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Taxonomic Paper

Megafauna of the German exploration licence area for seafloor massive sulphides along the Central and South East Indian Ridge (Indian Ocean)

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Abstract

Background

The growing interest in mineral resources of the deep sea, such as seafloor massive sulphide deposits, has led to an increasing number of exploration licences issued by the International Seabed Authority. In the Indian Ocean, four licence areas exist, resulting in an increasing number of new hydrothermal vent fields and the discovery of new species. Most studies focus on active venting areas including their ecology, but the non-vent megafauna of the Central Indian Ridge and South East Indian Ridge remains poorly known.

In the framework of the Indian Ocean Exploration project in the German license area for seafloor massive sulphides, baseline imagery and sampling surveys were conducted yearly during research expeditions from 2013 to 2018, using video sledges and Remotely Operated Vehicles.

New information

This is the first report of an imagery collection of megafauna from the southern Central Indian- and South East Indian Ridge, reporting the taxonomic richness and their distribution. A total of 218 taxa were recorded and identified, based on imagery, with additional morphological and molecular confirmed identifications of 20 taxa from 89 sampled specimens. The compiled fauna catalogue is a synthesis of megafauna occurrences aiming at a consistent morphological identification of taxa and showing their regional distribution. The imagery data were collected during multiple research cruises in different exploration clusters of the German licence area, located 500 km north of the Rodriguez Triple Junction along the Central Indian Ridge and 500 km southeast of it along the Southeast Indian Ridge.

Keywords

deep-sea mining, INDEX, fauna catalogue, video imagery, photographs, biodiversity

Introduction

The Central Indian Ridge (CIR) and South East Indian Ridge (SEIR) are part of a global oceanic ridge system with high magmatic activity, which creates new seafloor, volcanoes and hydrothermal vent fields (Kelley 2001, Wang et al. 2012). High-temperature hydrothermal activity is often focused along topographically shallow portions of a single ridge segment, where a large magma reservoir causes crustal buoyancy (Ballard et al. 1981, Francheteau and Ballard 1983, Herzig and Hannington 1995). The hydrothermal activity accumulates polymetallic sulphides on the seafloor that may form seafloor massive sulphide (SMS) deposits with high content of iron, copper, zinc and rare earth metals in

economically valuable amounts (Van Dover 2011, Miller et al. 2018, Van Dover 2019). The highly abundant and mostly symbiotic fauna that exist in hydrothermally active deposits in the Indian Ocean benefit from bacterial primary production and consist mainly of shrimp swarms, bivalve mussel beds and dense anemone fields (Hashimoto et al. 2001).

Along the spreading axes of the Indian Ocean, exploration licences for SMS deposits as potential mineral resources are issued by the International Seabed Authority (ISA; www.isa.org.jm). The ISA manages the areas beyond national jurisdiction (Levin et al. 2016) and regulates the human activities in the context of mineral resource exploration and exploitation that may take place in the near future (Ramirez-Llodra et al. 2011). This includes the protection of the marine environment from anthropogenic impacts, such as mineral extraction and mining technology testing (Rogers et al. 2012, Levin et al. 2016, Miller et al. 2018). To date, seven exploration licences for SMS deposits have been issued by the ISA; three on the Mid-Atlantic Ridge (MAR) and four in the Indian Ocean (www.isa.org.jm).

Possible future mining events at inactive hydrothermal vents will physically remove hard substrates and the local fauna, thereby flattening the vertical topography and permanently reducing habitat heterogeneity (Van Dover 2014, Levin et al. 2016, Van Dover et al. 2020). Since inactive vents may act as stepping stones for population recolonisation, removal of substrate during SMS mineral extraction may halt recolonisation (Van Dover 2014, Van Dover et al. 2020).

Such mining-related activities and disturbances will likely affect the hydrothermal vent fields and their surrounding areas, making taxonomic and ecological baseline studies essential for describing undisturbed environmental conditions and assessing potential mining impacts (Copley et al. 2016). Imagery-based studies are an accurate and cost-effective tool (Sen et al. 2014, Van Dover 2014), as they are able to detect environmental changes or serious harm (Van Dover 2019) to the ecosystem.

Deep-sea megafauna are important components of biodiversity and play significant roles in ecosystem functioning, as pointed out for megafauna occurring in nodule areas (Smith et al. 2008, Vanreusel et al. 2016). These ecosystem functions include utilisation rates of surface derived detritus, dietary composition or the locomotion mode. Megafauna are likely subject to drastic changes due to mining activities and are expected to recover slowly related with slow rates of growth and recruitment (Ramirez-Llodra et al. 2011, Amon et al. 2016, Gollner et al. 2017). Many megafauna taxa are considered as indicators of physical disturbance responding to disturbance events with changes in densities, dominating taxa or the community composition (Bluhm and Gebruk 1999, Amon et al. 2017).

Environmental research has been conducted in the framework of the German Indian Ocean Exploration (INDEX) project and includes biological benthic baseline studies in accordance with ISA environmental guidelines (www.isa.org.jm (ISBA/25/LTC/6/Rev.1); Ardron et al. 2011, Miller et al. 2018). The German licence area (GLA) in the Indian Ocean is located along the southern CIR and northern SEIR (Fig. 1). The INDEX project is conducted by the Federal Institute for Geoscience and Natural Resources (BGR,

www.bgr.bund.de) and aims to find massive sulphide deposits in economically valuable amounts for potential exploitation. The GLA covers 100 exploration blocks, each 10 x 10 km in size, with a total area of 10,000 km^2 of deep-sea floor. A vast number of photographs and video material has been collected during annual expeditions from 2013 to 2018 and has been used to create annual fauna catalogues of specific regions or clusters within the licence area.

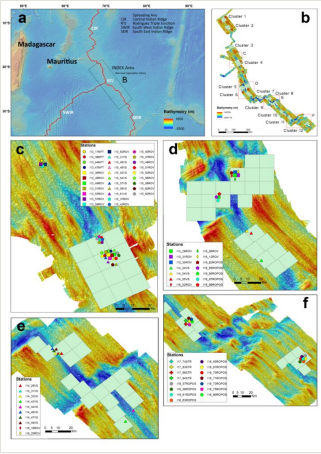

Figure 1. doi

Locations of imagery stations within the INDEX exploration area. a) Overview map of the southwestern Indian Ocean showing the ridge spreading axes (red line). b) Cluster 1-12 of the GLA for polymetallic massive sulphide exploration. The red boxes show the areas enlarged in C-F; each includes imagery transects conducted in each area. c) MESO area and Cluster 4. d) Cluster 5 and 6. e) Cluster 8 and 9. f) Cluster 11 and 12. Bathymetry data provided by the Federal Institute for Geoscience and Natural Resources (BGR).

This study combined the existing imagery of the taxa observed within the GLA to create a taxonomic expert-revised faunal catalogue with consistent identifications for the six years of exploration. The goal of the image analysis was to assess the species richness of benthic megafauna within the GLA, covering active and inactive hydrothermal vent fields and their surrounding non-vent areas, namely the abyssal deep-sea areas along the spreading axis of the southern CIR, the Rodriguez Triple Junction (RTJ) and the northern SEIR.

Materials and methods

INDEX expeditions and imagery acquisition

Six expeditions in consecutive years from 2013 to 2018 were used for this imagery study and covered a cumulative bottom track distance of 220,983 m. A total of 122,918 photographs and 367 hours 10 minutes of video imagery were collected. All photographs were reviewed and faunal occurrences annotated and extracted; video imagery was only

used when additional imagery was necessary to clarify the imagery-based identification. The study area has a bathymetrical range of 2,280 – 3,770 m and spanned a geographical range from the MESO areas (after RV Meteor and RV Sonne; Muench et al. 1999) outside the German licence area on the southern CIR at 23°23'S, 69°14'E, to Cluster 12 on the northern SEIR at 27°42'S, 73°44'E (Fig. 1). The MESO area was studied during the pre-exploration period and later excluded before signing the exploration licence in 2015.

All imagery transects were conducted using three different video sledges and three Remotely Operated Vehicles (ROVs). The towed video platforms were the Multifunctional Tool (MFT) and the *STROMER* (STR), both belonging to the BGR and the video sledge (VS) of the Royal Netherlands Institute for Sea Research (NIOZ). The ROVs were the *Kiel 6000* from the GEOMAR, the Remotely Operated Platform for Ocean Science (*ROPOS*) of the Canadian Scientific Submersible Facility (CSSF) and the ROV *Victor 6000* of the IFREMER. Table 1 lists gear details and total photographs and video imagery collected. Table 2 lists specifications of the sampling gear, such as the camera equipment used and the imagery resolution.

Table 1.

Detailed information of each expedition, including gear used, number of stations, photographs and video collected and distance covered. EGS = Edmond-vent site 2-vent site 7, SEIR = South East Indian Ridge, RTJ = Rodriguez Triple Junction, MFT = Multifunctional Tool, ROV = Remotely Operated Vehicle, VS = Video Sledge, ROPOS = Remotely Operated Platform for Ocean Science, STR = STROMER.

Expedition	Vessel	Year	Time period	Cluster	Locality	Gear	No. of Stations	Photographs	Video (h: min)	Distance (m)
INDEX 2013	RV Sonne	2013	23Oct – 21Dec	4,5	MESO, Kairei, EGS	MFT	4	15,124	-	11,529
						ROV Kiel 6000	11	595	105:57	18,617
INDEX 2014	RV Pelagia	2014	11Nov – 9Dec	6,8,9	SEIR, Pelagia	VS	11	64,606	-	33,820
INDEX 2015	RV Pelagia	2015	12Oct – 12Dec	4	vent site 1, EGS	VS	8	15,243	-	28,529
						ROV ROPOS	11	5,608	68:36	22,541
INDEX 2016	RV Pourquoi pas?	2016	3Jan – 3Feb	5,8	Kairei, Pelagia	ROV Victor 6000	5	3,402	81:52	38,277
INDEX 2017	RV Sonne	2017	25Aug – 13Oct	11,12	SEIR, vent site 5	STR	4	4,522	-	16,460
INDEX 2018	RV Pelagia	2018	10Oct – 17Dec	5,11,12	RTJ, vent sites 3-6	ROV ROPOS	16	4,817 (9,001 frame grabs)	110:45	51,210

Table 2.

Detailed information of each sampling gear, including altitude above seafloor, speed range during imagery collection, camera angle, camera system, interval of taking still photos and information regarding the resolution (dots per inch (dpi); Megapixel (mp); Bit rate (kBits sec^{-1}); Size of video imagery in pixel X pixel). All gears used flat port pressure bottles for video and still cameras with the exception of the ROV Victor 6000, which used dome port pressure bottles.

Gear specifications				Camera specifications				Video specifications			
Gear	**Altitude**	**Speed range**	**Angle**	**Camera system**	**Interval**	**Dots per inch**	**Megapixel**	**Frame rate**	**Bit rate**	**Pixel resolution**	**Megapixel**
MFT	0.5-5 m	0.3-1 knots	90°/ 45°	Canon Power Shot G9	10 sec	180 dpi	12 mp	25 fps	8,555 kBits sec^{-1}	1440X1080	1.6 mp
STR	0.5-5 m	0.3-1 knots	90°/ 90°	Canon Power Shot G15	10 sec	180 dpi	12 mp	29 fps	15,186 kBits sec^{-1}	1920X1080	2.1 mp
VS	0.5-5 m	0.3-1.5 knots	-/ 90°	-	-	-	-	25 fps	171,355 kBits sec^{-1}	1920X1080	2.1 mp
ROV Kiel 6000	0.5-5 m	0.1-1 knots	10-90°	Canon Power Shot G5	-	180 dpi	5 mp	25 fps	4,128 kBits sec^{-1}	704X576	0.4 mp
ROV Victor 6000	0.5-5 m	0.1-1 knots	10-90°	Video frame grabs	-	72 dpi	2.1 mp	25 fps	768 kBits sec^{-1}	1440X1080	2.1 mp
ROV Ropos	0.5-8 m	0.1-1 knots	10-90°	Nikon D700/ D810	-	300 dpi	12 mp/ 36 mp	30 fps	50,384 kBits sec^{-1}	1920X1080	2.1 mp

Megafaunal imagery analysis

All taxa visible in photographs and video were annotated, cut out, and the individuals identified to the lowest taxonomic level possible. Photographic analysis was carried out using Adobe Photoshop Lightroom 5.7 (©2019 Adobe Systems Software Ireland Ltd.; www.adobe.com). Photographs were imported and automatically white-balanced and tone-corrected; year and station were added to the metadata for standardisation purposes and use in an imagery database.

Each photograph was magnified until identification was impossible due to pixelation and each section searched for both sessile and motile animals (Schoening et al. 2012). For each individual organism, a copy was created and the section containing the animal cut out. Folders were created in Lightroom in a taxonomic hierarchy following the classification in the World Register of Marine Species (WoRMS Editorial Board 2021). The morphotype or species and the abundance in the photographs were written into the metadata and

resulted in up to 100 cut-outs from different photographs of individual taxa. The initial identification was based on taxonomic and imagery databases, photograph and video imagery galleries and scientific publications. In addition, selected images of all taxa were validated by the respective taxonomic experts of the team to check for consistency of the initial identification (Suppl. material 1).

The metadata of the processed photographs were exported and included taxon, abundance, expedition, year, station, GPS coordinates and technical information about the camera using the plug-in ListView (www.lightroomsolutions.com) for Adobe Photoshop Lightroom; the fauna catalogue shows selected images of each taxon.

The video imagery analysis was carried out with the video processing programme Magix Video deluxe 2014 Premium (©2003-2020 MAGIX Software GmbH; www.magix.com) primarily using video tracks from the ROVs; MFT video imagery was only processed in addition to photographs, if supporting the identification.

Both frame grabs from the video and short video films were exported and the frame grabs were used for the extension of the fauna catalogue. Short video films were cut out and added if the movement was characteristic for the animal and, therefore, helpful for identification (pers. comm. H. Singh Woods Hole Oceanographic Institute, Massachusetts, USA). The identification process was carried out in the same way as for the photographs. Detailed metadata information, such as sample locations, gear, depth, sampled specimens and camera information are listed in Suppl. material 1.

Sample collection

A total of 89 specimens were collected throughout the expeditions using ROVs, mainly within active hydrothermal vent fields. Megafaunal specimens were quickly transferred to chilled seawater and photographed, and tissue subsamples or the entire animal were preserved in 96% ethanol for molecular analysis. Onboard photographs of the sampled specimens were included in this manuscript if they showed characteristic details helpful for taxonomic identification. In the laboratory, the specimens were assigned to the lowest taxonomic level possible using a sequenced segment of approximately 650 bp of the cytochrome oxidase subunit I (COI) gene. Molecular samples were used to verify identifications based on images.

Applied open taxonomic nomenclature and technical notes

Note: Scaling of photographs was, in most cases, not possible due to missing lasers or lasers visible on a different focal plane. Only size estimates, based on samples or in relation to known sizes of taxa, are given. The identification of taxa, based only on imagery, is very difficult and many of the taxa presented herein might be new species. Llife traces and the phylum Porifera, with the exception of a single trace listed as poriferan taxon, *Paleodictyon nodosum*, are excluded from this catalogue. The phylum Porifera was excluded from this megafauna catalogue because of the high diversity of this group and

the difficulties to discriminate these morphologically very similar taxa from one another, based on imagery alone without physical samples within the INDEX area.

Some putative taxa presented have an asterisk followed by an additional taxon name in squared brackets as, for example, “Genus species *[Genus species sp. inc.]”. This means that the image shown in the catalogue has the “Genus species” identification level, even though there do exist certain images in Suppl. material 1, where the species level identification remains uncertain. These images are indicated by “*[Genus species sp. inc.]”, but are assumed to belong to this higher ranked identification level. This was applied where only part, but not all, of the imagery samples could confirm a taxonomic group, based on morphological or molecular results (or both). It has been suggested, in these cases, to move the identification rank up to the level where all images could be reliably identified (Horton et al. 2021). Since this meant a loss of accuracy of the generated dataset and omission of valid identifications made, we decided to keep the higher level of accuracy and introduced and defined the use of the asterisk and squared brackets.

Several abbreviations were used in this fauna catalogue following the recommendations for standardisation of imagery-based annotations by Horton et al. (2021). The taxonomic ranks 'cl.' (“class”), 'ord.' (“order”), 'fam.' (“family”), 'gen.' (“genus”) and 'sp.' (species) indicate the taxonomic rank and are always combined with the open nomenclature (ON) signs 'indet.', 'inc.' or a unique code applied for this taxon (*taxon rank* (*unique code*)). Several morphotypes have a unique code in brackets (DZMB_2021_00xx), that has been assigned to all morphotypes where more than one taxon could be distinguished, but not identified to species level, based on the available imagery. These ON signs are defined according to Horton et al. (2021) as follows:

- The 'spp.' (“species (plural)”) was used when there is more than one species present within an identified group of organisms, but could not be further distinguished, based on the imagery.
- The 'indet.' (“indeterminabilis”) means that no further identification was possible because diagnostic characteristics were not visible. Missing diagnostic characteristics are often related to blurry imagery, low resolution, orientation of the organism and missing physical samples.
- The 'inc.' (“incerta”) means that diagnostic characteristics and (or) physical sample were present, but the identification is still uncertain and needs further comparable material for validation.

Table 3 contains all taxa included in this catalogue.

Table 3.

List of all taxa in this fauna catalogue including phylum and the scientific name authority for the taxon. The asterisk and species names in squared brackets means that a taxon has been identified in several images, but a given identification level could not be supported in all images because not every single observation could be supported by morphological or molecular methods or contradictory results of different methods exist. Some putative taxa presented have an asterisk followed by an additional taxon name in squared brackets, as, for example, “Genus species *[Genus species sp. inc.]”, meaning that the image shown in the catalogue has the “Genus species” identification level, with further images, where the species level identification remains uncertain, indicated by “*[Genus species sp. inc.]”. The taxonomic ranks 'cl.' (“class”), 'ord.' (“order”), 'fam.' (“family”), 'gen.' (“genus”) and 'sp.' (species) indicate the taxonomic rank and are always combined with the open nomenclature (ON) signs 'indet.', 'inc.' according to Horton et al. (2021) or a unique code applied for this taxon (*taxon rank* (*unique code*)).

Phylum	Taxon	Authority
Annelida	*Archinome jasoni* *[*Archinome jasoni* sp. inc.]	Borda, Kudenov, Chevaldonné, Blake, Desbruyères, Fabri, Hourdez, Pleijel, Shank, Wilson, Schulze & Rouse, 2013
	Polynoidae gen. indet.	Kinberg, 1856
	Branchipolynoe gen. inc.	Pettibone, 1984
	Lepidonotopodium gen. inc. (DZMB_2021_0001)	Pettibone, 1983
	Lepidonotopodium gen. inc. (DZMB_2021_0002)	Pettibone, 1983
	Lepidonotopodium gen. inc. (DZMB_2021_0003)	Pettibone, 1983
	Sabellidae gen. indet.	Latreille, 1825
	Oasisia gen. inc.	Jones, 1985
	Alvinella gen. inc.	Desbruyeres & Laubier, 1980
Arthropoda	*Glyptelasma* gen. inc.	Pilsbry, 1907
	Neolepas marisindica sp. inc.	Watanabe, Chen & Chan, 2018
	Regioscalpellum regium sp. inc.	(Wyville Thomson, 1873)
	Verrucidae fam. inc.	Darwin, 1854
	Amphipoda ord. inc.	Latreille, 1816
	Anomura fam. indet.	MacLeay, 1838
	Galatheidae fam. inc.	Samouelle, 1819
	Munidopsis aries sp. inc.	(A. Milne Edwards, 1880)
	Munidopsis pallida sp. inc.	Alcock, 1894
	Paguroidea superfam. inc.	Latreille, 1802
	Thymopides laurentae sp. inc.	Segonzac & Macpherson, 2003
	Austinograea rodriguezensis	Tsuchida & Hashimoto, 2002

Phylum	Taxon	Authority
	Alvinocaris solitaire sp. inc. *[*Alvinocaris solitaire*]	Yahagi, Watanabe, Kojima & Beedesse, 2014
	Mirocaris indica sp. inc.	Komai, Martin, Zala, Tsuchida & Hashimoto, 2006
	Rimicaris kairei	Watabe & Hashimoto, 2002
	Nematocarcinus gen. inc. (DZMB_2021_0004)	A. Milne-Edwards, 1881
	Nematocarcinus gen. inc. (DZMB_2021_0005)	A. Milne-Edwards, 1881
	Dendrobranchiata subord. inc.	Bate, 1888
	Cerataspis monstrosus sp. inc.	Gray, 1828
	Munnopsidae fam. inc. (DZMB_2021_0006)	Lilljeborg, 1864
	Munnopsidae fam. inc. (DZMB_2021_0007)	Lilljeborg, 1864
	Pantopoda ord. inc.	Gerstaecker, 1863
Bryozoa	Cheilostomatida fam. indet. (DZMB_2021_0008)	Busk, 1852
	Cheilostomatida fam. indet. (DZMB_2021_0009)	Busk, 1852
	Bifaxaria gen. inc.	Busk, 1884
	Tessaradoma gen. inc.	Norman, 1869
Chordata	Synaphobranchidae gen. indet.	Johnson, 1862
	Histiobranchus gen. inc.	Gill, 1883
	Synaphobranchidae *Ilyophis brunneus* fam. inc.	Gilbert, 1891
	Bathysaurus mollis sp. inc.	Günther, 1878
	Bathypterois sp. indet.	Günther, 1878
	Ipnops agassizii sp. inc.	Garman, 1899
	Gadiformes Macrouridae ord. inc. (DZMB_2021_0010)	Bonaparte, 1831
	Gadiformes Macrouridae ord. inc. (DZMB_2021_0011)	Bonaparte, 1831
	Coryphaenoides gen. inc. (DZMB_2021_0012)	Gunnerus, 1765
	Coryphaenoides gen. inc. (DZMB_2021_0013)	Gunnerus, 1765
	Coryphaenoides armatus sp. inc.	(Hector, 1875)
	Coryphaenoides longifilis sp. inc.	Günther, 1877
	Antimora rostrata	(Günther, 1878)
	Chaunacops gen. inc.	Garman, 1899
	Notacanthiformes ord. inc.	L. S. Berg, 1947

Phylum	Taxon	Authority
	Aldrovandia affinis gen. inc.	(Günther, 1877)
	Halosauropsis macrochir gen. inc.	(Günther, 1878)
	Ophidiidae gen. indet. (DZMB_2021_0014)	Rafinesque, 1810
	Ophidiidae gen. indet. (DZMB_2021_0015)	Rafinesque, 1810
	Ophidiidae fam. inc. (DZMB_2021_0016)	Rafinesque, 1810
	Acanthonus armatus gen. inc.	Günther, 1878
	Barathrites iris gen. inc.	Zugmayer, 1911
	Bassozetus gen. inc.	Gill, 1883
	Spectrunculus crassus sp. inc.	(Vaillant, 1888)
	Spectrunculus grandis sp. inc.	(Günther, 1877)
	Xyelacyba myersi gen. inc.	Cohen, 1961
	Pachycara angeloi	Thiel, Knebelsberger, Kihara & Gerdes, 2021
	Octacnemidae gen. indet.	-
	Culeolus spp. indet.	Herdman, 1881
	Bathyraja tunae sp. inc.	Stehmann, 2005
Cnidaria	Cnidaria cl. indet.	Hatschek, 1888
	Ceriantharia ord. indet.	Perrier, 1893
	Spirularia fam. indet.	den Hartog, 1977
	Actiniaria fam. indet. (DZMB_2021_0017)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0018)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0019)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0020)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0021)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0022)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0023)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0024)	Hertwig, 1882
	Actiniaria fam. indet. (DZMB_2021_0025)	Hertwig, 1882
	Actinoscyphiidae gen. indet. (DZMB_2021_0026)	Stephenson, 1920
	Actinoscyphiidae gen. indet. (DZMB_2021_0027)	Stephenson, 1920
	Actinoscyphia sp. indet.	Stephenson, 1920
	Actinostolidae gen. indet.	Carlgren, 1932
	Actinostola sp. indet. (DZMB_2021_0028)	Verrill, 1883
	Actinostola sp. indet. (DZMB_2021_0029)	Verrill, 1883
	Actinostola sp. indet. (DZMB_2021_0030)	Verrill, 1883
	Actinostola sp. indet. (DZMB_2021_0031)	Verrill, 1883

Phylum	Taxon	Authority
	Bathyphellia sp. indet. (DZMB_2021_0032)	Carlgren, 1932
	Bathyphellia sp. indet. (DZMB_2021_0033)	Carlgren, 1932
	Chondrophellia sp. indet.	Carlgren, 1925
	Maractis sp. indet.	Fautin & Barber, 1999
	Relicanthus daphneae sp. inc.	(Daly, 2006)
	Alcyonacea fam. indet.	Lamouroux, 1812
	Alcyonacea *Anthomastus* gen. inc.	Verrill, 1878
	Anthomastus sp. indet.	Verrill, 1878
	Chrysogorgia sp. indet. (DZMB_2021_0034)	Duchassaing & Michelotti, 1864
	Chrysogorgia sp. indet. (DZMB_2021_0035)	Duchassaing & Michelotti, 1864
	Iridogorgia magnispiralis sp. inc.	Watling, 2007
	Clavulariidae gen. indet. (DZMB_2021_0036)	Hickson, 1894
	Clavulariidae gen. indet. (DZMB_2021_0037)	Hickson, 1894
	Clavulariidae fam. inc. (DZMB_2021_0038)	Hickson, 1894
	Clavulariidae fam. inc. (DZMB_2021_0039)	Hickson, 1894
	Isididae gen. indet. (DZMB_2021_0040)	Lamouroux, 1812
	Isididae gen. indet. (DZMB_2021_0041)	Lamouroux, 1812
	Isididae gen. indet. (DZMB_2021_0042)	Lamouroux, 1812
	Isididae gen. indet. (DZMB_2021_0043)	Lamouroux, 1812
	Isididae fam. inc. (DZMB_2021_0044)	Lamouroux, 1812
	Isididae gen. indet. (DZMB_2021_0045)	Lamouroux, 1812
	Isididae *Acanella* gen. inc.	Gray, 1870
	Isididae *Bathygorgia* gen. inc.	Wright, 1885
	Isididae *Jasonisis* gen. inc.	Alderslade & McFadden, 2012
	Isididae *Keratoisis* gen. inc. (DZMB_2021_0046)	Wright, 1869
	Isididae *Keratoisis* gen. inc. (DZMB_2021_0047)	Wright, 1869
	Isididae *Lepidisis* gen. inc.	Verrill, 1883
	Lepidisis spp. indet.	Verrill, 1883
	Paragorgiidae fam. inc.	Kükenthal, 1916
	Primnoidae gen. indet. (DZMB_2021_0048)	Milne Edwards, 1857
	Primnoidae gen. indet. (DZMB_2021_0049)	Milne Edwards, 1857
	Stalk of Alcyonacea or Antipatharia ord. inc.	Lamouroux, 1812/ -
	Heteropathes sp. indet.	Opresko, 2011
	Heteropathes americana sp. inc.	(Opresko, 2003)
	Bathypathes sp. indet. (DZMB_2021_0050)	Brook, 1889

