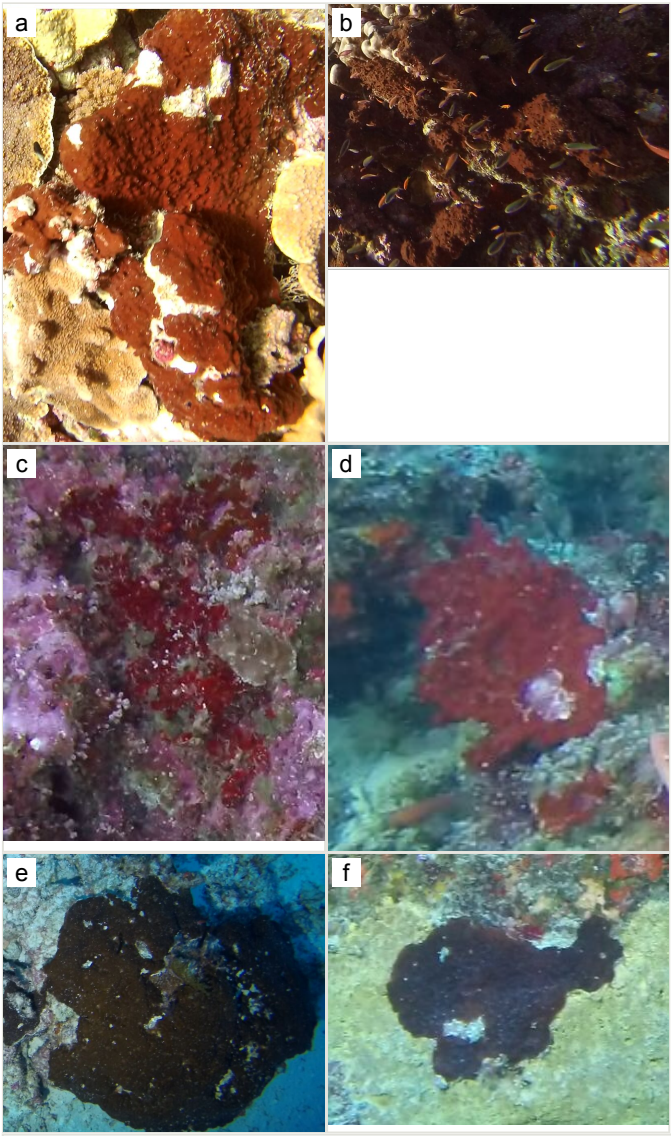

Figure 179.

Demospongiae order indet. sp. 3.

a: *Raspailia* sp. Astove W1. 10 m. doi
b: *Raspailia* sp. Astove W1, 10 m. doi
c: *Cliona* sp. Astove W1, 10 m. doi
d: *Cliona* sp. Aldabra N1, 30 m. doi
e: *Spirastrella* sp. Aldabra N1, 60 m. doi
f: *Spirastrella* sp. Aldabra N1, 60 m. doi

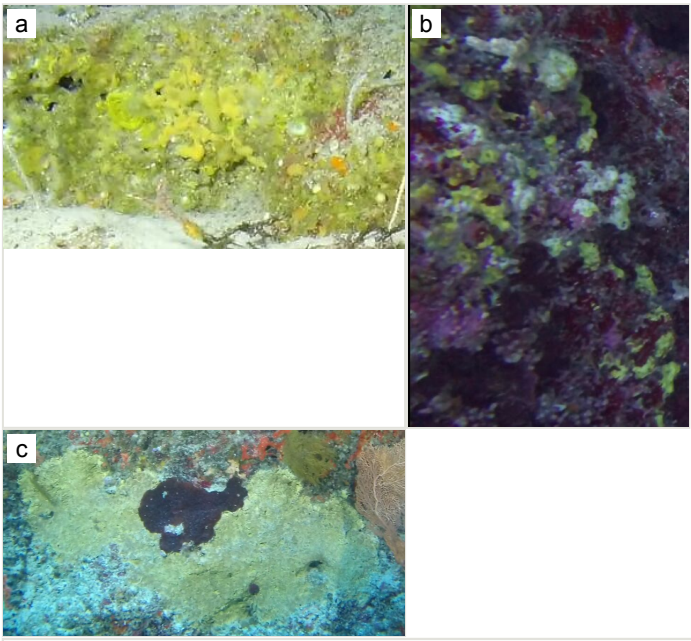

Figure 180.