Phylum	Taxon	Authority
	Bathypathes gen. inc. (DZMB_2021_0051)	Brook, 1889
	Bathypathes patula sp. inc.	Brook, 1889
	Schizopathes spp. indet.	Brook, 1889
	Pennatulacea ord. inc. (DZMB_2021_0052)	Verrill, 1865
	Pennatulacea fam. indet. (DZMB_2021_0053)	Verrill, 1865
	Pennatulacea *Kophobelemnon* ord. inc.	Asbjörnsen, 1856
	Umbellula sp. indet. (DZMB_2021_0054)	Gray, 1870
	Umbellula sp. indet. (DZMB_2021_0055)	Gray, 1870
	Zoantharia fam. indet. (DZMB_2021_0056)	Gray, 1832
	Zoantharia fam. indet. (DZMB_2021_0057)	Gray, 1832
	Zoantharia fam. indet. (DZMB_2021_0058)	Gray, 1832
	Epizoanthus sp. indet.	Gray, 1867
	Hydrozoa ord. indet. (DZMB_2021_0059)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0060)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0061)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0062)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0063)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0064)	Owen, 1843
	Hydrozoa ord. indet. (DZMB_2021_0065)	Owen, 1843
	Candelabrum sp. indet	de Blainville, 1830
	Corymorphidae gen. indet.	Allman, 1872
	Siphonophorae Rhodaliidae *Thermopalia* gen. inc.	Pugh, 1983
Echinodermata	*Hymenodiscus* gen. inc.	Perrier, 1884
	Freyellidae fam. inc.	Downey, 1986
	Freyastera gen. inc.	Downey, 1986
	Freyella gen. inc.	Perrier, 1885
	Styracaster gen. inc.	Sladen, 1883
	Henricia gen. inc.	Gray, 1840
	Goniasteridae gen. indet. (DZMB_2021_0066)	Forbes, 1841
	Goniasteridae gen. indet. (DZMB_2021_0067)	Forbes, 1841
	Circeaster gen. inc.	Koehler, 1909
	Evoplosoma gen. inc.	Fisher, 1906
	Lydiaster johannae sp. inc.	Koehler, 1909
	Solasteridae fam. inc.	Viguier, 1878

Phylum	Taxon	Authority
	Asthenactis gen. inc.	Fisher, 1906
	Hymenaster sp. indet.	Wyville Thomson, 1873
	Pteraster gen. inc.	Müller & Troschel, 1842
	Antedonidae gen. indet. (DZMB_2021_0068)	Norman, 1865
	Antedonidae fam. inc. (DZMB_2021_0069)	Norman, 1865
	Bathymetra gen. inc.	AH Clark, 1908
	Pentametrocrinus sp. indet.	AH Clark, 1908
	Hyocrinidae gen. indet.	Carpenter, 1884
	Irregularia infracl. inc.	Latreille, 1825
	Cidaroida fam. indet.	Claus, 1880
	Hapalosoma sp. indet.	Mortensen, 1903
	Salenocidaris sp. indet.	Agassiz, 1869
	Chiridota hydrothermica sp. inc.	Smirnov & Gebruk, 2000
	Elpidiidae gen. indet. (DZMB_2021_0070)	Théel, 1882
	Elpidiidae gen. indet. (DZMB_2021_0071)	Théel, 1882
	Elpidiidae gen. indet. (DZMB_2021_0072)	Théel, 1882
	Peniagone purpurea	(Théel, 1882)
	Laetmogonidae gen. indet.	Ekman, 1926
	Enypniastes eximia	Théel, 1882
	Benthodytes sp. indet.	Théel, 1882
	Benthothuria gen. inc.	Perrier R., 1898
	Pseudostichopus gen. inc. (DZMB_2021_0073)	Théel, 1886
	Pseudostichopus sp. indet. (DZMB_2021_0074)	Théel, 1886
	Oneirophanta sp. indet.	Théel, 1879
	Synallactidae gen. indet. (DZMB_2021_0075)	Ludwig, 1894
	Synallactidae gen. indet. (DZMB_2021_0076)	Ludwig, 1894
	Synallactidae gen. indet. (DZMB_2021_0077)	Ludwig, 1894
	Synallactidae gen. indet. (DZMB_2021_0078)	Ludwig, 1894
	Synallactidae fam. inc. (DZMB_2021_0079)	Ludwig, 1894
	Synallactes sp. indet.	Ludwig, 1894
	Amphilepidida ord. inc.	O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017
	Asteronyx gen. inc.	Müller & Troschel, 1842
	Ophiacanthida ord. inc.	O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017
	Ophiophyllum petilum sp. inc.	Lyman, 1878
	Ophiosphalma gen. inc.	H.L. Clark, 1941

Phylum	Taxon	Authority
	Ophiosphalma armigerum sp. inc.	(Lyman, 1878)
Hemichordata	Torquaratoridae fam. inc.	Holland, Clague, Gordon, Gebruk, Pawson & Vecchione, 2005
Mollusca	*Bathymodiolus septemdierum* *[*Bathymodiolus septemdierum* sp. inc.]	Hashimoto & Okutani, 1994
	Bathypolypus sp. indet.	Grimpe, 1921
	Cirroteuthis sp. indet.	Eschricht, 1838
	Grimpoteuthis gen. inc.	Robson, 1932
	Magnapinna sp. indet.	Vecchione & Young, 1998
	Abyssochrysoidea superfam. inc.	Tomlin, 1927
	Speculator gen. inc.	Waren & Bouchet, 2001
	Alviniconcha marisindica	Okutani, 2014
	Lepetodrilidae fam. inc.	McLean, 1988
	Lepetodrilus gen. inc.	McLean, 1988
	Lepetodrilidae *Lepetodrilus* sp. indet. *[Lepetodrilidae *Lepetodrilus* gen. inc.]	McLean, 1988
	Phymorhynchus sp. indet.	Dall, 1908
	Phymorhynchus sp. indet. (Egg capsules)	Dall, 1908
	Melanodrymiidae fam. inc.	Salvini-Plawen & Steiner, 1995
	Chrysomallon squamiferum	C. Chen, Linse, Copley & Rogers, 2015
	Scaphopoda ord. indet.	Bronn, 1862
	Solenogastres ord. indet.	Gegenbaur, 1878
Nemertea	*Thermanemertes* gen. inc.	Rogers, Gibson & Tunnicliffe, 1996
Platyhelminthes	Polycladida fam. indet. *[Polycladida ord. inc.]	Lang, 1884
Porifera	*Paleodictyon nodosum*	Seilacher, 1977
Foraminifera	Monothalamea ord. indet. (DZMB_2021_0080)	Haeckel, 1862 (as emended by Pawlowski et al., 2013)
	Monothalamea ord. indet. (DZMB_2021_0081)	Haeckel, 1862 (as emended by Pawlowski et al., 2013)
	Monothalamea ord. indet. (DZMB_2021_0082)	Haeckel, 1862 (as emended by Pawlowski et al., 2013)
	Luffammina gen. inc.	Kamenskaya, Bagirov & Simdianov, 2002
	Psammina gen. inc. (DZMB_2021_0083)	Haeckel, 1889
	Psammina gen. inc. (DZMB_2021_0084)	Haeckel, 1889
	Stannoma gen. inc.	Haeckel, 1889

Data resources

The following Table 4 contains a brief description of content of all fields present in the Suppl. material 1.

Table 4.

Brief description of the 78 fields of the Suppl. material 1, including the Field name and a Field data description in a separate column.

Field name	Field data description
Field ID	Unique ID for each data entry
Cruise Name	Name of the research expedition
Research Vessel	Name of the vessel on which the expedition took place
Leg Number	Contains the leg of a single expedition during which the data were generated
Geographical Area	Mid Ocean Ridge segment where the data were collected
Area sector	Contains information if the data were collected within or outside a cluster and in which cluster the data were collected. The clusters are within the German licence area for the exploration of polymetallic sulphide occurrences and were issued by the Federal Institute for Geosciences and Natural Resources (www.bgr.de) on behalf of the International Seabed Authority (www.isa.org.jm)
Year	Year of the expedition
Sampling Date	Date of data collection (year-month-day)
Time stamp (on video/ still photo)	Time (hours:minutes:seconds) of the data collection in UTC
Sampling start time	Start time of the individual transect (hours:minutes)
Sampling start depth	Depth (m) at the starting point of the transect
Sampling start latitude	Latitude at the starting point of the transect
Sampling start longitude	Longitude at the starting point of the transect
Sampling end time	End time of the individual transect (hours:minutes)
Sampling end depth	Depth (m) at the end point of the transect
Sampling end latitude	Latitude at the end point of the transect
Sampling end longitude	Longitude at the end point of the transect
Area or Volume sampled (m)	Length (m) of the entire transect
Locality	Local name of the sampling area or hydrothermal vent field name
Geodetic Datum	Global reference frame for precisely measuring locations on Earth
Coordinate uncertainty in Meters	Accurracy deviation of the underwater acoustic Ultra-short-baseline (USBL) positioning in metres
Station ID	Name of individual station including the year of expedition
Transect ID	Name of the individual transect
Sample ID	Name of the individual sample collected

Field name	Field data description
Voucher Specimen Code	Unique code for each sampled specimen
Marker	Genetic marker targeted
PCR Result	Descriptor for the success of extracting DNA with the Polymerase chain reaction (PCR)
Sequence Result	Descriptor for the successful sequencing result of the extracted DNA
Photograph frame code of sampled specimen	Photograph name of the sampled specimen
Sampling Gear (code)	Abbreviation of the tool or gear used for the data collection
Preparations	Descriptor for the preparation of collected data including information of the fixation of sampled specimens
Institution Storing Imagery and Samples	Abbreviation of Institute where samples are stored
Recorded By	Abbreviation of Institute that has the copyright of imagery
Occurrence Status	Indication for the occurrence status of the identified taxon in the data
Identification Remarks	Indicating potential limitations related to the available material and data type used for the identification (imagery, physical sample or both)
Language	Language of the data entry
Basis of Record	Descriptor if the identification record was based on Human observtaion (indirect, imagery only) or Preserved Specimen (direct, including physical samples)
Dataset Name	Name of the Dataset, equivalent with the project name INDEX (Indian Ocean Exploration Project)
Number of sampled individuals	Indicating how many of the photographed individuals were collected and are present as a physical sample
Number of counted individuals	Number of individuals of a specific taxon that were counted in the photograph present. The number "0" indicates different photograph or sample of an identical specimen, the number "100" indicates that precise counting was not possible and an uncountable number of individuals was present.
Frame Code (on video/ still photo)	Name of the photograph or frame grab showing the identified taxon
Area of image	Showing the total area of each photograph or frame grab in pixels (length x width)
Video/photo sled ID code	Name of the tool or gear used for the data collection
Technical specifications of camera equipment	Specification of the camera used or if a frame grab was extracted from a high definition (hd) or standard definition (sd) video
Kingdom	Taxonomic classification hierarchy level: Kingdom
Identification: Phylum	Taxonomic classification hierarchy level: Phylum
Identification: Class	Taxonomic classification hierarchy level: Class
Identification: Order	Taxonomic classification hierarchy level: Order
Identification: Family	Taxonomic classification hierarchy level: Family
Identification: Genus	Taxonomic classification hierarchy level: Genus
Identification: Species	Taxonomic classification hierarchy level: Species

Field name	Field data description
Taxon rank	Lowest possible identification level
Identification Qualifier	Descriptor for the confidence of the identification level
Scientific Name authorship	Authority and year of the original taxon description
Identification: putative species name or number	Putative taxon name regardless the identification level including the identification qualifier
Identification Molecular	Result of the molecular identification if present
Morphological Taxonomist	Responsible taxonomist who identified the taxon the putative taxon name or number
Morphological Taxonomist E-mail	Current email adress of the taxonomist
Morphological Taxonomist Institution	Current Institution of the taxonomist
Behaviour	Behaviour of the observed and identified individual
Specimen Details: Life Stage	Life stage of the identified individual, if possible
Specimen Details : Tissue Descriptor	Tissue used for the molecular DNA extraction
Specimen Details: Associated Taxa	Associated taxa in the close vicinity of the identified taxon
Specimen Details : Associated Specimens	Associated specimens in symbiosis or attached to the identified individual
Hydrothermal activity	Indicating if the identified taxon was observed in an area with hydrothermal activity or not
Activity of hydrothermal vent site (active/ inactive/dormant/diffuse flow)	Indicating the level of hydrothermal activity from high to low/no activity in the categories "active", "diffuse flow", "inactive", "dormant", "non-vent", respectively
Age of hydrothermal vent (100 - >10,000 years)	Estimated and categorised age of hydrothermal vent field from young (100 years) to old (10,000 years)
Water Body	Ocean in which data or samples were collected
Water Temperature (°C)	Water temperature in degrees Celsius at the location of the observed individual (if measured)
Salinity (ppt)	Salinity in parts per thousand at the location of the observed individual (if measured)
Depth (m)	Depth (m) at the location of the observed individual
Image Type	Indicating if the data were derived from a photograph or from video imagery
Exposure	Exposure time of the camera used
ISO-speed	Indicating the sensitivity of the CMOS sensor towards light. A higher ISO speed indicates higher sensitivity to light.
Focal length	Measure of how strongly the camera converges the light

Field name	Field data description
Use of picture	Descriptor of which photographs were extracted for identification, were extracted and send to taxonomists for precise identification and extracted, identified and shown in the publication as an example of that taxon
Latitude	Latitude in decimal degrees of the observed individual
Longitude	Longitude in decimal degrees of the observed individual

Megafauna of the German exploration license area

Kingdom Animalia

Phylum Annelida Lamarck, 1809

Class Polychaeta Grube, 1850

Order Amphinomida

Family Amphinomidae Lamarck, 1818

Genus *Archinome* Kudenov, 1991

Archinome jasoni Borda, Kudenov, Chevaldonné, Blake, Desbruyères, Fabri, Hourdez, Pleijel, Shank, Wilson, Schulze & Rouse, 2013

Material

a. scientificName: ***Archinome jasoni***; taxonConceptID: ***Archinome jasoni***; taxonID: I13_390; scientificNameID: ***Archinome jasoni***; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Amphinomida; family: Amphinomidae; taxonRank: Species; genus: ***Archinome***; scientificNameAuthorship: Borda, Kudenov, Chevaldonné, Blake, Desbruyčres, Fabri, Hourdez, Pleijel, Shank, Wilson, Schulze & Rouse, 2013; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2432; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -25.3205; decimalLongitude: 70.0401; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2013-12-05; eventTime: 11:07:30 am; year: 2013; fieldNumber: INDEX2013-28ROV; fieldNotes: 1.8°C; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: moving at basis of active chimney; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-05_11-07-30_Sonne_INDEX2013-2_028ROV01_Logo.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Theresa Guggolz; identificationRemarks: Identified by morphology and DNA of collected specimen; language: en; institutionCode: DZMB; collectionCode: I13_28RO_SG1_2; datasetName: INDEX; basisOfRecord: Preserved Specimen

Notes: Fig. 2

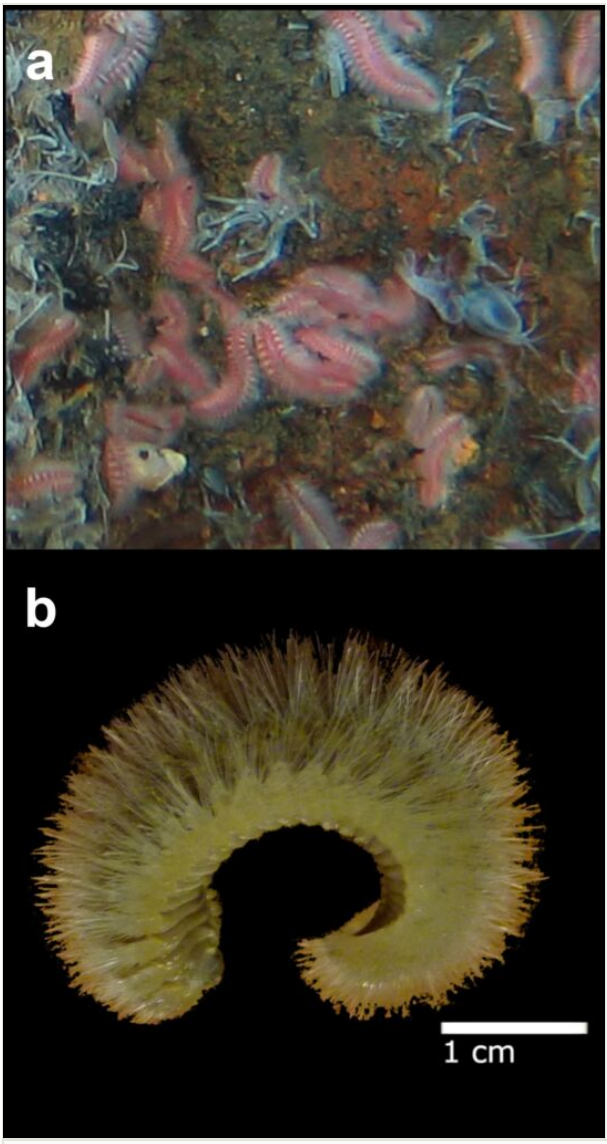

Figure 2. doi

Archinome jasoni in situ (a) and sampled specimen (b) within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Order Phyllodocida Dales, 1962

Family Polynoidae Kinberg, 1856

Polynoidae gen. indet.

Material

a. taxonConceptID: Polynoidae gen. indet.; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Phyllodocida; family: Polynoidae; taxonRank: Family; scientificNameAuthorship: Kinberg, 1856; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2398; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 9:02:06 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: on anemone; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00177.jpg; associatedOccurrences: *Actinostolidae* gen. indet.; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery - commensal morphotype only observed on Actinostolidae gen. indet.; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 3

Figure 3. doi

Commensal Polynoidae gen. indet. in situ on Actiniaria anemone in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Branchipolynoe* Pettibone, 1984

Branchipolynoe gen. inc.

Material

a. taxonConceptID: *Branchipolynoe* gen. inc.; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Phyllodocida; family: Polynoidae; taxonRank: Genus; genus: *Branchipolynoe*; scientificNameAuthorship: Pettibone, 1984; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3280; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2015-12-06; eventTime: 5:19:55 am; year: 2015; fieldNumber: INDEX2015-58ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1913_01678.jpg; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 4

Figure 4. doi

Branchipolynoe gen. inc. in situ within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Lepidonotopodium* Pettibone, 1983

Lepidonotopodium gen. inc. (DZMB_2021_0001)

Material

a. taxonConceptID: ***Lepidonotopodium*** gen. inc. (DZMB_2021_0001); kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Phyllodocida; family: Polynoidae; taxonRank: Genus; genus: ***Lepidonotopodium***; scientificNameAuthorship: Pettibone, 1983; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2630; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 5:51:39 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00050.jpg; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 5

Figure 5. doi

Lepidonotopodium gen. inc. (DZMB_2021_0001) in situ within the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Lepidonotopodium gen. inc. (DZMB_2021_0002)

Material

a. taxonConceptID: ***Lepidonotopodium*** gen. inc. (DZMB_2021_0002); kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Phyllodocida; family: Polynoidae; taxonRank: Genus; genus: ***Lepidonotopodium***; scientificNameAuthorship: Pettibone, 1983;

waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2911; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2018-12-01; eventTime: 6:15:16 am; year: 2018; fieldNumber: INDEX2018-80ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2102_00026.jpg; associatedOccurrences: none; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 6

Figure 6. doi

Lepidonotopodium gen. inc. (DZMB_2021_0002) in situ within the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Lepidonotopodium gen. inc. (DZMB_2021_0003)

Material

a. taxonConceptID: *Lepidonotopodium* gen. inc. (DZMB_2021_0003); kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Phyllodocida; family: Polynoidae; taxonRank: Genus; genus: *Lepidonotopodium*; scientificNameAuthorship: Pettibone, 1983; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2479; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 9:42:28 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00136.jpg; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery;

identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 7

Figure 7. doi

Lepidonotopodium gen. inc. (DZMB_2021_0003) in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Sabellida Levinsen, 1883

Family Sabellidae Latreille, 1825

Sabellidae gen. indet.

Material

a. taxonConceptID: Sabellidae gen. indet.; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Sabellida; family: Sabellidae; taxonRank: Family; scientificNameAuthorship: Latreille, 1825; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 11; maximumDepthInMeters: 2928; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.2562; decimalLongitude: 72.7216; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-25; eventTime: 3:47:53 am; year: 2017; fieldNumber: INDEX2017-86STR; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_5003.jpg; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 8

Figure 8. doi

Sabellidae gen. indet. in situ on the seafloor in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Siboglinidae Caullery, 1914

Genus *Oasisia* Jones, 1985

Oasisia gen. inc.

Material

a. taxonConceptID: *Oasisia* gen. inc.; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Sabellida; family: Siboglinidae; taxonRank: Genus; genus: *Oasisia*; scientificNameAuthorship: Jones, 1985; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3269; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-08; eventTime: 10:50:40 am; year: 2013; fieldNumber: INDEX2013-36ROV; fieldNotes: 1.8°C; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: in sulphidic sediment; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-08_10-50-40_Sonne_INDEX2013-2_036ROV04_Logo.jpg; identifiedBy: Theresa Guggolz; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 9

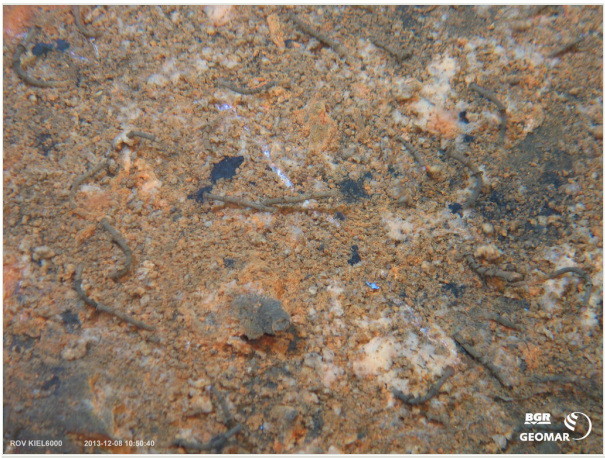

Figure 9. doi

Oasisia gen. inc. in situ within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Order Terebellida sensu Rouse & Fauchald, 1997

Family Alvinellidae Desbruyeres & Laubier, 1986

Genus *Alvinella* Desbruyères & Laubier, 1980

Alvinella gen. inc.

Material

a. taxonConceptID: *Alvinella* gen. inc.; taxonID: I18_1138; scientificNameID: -; kingdom: Animalia; phylum: Annelida; class: Polychaeta; order: Terebellida; family: Alvinellidae; taxonRank: Genus; genus: *Alvinella*; scientificNameAuthorship: Desbruyeres & Laubier, 1980; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2449; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 9:31:00 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: attached to active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: *Alvinella* sp.tif; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Theresa Guggolz; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; collectionCode: I18_065RO_B_005; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 10

Figure 10. doi

Alvinella gen. inc. in situ (white arrow) within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Arthropoda von Siebold, 1848

Class Hexanauplia Oakley, Wolfe, Lindgren & Zaharof, 2013

Superorder Thoracica Darwin, 1854

Order Lepadiformes Buckeridge & Newman, 2006

Family Poecilasmatidae Annandale, 1909

Genus *Glyptelasma* Pilsbry, 1907

Glyptelasma gen. inc.

Material

a. taxonConceptID: *Glyptelasma* gen. inc.; kingdom: Animalia; phylum: Arthropoda; class: Hexanauplia; order: Lepadiformes; family: Poecilasmatidae; taxonRank: Genus; genus: *Glyptelasma*; scientificNameAuthorship: Pilsbry, 1907; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2374; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 8:14:41 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: Attached to coral stalk; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00145.jpg; associatedOccurrences: Isididae *Jasonisis* gen. inc.; identifiedBy: Kate

Shalaeva; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 11

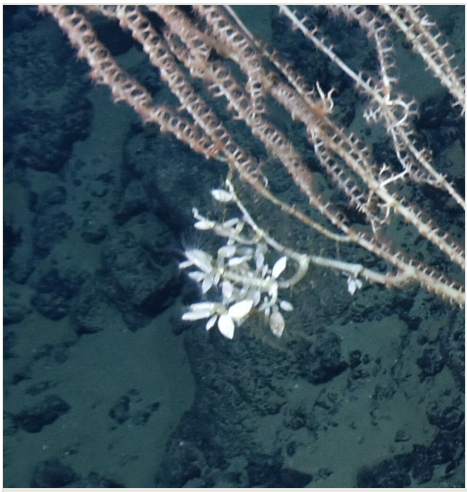

Figure 11. doi

Glyptelasma gen. inc. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Scalpelliformes Buckeridge & Newman, 2006

Family Eolepadidae Buckeridge, 1983

Genus *Neolepas* Newman, 1979

Neolepas marisindica sp. inc. Watanabe, Chen & Chan, 2018

Material

a. scientificName: *Neolepas marisindica*; taxonConceptID: *Neolepas marisindica* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Hexanauplia; order: Scalpelliformes; family: Eolepadidae; taxonRank: Species; genus: *Neolepas*; scientificNameAuthorship: Watanabe, Chen & Chan, 2018; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2468; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 9:25:45 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00131.jpg; identifiedBy: Kate Shalaeva; identificationRemarks: Identified only from imagery;

identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 12

Figure 12. doi

Neolepas marisindica sp. inc. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Scalpellidae Pilsbry, 1907

Genus *Regioscalpellum* Gale, 2015

Regioscalpellum regium sp. inc. (Wyville Thomson, 1873)

Material

a. scientificName: *Regioscalpellum regium*; taxonConceptID: *Regioscalpellum regium* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Hexanauplia; order: Scalpelliformes; family: Scalpellidae; taxonRank: Species; genus: *Regioscalpellum*; scientificNameAuthorship: (Wyville Thomson, 1873); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2380; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 5:50:33 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulfides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00029-1.jpg; identifiedBy: Kate Shalaeva; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 13

Figure 13. doi

Regioscalpellum regium sp. inc. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Sessilia Lamarck, 1818

Family Verrucidae Darwin, 1854

Verrucidae fam. inc.

Material

a. taxonConceptID: Verrucidae fam. inc.; kingdom: Animalia; phylum: Arthropoda; class: Hexanauplia; order: Sessilia; family: Verrucidae; taxonRank: Family; scientificNameAuthorship: Darwin, 1854; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2380; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 5:50:33 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulfides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00029-2.jpg; identifiedBy: Kate Shalaeva; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 14

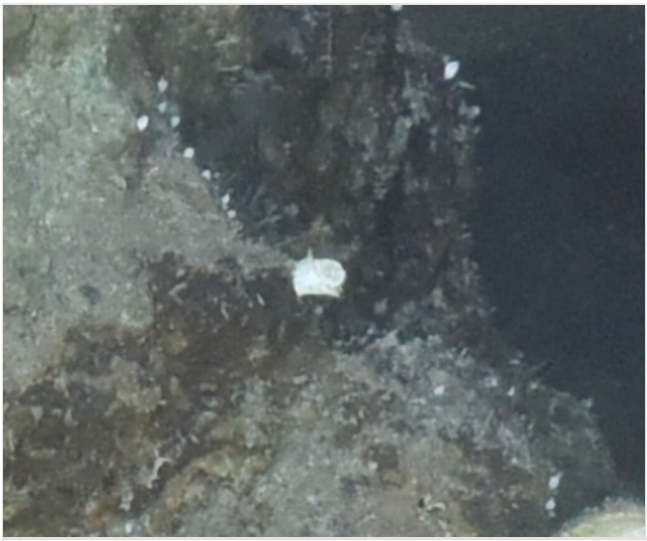

Figure 14. doi

Verrucidae fam. inc. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Malacostraca Latreille, 1802

Order Amphipoda Latreille, 1816

Amphipoda ord. inc.

Material

a. taxonConceptID: Amphipoda ord. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Amphipoda; taxonRank: Order; scientificNameAuthorship: Latreille, 1816; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2468; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2016-01-11; eventTime: 10:17:31 pm; year: 2016; fieldNumber: INDEX2016-06ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: sitting on hydrozoa stalk; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160111221731A Kopie.jpg; associatedOccurrences: Hydrozoa ord. indet.; identifiedBy: Simon Bober; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 15

Figure 15. doi

Amphipoda ord. inc. in situ within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Decapoda Latreille, 1802

Infraorder Anomura MacLeay, 1838

Anomura fam. indet.

Material

a. taxonConceptID: Anomura fam. indet.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; taxonRank: Infraorder; scientificNameAuthorship: MacLeay, 1838; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2825; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3922; decimalLongitude: 69.2423; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:21:40 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving on seafloor; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-63-2.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 16

Figure 16. doi

Anomura fam. indet. in situ within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Galatheidae Samouelle, 1819

Galatheidae fam. inc.

Material

a. taxonConceptID: Galatheidae fam. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Galatheidae; taxonRank: Family; scientificNameAuthorship: Samouelle, 1819; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2478; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 6:16:31 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00075.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 17

Figure 17. doi

Galatheidae fam. inc. in situ close to the vent site 3 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Munidopsidae Ortmann, 1898

Genus *Munidopsis* Whiteaves, 1874

Munidopsis aries sp. inc. (A. Milne Edwards, 1880)

Material

a. scientificName: *Munidopsis aries*; taxonConceptID: *Munidopsis aries* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Munidopsidae; taxonRank: Species; genus: *Munidopsis*; scientificNameAuthorship: (A. Milne Edwards, 1880); waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2576; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 5:42:12 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00030.jpg; identifiedBy: Enrique MacPherson; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 18

Figure 18. doi

Munidopsis aries sp. inc. in situ at the border of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Munidopsis pallida sp. inc. Alcock, 1894

Material

a. scientificName: *Munidopsis pallida*; taxonConceptID: *Munidopsis pallida* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Munidopsidae; taxonRank: Species; genus: *Munidopsis*; scientificNameAuthorship: Alcock, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 2; verbatimLocality: Cluster 4; maximumDepthInMeters: 3048; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-13; eventTime: 9:23:30 am; year: 2013; fieldNumber: INDEX2013-51ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-13_09-23-30_Sonne_INDEX2013-2_051ROV07_Logo.jpg; identifiedBy: Enrique MacPherson; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 19

Figure 19. doi

Munidopsis pallida sp. inc. in situ within the inactive vent site 2 hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Superfamily Paguroidea Latreille, 1802

Paguroidea superfam. inc.

Material

a. taxonConceptID: Paguroidea superfam. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; taxonRank: Superfamily; scientificNameAuthorship: Latreille, 1802; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3072; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-27; eventTime: 9:20:39 am; year: 2015; fieldNumber: INDEX2015-37ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1905_00014.jpg; associatedOccurrences: *Epizoanthus* sp. indet.; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: superfam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 20

Figure 20. doi

Paguroidea superfam. inc. (in symbiosis with *Epizoanthus* sp. indet.) in situ within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Infraorder Astacidea Latraeille, 1802

Family Nephropidae Dana, 1852

Genus *Thymopides* Burukovsky & Averin, 1977

Thymopides laurentae sp. inc. Segonzac & Macpherson, 2003

Material

a. scientificName: *Thymopides laurentae*; taxonConceptID: *Thymopides laurentae* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Nephropidae; taxonRank: Species; genus: *Thymopides*; scientificNameAuthorship: Segonzac & Macpherson, 2003; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3036; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-29; eventTime: 8:55:19 am; year: 2015; fieldNumber: INDEX2015-43ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1906_00143.jpg; identifiedBy: Enrique MacPherson; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 21

Figure 21. doi

Thymopides laurentae sp. inc. in situ within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Infraorder Brachyura Linnaeus, 1754

Family Bythograeidae Williams, 1980

Genus *Austinograea* Hessler & Martin, 1989

Austinograea rodriguezensis Tsuchida & Hashimoto, 2002

Material

a. scientificName: *Austinograea rodriguezensis*; taxonConceptID: *Austinograea rodriguezensis*; taxonID: I13_80; scientificNameID: *Austinograea rodriguezensis*; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Bythograeidae; taxonRank: Species; genus: *Austinograea*; scientificNameAuthorship: Tsuchida & Hashimoto, 2002; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2424; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -25.3203; decimalLongitude: 70.0404; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2013-12-06; eventTime: 10:57:36 am; year: 2013; fieldNumber: INDEX2013-31ROV; fieldNotes: 2°C; individualCount: 3; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: moving on seafloor; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-06_10-57-36_Sonne_INDEX2013-2_031ROV02_Logo-4.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified by morphology and DNA of collected specimen; language: en; institutionCode: DZMB; collectionCode: I13_31RO_SG2_1; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 22

Figure 22. doi

Austinograea rodriguezensis in situ within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Infraorder Caridea Dana, 1852

Family Alvinocaridae Christoffersen, 1986

Genus *Alvinocaris* Williams & Chace, 1982

Alvinocaris solitaire sp. inc. Yahagi, Watanabe, Kojima & Beedesse, 2014

Material

a. scientificName: *Alvinocaris solitaire*; taxonConceptID: *Alvinocaris solitaire* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Alvinocarididae; taxonRank: Species; genus: *Alvinocaris*; scientificNameAuthorship: Yahagi, Watanabe, Kojima & Beedesse, 2014; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2631; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 5:59:55 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: moving on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00061.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 23

Figure 23. doi

Alvinocaris solitaire sp. inc. in situ within the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Mirocaris* Vereshchaka, 1997

Mirocaris indica sp. inc. Komai, Martin, Zala, Tsuchida & Hashimoto, 2006

Material

a. scientificName: *Mirocaris indica*; taxonConceptID: *Mirocaris indica* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Alvinocarididae; taxonRank: Species; genus: *Mirocaris*; scientificNameAuthorship: Komai, Martin, Zala, Tsuchida & Hashimoto, 2006; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3270; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2015-12-03; eventTime: 7:08:32 am; year: 2015; fieldNumber: INDEX2015-51ROV; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: moving on sulfides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1910_00877.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 24

Figure 24. doi

Mirocaris indica sp. inc. in situ within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Rimicaris* Williams & Rona, 1986

Rimicaris kairei Watabe & Hashimoto, 2002

Material

a. scientificName: *Rimicaris kairei*; taxonConceptID: *Rimicaris kairei*; taxonID: I18_1337; scientificNameID: *Rimicaris kairei*; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Alvinocarididae; taxonRank: Species; genus: *Rimicaris*; scientificNameAuthorship: Watabe & Hashimoto, 2002; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2629; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 7:16:44 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 2.4°C, 34.6 ppt; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored freeze dried; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00156.jpg; associatedOccurrences: Bacteria; associatedSequences: COI; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified by morphology and DNA of collected specimen; language: en; institutionCode: DZMB; collectionCode: I18_095RO_SG1_002; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 25

Figure 25. doi

Rimicaris kairei in situ within the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Nematocarcinidae Smith, 1884

Genus *Nematocarcinus* A. Milne-Edwards, 1881

Nematocarcinus gen. inc. (DZMB_2021_0004)

Material

a. taxonConceptID: *Nematocarcinus* gen. inc. (DZMB_2021_0004); kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Nematocarcinidae; taxonRank: Genus; genus: *Nematocarcinus*; scientificNameAuthorship: A. Milne-Edwards, 1881; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2642; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 12:10:26 pm; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00288.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 26

Figure 26. doi

Nematocarcinus gen. inc. (DZMB_2021_0004) in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Nematocarcinus gen. inc. (DZMB_2021_0005)

Material

a. taxonConceptID: *Nematocarcinus* gen. inc. (DZMB_2021_0005); kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Nematocarcinidae; taxonRank: Genus; genus: *Nematocarcinus*; scientificNameAuthorship: A. Milne-Edwards, 1881; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3075; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-04; eventTime: 6:16:41 am; year: 2015; fieldNumber: INDEX2015-53ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sulfides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1911_01051.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 27

Figure 27. doi

Nematocarcinus gen. inc. (DZMB_2021_0005) in situ within the Edmond-vent site 2-vent site 7 hydrothermal area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Suborder Dendrobranchiata Bate, 1888

Dendrobranchiata subord. inc.

Material

a. taxonConceptID: Dendrobranchiata subord. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; taxonRank: Suborder; scientificNameAuthorship: Bate, 1888; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2913; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-28; eventTime: 8:12:11 am; year: 2018; fieldNumber: INDEX2018-73ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2100_00098.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: subord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 28

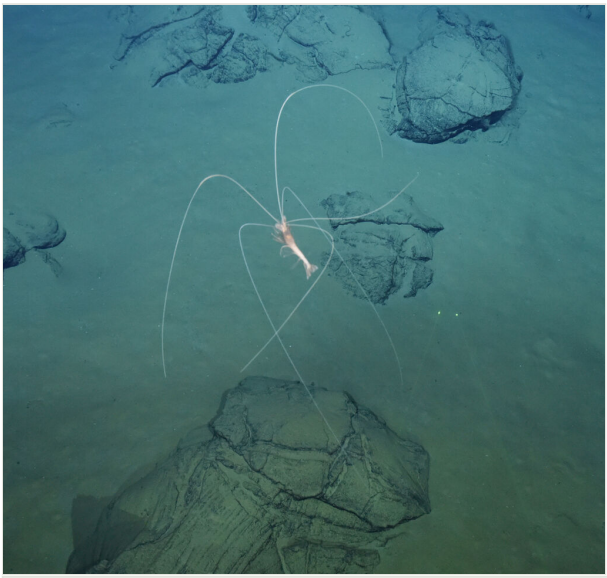

Figure 28. doi

Dendrobranchiata subord. inc. in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Aristeidae Wood-Mason in Wood-Mason & Alcock, 1891

Genus *Cerataspis* Gray, 1828

Cerataspis monstrosus sp. inc. Gray, 1828

Material

a. scientificName: *Cerataspis* montrosus; taxonConceptID: *Cerataspis monstrosus* sp. inc.; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Decapoda; family: Aristeidae; taxonRank: Species; genus: *Cerataspis*; scientificNameAuthorship: Gray, 1828; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2382; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 5:48:25 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00024.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 29

Figure 29. doi

Cerataspis monstrosus sp. inc. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Isopoda Latreille, 1817

Family Munnopsidae Lilljeborg, 1864

Munnopsidae fam. inc. (DZMB_2021_0006)

Material

a. taxonConceptID: Munnopsidae fam. inc. (DZMB_2021_0006); taxonID: I15_53; scientificNameID: -; kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Isopoda; family: Munnopsidae; taxonRank: Family; scientificNameAuthorship: Lilljeborg, 1864; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3036; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-29; eventTime: 8:54:59 am; year: 2015; fieldNumber: INDEX2015-43ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1906_00142.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Simon Bober; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; collectionCode: I15_43RO_D_11; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 30

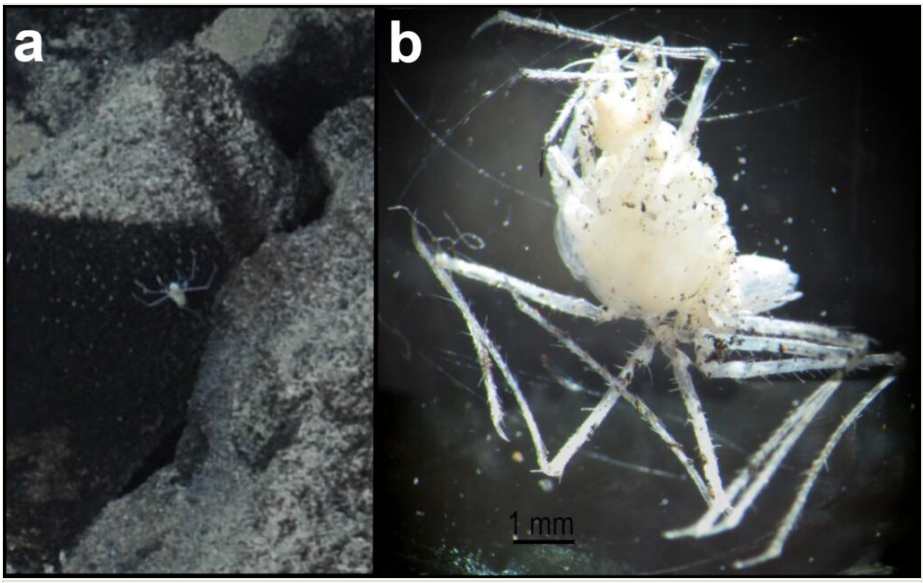

Figure 30. doi

Munnopsidae fam. inc. (DZMB_2021_0006) in situ (a) and sampled specimen (b) within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Munnopsidae fam. inc. (DZMB_2021_0007)

Material

a. taxonConceptID: Munnopsidae fam. inc. (DZMB_2021_0007); kingdom: Animalia; phylum: Arthropoda; class: Malacostraca; order: Isopoda; family: Munnopsidae; taxonRank: Family; scientificNameAuthorship: Lilljeborg, 1864; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2652; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 9:36:47 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: on sulfides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00319.jpg; identifiedBy: Simon Bober; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 31

Figure 31. doi

Munnopsidae fam. inc. (DZMB_2021_0007) in situ within the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Pycnogonida Latreille, 1810

Order Pantopoda Gerstaecker, 1863

Pantopoda ord. inc.

Material

a. taxonConceptID: Pantopoda ord. inc.; kingdom: Animalia; phylum: Arthropoda; class: Pycnogonida; order: Pantopoda; taxonRank: Order; scientificNameAuthorship: Gerstaecker, 1863; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2908; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-28; eventTime: 10:53:01 am; year: 2018; fieldNumber: INDEX2018-73ROPOS; fieldNotes: 1.7°C, 34.8 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: moving at basis of active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2100_00194.jpg; identifiedBy: Magdalini Christodoulou, Terue C. Kihara; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 32

Figure 32. doi

Pantopoda ord. inc. in situ within the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data below (Image attribution: BGR).

Phylum Bryozoa

Class Gymnolaemata Allman, 1856

Order Cheilostomatida Busk, 1852

Cheilostomatida fam. indet. (DZMB_2021_0008)

Material

a. taxonConceptID: Cheilostomatida fam. indet. (DZMB_2021_0008); kingdom: Animalia; phylum: Bryozoa; class: Gymnolaemata; order: Cheilostomatida; taxonRank: Order; scientificNameAuthorship: Busk, 1852; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2820; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-12-17; eventTime: 9:26:37 am; year: 2013; fieldNumber: INDEX2013-62ROV; individualCount: 5; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-17_09-26-37_Sonne_INDEX2013-2_062ROV11_Logo-2.jpg; identifiedBy: Dennis Gordon; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 33

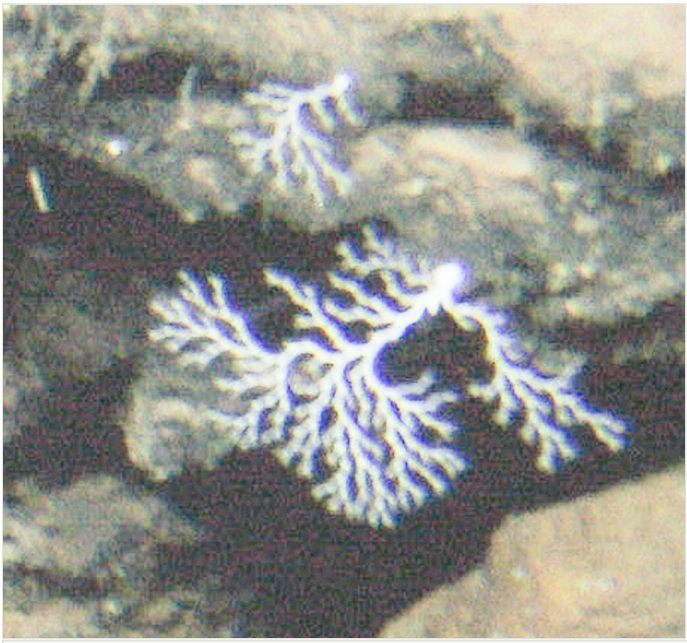

Figure 33. doi

Cheilostomatida fam. indet. (DZMB_2021_0008) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Cheilostomatida fam. indet. (DZMB_2021_0009)

Material

a. taxonConceptID: Cheilostomatida fam. indet. (DZMB_2021_0009); kingdom: Animalia; phylum: Bryozoa; class: Gymnolaemata; order: Cheilostomatida; taxonRank: Order; scientificNameAuthorship: Busk, 1852; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2917; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-27; eventTime: 9:16:24 am; year: 2017; fieldNumber: INDEX2017-94STR; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_5416.jpg; identifiedBy: Dennis Gordon; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 34

Figure 34. doi

Cheilostomatida fam. indet. (DZMB_2021_0009) in situ close to the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Bifaxariidae Busk, 1884

Genus *Bifaxaria* Busk, 1884

Bifaxaria gen. inc.

Material

a. taxonConceptID: *Bifaxaria* gen. inc.; kingdom: Animalia; phylum: Bryozoa; class: Gymnolaemata; order: Cheilostomatida; family: Bifaxariidae; taxonRank: Genus; genus: *Bifaxaria*; scientificNameAuthorship: Busk, 1884; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2909; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 10:01:21 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00131.jpg; identifiedBy: Dennis Gordon; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 35

Figure 35. doi

Bifaxaria gen. inc. in situ close to the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Tessaradomidae Jullien, 1903

Genus *Tessaradoma* Norman, 1869

Tessaradoma gen. inc.

Material

a. taxonConceptID: *Tessaradoma* gen. inc.; kingdom: Animalia; phylum: Bryozoa; class: Gymnolaemata; order: Cheilostomatida; family: Tessaradomidae; taxonRank: Genus; genus: *Tessaradoma*; scientificNameAuthorship: Norman, 1869; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2823; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-15; eventTime: 7:25:31 am; year: 2013; fieldNumber: INDEX2013-57ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-15_07-25-31_Sonne_INDEX2013-2_057ROV09_Logo-2.jpg; identifiedBy: Dennis Gordon; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 36

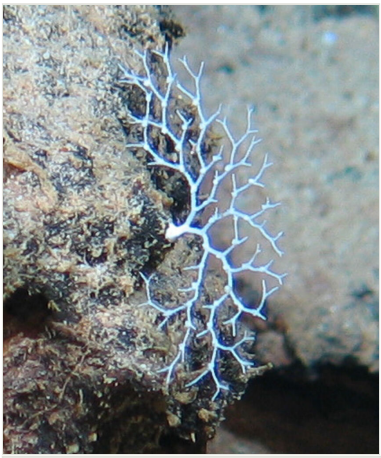

Figure 36. doi

Tessaradoma gen. inc. in situ within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Phylum Chordata Haeckel, 1874

Class Actinopterygii

Order Anguilliformes

Family Synaphobranchidae Johnson, 1862

Synaphobranchidae gen. indet.

Material

a. taxonConceptID: Synaphobranchidae gen. indet.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Anguilliformes; family: Synaphobranchidae; taxonRank: Family; scientificNameAuthorship: Johnson, 1862; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2479; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 10:09:43 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00220.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 37

Figure 37. doi

Synaphobranchidae gen. indet. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Histiobranchus* Gill, 1883

Histiobranchus gen. inc.

Material

a. taxonConceptID: *Histiobranchus* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Anguilliformes; family: Synaphobranchidae; taxonRank: Genus; genus: *Histiobranchus*; scientificNameAuthorship: Gill, 1883; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3025; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-27; eventTime: 9:47:09 am; year: 2015; fieldNumber: INDEX2015-37ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1905_00044.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 38

Figure 38. doi

Histiobranchus gen. inc. in situ within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Ilyophis* Gilbert, 1891

Synaphobranchidae Ilyophis brunneus fam. inc. Gilbert, 1891

Material

a. scientificName: ***Ilyophis brunneus***; taxonConceptID: Synaphobranchidae ***Ilyophis brunneus*** fam. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Anguilliformes; family: Synaphobranchidae; taxonRank: Species; genus: ***Ilyophis***; scientificNameAuthorship: Gilbert, 1891; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2498; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2013-12-05; eventTime: 10:02:51 am; year: 2013; fieldNumber: INDEX2013-28ROV; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-05_10-02-51_Sonne_INDEX2013-2_028ROV01_Logo.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 39

Figure 39. doi

Synaphobranchidae *Ilyophis brunneus* fam. inc. in situ within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Order Aulopiformes

Family Bathysauridae Fowler, 1944

Genus *Bathysaurus* Günther, 1878

Bathysaurus mollis sp. inc. Günther, 1878

Material

a. scientificName: *Bathysaurus mollis*; taxonConceptID: *Bathysaurus mollis* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Aulopiformes; family: Bathysauridae; taxonRank: Species; genus: *Bathysaurus*; scientificNameAuthorship: Günther, 1878; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3041; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-30; eventTime: 8:37:35 am; year: 2015; fieldNumber: INDEX2015-45ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1907_00295.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 40

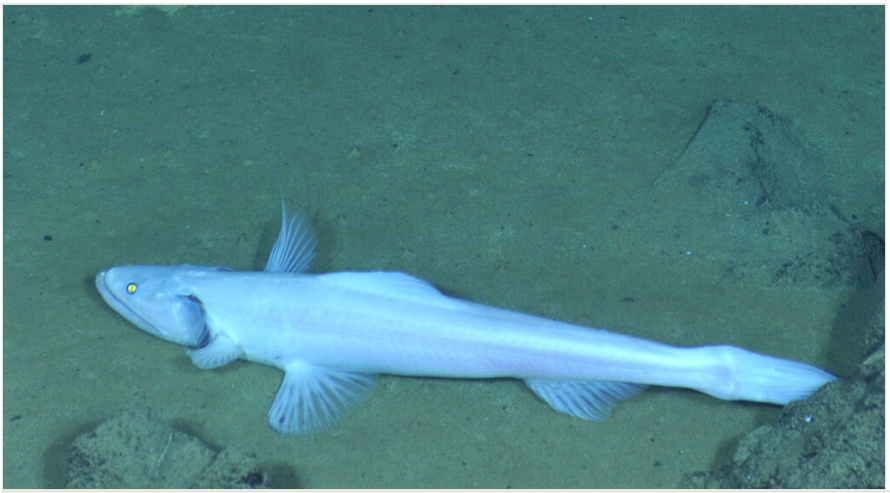

Figure 40. doi

Bathysaurus mollis sp. inc. in situ within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Ipnopidae Gill, 1884

Genus *Bathypterois* Günther, 1878

Bathypterois sp. indet.

Material

a. taxonConceptID: *Bathypterois* sp. indet.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Aulopiformes; family: Ipnopidae; taxonRank: Genus; genus: *Bathypterois*; scientificNameAuthorship: Günther, 1878; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3301; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2015-12-07; eventTime: 7:29:18 am; year: 2015; fieldNumber: INDEX2015-60ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1914_00197.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 41

Figure 41. doi

Bathypterois sp. indet. in situ in the Edmond-vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Ipnops* Günther, 1878

Ipnops agassizii sp. inc. Garman, 1899

Material

a. scientificName: *Ipnops agassizii*; taxonConceptID: *Ipnops agassizii* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Aulopiformes; family: Ipnopidae; taxonRank: Species; genus: *Ipnops*; scientificNameAuthorship: Garman, 1899; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3284; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8787; decimalLongitude: 69.6007; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-09; eventTime: 1:46:37 am; year: 2013; fieldNumber: INDEX2013-38MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 38MFT Fotos 2013-284.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 42

Figure 42. doi

Ipnops agassizii sp. inc. in situ close to the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Gadiformes

Family Macrouridae Bonaparte, 1831

Gadiformes Macrouridae ord. inc. (DZMB_2021_0010)

Material

a. taxonConceptID: Gadiformes Macrouridae ord. inc. (DZMB_2021_0010); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Family; scientificNameAuthorship: Bonaparte, 1831; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2544; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-11-21; eventTime: 6:23:52 am; year: 2018; fieldNumber: INDEX2018-59ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2093_00612.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 43

Figure 43. doi

Gadiformes Macrouridae ord. inc. (DZMB_2021_0010) in situ close to the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Gadiformes Macrouridae ord. inc. (DZMB_2021_0011)

Material

a. taxonConceptID: Gadiformes Macrouridae ord. inc. (DZMB_2021_0011); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Family; scientificNameAuthorship: Bonaparte, 1831; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2463; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 10:43:48 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00558.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 44

Figure 44. doi

Gadiformes Macrouridae ord. inc. (DZMB_2021_0011) in situ close to the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Coryphaenoides* Gunnerus, 1765

Coryphaenoides gen. inc. (DZMB_2021_0012)

Material

a. taxonConceptID: *Coryphaenoides* gen. inc. (DZMB_2021_0012); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Genus; genus: *Coryphaenoides*; scientificNameAuthorship: Gunnerus, 1765; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2922; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 5:20:34 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00005.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 45

Figure 45. doi

Coryphaenoides gen. inc. (DZMB_2021_0012) in situ within the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Coryphaenoides gen. inc. (DZMB_2021_0013)

Material

a. taxonConceptID: *Coryphaenoides* gen. inc. (DZMB_2021_0013); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Genus; genus: *Coryphaenoides*; scientificNameAuthorship: Gunnerus, 1765; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2462; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 7:23:30 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00403.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 46

Figure 46. doi

Coryphaenoides gen. inc. (DZMB_2021_0013) in situ close to the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Coryphaenoides armatus sp. inc. (Hector, 1875)

Material

a. scientificName: *Coryphaenoides armatus*; taxonConceptID: *Coryphaenoides armatus* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Species; genus: *Coryphaenoides*; scientificNameAuthorship: (Hector, 1875); waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2816; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-15; eventTime: 9:28:38 am; year: 2013; fieldNumber: INDEX2013-57ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: BGR/GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-15_09-28-38_Sonne_INDEX2013-2_057ROV09_Logo.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 47

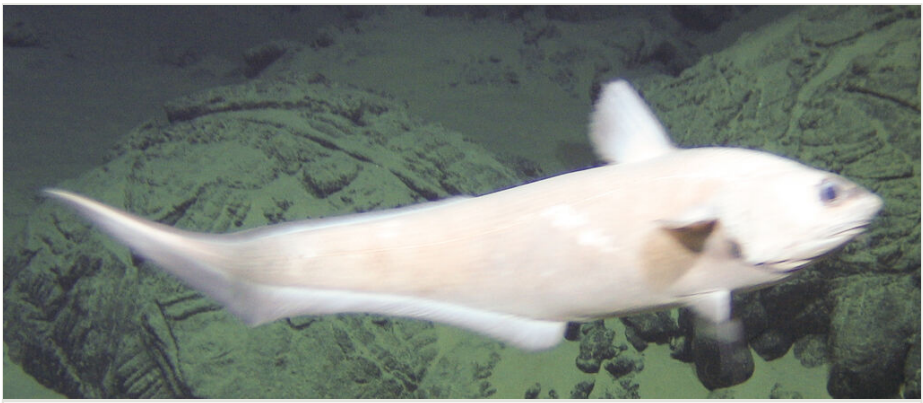

Figure 47. doi

Coryphaenoides armatus sp. inc. in situ within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Coryphaenoides longifilis sp. inc. Günther, 1877

Material

a. scientificName: *Coryphaenoides longifilis*; taxonConceptID: *Coryphaenoides longifilis* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Macrouridae; taxonRank: Species; genus: *Coryphaenoides*; scientificNameAuthorship: Günther, 1877; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2554; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2013-12-05; eventTime: 9:26:25 am; year: 2013; fieldNumber: INDEX2013-28ROV; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-05_09-26-25_Sonne_INDEX2013-2_028ROV01_Logo.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 48

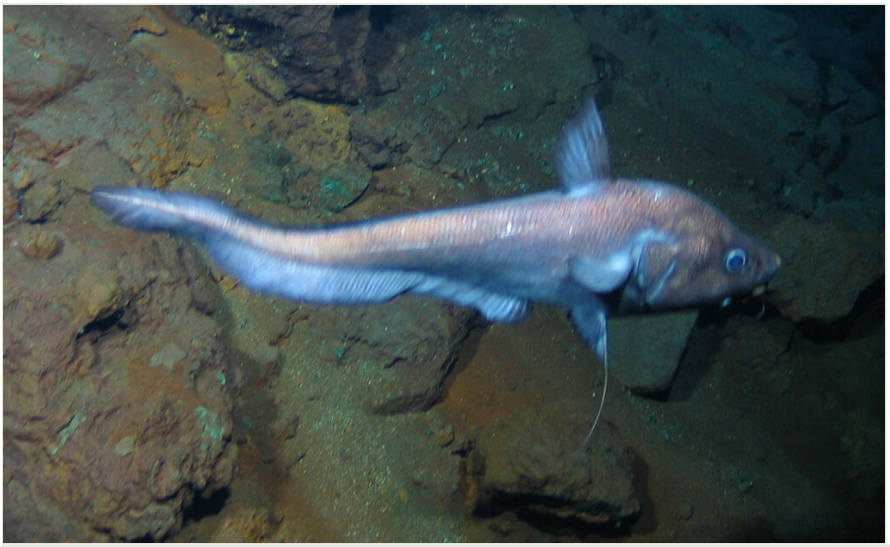

Figure 48. doi

Coryphaenoides longifilis sp. inc. in situ within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Family Moridae Moreau, 1881

Genus *Antimora* Günther, 1878

Antimora rostrata (Günther, 1878)

Material

a. scientificName: *Antimora rostrata*; taxonConceptID: *Antimora rostrata*; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Gadiformes; family: Moridae; taxonRank: Species; genus: *Antimora*; scientificNameAuthorship: (Günther, 1878); waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2281; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 12:22:53 pm; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00291.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 49

Figure 49. doi

Antimora rostrata in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Lophiiformes

Family Chaunacidae Gill, 1863

Genus *Chaunacops* Garman, 1899

Chaunacops gen. inc.