Demospongiae order indet. sp. 4.

a: *Haliclona* sp. Aldabra N1, 120 m. doi
b: *Cliona* sp. Astove W1, 10 m. doi
c: *Cliona* sp. Aldabra N1, 60 m. doi

Figure 181. doi

Hyalonema sp. indet. Aldabra W1, 250 m.

Notes: A massive-globular sponge, less than 10 cm across, that creates a single giant basal spicule to anchor itself in the sediment. Smooth surface with rough-looking “stalk”. Colouration pale white (Fig. 181).

Order Lyssacinosida Zittel, 1877

Family Euplectellidae Gray, 1867

Genus *Heterotella* Gray, 1867

Heterotella corbicula (Bowerbank, 1862)

Material

a. scientificName: *Heterotella corbicula*; kingdom: Animalia; phylum: Porifera; class: Hexactinellida; order: Lyssacinosida; family: Euplectellidae; genus: *Heterotella*; scientificNameAuthorship: Bowerbank, 1862; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, D'Arros N1, Desroches S1; minimumDepthInMeters: 130.3 m; maximumDepthInMeters: 248.9 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Cup-shaped sponge with a smooth surface and serrated edge. Typical recorded size: 10 cm across. Individuals appear rather flat and form roughly oval masses. Pale-whitish colouration (Fig. 182).

Order Sceptrulophora Mehl, 1992

Family Tretodictyidae Schulze, 1886

Genus *Sclerothamnus* Marshall, 1875

Sclerothamnus sp. indet.

Material

a. scientificName: *Sclerothamnus* sp.; kingdom: Animalia; phylum: Porifera; class: Hexactinellida; order: Sceptrulophora; family: Tretodictyidae; genus: *Sclerothamnus*; scientificNameAuthorship: Marshall, 1875; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1, Aldabra W1, Astove W1, Desroches S1; minimumDepthInMeters: 130.3 m; maximumDepthInMeters: 250 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Branching sponge that can appear twig-like or fan-like in larger individuals due to its heavily branched appearance. Typically between 25 to 30 cm in height, although individuals can grow > 50 cm. Raised oscules that resemble corallites in hard corals.

Colour light yellow. Somewhat resembles hard corals if not for the depth where it is found. (Fig. 183).

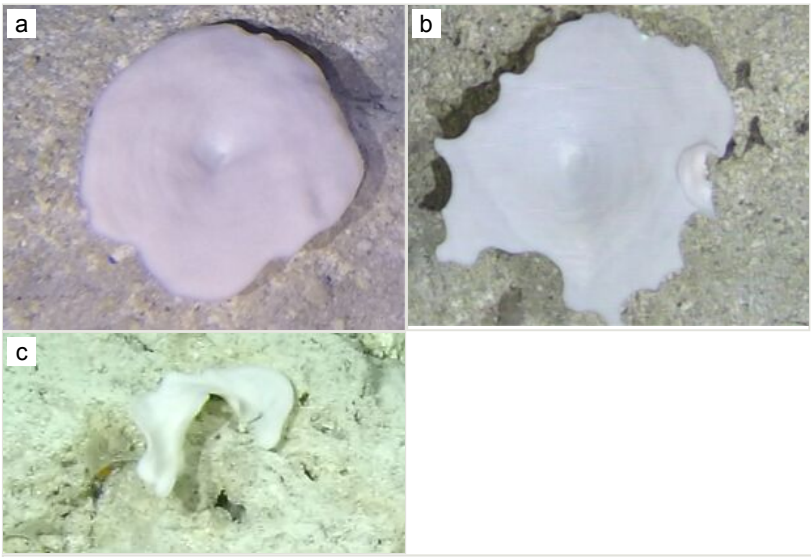

Figure 182.

Heterotella corbicula

a: Astove W1, 120 m. doi
b: Aldabra N1, 120 m. doi
c: Aldabra W1, 250 m. doi

Class Homoscleromorpha Bergquist, 1978

Order Homosclerophorida Dendy, 1905

Family Plakinidae Schulze, 1880

Genus *Plakortis* Schulze, 1880

Plakortis sp. indet.

Material

a. scientificName: *Plakortis* sp.; kingdom: Animalia; phylum: Porifera; class: Homoscleromorpha; order: Homosclerophorida; family: Plakinidae; genus: *Plakortis*; scientificNameAuthorship: Schulze 1880; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra W1, Alphonse N1, Astove W1; minimumDepthInMeters: 10 m; maximumDepthInMeters: 72 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy:

Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: Encrusting sponge with multiple small oscules; surface smooth, but irregular, uneven with a soft texture. Maximum recorded size: 30 cm across. Colour pale brown to yellow, orange and purple. Commonly known as “chicken liver” sponges because of their fleshy texture. These sponges are soft. It is typical of the group in that the internal colour is virtually identical to the external colour (Fig. 184).

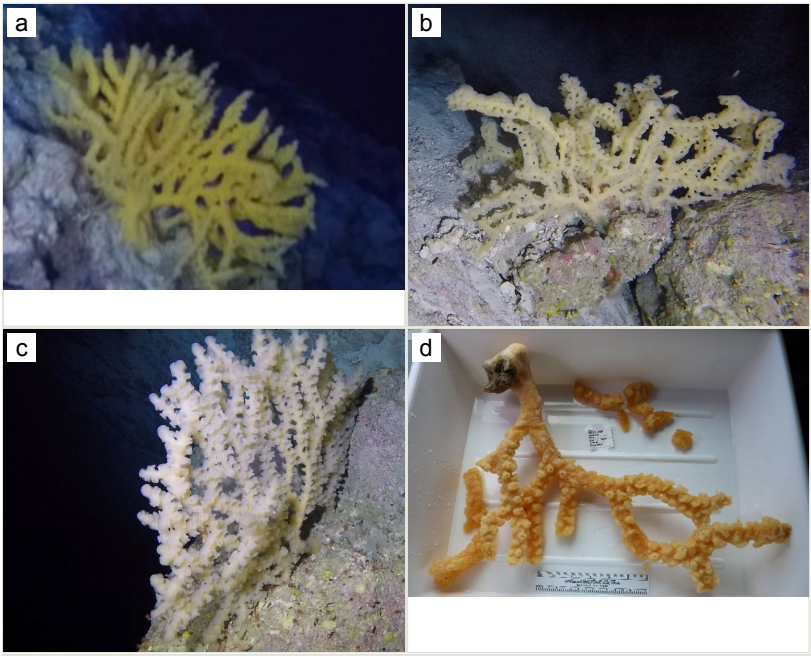

Figure 183.

Sclerothamnus sp. indet.

a: Astove W1, 250 m. doi
b: Astove W1, 250 m. doi
c: Astove W1, 250 m. doi
d: Aldabra W1, 120 m. Collected specimen (SEY1_163). doi

Unknown lettuce-like green sponge

Material

a. scientificName: Lettuce-like green sponge; kingdom: Animalia; phylum: Porifera; waterBody: Indian Ocean; country: Seychelles; locality: Aldabra N1; minimumDepthInMeters: 120 m; maximumDepthInMeters: 120 m; locationRemarks: First Descent: Seychelles Expedition; samplingProtocol: Submersible OR Remotely Operated Vehicle OR SCUBA; identifiedBy: Nico Fassbender, Toufiek Samaai, Paris Stefanoudis; dateIdentified: 2019, 2020; identificationRemarks: identified only from imagery; basisOfRecord: Human observation

Notes: A foliose sponge that resembles lettuce. Maximum recorded size: 28 cm across. Flower-like appearance with irregular edges. Dark green colouration (Fig. 185).

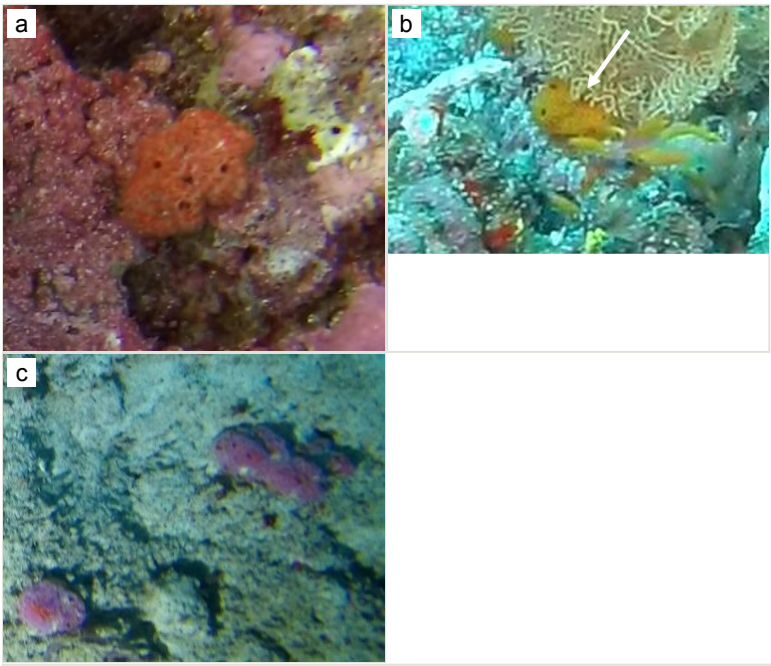

Figure 184.