Material

a. taxonConceptID: *Chaunacops* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Lophiiformes; family: Chaunacidae; taxonRank: Genus; genus: *Chaunacops*; scientificNameAuthorship: Garman, 1899; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2922; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 6:55:14 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00051.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 50

Figure 50. doi

Chaunacops gen. inc. in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Notacanthiformes L. S. Berg, 1947

Notacanthiformes ord. inc.

Material

a. taxonConceptID: Notacanthiformes ord. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Notacanthiformes; taxonRank: Order; scientificNameAuthorship: L. S. Berg, 1947; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3252; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8769; decimalLongitude: 69.6009; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-10; eventTime: 10:41:13 pm; year: 2013; fieldNumber: INDEX2013-44MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 44MFT Fotos 2013-298.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 51

Figure 51. doi

Notacanthiformes ord. inc. in situ in the surrounding area of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Halosauridae Günther, 1868

Genus *Aldrovandia* Goode & Bean, 1896

Aldrovandia affinis gen. inc. (Günther, 1877)

Material

a. scientificName: ***Aldrovandia affinis***; taxonConceptID: ***Aldrovandia affinis*** gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Notacanthiformes; family: Halosauridae; taxonRank: Species; genus: ***Aldrovandia***; scientificNameAuthorship: (Günther, 1877); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2494; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 10:02:00 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00204.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 52

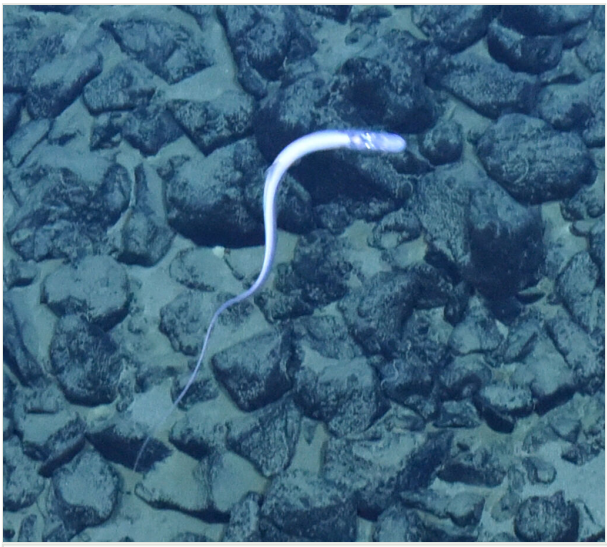

Figure 52. doi

Aldrovandia affinis gen. inc. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Halosauropsis* Collett, 1896

Halosauropsis macrochir gen. inc. (Günther, 1878)

Material

a. scientificName: *Halosauropsis macrochir*; taxonConceptID: *Halosauropsis macrochir* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Notacanthiformes; family: Halosauridae; taxonRank: Species; genus: *Halosauropsis*; scientificNameAuthorship: (Günther, 1878); waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2431; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 9:26:58 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00196.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 53

Figure 53. doi

Halosauropsis macrochir gen. inc. in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Ophidiiformes

Family Ophidiidae Rafinesque, 1810

Ophidiidae gen. indet. (DZMB_2021_0014)

Material

a. taxonConceptID: Ophidiidae gen. indet. (DZMB_2021_0014); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Family; scientificNameAuthorship: Rafinesque, 1810; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2347; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 6:17:39 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00050.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 54

Figure 54. doi

Ophidiidae gen. indet. (DZMB_2021_0014) in situ close to the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Ophidiidae gen. indet. (DZMB_2021_0015)

Material

a. taxonConceptID: Ophidiidae gen. indet. (DZMB_2021_0015); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Family; scientificNameAuthorship: Rafinesque, 1810; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2415; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 6:11:25 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00080.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 55

Figure 55. doi

Ophidiidae gen. indet. (DZMB_2021_0015) in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Ophidiidae fam. inc. (DZMB_2021_0016)

Material

a. taxonConceptID: Ophidiidae fam. inc. (DZMB_2021_0016); kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Family; scientificNameAuthorship: Rafinesque, 1810; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2687; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2016-01-09; eventTime: 12:15:10 pm; year: 2016; fieldNumber: INDEX2016-02ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160109121510914_02_1080i Kopie.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 56

Figure 56. doi

Ophidiidae fam. inc. (DZMB_2021_0016) in situ in the surrounding area of the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Acanthonus* Günther, 1878

Acanthonus armatus gen. inc. Günther, 1878

Material

a. scientificName: *Acanthonus armatus*; taxonConceptID: *Acanthonus armatus* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Species; genus: *Acanthonus*; scientificNameAuthorship: Günther, 1878; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2544; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-11-21; eventTime: 6:20:48 am; year: 2018; fieldNumber: INDEX2018-59ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2093_00611.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 57

Figure 57. doi

Acanthonus armatus gen. inc. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Barathrites* Zugmayer, 1911

Barathrites iris sp. inc. Zugmayer, 1911

Material

a. scientificName: *Barathrites iris*; taxonConceptID: *Barathrites iris* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Species; genus: *Barathrites*; scientificNameAuthorship: Zugmayer, 1911; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3039; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-02; eventTime: 7:57:31 am; year: 2015; fieldNumber: INDEX2015-49ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1909_00549.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 58

Figure 58. doi

Barathrites iris gen. inc. in situ within the vent site 1 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Bassozetus* Gill, 1883

Bassozetus gen. inc.

Material

a. taxonConceptID: *Bassozetus* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Genus; genus: *Bassozetus*; scientificNameAuthorship: Gill, 1883; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3314; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2015-12-06; eventTime: 11:05:00 am; year: 2015; fieldNumber: INDEX2015-58ROV; fieldNotes: 1.9°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1913_01969.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 59

Figure 59. doi

Bassozetus gen. inc. in situ in the Edmond-vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Spectrunculus* Jordan & Thompson, 1914

Spectrunculus crassus sp. inc. (Vaillant, 1888)

Material

a. scientificName: *Spectrunculus crassus*; taxonConceptID: *Spectrunculus crassus* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Species; genus: *Spectrunculus*; scientificNameAuthorship: (Vaillant, 1888); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2462; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 10:27:36 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2096_00237.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 60

Figure 60. doi

Spectrunculus crassus sp. inc. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Spectrunculus grandis sp. inc. (Günther, 1877)

Material

a. scientificName: *Spectrunculus grandis*; taxonConceptID: *Spectrunculus grandis* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Species; genus: *Spectrunculus*; scientificNameAuthorship: (Günther, 1877); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2896; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2018-12-01; eventTime: 6:36:14 am; year: 2018; fieldNumber: INDEX2018-80ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2102_00053.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 61

Figure 61. doi

Spectrunculus grandis sp. inc. in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Xyelacyba* Cohen, 1961

Xyelacyba myersi gen. inc. Cohen, 1961

Material

a. scientificName: *Xyelacyba myersi*; taxonConceptID: *Xyelacyba myersi* gen. inc.; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Ophidiiformes; family: Ophidiidae; taxonRank: Species; genus: *Xyelacyba*; scientificNameAuthorship: Cohen, 1961; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2304; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 5:10:56 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00024.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 62

Figure 62. doi

Xyelacyba myersi gen. inc. in situ in the area of the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Perciformes

Family Zoarcidae Swainson, 1839

Genus *Pachycara* Zugmayer, 1911

Pachycara angeloi Thiel, Knebelsberger, Kihara & Gerdes, 2021

Material

a. scientificName: *Pachycara angeloi*; taxonConceptID: *Pachycara angeloi*; taxonID: I18_1240; kingdom: Animalia; phylum: Chordata; class: Actinopterygii; order: Perciformes; family: Zoarcidae; taxonRank: Species; genus: *Pachycara*; scientificNameAuthorship: Thiel, Knebelsberger, Kihara & Gerdes, 2021; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2908; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-28; eventTime: 10:53:01 am; year: 2018; fieldNumber: INDEX2018-73ROPOS; fieldNotes: 1.7°C, 34.8 ppt; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2100_00194.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Thomas D. Linley; identificationRemarks: Identified by morphology and DNA of collected specimen; language: en; institutionCode: DZMB; collectionCode: I18_073RO_SG1_001; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 63

Figure 63. doi

Pachycara angeloi in situ (a) and sampled specimen (b) within the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Ascidiacea Blainville, 1824

Order Phlebobranchia Lahille, 1886

Family Octacnemidae

Octacnemidae gen. indet.

Material

a. taxonConceptID: Octacnemidae gen. indet.; kingdom: Animalia; phylum: Chordata; class: Ascidiacea; order: Phlebobranchia; family: Octacnemidae; taxonRank: Family; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2839; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-12-16; eventTime: 6:40:29 am; year: 2013; fieldNumber: INDEX2013-59ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-16_06-40-29_Sonne_INDEX2013-2_059ROV10_Logo.jpg; identifiedBy: Karen Sanamyan; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 64

Figure 64. doi

Octacnemidae gen. indet. in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Order Stoliobranchia Lahille, 1886

Family Pyuridae Hartmeyer, 1908

Genus *Culeolus* Herdman, 1881

Culeolus spp. indet.

Material

a. taxonConceptID: *Culeolus* spp. indet.; kingdom: Animalia; phylum: Chordata; class: Ascidiacea; order: Stolidobranchia; family: Pyuridae; taxonRank: Genus; genus: *Culeolus*; scientificNameAuthorship: Herdman, 1881; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2508; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-04; eventTime: 8:09:09 am; year: 2018; fieldNumber: INDEX2018-85ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2104_00106.jpg; identifiedBy: Karen Sanamyan; identificationRemarks: Identified only from imagery; identificationQualifier: spp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 65

Figure 65. doi

Culeolus sp. indet. in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. The individual is an example for the species complex *Culeolus* spp. indet., with more images and entries in the supplementary imagery and data table. Image corresponds with the data (Image attribution: BGR).

Class Elasmobranchii

Order Rajiformes

Family Arhynchobatidae Fowler, 1934

Genus *Bathyraja* Ishiyama, 1958

Bathyraja tunae sp. inc. Stehmann, 2005

Material

a. scientificName: *Bathyraja tunae*; taxonConceptID: *Bathyraja tunae* sp. inc.; kingdom: Animalia; phylum: Chordata; class: Elasmobranchii; order: Rajiformes; family: Arhynchobatidae; taxonRank: Species; genus: *Bathyraja*; scientificNameAuthorship: Stehmann, 2005; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2482; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 10:16:47 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.8°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00207.jpg; identifiedBy: Thomas D. Linley; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 66

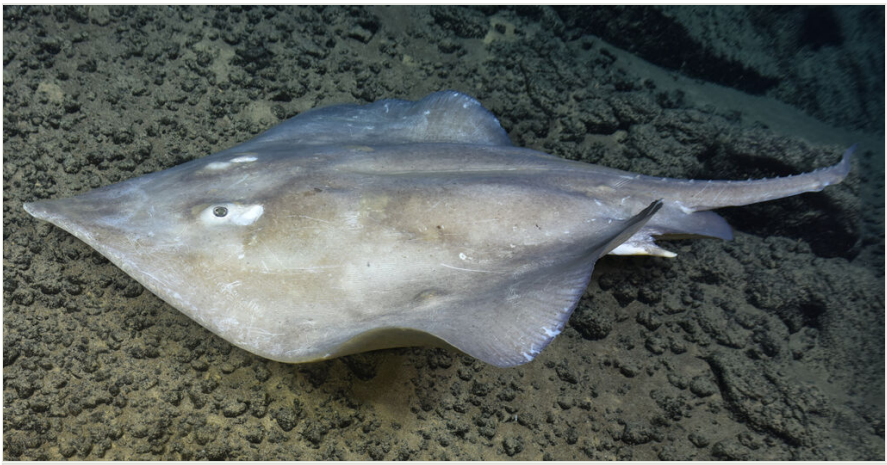

Figure 66. doi

Bathyraja tunae sp. inc. in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Cnidaria Hatschek, 1888

Cnidaria cl. indet.

Material

a. taxonConceptID: Cnidaria cl. indet.; kingdom: Animalia; phylum: Cnidaria; class: -; order: -; family: -; taxonRank: Phylum; genus: -; scientificNameAuthorship: Hatschek, 1888; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 6; maximumDepthInMeters: 3582; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2014-12-04; eventTime: 1:11:00 am; year: 2014; fieldNumber: INDEX2014-55VS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141204011100792.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: cl. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 67

Figure 67. doi

Cnidaria cl. indet. in situ at the South East Indian Ridge in Cluster 6 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Anthozoa Ehrenberg, 1834

Subclass Ceriantharia Perrier, 1893

Ceriantharia ord. indet.

Material

a. taxonConceptID: Ceriantharia ord. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: -; family: -; taxonRank: Subclass; genus: -; scientificNameAuthorship: Perrier, 1893; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2148; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2016-01-11; eventTime: 6:55:33 am; year: 2016; fieldNumber: INDEX2016-06ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160111221731A Kopie.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 68

Figure 68. doi

Ceriantharia ord. indet. in situ at the Rodriguez Triple Junction within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Spirularia den Hartog, 1977

Spirularia fam. indet.

Material

a. taxonConceptID: Spirularia fam. indet.; taxonID: I15_191; scientificNameID: -; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Spirularia; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: den Hartog, 1977; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3223; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; decimalLatitude: -23.9206; decimalLongitude: 69.6157; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2015-12-07; eventTime: 6:25:26 am; year: 2015; fieldNumber: INDEX2015-60ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1914_00139.jpg; associatedSequences: COI; identifiedBy: Tina Molodtsova; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; collectionCode: I15_60RO_S_2; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 69

Figure 69. doi

Spirularia fam. indet. in situ at the Central Indian Ridge in the Edmond-Vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Actiniaria Hertwig, 1882

Actiniaria fam. indet. (DZMB_2021_0017)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0017); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3220; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2015-12-05; eventTime: 10:48:55 am; year: 2015; fieldNumber: INDEX2015-56ROV; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1912_01544.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 70

Figure 70. doi

Actiniaria fam. indet. (DZMB_2021_0017) in situ at the Central Indian Ridge in the Edmond-Vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data below (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0018)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0018); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 11; maximumDepthInMeters: 2899; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.2565; decimalLongitude: 72.7243; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-24; eventTime: 3:26:59 pm; year: 2017; fieldNumber: INDEX2017-83STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_4539.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 71

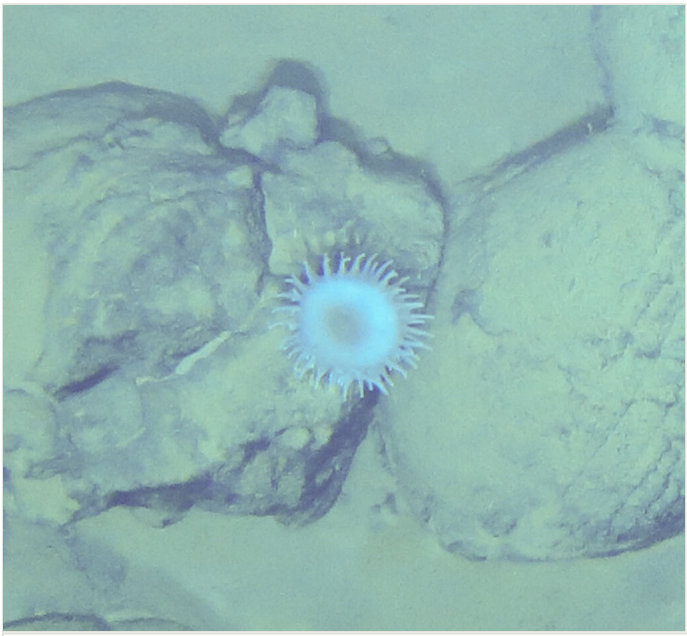

Figure 71. doi

Actiniaria fam. indet. (DZMB_2021_0018) in situ at the South East Indian Ridge in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0019)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0019); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3048; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-02; eventTime: 7:31:44 am; year: 2015; fieldNumber: INDEX2015-49ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1909_00494-4.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 72

Figure 72. doi

Actiniaria fam. indet. (DZMB_2021_0019) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0020)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0020); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3065; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-01; eventTime: 6:22:02 am; year: 2015; fieldNumber: INDEX2015-47ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1908_00374.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 73

Figure 73. doi

Actiniaria fam. indet. (DZMB_2021_0020) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0021)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0021); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3301; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8763; decimalLongitude: 69.5966; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-09; eventTime: 12:20:26 am; year: 2013; fieldNumber: INDEX2013-38MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 38MFT Fotos 2013-9.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 74

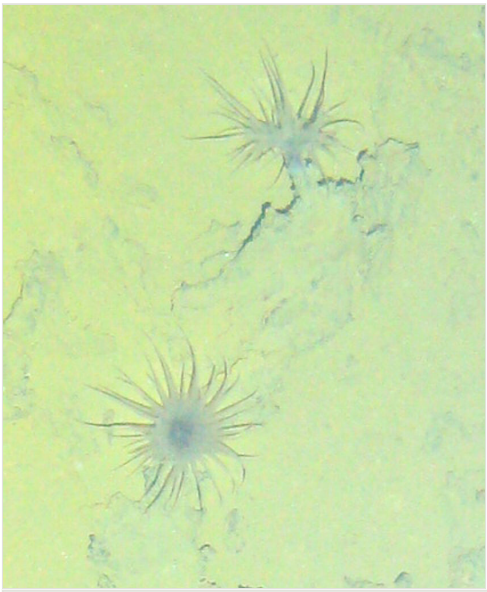

Figure 74. doi

Actiniaria fam. indet. (DZMB_2021_0021) in situ at the Central Indian Ridge within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0022)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0022); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 11; maximumDepthInMeters: 2859; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.2462; decimalLongitude: 72.7151; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-24; eventTime: 1:39:04 pm; year: 2017; fieldNumber: INDEX2017-83STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt/ sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_3346.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 75

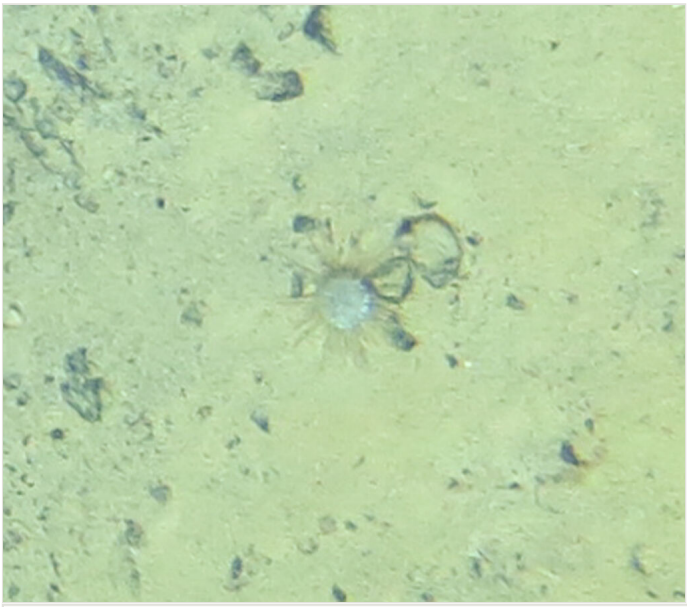

Figure 75. doi

Actiniaria fam. indet. (DZMB_2021_0022) in situ at the South East Indian Ridge in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0023)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0023); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3311; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8764; decimalLongitude: 69.5969; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-09; eventTime: 12:27:34 am; year: 2013; fieldNumber: INDEX2013-38MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt/ sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 38MFT Fotos 2013-31.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 76

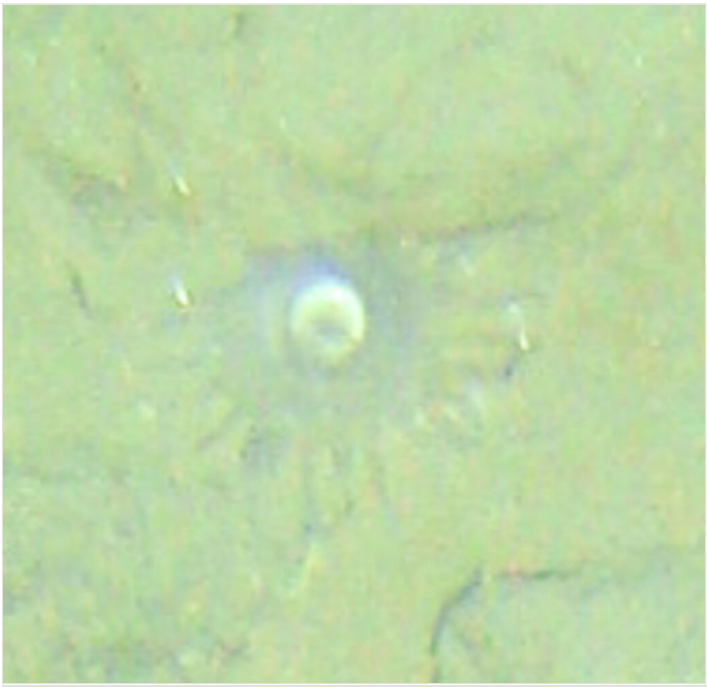

Figure 76. doi

Actiniaria fam. indet. (DZMB_2021_0023) in situ at the Central Indian Ridge within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0024)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0024); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3327; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8792; decimalLongitude: 69.5965; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-09; eventTime: 2:57:30 am; year: 2013; fieldNumber: INDEX2013-38MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 38MFT Fotos 2013-471-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 77

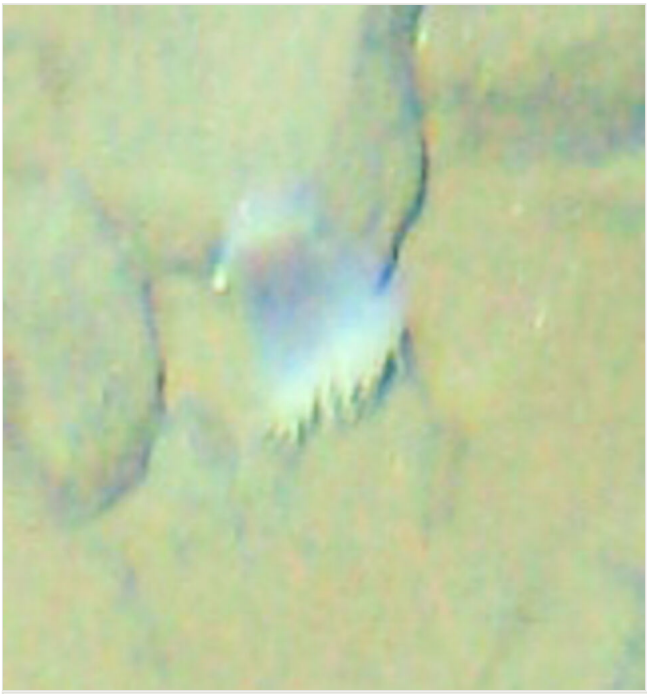

Figure 77. doi

Actiniaria fam. indet. (DZMB_2021_0024) in situ at the Central Indian Ridge within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actiniaria fam. indet. (DZMB_2021_0025)

Material

a. taxonConceptID: Actiniaria fam. indet. (DZMB_2021_0025); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Hertwig, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3024; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-29; eventTime: 9:13:39 am; year: 2015; fieldNumber: INDEX2015-43ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides/ basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1906_00149-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 78

Figure 78. doi

Actiniaria fam. indet. (DZMB_2021_0025) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Actinoscyphiidae Stephenson, 1920

Actinoscyphiidae gen. indet. (DZMB_2021_0026)

Material

a. taxonConceptID: Actinoscyphiidae gen. indet. (DZMB_2021_0026); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinoscyphiidae; taxonRank: Family; genus: -; scientificNameAuthorship: Stephenson, 1920; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3035; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-29; eventTime: 8:51:41 am; year: 2015; fieldNumber: INDEX2015-43ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1906_00140-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 79

Figure 79. doi

Actinoscyphiidae gen. indet. (DZMB_2021_0026) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actinoscyphiidae gen. indet. (DZMB_2021_0027)

Material

a. taxonConceptID: Actinoscyphiidae gen. indet. (DZMB_2021_0027); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinoscyphiidae; taxonRank: Family; genus: -; scientificNameAuthorship: Stephenson, 1920; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2386; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 7:10:30 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Attached to coral stalk; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00100-2.jpg; associatedOccurrences: Isididae *Acanella* gen. inc.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 80

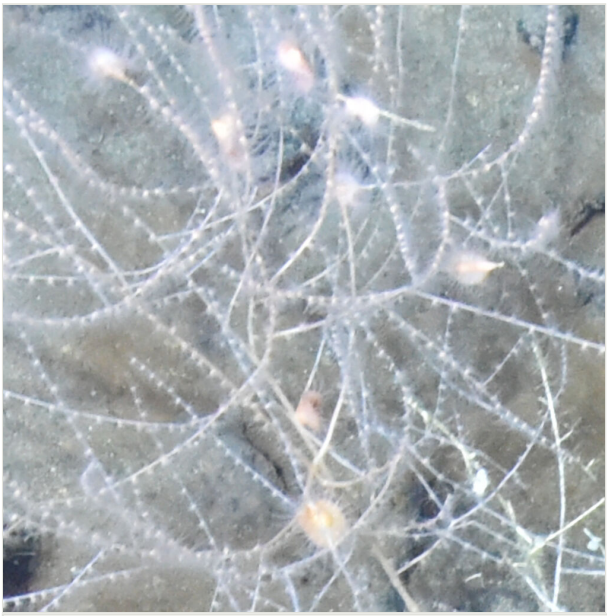

Figure 80. doi

Actinoscyphiidae gen. indet. (DZMB_2021_0027) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Actinoscyphia* Stephenson, 1920

Actinoscyphia sp. indet.

Material

a. taxonConceptID: ***Actinoscyphia*** sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinoscyphiidae; taxonRank: Genus; genus: ***Actinoscyphia***; scientificNameAuthorship: Stephenson, 1920; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2661; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 9:21:20 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Attached to coral stalk; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00314-2.jpg; associatedOccurrences: Isididae ***Keratoisis*** gen. inc.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 81

Figure 81. doi

Actinoscyphia sp. indet. in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Actinostolidae Carlgren, 1932

Actinostolidae gen. indet.

Material

a. taxonConceptID: Actinostolidae gen. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinostolidae; taxonRank: Family; genus: -; scientificNameAuthorship: Carlgren, 1932; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2485; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 11:37:11 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00308.jpg; associatedOccurrences: Polynoidae gen. indet. (commensal); identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 82

Figure 82. doi

Actinostolidae gen. indet. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Actinostola* Verrill, 1883

Actinostola sp. indet. (DZMB_2021_0028)

Material

a. taxonConceptID: *Actinostola* sp. indet. (DZMB_2021_0028); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinostolidae; taxonRank: Genus; genus: *Actinostola*; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2991; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2018-12-01; eventTime: 8:42:41 am; year: 2018; fieldNumber: INDEX2018-80ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2102_00166.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 83

Figure 83. doi

Actinostola sp. indet. (DZMB_2021_0028) in situ at the South East Indian Ridge within Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actinostola sp. indet. (DZMB_2021_0029)

Material

a. taxonConceptID: *Actinostola* sp. indet. (DZMB_2021_0029); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinostolidae; taxonRank: Genus; genus: *Actinostola*; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2910; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-28; eventTime: 6:11:14 am; year: 2018; fieldNumber: INDEX2018-73ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2100_00020.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery - burrowing morphotype; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 84

Figure 84. doi

Actinostola sp. indet. (DZMB_2021_0029) in situ at the South East Indian Ridge within the Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actinostola sp. indet. (DZMB_2021_0030)

Material

a. taxonConceptID: *Actinostola* sp. indet. (DZMB_2021_0030); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinostolidae; taxonRank: Genus; genus: *Actinostola*; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3023; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-29; eventTime: 8:40:12 am; year: 2015; fieldNumber: INDEX2015-43ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1906_00139.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 85

Figure 85. doi

Actinostola sp. indet. (DZMB_2021_0030) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Actinostola sp. indet. (DZMB_2021_0031)

Material

a. taxonConceptID: *Actinostola* sp. indet. (DZMB_2021_0031); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Actinostolidae; taxonRank: Genus; genus: *Actinostola*; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2408; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-27; eventTime: 9:16:09 am; year: 2017; fieldNumber: INDEX2017-94STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt/ sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_5410.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 86

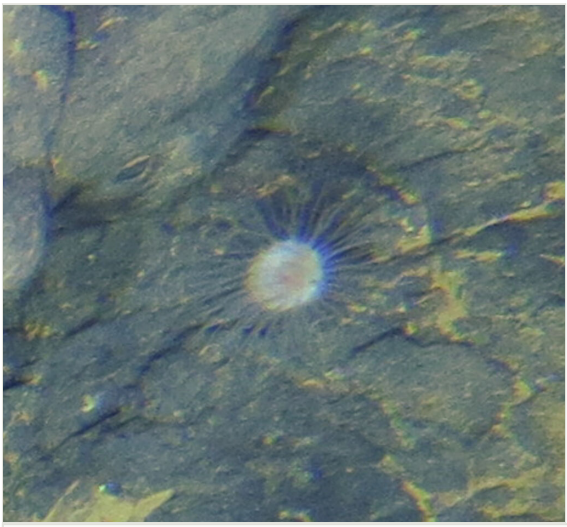

Figure 86. doi

Actinostola sp. indet. (DZMB_2021_0031) in situ at the South East Indian Ridge within Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Bathyphellidae Carlgren, 1932

Genus *Bathyphellia* Carlgren, 1932

Bathyphellia sp. indet. (DZMB_2021_0032)

Material

a. taxonConceptID: *Bathyphellia* sp. indet. (DZMB_2021_0032); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Bathyphelliidae; taxonRank: Genus; genus: *Bathyphellia*; scientificNameAuthorship: Carlgren, 1932; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 11; maximumDepthInMeters: 2784; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.2562; decimalLongitude: 72.7216; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-25; eventTime: 3:51:39 am; year: 2017; fieldNumber: INDEX2017-86STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_5093.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 87

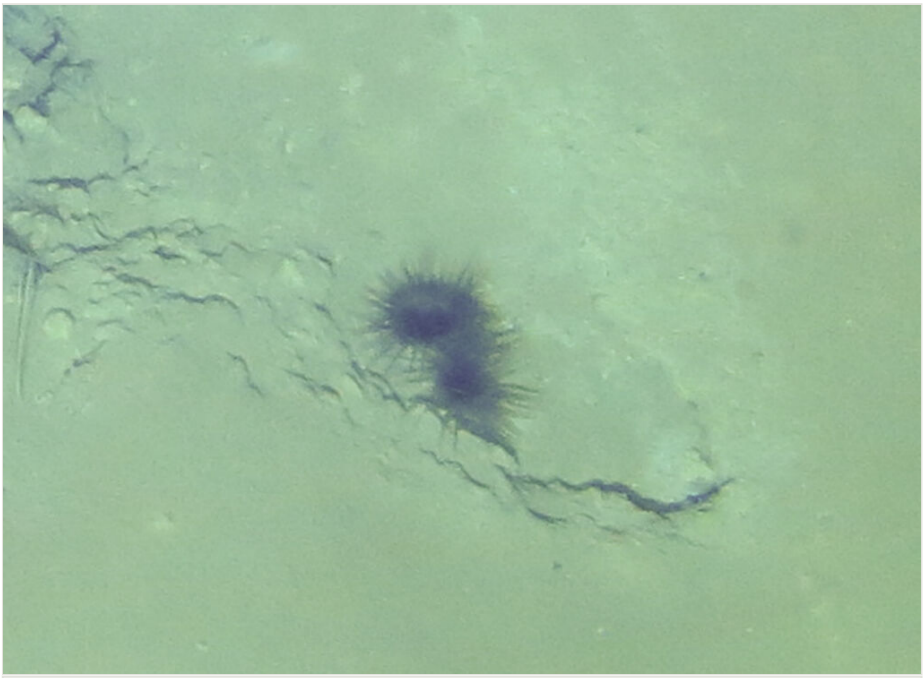

Figure 87. doi

Bathyphellia sp. indet. (DZMB_2021_0032) in situ at the South East Indian Ridge in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Bathyphellia sp. indet. (DZMB_2021_0033)

Material

a. taxonConceptID: *Bathyphellia* sp. indet. (DZMB_2021_0033); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Bathyphelliidae; taxonRank: Genus; genus: *Bathyphellia*; scientificNameAuthorship: Carlgren, 1932; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2920; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-27; eventTime: 9:16:42 am; year: 2017; fieldNumber: INDEX2017-94STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 3; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_5423.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 88

Figure 88. doi

Bathyphellia sp. indet. (DZMB_2021_0033) in situ at the South East Indian Ridge within Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Hormathiidae Carlgren, 1932

Genus *Chondrophellia* Carlgren, 1925

Chondrophellia sp. indet.

Material

a. taxonConceptID: *Chondrophellia* sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Hormathiidae; taxonRank: Genus; genus: *Chondrophellia*; scientificNameAuthorship: Carlgren, 1925; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3049; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-02; eventTime: 7:40:38 am; year: 2015; fieldNumber: INDEX2015-49ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1909_00519.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 89

Figure 89. doi

Chondrophellia sp. indet. in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Kadosactinidae Riemann-Zürneck, 1991

Genus *Maractis* Fautin & Barber, 1999

Maractis sp. indet.

Material

a. taxonConceptID: *Maractis* sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Kadosactinidae; taxonRank: Genus; genus: *Maractis*; scientificNameAuthorship: Fautin & Barber, 1999; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2446; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2013-12-06; eventTime: 8:13:55 am; year: 2013; fieldNumber: INDEX2013-31ROV; fieldNotes: 1.8°C, 34.6 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides/ basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-06_08-13-55_Sonne_INDEX2013-2_031ROV02_Logo-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Preserved Specimen

Notes: Fig. 90

Figure 90. doi

Maractis sp. indet. in situ at the Rodriguez Triple Junction within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Relicanthidae Rodríguez & Daly, 2014

Genus *Relicanthus* Rodriguez & Daly, 2014

Relicanthus daphneae sp. inc. (Daly, 2006)

Material

a. scientificName: *Relicanthus daphneae*; taxonConceptID: *Relicanthus daphneae* sp. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Actiniaria; family: Relicanthidae; taxonRank: Species; genus: *Relicanthus*; scientificNameAuthorship: (Daly, 2006); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 3005; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-27; eventTime: 7:48:41 am; year: 2017; fieldNumber: INDEX2017-94STR; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_3341.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 91

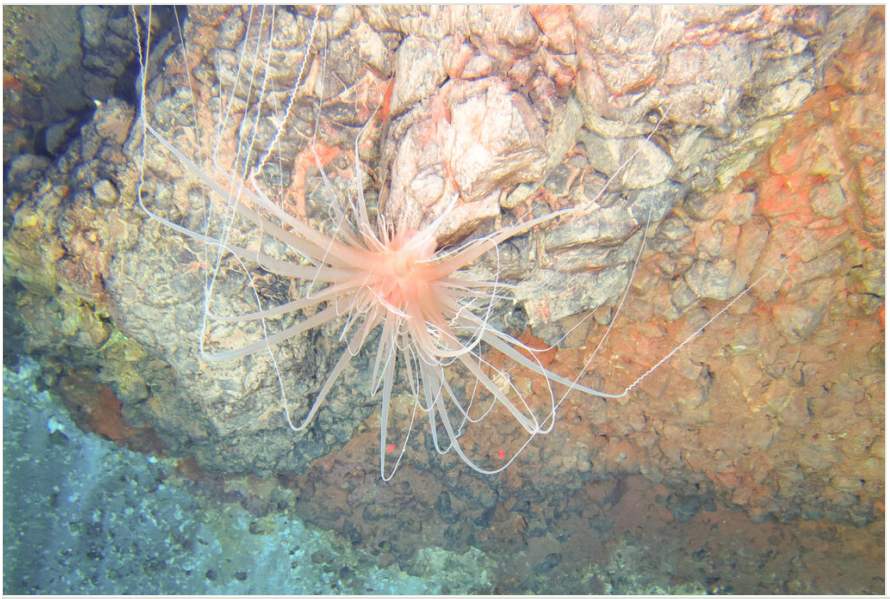

Figure 91. doi

Relicanthus daphneae sp. inc. in situ at the South East Indian Ridge within Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Alcyonacea Lamouroux, 1812

Alcyonacea fam. indet.

Material

a. taxonConceptID: Alcyonacea fam. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2824; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-15; eventTime: 7:35:33 am; year: 2013; fieldNumber: INDEX2013-57ROV; fieldNotes: 1.8°C, 34.5 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-15_07-35-33_Sonne_INDEX2013-2_057ROV09_Logo-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 92

Figure 92. doi

Alcyonacea fam. indet. in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Alcyoniidae Lamouroux, 1812

Genus *Anthomastus* Verrill, 1878

Anthomastus gen. inc.

Material

a. taxonConceptID: Alcyonacea *Anthomastus* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; taxonRank: Genus; genus: *Anthomastus*; scientificNameAuthorship: Verrill, 1878; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2361; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-11-21; eventTime: 9:20:48 am; year: 2018; fieldNumber: INDEX2018-59ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt/sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2093_00822.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 93

Figure 93. doi

Alcyonacea *Anthomastus* gen. inc. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Anthomastus sp. indet.

Material

a. taxonConceptID: ***Anthomastus*** sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Alcyoniidae; taxonRank: Genus; genus: ***Anthomastus***; scientificNameAuthorship: Verrill, 1878; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2826; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-15; eventTime: 8:18:40 am; year: 2013; fieldNumber: INDEX2013-57ROV; fieldNotes: 1.8°C, 34.5 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-15_08-18-40_Sonne_INDEX2013-2_057ROV09_Logo-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 94

Figure 94. doi

Anthomastus sp. indet. in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR/ GEOMAR).

Family Chrysogorgiidae Verrill, 1883

Genus *Chrysogorgia* Duchassaing & Michelotti, 1864

Chrysogorgia sp. indet. (DZMB_2021_0034)

Material

a. taxonConceptID: *Chrysogorgia* sp. indet. (DZMB_2021_0034); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Chrysogorgiidae; taxonRank: Genus; genus: *Chrysogorgia*; scientificNameAuthorship: Duchassaing & Michelotti, 1864; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2817; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-12-16; eventTime: 6:53:32 am; year: 2013; fieldNumber: INDEX2013-59ROV; fieldNotes: 1.8°C, 34.5 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-16_06-53-32_Sonne_INDEX2013-2_059ROV10_Logo.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 95

Figure 95. doi

Chrysogorgia sp. indet. (DZMB_2021_0034) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR/ GEOMAR).

Chrysogorgia sp. indet. (DZMB_2021_0035)

Material

a. taxonConceptID: *Chrysogorgia* sp. indet. (DZMB_2021_0035); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Chrysogorgiidae; taxonRank: Genus; genus: *Chrysogorgia*; scientificNameAuthorship: Duchassaing & Michelotti, 1864; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2828; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-12-17; eventTime: 12:37:23 pm; year: 2013; fieldNumber: INDEX2013-62ROV; fieldNotes: 1.8°C, 34.4 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-17_12-37-23_Sonne_INDEX2013-2_062ROV11_Logo-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 96

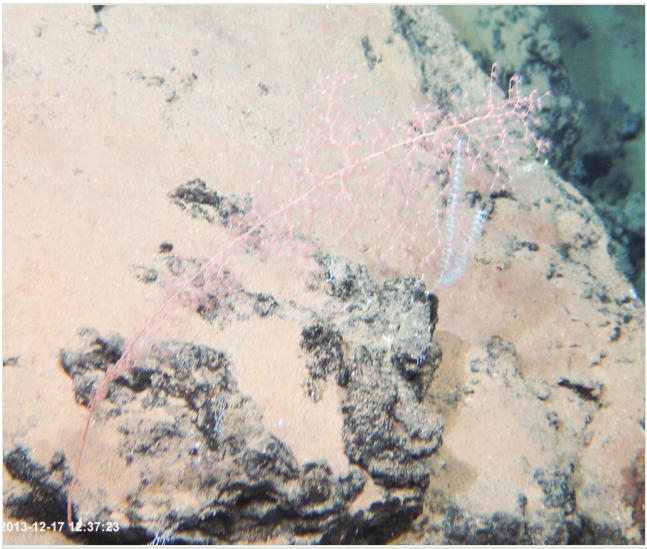

Figure 96. doi

Chrysogorgia sp. indet. (DZMB_2021_0035) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR/ GEOMAR).

Genus *Iridogorgia* Verrill, 1883

Iridogorgia magnispiralis sp. inc. Watling, 2007

Material

a. scientificName: *Iridogorgia magnispiralis*; taxonConceptID: *Iridogorgia magnispiralis* sp. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Chrysogorgiidae; taxonRank: Species; genus: *Iridogorgia*; scientificNameAuthorship: Watling, 2007; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2461; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 6:33:26 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00358.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 97

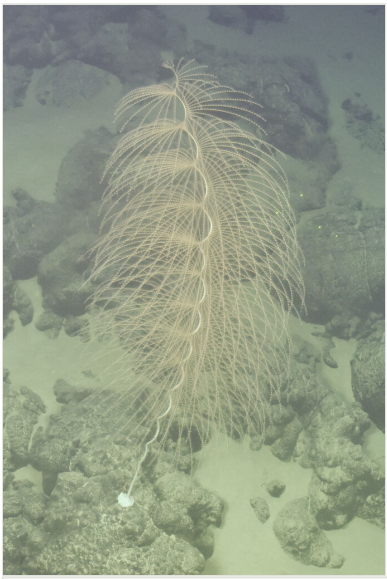

Figure 97. doi

Iridogorgia magnispiralis sp. inc. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Clavulariidae Hickson, 1894

Clavulariidae gen. indet. (DZMB_2021_0036)

Material

a. taxonConceptID: Clavulariidae gen. indet. (DZMB_2021_0036); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Clavulariidae; taxonRank: Family; genus: -; scientificNameAuthorship: Hickson, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3048; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-02; eventTime: 6:51:26 am; year: 2015; fieldNumber: INDEX2015-49ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides/ basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1909_00483-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 98

Figure 98. doi

Clavulariidae gen. indet. (DZMB_2021_0036) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Clavulariidae gen. indet. (DZMB_2021_0037)

Material

a. taxonConceptID: Clavulariidae gen. indet. (DZMB_2021_0037); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Clavulariidae; taxonRank: Family; genus: -; scientificNameAuthorship: Hickson, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2830; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3799; decimalLongitude: 69.2352; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 6:34:34 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides/ basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-365.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 99

Figure 99. doi

Clavulariidae gen. indet. (DZMB_2021_0037) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Clavulariidae fam. inc. (DZMB_2021_0038)

Material

a. taxonConceptID: Clavulariidae fam. inc. (DZMB_2021_0038); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Clavulariidae; taxonRank: Family; genus: -; scientificNameAuthorship: Hickson, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2799; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3878; decimalLongitude: 69.2403; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 4:30:29 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-200.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 100

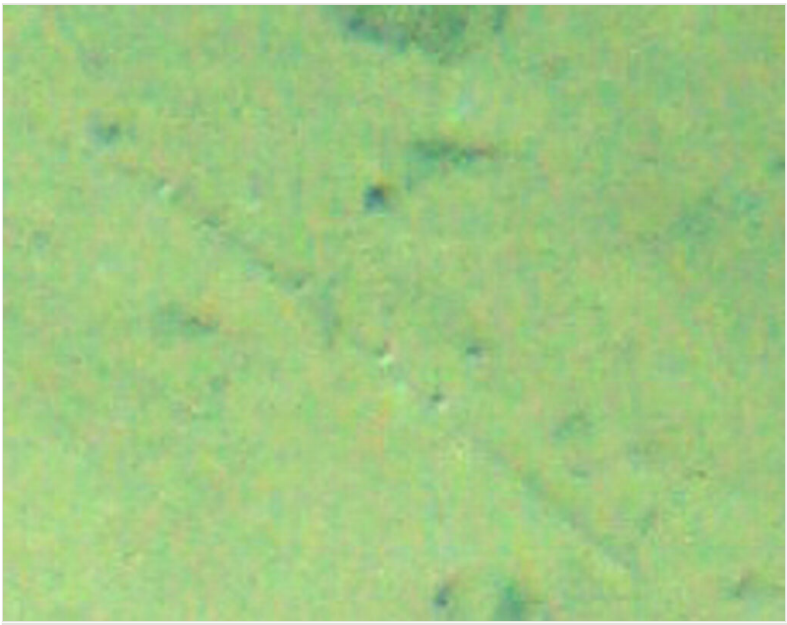

Figure 100. doi

Clavulariidae fam. inc. (DZMB_2021_0038) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Clavulariidae fam. inc. (DZMB_2021_0039)

Material

a. taxonConceptID: Clavulariidae fam. inc. (DZMB_2021_0039); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Clavulariidae; taxonRank: Family; genus: -; scientificNameAuthorship: Hickson, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3046; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-02; eventTime: 7:32:34 am; year: 2015; fieldNumber: INDEX2015-49ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1909_00497.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 101

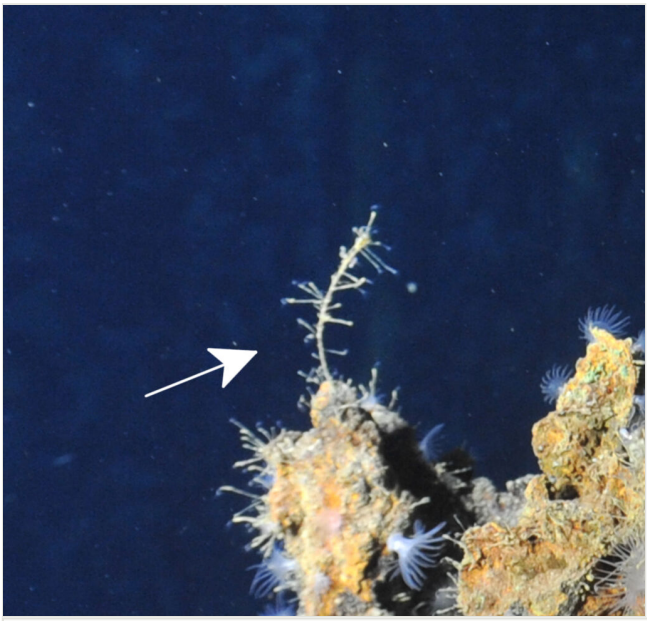

Figure 101. doi

Clavulariidae fam. inc. (DZMB_2021_0039) in situ at the Central Indian Ridge within Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Isididae Lamouroux, 1812

Isididae gen. indet. (DZMB_2021_0040)

Material

a. taxonConceptID: Isididae gen. indet. (DZMB_2021_0040); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2481; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 10:50:56 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2096_00254.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 102

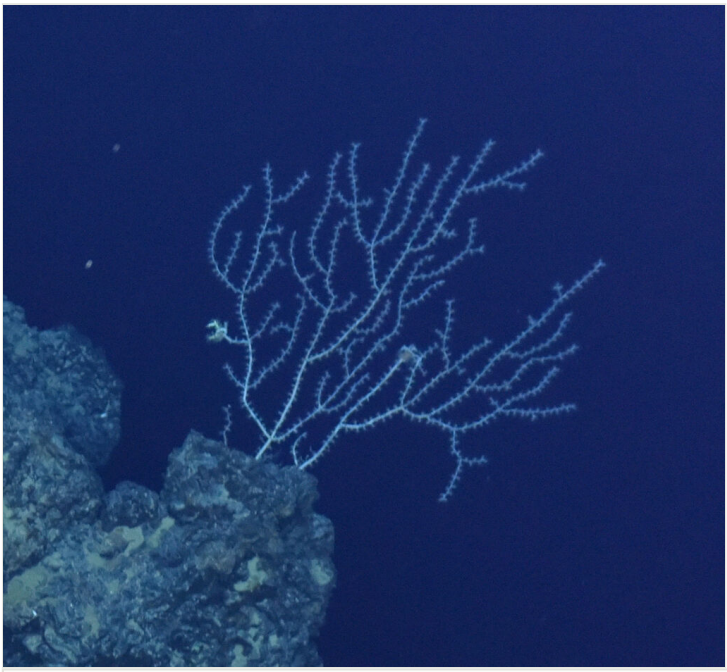

Figure 102. doi

Isididae gen. indet. (DZMB_2021_0040) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae gen. indet. (DZMB_2021_0041)

Material

a. taxonConceptID: Isididae gen. indet. (DZMB_2021_0041); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2465; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 12:20:38 pm; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00602.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 103

Figure 103. doi

Isididae gen. indet. (DZMB_2021_0041) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae gen. indet. (DZMB_2021_0042)

Material

a. taxonConceptID: Isididae gen. indet. (DZMB_2021_0042); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2374; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 8:13:14 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00142.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 104

Figure 104. doi

Isididae gen. indet. (DZMB_2021_0042) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae gen. indet. (DZMB_2021_0043)

Material

a. taxonConceptID: Isididae gen. indet. (DZMB_2021_0043); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2465; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 12:21:14 pm; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00603-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 105

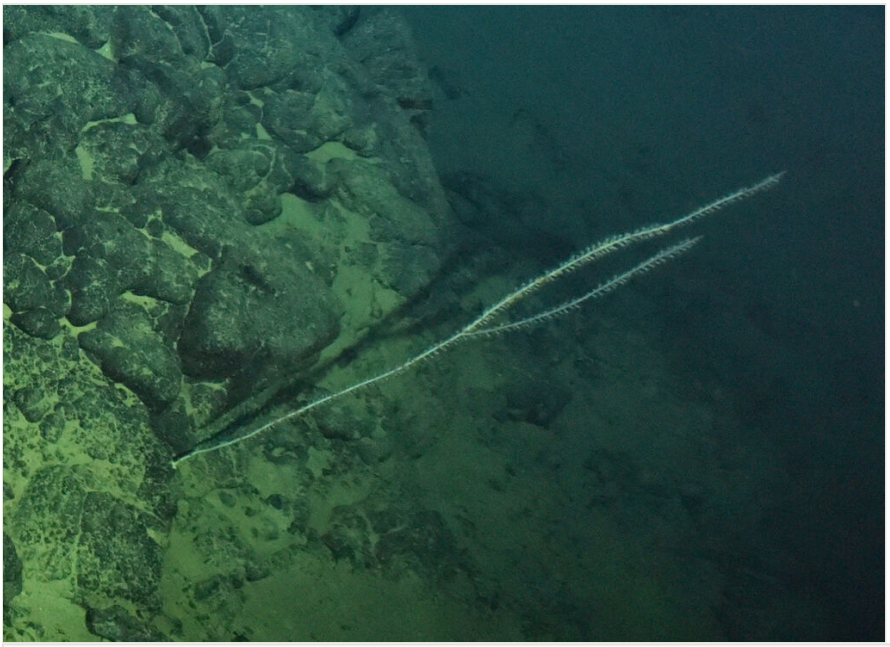

Figure 105. doi

Isididae gen. indet. (DZMB_2021_0043) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae fam. inc. (DZMB_2021_0044)

Material

a. taxonConceptID: Isididae fam. inc. (DZMB_2021_0044); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2448; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 8:36:21 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00475.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 106

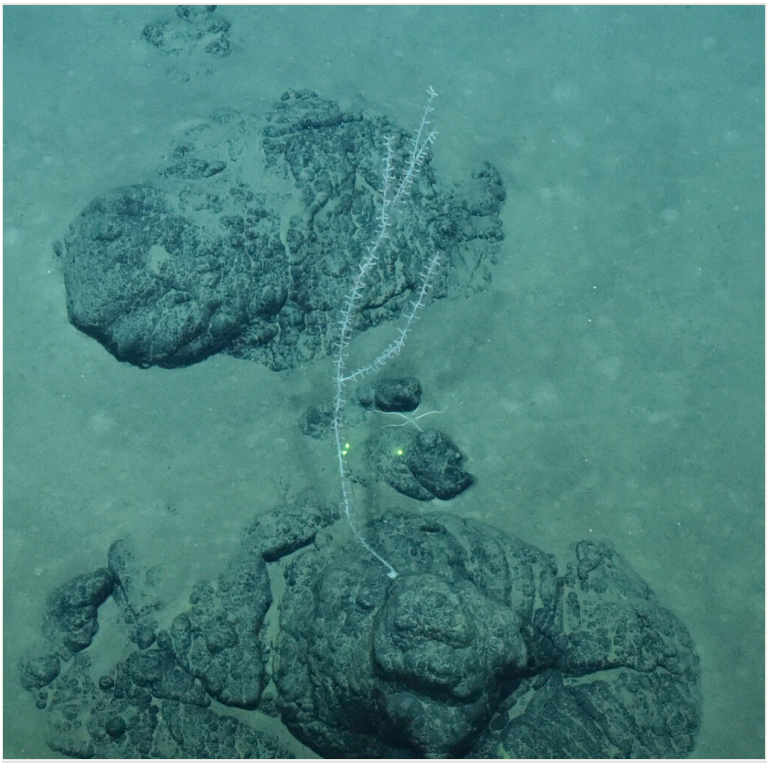

Figure 106. doi

Isididae fam. inc. (DZMB_2021_0044) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae gen. indet. (DZMB_2021_0045)

Material

a. taxonConceptID: Isididae gen. indet. (DZMB_2021_0045); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Family; genus: -; scientificNameAuthorship: Lamouroux, 1812; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2828; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-12-17; eventTime: 12:37:23 pm; year: 2013; fieldNumber: INDEX2013-62ROV; fieldNotes: 1.8°C, 34.4 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-17_12-37-23_Sonne_INDEX2013-2_062ROV11_Logo.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery - forked morphotype; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 107

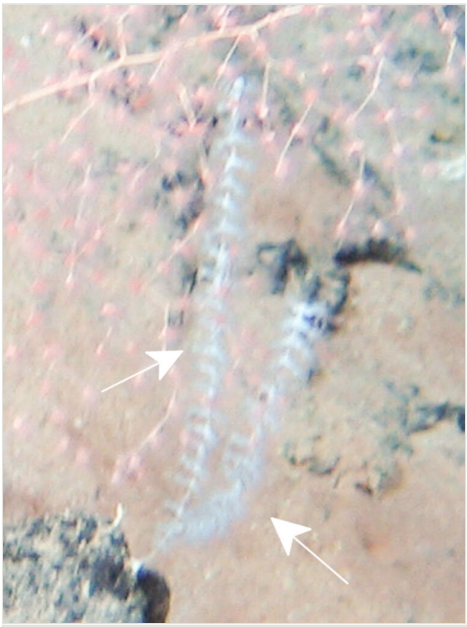

Figure 107. doi

Isididae gen. indet. (DZMB_2021_0045) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Acanella* Gray, 1870

Isididae Acanella gen. inc.