Plakortis sp. indet.

a: Astove W1, 10 m. doi
b: Alphonse N1, 30 m. doi
c: Aldabra W1, 60 m. doi

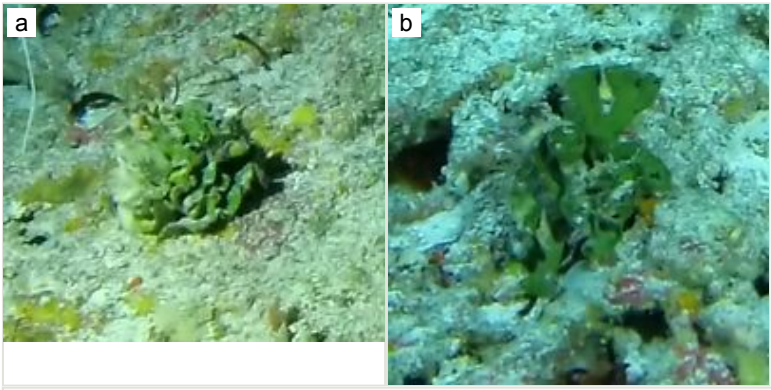

Figure 185.

Lettuce-like green sponge

a: Aldabra N1, 120 m. doi
b: Aldabra N1, 120 m. doi

Acknowledgements

All underwater images were acquired from video data; hence, special thanks to the SCUBA divers (Nekton, Blue Safari and Island Conservation Society) and pilots (ROV support and Global Sub Dive) operating the ROV and mini-ROV (ROV Support A/S, Kolding, Denmark) and the two submersibles (Triton submersibles, Vero Beach, Florida, USA), respectively. We would also like to thank Emma Deeks, Francesca Sahit and Molly Rivers for helping with the initial screening of underwater footage and helping with the compilation of morphotype lists. We also thank Denise Swanborn for helping us create a map of our surveyed sites including the collected multibeam bathymetry data. Furthermore, we would like to thank the Seychelles Government, namely the Ministry of Agriculture, Climate Change and Environment and all our other Seychelles partners (Seychelles Fishing Authority, The Ministry of Fisheries and the Blue Economy, The Seychelles Tourism Board, The Ministry of Foreign Affairs and Tourism, University of Seychelles, Seychelles Island Foundation, Marine Conservation Society Seychelles, The Nature Conservancy, The Seychelles Conservation and Climate Adaptation Trust, Nature Seychelles, The Island Development Company, The National Institute of Science and Technology and The Seychelles National Parks Authority) for helping us with the planning and execution of the Expedition. We wish to thank Omega and Kensington Tours for their generous funding and our strategic partners for their in-kind contributions. Special thanks go out to National Research Foundation, South African Institute of Aquatic Biodiversity for hosting our taxonomic ID workshop and everyone who attended it, helping with the finalisation of our species identification lists and the identification of collected specimens. Finally, thanks to all the Expedition participants, the crew of the *Ocean Zephyr*, the Nekton office team and the Nekton trustees. The research permit for Seychelles was issued by the Seychelles Bureau of Standards (Permit Number: 524).

Author contributions

LCW and PVS designed fieldwork data collection and, together with KNS, NF, JM and RW, collected the video and biological specimens in the field. LW served as the chief scientist on the First Descent: Seychelles 2019 expedition. NF and PS annotated the collected footage and placed them into an initial set of morphotypes. Further taxonomic identification was conducted in collaboration with JAM and LM (Algae and Plantae), KSN (Alcyonacea), DW (Antipatharia), CLM (Asteroidea), ZF (Echinodermata), CJM (Hydrozoa), RW and GG (Scleractinia) and TS (Porifera). NF wrote the main manuscript text with assistance from PVS and LCW. NF prepared all figures. All authors reviewed and commented on the manuscript and gave final approval for publication.

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