Material

a. taxonConceptID: Isididae *Acanella* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Acanella*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2370; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 6:50:03 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00087.jpg; associatedOccurrences: Goniasteridae gen. indet.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 108

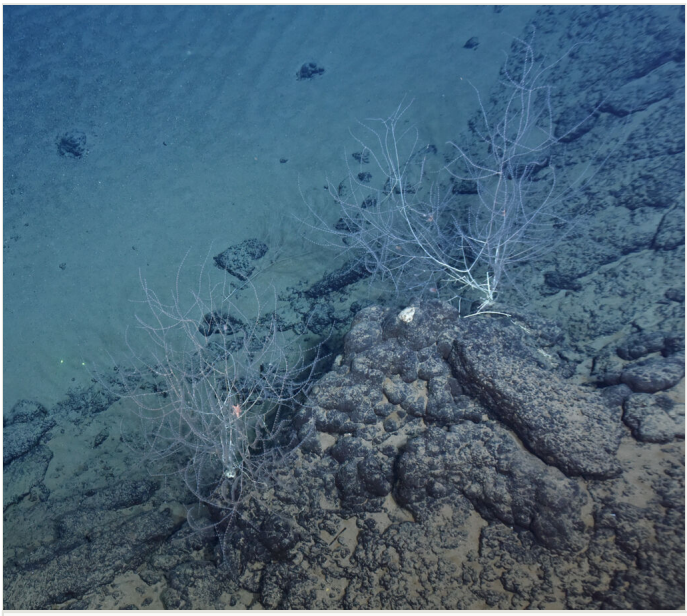

Figure 108. doi

Isididae *Acanella* gen. inc. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Bathygorgia* Wright, 1885

Isididae Bathygorgia gen. inc.

Material

a. taxonConceptID: Isididae *Bathygorgia* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Bathygorgia*; scientificNameAuthorship: Wright, 1885; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2663; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 6:49:45 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00090.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 109

Figure 109. doi

Isididae *Bathygorgia* gen. inc. in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Jasonisis* Alderslade & McFadden, 2012

Isididae Jasonisis gen. inc.

Material

a. taxonConceptID: Isididae *Jasonisis* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Jasonisis*; scientificNameAuthorship: Alderslade & McFadden, 2012; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2368; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-11-21; eventTime: 10:48:28 am; year: 2018; fieldNumber: INDEX2018-59ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2093_00938.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 110

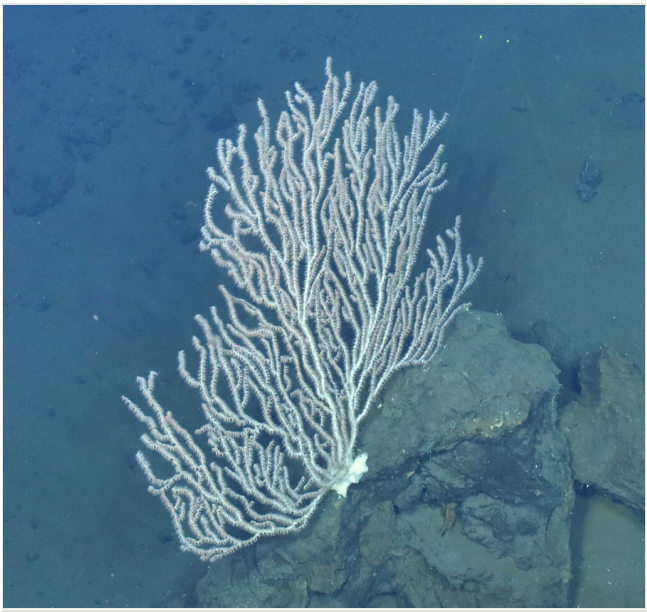

Figure 110. doi

Isididae *Jasonisis* gen. inc. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Keratoisis* Wright, 1869

Isididae Keratoisis gen. inc. (DZMB_2021_0046)

Material

a. taxonConceptID: Isididae *Keratoisis* gen. inc. (DZMB_2021_0046); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Keratoisis*; scientificNameAuthorship: Wright, 1869; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2662; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 6:50:43 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00094.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 111

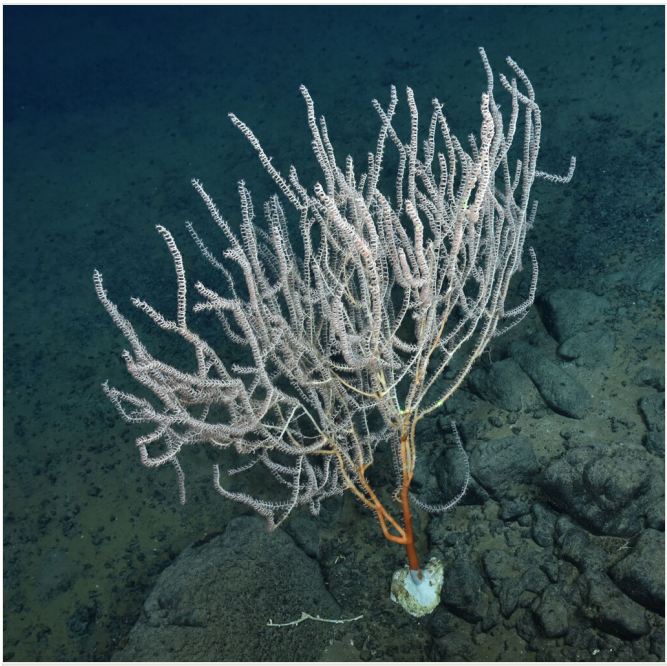

Figure 111. doi

Isididae *Keratoisis* gen. inc. (DZMB_2021_0046) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Isididae Keratoisis gen. inc. (DZMB_2021_0047)

Material

a. taxonConceptID: Isididae *Keratoisis* gen. inc. (DZMB_2021_0047); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Keratoisis*; scientificNameAuthorship: Wright, 1869; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2658; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 9:20:43 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00311.jpg; associatedOccurrences: *Actinoscyphia* sp. indet.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 112

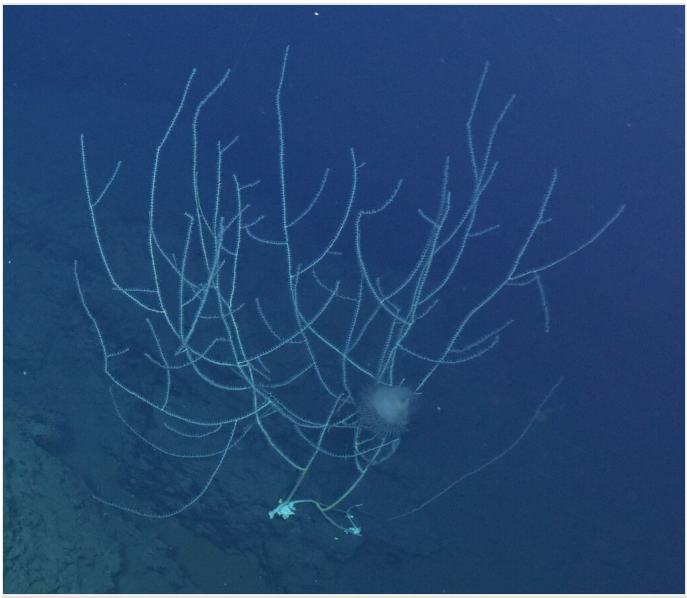

Figure 112. doi

Isididae *Keratoisis* gen. inc. (DZMB_2021_0047) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Lepidisis* Verrill, 1883

Isididae Lepidisis gen. inc.

Material

a. taxonConceptID: Isididae *Lepidisis* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: *Lepidisis*; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2483; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 6:12:27 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00067.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 113

Figure 113. doi

Isididae *Lepidisis* gen. inc. in situ at the South East Indian Ridge at the border of Vent site 3 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Lepidisis spp. indet.

Material

a. taxonConceptID: ***Lepidisis*** spp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Isididae; taxonRank: Genus; genus: ***Lepidisis***; scientificNameAuthorship: Verrill, 1883; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2969; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2018-12-01; eventTime: 8:27:44 am; year: 2018; fieldNumber: INDEX2018-80ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2102_00153.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: spp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 114

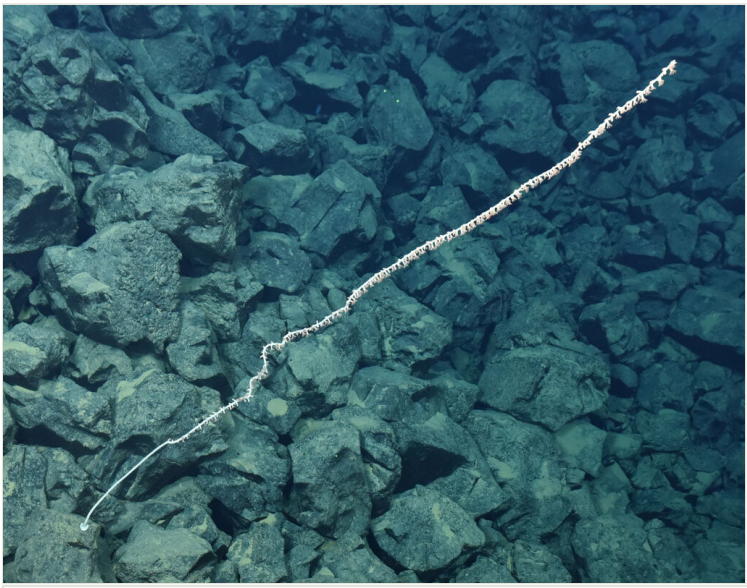

Figure 114. doi

Lepidisis sp. indet. in situ at the South East Indian Ridge within Vent site 5 in Cluster 11 of the INDEX area. The individual is an example for the species complex *Lepidisis* spp. indet., with more images and entries in the supplementary imagery and data table. Image corresponds with the data (Image attribution: BGR).

Family Paragorgiidae Kükenthal, 1916

Paragorgiidae fam. inc.

Material

a. taxonConceptID: Paragorgiidae fam. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Paragorgiidae; taxonRank: Family; genus: -; scientificNameAuthorship: Kükenthal, 1916; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2396; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 5:40:24 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00011.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 115

Figure 115. doi

Paragorgiidae fam. inc. in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Primnoidae Milne Edwards, 1857

Primnoidae gen. indet. (DZMB_2021_0048)

Material

a. taxonConceptID: Primnoidae gen. indet. (DZMB_2021_0048); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Primnoidae; taxonRank: Family; genus: -; scientificNameAuthorship: Milne Edwards, 1857; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2632; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 4:31:09 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt/ sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00037.jpg; associatedOccurrences: Arthropoda cl. indet.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery - branched morphotype; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 116

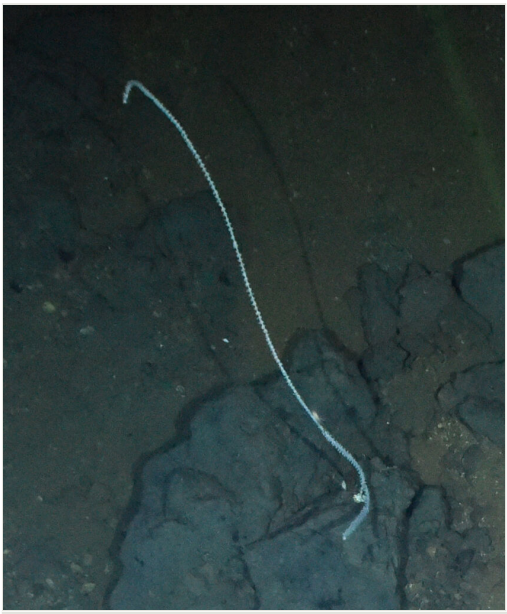

Figure 116. doi

Primnoidae gen. indet. (DZMB_2021_0048) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Primnoidae gen. indet. (DZMB_2021_0049)

Material

a. taxonConceptID: Primnoidae gen. indet. (DZMB_2021_0049); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea; family: Primnoidae; taxonRank: Family; genus: -; scientificNameAuthorship: Milne Edwards, 1857; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2483; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 10:50:42 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2096_00253.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery - unbranched morphotype; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 117

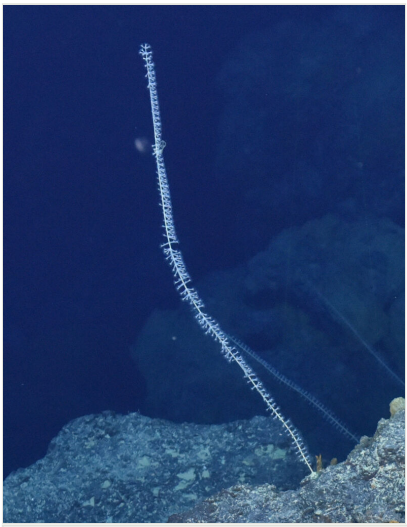

Figure 117. doi

Primnoidae gen. indet. (DZMB_2021_0049) in situ at the South East Indian Ridge at the border of Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Alcyonacea/ Antipatharia Lamouroux, 1812

Stalk of Alcyonacea or Antipatharia ord. inc.

Material

a. taxonConceptID: Stalk of Alcyonacea or Antipatharia ord. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Alcyonacea/ Antipatharia; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Lamouroux, 1812/ -; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2816; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3919; decimalLongitude: 69.2420; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:27:11 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-289_Stalk of Gorgonian.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 118

Figure 118. doi

Stalk of Alcyonacea or Antipatharia ord. inc. in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Antipatharia

Family Cladopathidae Kinoshita, 1910

Genus *Heteropathes* Opresko, 2011

Heteropathes sp. indet.

Material

a. taxonConceptID: *Heteropathes* sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Cladopathidae; taxonRank: Genus; genus: *Heteropathes*; scientificNameAuthorship: Opresko, 2011; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2385; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 5:46:04 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00020.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 119

Figure 119. doi

Heteropathes sp. indet. in situ at the South East Indian Ridge at the border of Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Heteropathes americana sp. inc. (Opresko, 2003)

Material

a. scientificName: *Heteropathes americana*; taxonConceptID: *Heteropathes americana* sp. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Cladopathidae; taxonRank: Species; genus: *Heteropathes*; scientificNameAuthorship: (Opresko, 2003); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2508; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 7:46:49 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00428-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 120

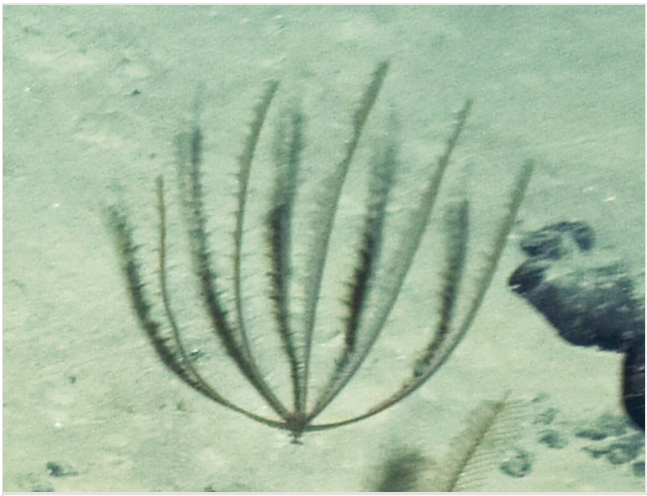

Figure 120. doi

Heteropathes americana sp. inc. in situ at the South East Indian Ridge at the border of Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Schizopathidae Brook, 1889

Genus *Bathypathes* Brook, 1889

Bathypathes sp. indet. (DZMB_2021_0050)

Material

a. taxonConceptID: *Bathypathes* sp. indet. (DZMB_2021_0050); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Schizopathidae; taxonRank: Genus; genus: *Bathypathes*; scientificNameAuthorship: Brook, 1889; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2662; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 4:46:55 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00045.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 121

Figure 121. doi

Bathypathes sp. indet. (DZMB_2021_0050) in situ at the Rodriguez Triple Junction at the border of Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Bathypathes gen. inc. (DZMB_2021_0051)

Material

a. taxonConceptID: *Bathypathes* gen. inc. (DZMB_2021_0051); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Schizopathidae; taxonRank: Genus; genus: *Bathypathes*; scientificNameAuthorship: Brook, 1889; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2374; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 8:14:41 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00145-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 122

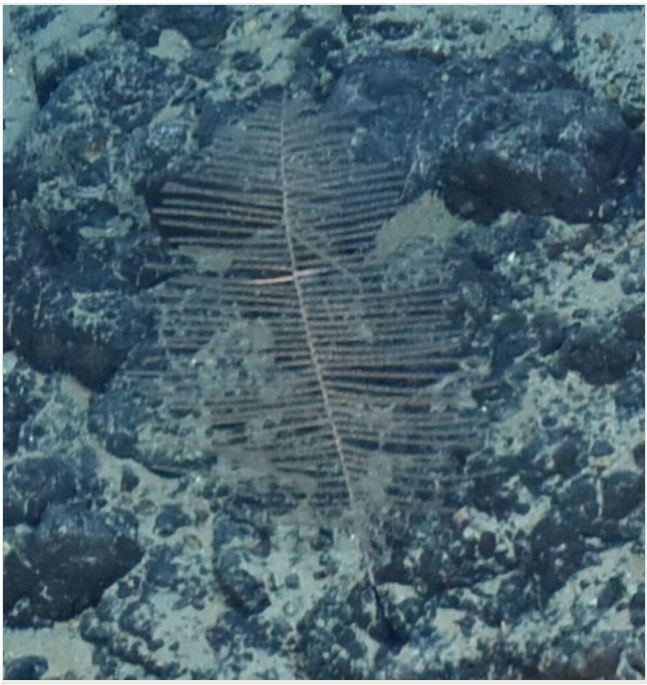

Figure 122. doi

Bathypathes gen. inc. (DZMB_2021_0051) in situ at the South East Indian Ridge at the border of Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Bathypathes patula sp. inc. Brook, 1889

Material

a. scientificName: *Bathypathes patula*; taxonConceptID: *Bathypathes patula* sp. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Schizopathidae; taxonRank: Species; genus: *Bathypathes*; scientificNameAuthorship: Brook, 1889; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3065; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-12-01; eventTime: 7:17:48 am; year: 2015; fieldNumber: INDEX2015-47ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1908_00414.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 123

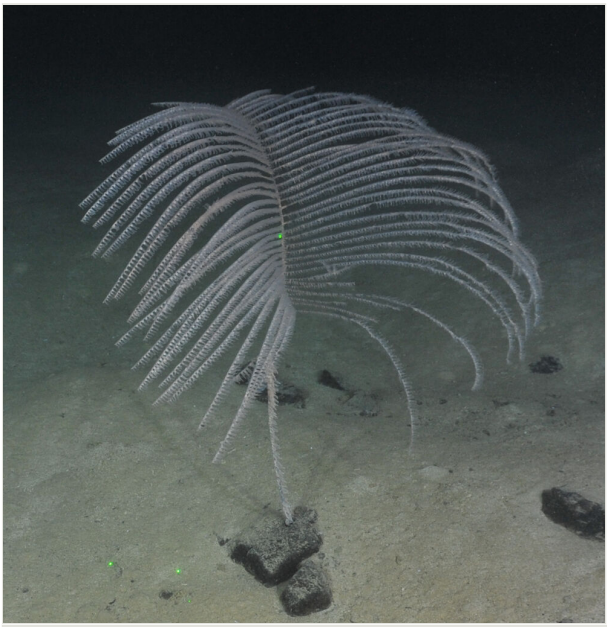

Figure 123. doi

Bathypathes patula sp. inc. in situ at the Central Indian Ridge at the border of Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Schizopathes* Brook, 1889

Schizopathes spp. indet.

Material

a. taxonConceptID: *Schizopathes* spp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Antipatharia; family: Schizopathidae; taxonRank: Genus; genus: *Schizopathes*; scientificNameAuthorship: Brook, 1889; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2712; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 10:19:38 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00337.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: spp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 124

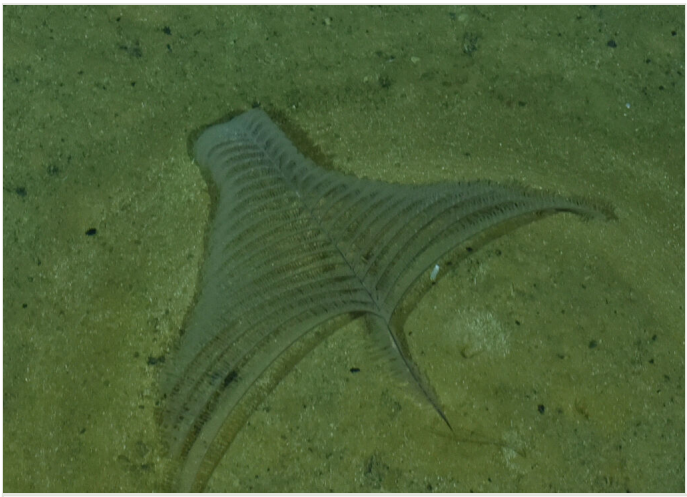

Figure 124. doi

Schizopathes sp. indet. in situ at the Rodriguez Triple Junction at the border of Vent site 4 in Cluster 5 of the INDEX area. The individual is an example for the species complex *Schizopathes* spp. indet., with more images and entries in the supplementary imagery and data table. Image corresponds with the data (Image attribution: BGR).

Order Pennatulacea Verrill, 1865

Pennatulacea ord. inc. (DZMB_2021_0052)

Material

a. taxonConceptID: Pennatulacea ord. inc. (DZMB_2021_0052); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Pennatulacea; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Verrill, 1865; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2846; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3839; decimalLongitude: 69.2377; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 5:31:31 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-139.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 125

Figure 125. doi

Pennatulacea ord. inc. (DZMB_2021_0052) in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Pennatulacea fam. indet. (DZMB_2021_0053)

Material

a. taxonConceptID: Pennatulacea fam. indet. (DZMB_2021_0053); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Pennatulacea; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Verrill, 1865; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3111; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; decimalLatitude: -23.9343; decimalLongitude: 69.6114; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2015-12-07; eventTime: 9:32:22 am; year: 2015; fieldNumber: INDEX2015-60ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1914_00241.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 126

Figure 126. doi

Pennatulacea fam. indet. (DZMB_2021_0053) in situ at the Central Indian Ridge within the Edmond-Vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Kophobelemnidae Gray, 1860

Genus *Kophobelemnon* Asbjörnsen, 1856

Pennatulacea Kophobelemnon ord. inc.

Material

a. taxonConceptID: Pennatulacea *Kophobelemnon* ord. inc.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Pennatulacea; family: Kophobelemnidae; taxonRank: Genus; genus: *Kophobelemnon*; scientificNameAuthorship: Asbjörnsen, 1856; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: Cluster 3; maximumDepthInMeters: 2825; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3926; decimalLongitude: 69.2426; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:15:06 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-417-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 127

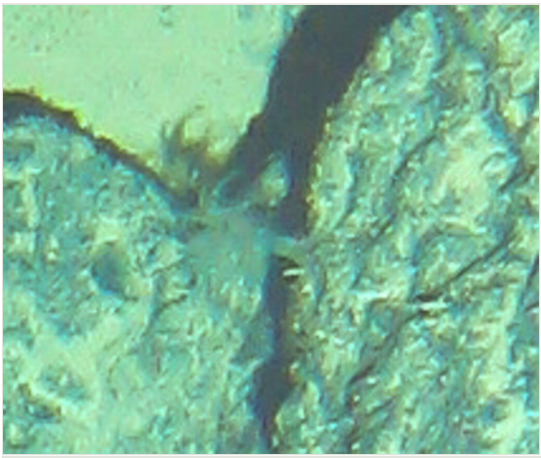

Figure 127. doi

Pennatulacea *Kophobelemnon* ord. inc. incertae sedis in situ at the Central Indian Ridge within the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Umbellulidae Kölliker, 1880

Genus *Umbellula* Gray, 1870

Umbellula sp. indet. (DZMB_2021_0054)

Material

a. taxonConceptID: *Umbellula* sp. indet. (DZMB_2021_0054); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Pennatulacea; family: Umbellulidae; taxonRank: Genus; genus: *Umbellula*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3271; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8781; decimalLongitude: 69.6004; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-09; eventTime: 1:12:01 am; year: 2013; fieldNumber: INDEX2013-38MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 38MFT Fotos 2013-160.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 128

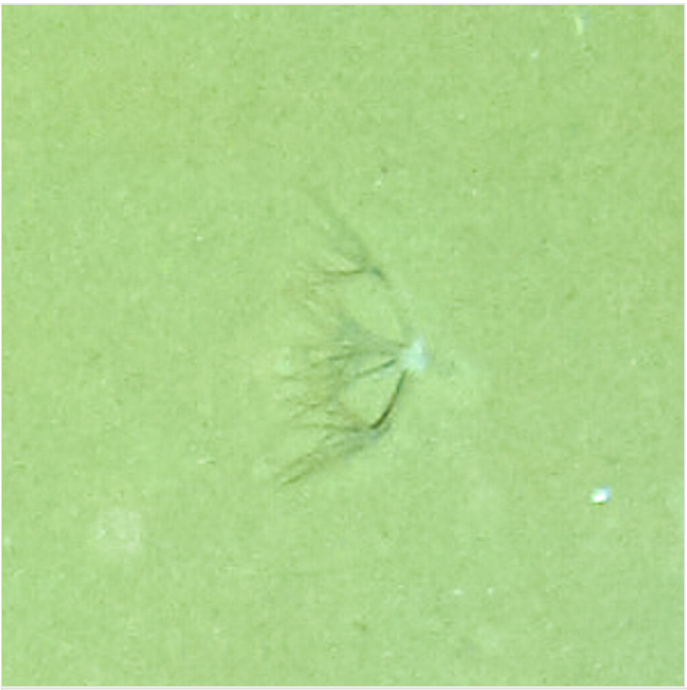

Figure 128. doi

Umbellula sp. indet. (DZMB_2021_0054) in situ at the Central Indian Ridge at the border of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Umbellula sp. indet. (DZMB_2021_0055)

Material

a. taxonConceptID: *Umbellula* sp. indet. (DZMB_2021_0055); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Pennatulacea; family: Umbellulidae; taxonRank: Genus; genus: *Umbellula*; scientificNameAuthorship: Gray, 1870; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2541; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-04; eventTime: 7:57:30 am; year: 2018; fieldNumber: INDEX2018-85ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2104_00100.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 129

Figure 129. doi

Umbellula sp. indet. (DZMB_2021_0055) in situ at the Rodriguez Triple Junction at the border of Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Zoantharia Gray, 1832

Zoantharia fam. indet. (DZMB_2021_0056)

Material

a. taxonConceptID: *Zoantharia* fam. indet. (DZMB_2021_0056); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Zoantharia; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Gray, 1832; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2547; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 10:39:16 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.8 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00275-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 130

Figure 130. doi

Zoantharia fam. indet. (DZMB_2021_0056) in situ at the South East Indian Ridge within Vent site 3 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Zoantharia fam. indet. (DZMB_2021_0057)

Material

a. taxonConceptID: *Zoantharia* fam. indet. (DZMB_2021_0057); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Zoantharia; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Gray, 1832; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2431; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 7:24:03 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides/ basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2096_00102.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 131

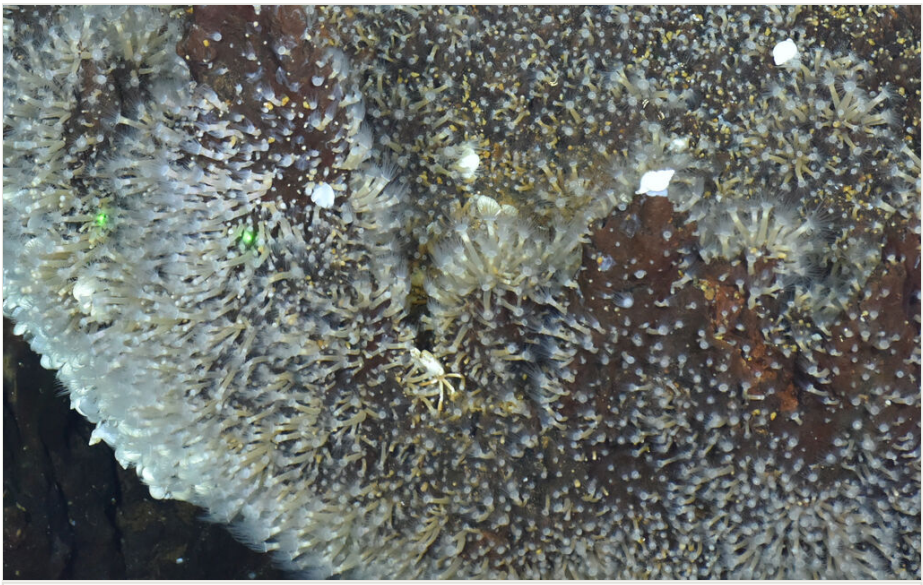

Figure 131. doi

Zoantharia fam. indet. (DZMB_2021_0057) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Zoantharia fam. indet. (DZMB_2021_0058)

Material

a. taxonConceptID: *Zoantharia* fam. indet. (DZMB_2021_0058); kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Zoantharia; family: -; taxonRank: Order; genus: -; scientificNameAuthorship: Gray, 1832; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2489; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 10:06:31 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00212-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 132

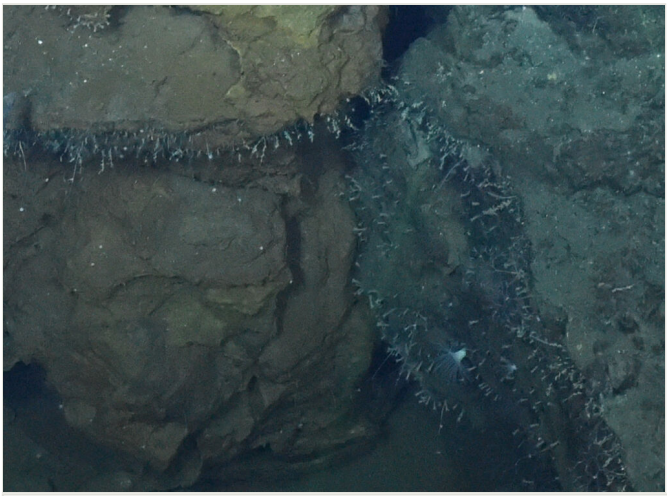

Figure 132. doi

Zoantharia fam. indet. (DZMB_2021_0058) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Epizoanthidae Delage & Hérouard, 1901

Genus *Epizoanthus* Gray, 1867

Epizoanthus sp. indet.

Material

a. taxonConceptID: *Epizoanthus* sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Anthozoa; order: Zoantharia; family: Epizoanthidae; taxonRank: Genus; genus: *Epizoanthus*; scientificNameAuthorship: Gray, 1867; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3072; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-27; eventTime: 9:20:39 am; year: 2015; fieldNumber: INDEX2015-37ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: in symbiosis with hermit crab; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1905_00014.jpg; associatedOccurrences: Paguroidea superfam. inc.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 133

Figure 133. doi

Epizoanthus sp. indet. (in symbiosis with Paguroidea superfam. inc.) in situ at the Central Indian Ridge in the surrounding of Vent site 1 in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Hydrozoa Owen, 1843

Hydrozoa ord. indet. (DZMB_2021_0059)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0059); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2471; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 9:45:31 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; fieldNotes: 1.8°C; individualCount: 3; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00138-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 134

Figure 134. doi

Hydrozoa ord. indet. (DZMB_2021_0059) in situ at the South East Indian Ridge within Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0060)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0060); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2628; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 3:38:22 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00010.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 135

Figure 135. doi

Hydrozoa ord. indet. (DZMB_2021_0060) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0061)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0061); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: -; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2629; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 8:30:44 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00117-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 136

Figure 136. doi

Hydrozoa ord. indet. (DZMB_2021_0061) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0062)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0062); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2483; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-24; eventTime: 10:50:42 am; year: 2018; fieldNumber: INDEX2018-65ROPOS; fieldNotes: 1.8°C; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: attached to sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2096_00253-2.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 137

Figure 137. doi

Hydrozoa ord. indet. (DZMB_2021_0062) in situ at the South East Indian Ridge at the border of Vent site 6 in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0063)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0063); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2638; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 8:12:05 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00097.jpg; associatedOccurrences: *Glyptelasma* gen. inc.; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 138

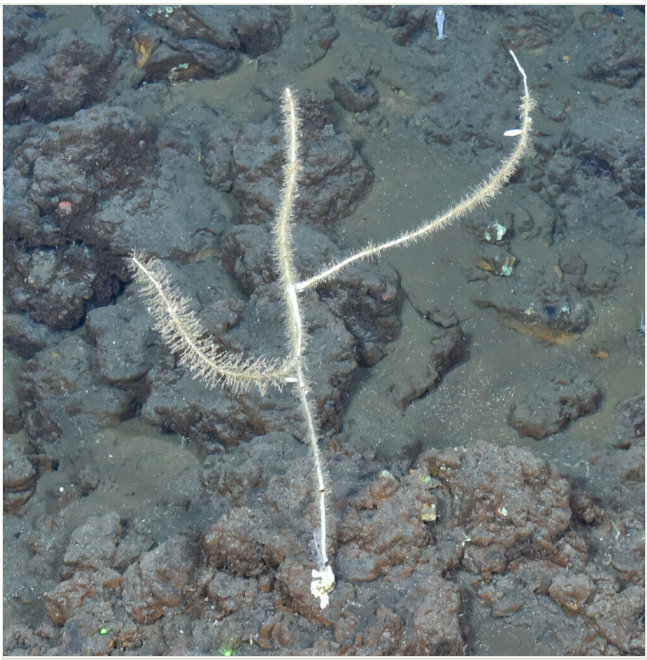

Figure 138. doi

Hydrozoa ord. indet. (DZMB_2021_0063) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0064)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0064); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2629; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 8:30:44 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00117.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 139

Figure 139. doi

Hydrozoa ord. indet. (DZMB_2021_0064) in situ at the Rodriguez Triple Junction within Vent site 4 in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Hydrozoa ord. indet. (DZMB_2021_0065)

Material

a. taxonConceptID: Hydrozoa ord. indet. (DZMB_2021_0065); kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; taxonRank: Class; scientificNameAuthorship: Owen, 1843; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2515; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 7:15:59 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00133.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 140

Figure 140. doi

Hydrozoa ord. indet. (DZMB_2021_0065) in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Anthoathecata Cornelius, 1992

Family Candelabridae Stechow, 1921

Genus *Candelabrum* de Blainville, 1830

Candelabrum sp. indet.

Material

a. taxonConceptID: *Candelabrum* sp. indet.; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Anthoathecata; family: Candelabridae; taxonRank: Genus; genus: *Candelabrum*; scientificNameAuthorship: de Blainville, 1830; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3345; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2015-12-06; eventTime: 10:25:54 am; year: 2015; fieldNumber: INDEX2015-58ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 4; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt/sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1913_01914.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 141

Figure 141. doi

Candelabrum sp. indet. in situ at the Central Indian Ridge within the Edmond-Vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Corymorphidae Allman, 1872

Corymorphidae gen. indet.

Material

a. taxonConceptID: Corymorphidae gen. indet.; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Anthoathecata; family: Corymorphidae; taxonRank: Family; genus: -; scientificNameAuthorship: Allman, 1872; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2909; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 6:44:09 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00040-3.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 142

Figure 142. doi

Corymorphidae gen. indet. in situ at the South East Indian Ridge at the border of Vent site 5 in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Siphonophorae Eschscholtz, 1829

Family Rhodaliidae Haeckel, 1888

Genus *Thermopalia* Pugh, 1983

Siphonophorae Rhodaliidae Thermopalia gen. inc.

Material

a. taxonConceptID: Siphonophorae Rhodaliidae *Thermopalia* gen. inc.; kingdom: Animalia; phylum: Cnidaria; class: Hydrozoa; order: Siphonophorae; family: Rhodaliidae; taxonRank: Genus; genus: *Thermopalia*; scientificNameAuthorship: Pugh, 1983; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2665; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 11:05:38 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00254.jpg; identifiedBy: Tina Molodtsova; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 143

Figure 143. doi

Siphonophorae Rhodaliidae *Thermopalia* gen. inc. in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Echinodermata Bruguiere, 1791 [ex Klein, 1734]

Class Asteroidea de Blainville, 1830

Order Brisingida Fisher, 1928

Family Brisingidae G. O. Sars, 1875

Genus *Hymenodiscus* Perrier, 1884

Hymenodiscus gen. inc.

Material

a. taxonConceptID: *Hymenodiscus* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Brisingida; family: Brisingidae; taxonRank: Genus; genus: *Hymenodiscus*; scientificNameAuthorship: Perrier, 1884; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2505; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 6:30:22 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00100.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 144

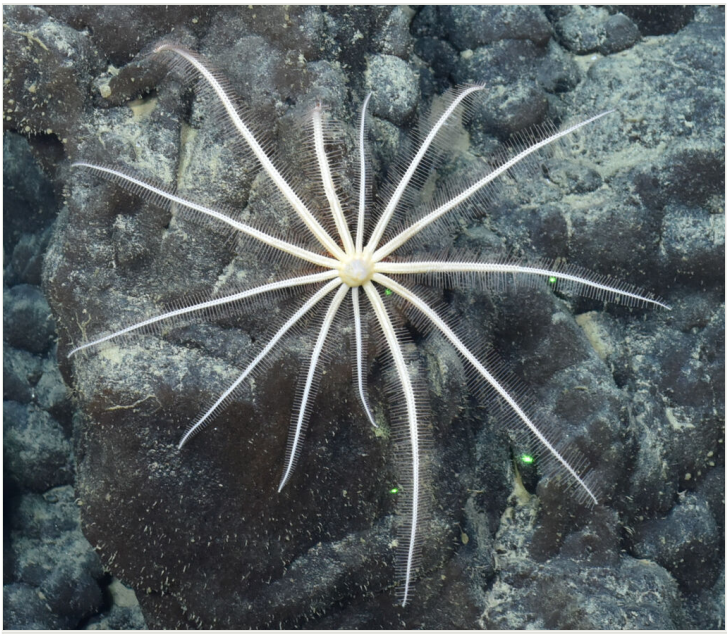

Figure 144. doi

Hymenodiscus gen. inc. in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Freyellidae Downey, 1986

Freyellidae fam. inc.

Material

a. taxonConceptID: Freyellidae fam. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Brisingida; family: Freyellidae; taxonRank: Family; scientificNameAuthorship: Downey, 1986; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3668; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-19; eventTime: 9:45:31 am; year: 2016; fieldNumber: INDEX2016-16ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160119094531155_01_1080i copy.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 145

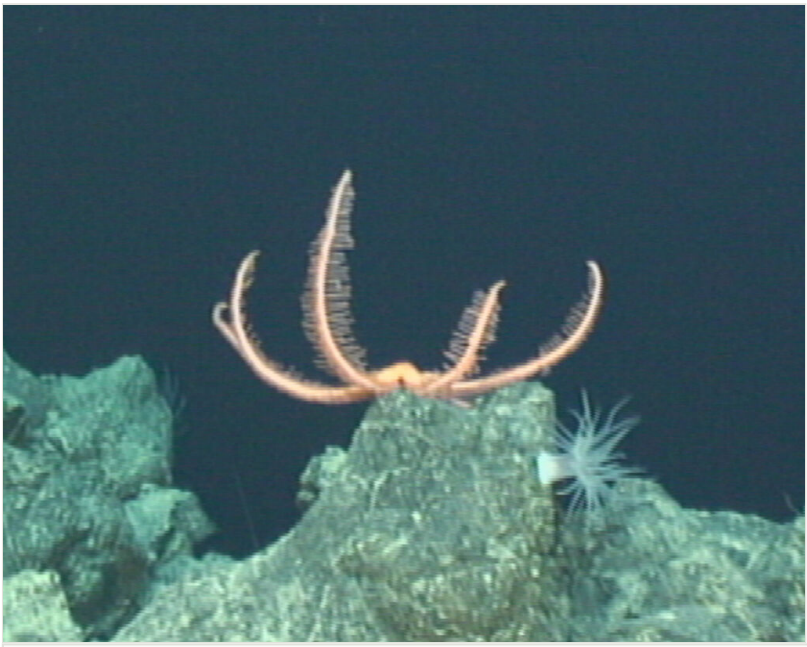

Figure 145. doi

Freyellidae fam. inc. in situ in the surrounding area of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Freyastera* Downey, 1986

Freyastera gen. inc.

Material

a. taxonConceptID: *Freyastera* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Brisingida; family: Freyellidae; taxonRank: Genus; genus: *Freyastera*; scientificNameAuthorship: Downey, 1986; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond/ vent site 2; verbatimLocality: Cluster 4; maximumDepthInMeters: 3234; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2013-12-12; eventTime: 10:48:06 am; year: 2013; fieldNumber: INDEX2013-49ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-12_10-48-06_Sonne_INDEX2013-2_049ROV06_Logo.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 146

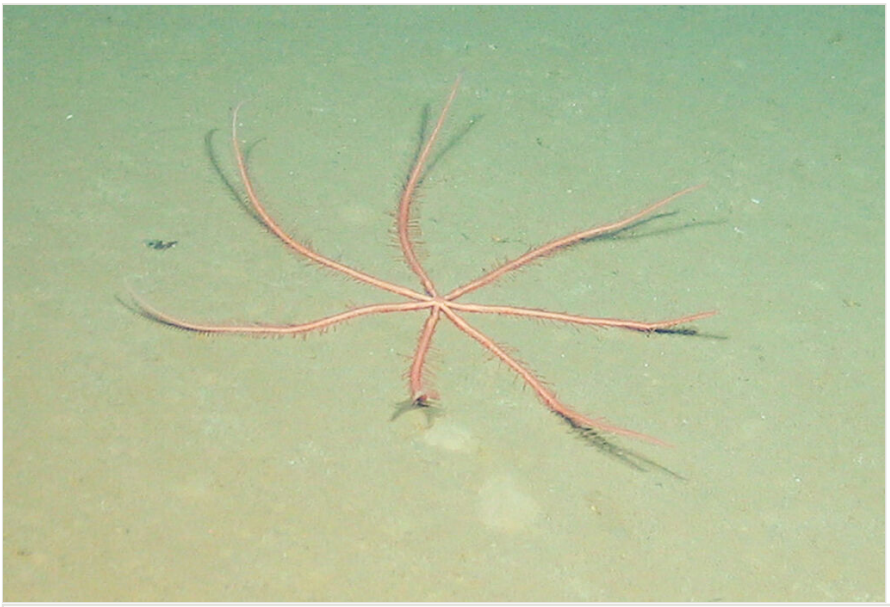

Figure 146. doi

Freyastera gen. inc. in situ in the surrounding area of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Genus *Freyella* Perrier, 1885

Freyella gen. inc.

Material

a. taxonConceptID: *Freyella* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Brisingida; family: Freyellidae; taxonRank: Genus; genus: *Freyella*; scientificNameAuthorship: Perrier, 1885; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2632; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 8:21:51 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00109.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 147

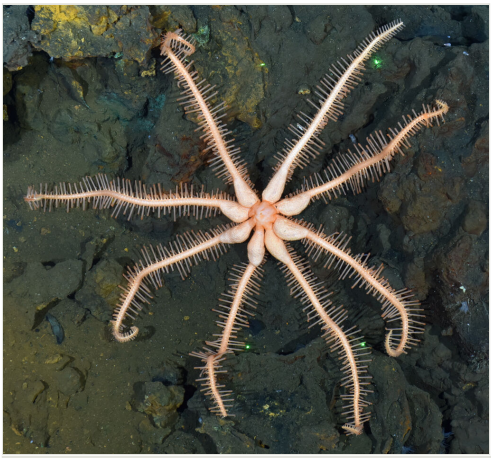

Figure 147. doi

Freyella gen. inc. in situ at the border of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Paxillosida Perrier, 1884

Family Porcellanasteridae Sladen, 1883

Genus *Styracaster* Sladen, 1883

Styracaster gen. inc.

Material

a. taxonConceptID: *Styracaster* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Paxillosida; family: Porcellanasteridae; taxonRank: Genus; genus: *Styracaster*; scientificNameAuthorship: Sladen, 1883; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2840; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3860; decimalLongitude: 69.2390; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 4:58:30 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-321-2.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 148

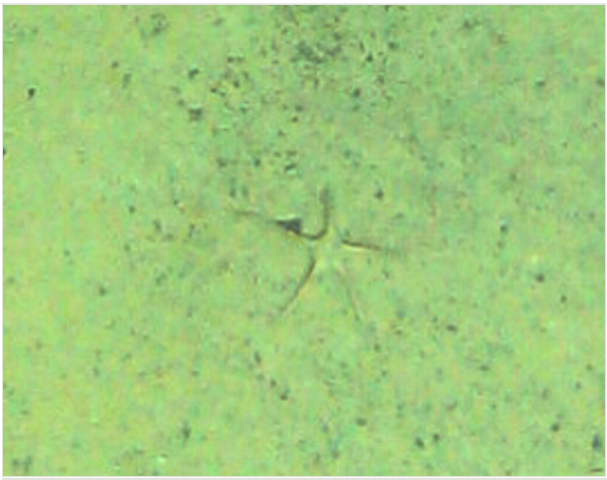

Figure 148. doi

Styracaster gen. inc. in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Spinulosida Perrier, 1884

Family Echinasteridae Verrill, 1867

Genus *Henricia* Gray, 1840

Henricia gen. inc.

Material

a. taxonConceptID: *Henricia* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Spinulosida; family: Echinasteridae; taxonRank: Genus; genus: *Henricia*; scientificNameAuthorship: Gray, 1840; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2653; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-11; eventTime: 4:39:08 am; year: 2018; fieldNumber: INDEX2018-99ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2107_00042.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 149

Figure 149. doi

Henricia gen. inc. in situ at the border of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Valvatida Perrier, 1884

Family Goniasteridae Forbes, 1841

Goniasteridae gen. indet. (DZMB_2021_0066)

Material

a. taxonConceptID: Goniasteridae gen. indet. (DZMB_2021_0066); kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; taxonRank: Family; scientificNameAuthorship: Forbes, 1841; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2355; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 6:24:30 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00067.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 150

Figure 150. doi

Goniasteridae gen. indet. (DZMB_2021_0066) in situ at the border of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Goniasteridae gen. indet. (DZMB_2021_0067)

Material

a. taxonConceptID: Goniasteridae gen. indet. (DZMB_2021_0067); kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; taxonRank: Family; scientificNameAuthorship: Forbes, 1841; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3328; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8791; decimalLongitude: 69.6003; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-10; eventTime: 12:16:39 am; year: 2013; fieldNumber: INDEX2013-44MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 44MFT Fotos 2013-447_Circeaster MAYBE.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 151

Figure 151. doi

Goniasteridae gen. indet. (DZMB_2021_0067) in situ in the surrounding area of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Circeaster* Koehler, 1909

Circeaster gen. inc.

Material

a. taxonConceptID: *Circeaster* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; taxonRank: Genus; genus: *Circeaster*; scientificNameAuthorship: Koehler, 1909; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2473; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-22; eventTime: 10:33:44 am; year: 2018; fieldNumber: INDEX2018-61ROPOS; fieldNotes: 1.9°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on hard substrates; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2094_01142.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 152

Figure 152. doi

Circeaster gen. inc. in situ at the South East Indian Ridge in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Evoplosoma* Fisher, 1906

Evoplosoma gen. inc.

Material

a. taxonConceptID: *Evoplosoma* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; taxonRank: Genus; genus: *Evoplosoma*; scientificNameAuthorship: Fisher, 1906; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2465; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 12:21:14 pm; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Attached to coral stalk; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00603.jpg; associatedOccurrences: Alcyonacea fam. indet.; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 153

Figure 153. doi

Evoplosoma gen. inc. in situ at the border of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Lydiaster* Koehler, 1909

Lydiaster johannae sp. inc. Koehler, 1909

Material

a. scientificName: *Lydiaster johannae*; taxonConceptID: *Lydiaster johannae* sp. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Goniasteridae; taxonRank: Species; genus: *Lydiaster*; scientificNameAuthorship: Koehler, 1909; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond/ vent site 2; verbatimLocality: Cluster 4; maximumDepthInMeters: 3240; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2013-12-12; eventTime: 10:39:59 am; year: 2013; fieldNumber: INDEX2013-49ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013_INDEX2013_049ROV06.jpg; associatedOccurrences: Polynoidae fam. inc.; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 154

Figure 154. doi

Lydiaster johannae sp. inc. in situ in the surrounding area of the Edomd hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Family Solasteridae Viguier, 1878

Solasteridae fam. inc.

Material

a. taxonConceptID: Solasteridae fam. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Valvatida; family: Solasteridae; taxonRank: Family; scientificNameAuthorship: Viguier, 1878; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3465; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 35; eventDate: 2014-11-17; eventTime: 9:08:09 am; year: 2014; fieldNumber: INDEX2014-28VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on hard substrates; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141117090809540.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 155

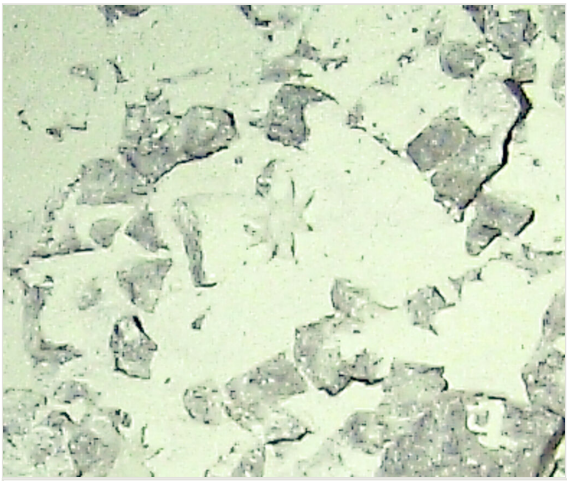

Figure 155. doi

Solasteridae fam. inc. in situ in the surrounding area of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Velatida Perrier, 1884

Family Myxasteridae Perrier, 1885

Genus *Asthenactis* Fisher, 1906

Asthenactis gen. inc.

Material

a. taxonConceptID: *Asthenactis* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Velatida; family: Myxasteridae; taxonRank: Genus; genus: *Asthenactis*; scientificNameAuthorship: Fisher, 1906; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 9; maximumDepthInMeters: 3472; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 36; eventDate: 2014-11-28; eventTime: 2:50:57 pm; year: 2014; fieldNumber: INDEX2014-44VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141128145057005.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 156

Figure 156. doi

Asthenactis gen. inc. in situ at the South East Indian Ridge in Cluster 9 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Pterasteridae Perrier, 1875

Genus *Hymenaster* Wyville Thomson, 1873

Hymenaster sp. indet.

Material

a. taxonConceptID: *Hymenaster* sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Velatida; family: Pterasteridae; taxonRank: Genus; genus: *Hymenaster*; scientificNameAuthorship: Wyville Thomson, 1873; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 6; maximumDepthInMeters: 3588; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 38; eventDate: 2014-12-03; eventTime: 5:28:01 pm; year: 2014; fieldNumber: INDEX2014-54VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on hard substrates; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141203172801863.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 157

Figure 157. doi

Hymenaster sp. indet. in situ at the South East Indian Ridge in Cluster 6 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Pteraster* Müller & Troschel, 1842

Pteraster gen. inc.

Material

a. taxonConceptID: *Pteraster* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Asteroidea; order: Velatida; family: Pterasteridae; taxonRank: Genus; genus: *Pteraster*; scientificNameAuthorship: Müller & Troschel, 1842; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 11; maximumDepthInMeters: 2892; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.2563; decimalLongitude: 72.7241; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2017-09-24; eventTime: 3:25:09 pm; year: 2017; fieldNumber: INDEX2017-83STR; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_4517.jpg; identifiedBy: Christopher Mah; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 158

Figure 158. doi

Pteraster gen. inc. in situ at the South East Indian Ridge in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Crinoidea Miller, 1821

Order Comatulida

Family Antedonidae Norman, 1865

Antedonidae gen. indet. (DZMB_2021_0068)

Material

a. taxonConceptID: Antedonidae gen. indet. (DZMB_2021_0068); kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; order: Comatulida; family: Antedonidae; taxonRank: Family; scientificNameAuthorship: Norman, 1865; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2909; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 10:01:21 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00131.jpg; identifiedBy: Charles G. Messing; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 159

Figure 159. doi

Antedonidae gen. indet. (DZMB_2021_0068) in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Antedonidae fam. inc. (DZMB_2021_0069)

Material

a. taxonConceptID: Antedonidae fam. inc. (DZMB_2021_0069); kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; order: Comatulida; family: Antedonidae; taxonRank: Family; scientificNameAuthorship: Norman, 1865; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond/ Vent site 7; verbatimLocality: Cluster 4; maximumDepthInMeters: 3245; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2013-12-14; eventTime: 11:52:16 am; year: 2013; fieldNumber: INDEX2013-55ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-14_11-52-16_Sonne_INDEX2013-2_055ROV08_Logo.jpg; identifiedBy: Charles G. Messing; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 160

Figure 160. doi

Antedonidae fam. inc. (DZMB_2021_0069) in situ in the surrounding area of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Genus *Bathymetra* AH Clark, 1908

Bathymetra gen. inc.

Material

a. taxonConceptID: *Bathymetra* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; order: Comatulida; family: Antedonidae; taxonRank: Genus; genus: *Bathymetra*; scientificNameAuthorship: AH Clark, 1908; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3677; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-21; eventTime: 9:50:33 pm; year: 2016; fieldNumber: INDEX2016-20ROV; fieldNotes: 1.7°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160121215033072_01_1080i Kopie.jpg; identifiedBy: Charles G. Messing; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 161

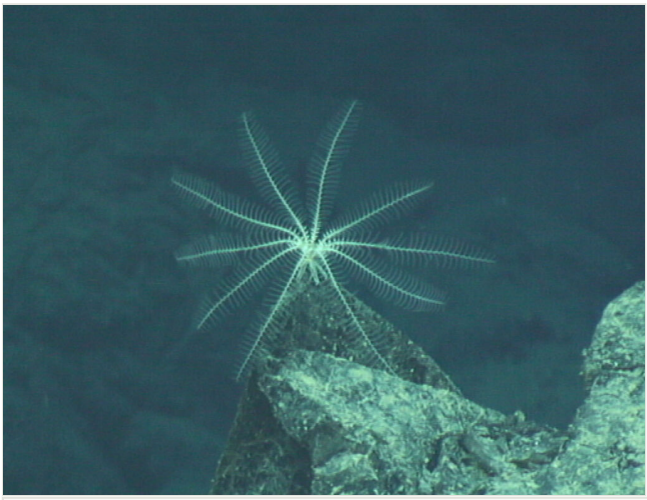

Figure 161. doi

Bathymetra gen. inc. in situ in the surrounding area of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Pentametrocrinidae AH Clark, 1908

Genus *Pentametrocrinus* AH Clark, 1908

Pentametrocrinus sp. indet.

Material

a. taxonConceptID: *Pentametrocrinus* sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; order: Comatulida; family: Pentametrocrinidae; taxonRank: Genus; genus: *Pentametrocrinus*; scientificNameAuthorship: AH Clark, 1908; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2827; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3924; decimalLongitude: 69.2425; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:17:19 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-314-3_Probably CRINOID.jpg; identifiedBy: Charles G. Messing; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 162

Figure 162. doi

Pentametrocrinus sp. indet. in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Hyocrinida Rasmussen, 1978

Family Hyocrinidae Carpenter, 1884

Hyocrinidae gen. indet.

Material

a. taxonConceptID: Hyocrinidae gen. indet.; kingdom: Animalia; phylum: Echinodermata; class: Crinoidea; order: Hyocrinida; family: Hyocrinidae; taxonRank: Family; scientificNameAuthorship: Carpenter, 1884; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3676; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-22; eventTime: 12:53:56 am; year: 2016; fieldNumber: INDEX2016-20ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: likely juvenile; preparations: Imaged only; behavior: attached to basalt; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160122005356857_16_1080i Kopie.jpg; identifiedBy: Charles G. Messing; identificationRemarks: Identified only from imagery; identificationQualifier:

gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 163

Figure 163. doi

Hyocrinidae gen. indet. in situ in the surrounding area of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Echinoidea Leske, 1778

Infraclass Irregularia Latreille, 1825

Irregularia infracl. inc.

Material

a. taxonConceptID: *Irregularia* infracl. inc.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; taxonRank: *Infraclass*; scientificNameAuthorship: Latreille, 1825; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 9; maximumDepthInMeters: 3354; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 36; eventDate: 2014-11-28; eventTime: 12:48:48 pm; year: 2014; fieldNumber: INDEX2014-44VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141128124848010.jpg; identifiedBy: Andreas Kroh; identificationRemarks: Identified only from imagery; identificationQualifier: infracl. inc.;

language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Remarks: The animal seen in Fig. 164 appears to be an irregular sea urchin, based on the overall shape and darker radial regions possibly representing ambulacra. It could belong to a number of different groups, including holasteroids, spatangoids and cassiduloids. The blurred nature of the image renders a more refined identification impossible.

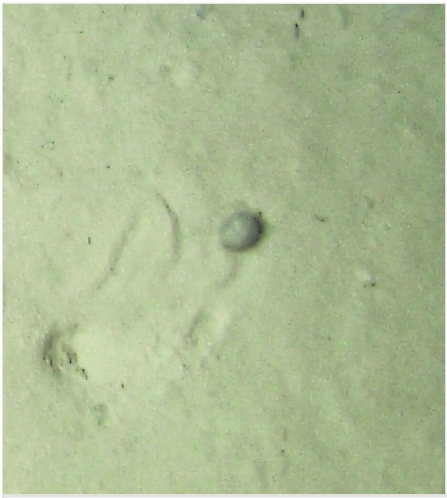

Figure 164. doi

Irregularia infracl. inc. in situ at the South East Indian Ridge in Cluster 9 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Cidaroida Claus, 1880

Cidaroida fam. indet.

Material

a. taxonConceptID: Cidaroida fam. indet.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Cidaroida; taxonRank: Order; scientificNameAuthorship: Claus, 1880; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2508; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-04; eventTime: 8:09:09 am; year: 2018; fieldNumber: INDEX2018-85ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2104_00106.jpg; identifiedBy: Andreas Kroh; identificationRemarks: Identified only from imagery; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 165

Figure 165. doi

Cidaroida fam. indet. in situ in the surrounding area of the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Echinothurioida Claus, 1880

Family Echinothuriidae Thomson, 1872

Genus *Hapalosoma* Mortensen, 1903

Hapalosoma sp. indet.

Material

a. taxonConceptID: *Hapalosoma* sp. indet.; taxonID: I13_379; scientificNameID: Sperosoma biseriatum; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Echinothurioida; family: Echinothuriidae; taxonRank: Genus; genus: *Hapalosoma*; scientificNameAuthorship: Mortensen, 1903; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond/ Vent site 7; verbatimLocality: Cluster 4; maximumDepthInMeters: 3286; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8780; decimalLongitude: 69.6014; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2013-12-14; eventTime: 10:56:53 am; year: 2013; fieldNumber: INDEX2013-55ROV; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on sediment; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-14_10-56-53_Sonne_INDEX2013-2_055ROV08_Logo.jpg;

associatedOccurrences: none; associatedSequences: COI; identifiedBy: Andreas Kroh; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; collectionCode: I13_55RO_BB_1; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Remarks: The echinoid seen in Fig. 166 clearly is a member of the subfamily Echinothuriinae, based on the presence of primary spines with their characteristic terminal hoofs. Identification to genus and species level is difficult in echinothurioids, specifically when based on images, since many forms are largely differentiated by details of their plate arrangement and pedicellarial morphology. In the present case, however, some information on the pedicellariae can be gained from the images. The specimen possesses very large tridentate pedicellariae with rounded blades which broaden towards the tip from a narrow base, a feature only known from species of the genus *Hapalosoma* (see Mortensen 1935, Anderson 2013). Four species of this genus are known (Anderson 2013), but none of them occurring in the Indian Ocean (having been reported from the New Zealand region, Malay Archipelago and Sagami Sea). That fact, combined with the divergent colouration of the observed specimen, suggests that it might belong to a new, yet undescribed species of *Hapalosoma*.

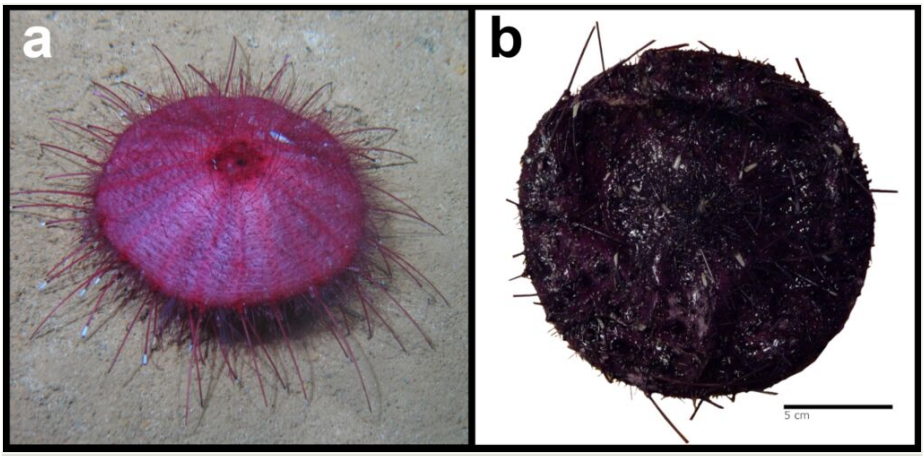

Figure 166. doi

Hapalosoma sp. indet. in situ (a) and sampled specimen (b) in the surrounding area of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Less detail can be recognszed in an individual seen in images R1915_00209 and R1915_00213, but the high similarity to the specimen in Fig. 166 suggests that this might be a second representative of this putative new species.

Order Salenioida Delage & Herouard, 1903

Family Saleniidae Agassiz, 1838

Genus *Salenocidaris* Agassiz, 1869

Salenocidaris sp. indet.

Material

a. taxonConceptID: *Salenocidaris* sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Echinoidea; order: Salenioida; family: Saleniidae; taxonRank: Genus; genus: *Salenocidaris*; scientificNameAuthorship: Agassiz, 1869; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2387; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-23; eventTime: 8:11:50 am; year: 2018; fieldNumber: INDEX2018-63ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2095_00122.jpg; identifiedBy: Andreas Kroh; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Remarks: The presence of relatively few, long and slender spines with upturned distal ends characterise the observed echinoids as saleniids. This is further supported by the excentric position of the periproct and large apical disc seen in Fig. 167. Of extant saleniids, three genera are known, two of these (*Salenia* and *Bathysalenia*) are characterised by distinctly banded spines (with the exception of *Salenia unicolor* Mortensen 1934 from the Sagami Sea and the Celebes Sea) and can be excluded. *Salenia unicolor* is reported to have greenish-white primary spines and a greyish-purple test (Mortensen 1935), unlike the observed animals which have white spines and a white to light purple test. The observed specimens are thus assigned to the genus *Salenocidaris*. Amongst *Salenocidaris*, the most likely candidate seems to be *S. hastigera* (Agassiz 1879), which fits in terms of colouration and has been reported from the Malay Archipelago and the Indian Ocean (Mortensen 1935). The latter were assigned to a separate variety (now considered a subspecies) *S. hastigera acuminata*, based on the long and pointed ambulacral spines (Mortensen 1934) – a feature which cannot be evaluated in the *in-situ* images available. A second possible candidate species is *Salenocidaris incrassata* Mortensen, 1934 described from the Celebes Sea. It is characterised by non-contiguous areoles of the primary interambulacral tubercles and distally thickened secondary spines – again features not visible in the available imagery. All other *Salenocidaris* species are either occurring in different oceans or are characterised by violet to dark purple tests and can, therefore, easily be excluded.

Figure 167. doi

Salenocidaris sp. indet. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Holothuroidea

Order Apodida Brandt, 1835

Family Chiridotidae Östergren, 1898

Genus *Chiridota* Eschscholtz, 1829

Chiridota hydrothermica sp. inc. Smirnov & Gebruk, 2000

Material

a. scientificName: *Chiridota hydrothermica*; taxonConceptID: *Chiridota hydrothermica* sp. inc.; taxonID: I13_380; scientificNameID: *Chiridota* sp. 1; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Apodida; family: Chiridotidae; taxonRank: Species; genus: *Chiridota*; scientificNameAuthorship: Smirnov & Gebruk, 2000; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3281; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8767; decimalLongitude: 69.5964; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2013-12-12; eventTime: 6:23:30 am; year: 2013; fieldNumber: INDEX2013-49ROV; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on sulphides; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-12_06-23-30_Sonne_INDEX2013-2_049ROV06_Logo.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB;

collectionCode: I13_49RO_SG2_2; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 168

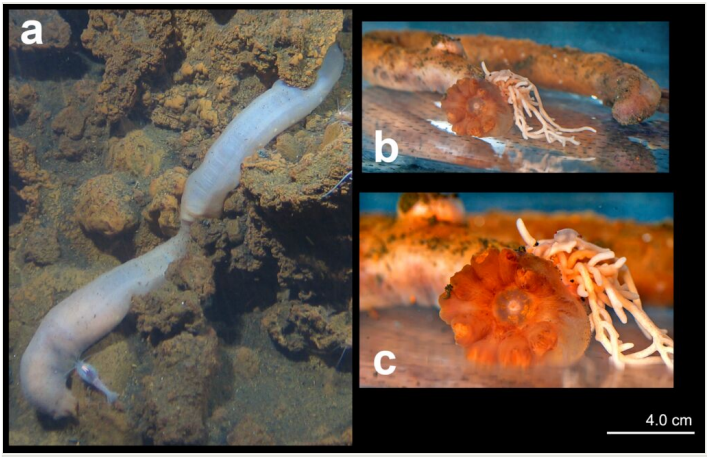

Figure 168. doi

Chiridota hydrothermica sp. inc. in situ (a) and sampled specimen (b+c) within the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Order Elasipodida Théel, 1882

Family Elpidiidae Théel, 1882

Elpidiidae gen. indet. (DZMB_2021_0070)

Material

a. taxonConceptID: Elpidiidae gen. indet. (DZMB_2021_0070); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Elpidiidae; taxonRank: Family; scientificNameAuthorship: Théel, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2820; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3919; decimalLongitude: 69.2420; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:27:11 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-289-7.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 169

Figure 169. doi

Elpidiidae gen. indet. (DZMB_2021_0070) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Elpidiidae gen. indet. (DZMB_2021_0071)

Material

a. taxonConceptID: Elpidiidae gen. indet. (DZMB_2021_0071); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Elpidiidae; taxonRank: Family; scientificNameAuthorship: Théel, 1882; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2604; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 6:06:13 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00055.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 170

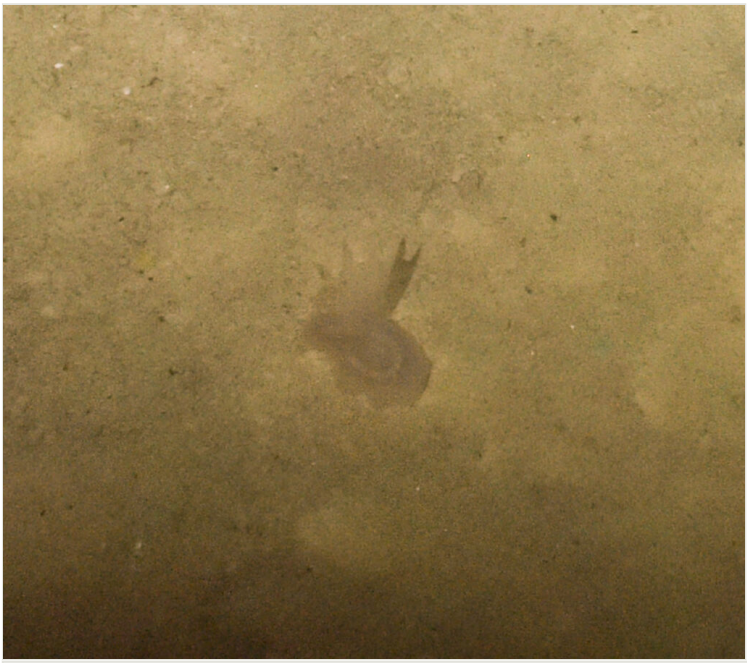

Figure 170. doi

Elpidiidae gen. indet. (DZMB_2021_0071) in situ in the area of the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Elpidiidae gen. indet. (DZMB_2021_0072)

Material

a. taxonConceptID: Elpidiidae gen. indet. (DZMB_2021_0072); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Elpidiidae; taxonRank: Family; scientificNameAuthorship: Théel, 1882; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 9; maximumDepthInMeters: 3345; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 36; eventDate: 2014-11-28; eventTime: 11:29:03 am; year: 2014; fieldNumber: INDEX2014-44VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141128112903004.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 171

Figure 171. doi

Elpidiidae gen. indet. (DZMB_2021_0072) in situ at the South East Indian Ridge in Cluster 9 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Peniagone* Théel, 1882

Peniagone purpurea (Théel, 1882)

Material

a. scientificName: *Peniagone purpurea*; taxonConceptID: *Peniagone purpurea*; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Elpidiidae; taxonRank: Species; genus: *Peniagone*; scientificNameAuthorship: (Théel, 1882); waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3155; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2015-12-07; eventTime: 5:22:16 am; year: 2015; fieldNumber: INDEX2015-60ROV; fieldNotes: 1.8°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1914_00060.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 172

Figure 172. doi

Peniagone purpurea in situ at the border of the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Laetmogonidae Ekman, 1926

Laetmogonidae gen. indet.

Material

a. taxonConceptID: Laetmogonidae gen. indet.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Laetmogonidae; taxonRank: Family; scientificNameAuthorship: Ekman, 1926; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2509; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 7:46:20 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00427.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 173

Figure 173. doi

Laetmogonidae gen. indet. in situ at the South East Indian Ridge in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Pelagothuriidae Ludwig, 1893

Genus *Enypniastes* Théel, 1882

Enypniastes eximia Théel, 1882

Material

a. scientificName: *Enypniastes eximia*; taxonConceptID: *Enypniastes eximia*; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Pelagothuriidae; taxonRank: Species; genus: *Enypniastes*; scientificNameAuthorship: Théel, 1882; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3313; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2015-12-08; eventTime: 6:41:13 am; year: 2015; fieldNumber: INDEX2015-62ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1915_00155.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 174

Figure 174. doi

Enypniastes eximia in situ within the Edmond-vent site 2-vent site 7 area field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Psychropotidae Théel, 1882

Genus *Benthodytes* Théel, 1882

Benthodytes sp. indet.

Material

a. taxonConceptID: ***Benthodytes*** sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Elasipodida; family: Psychropotidae; taxonRank: Genus; genus: ***Benthodytes***; scientificNameAuthorship: Théel, 1882; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2468; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 7:51:11 am; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00152.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 175

Figure 175. doi

Benthodytes sp. indet. in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

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

Genus *Benthothuria* Perrier R., 1898

Benthothuria gen. inc.

Material

a. taxonConceptID: *Benthothuria* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Persiculida; taxonRank: Genus; genus: *Benthothuria*; scientificNameAuthorship: Perrier R., 1898; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 6; maximumDepthInMeters: 3123; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2014-11-12; eventTime: 10:26:10 pm; year: 2014; fieldNumber: INDEX2014-24VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141112222610407.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 176

Figure 176. doi

Benthothuria gen. inc. in situ at the South East Indian Ridge in Cluster 6 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Pseudostichopodidae Miller, Kerr, Paulay, Reich, Wilson, Carvajal & Rouse, 2017

Genus *Pseudostichopus* Théel, 1886

Pseudostichopus gen. inc. (DZMB_2021_0073)

Material

a. taxonConceptID: ***Pseudostichopus*** gen. inc. (DZMB_2021_0073); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Persiculida; family: Pseudostichopodidae; taxonRank: Genus; genus: ***Pseudostichopus***; scientificNameAuthorship: Théel, 1886; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 9; maximumDepthInMeters: 2710; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 27; eventDate: 2014-11-28; eventTime: 7:48:43 am; year: 2014; fieldNumber: INDEX2014-43VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141128074843177.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 177

Figure 177. doi

Pseudostichopus gen. inc. (DZMB_2021_0073) in situ at the South East Indian Ridge in Cluster 9 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Pseudostichopus sp. indet. (DZMB_2021_0074)

Material

a. taxonConceptID: *Pseudostichopus* sp. indet. (DZMB_2021_0074); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Persiculida; family: Pseudostichopodidae; taxonRank: Genus; genus: *Pseudostichopus*; scientificNameAuthorship: Théel, 1886; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2496; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 11:44:51 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00588.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 178

Figure 178. doi

Pseudostichopus sp. indet. (DZMB_2021_0074) in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

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

Family Deimatidae Théel, 1882

Genus *Oneirophanta* Théel, 1879

Oneirophanta sp. indet.

Material

a. taxonConceptID: *Oneirophanta* sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Deimatidae; taxonRank: Genus; genus: *Oneirophanta*; scientificNameAuthorship: Théel, 1879; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2850; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3839; decimalLongitude: 69.2378; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 5:30:51 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-308.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 179

Figure 179. doi

Oneirophanta sp. indet. in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Synallactidae Ludwig, 1894

Synallactidae gen. indet. (DZMB_2021_0075)

Material

a. taxonConceptID: Synallactidae gen. indet. (DZMB_2021_0075); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Family; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2826; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2013-12-15; eventTime: 10:35:24 am; year: 2013; fieldNumber: INDEX2013-57ROV; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-15_10-35-24_Sonne_INDEX2013-2_057ROV09_Logo.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 180

Figure 180. doi

Synallactidae gen. indet. (DZMB_2021_0075) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Synallactidae gen. indet. (DZMB_2021_0076)

Material

a. taxonConceptID: Synallactidae gen. indet. (DZMB_2021_0076); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Family; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: EGS; verbatimLocality: Cluster 4; maximumDepthInMeters: 3199; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 31; eventDate: 2015-12-07; eventTime: 6:11:49 am; year: 2015; fieldNumber: INDEX2015-60ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1914_00119.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 181

Figure 181. doi

Synallactidae gen. indet. (DZMB_2021_0076) in situ in the Edmond-vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Synallactidae gen. indet. (DZMB_2021_0077)

Material

a. taxonConceptID: Synallactidae gen. indet. (DZMB_2021_0077); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Family; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2500; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 9:26:25 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.9°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00172.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 182

Figure 182. doi

Synallactidae gen. indet. (DZMB_2021_0077) in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Synallactidae gen. indet. (DZMB_2021_0078)

Material

a. taxonConceptID: Synallactidae gen. indet. (DZMB_2021_0078); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Family; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3687; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-22; eventTime: 12:43:12 am; year: 2016; fieldNumber: INDEX2016-20ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on basalt; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160122004312598_16_1080i Kopie.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: gen. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 183

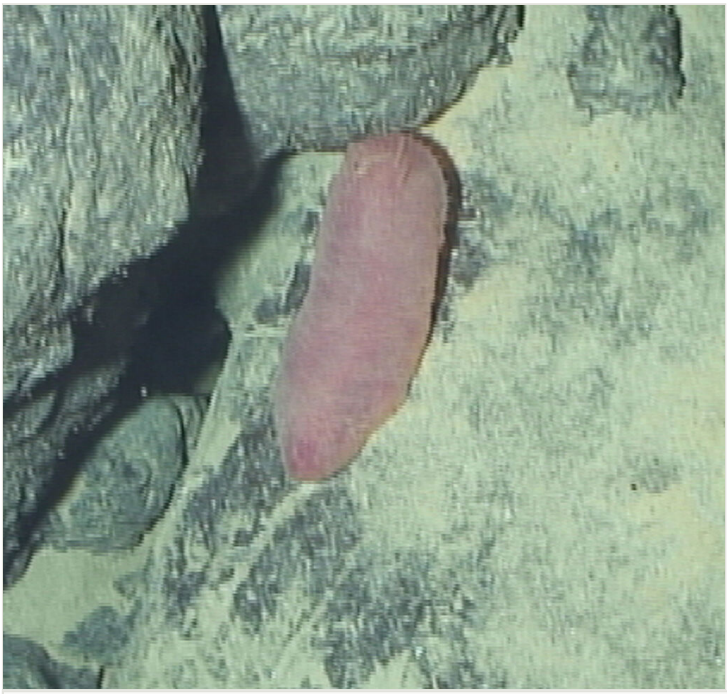

Figure 183. doi

Synallactidae gen. indet. (DZMB_2021_0078) in situ in the surrounding area of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Synallactidae fam. inc. (DZMB_2021_0079)

Material

a. taxonConceptID: Synallactidae fam. inc. (DZMB_2021_0079); kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Family; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2826; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3930; decimalLongitude: 69.2428; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 3:04:50 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-292.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 184

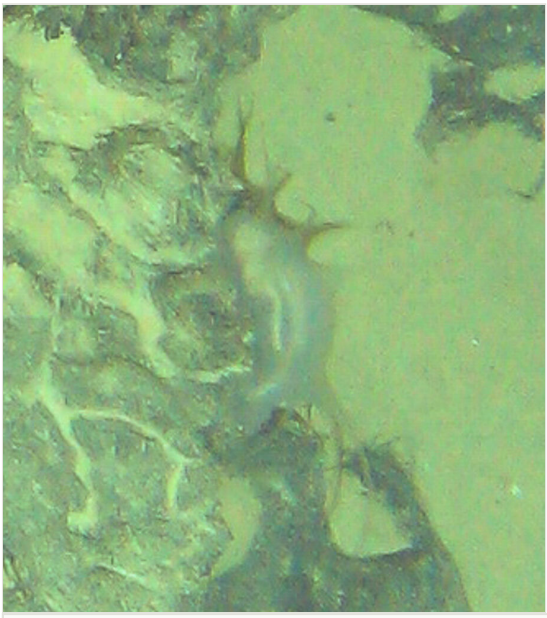

Figure 184. doi

Synallactidae fam. inc. (DZMB_2021_0079) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Synallactes* Ludwig, 1894

Synallactes sp. indet.

Material

a. taxonConceptID: *Synallactes* sp. indet.; kingdom: Animalia; phylum: Echinodermata; class: Holothuroidea; order: Synallactida; family: Synallactidae; taxonRank: Genus; genus: *Synallactes*; scientificNameAuthorship: Ludwig, 1894; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2530; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 8:11:10 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00180.jpg; identifiedBy: Andrey Gebruk, Antonina Kremenetskaia; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 185

Figure 185. doi

Synallactes sp. indet. in situ at the border of the vent site 3 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Ophiuroidea Gray, 1840

Order Amphilepidida O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017

Amphilepidida ord. inc.

Material

a. taxonConceptID: Amphilepidida ord. inc.; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Amphilepidida; taxonRank: Order; scientificNameAuthorship: O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2476; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 10:55:46 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00236.jpg; identifiedBy: Sabine Stöhr; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 186

Figure 186. doi

Amphilepidida ord. inc. in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Euryalida Lamarck, 1816

Family Asteronychidae Ljungman, 1867

Genus *Asteronyx* Müller & Troschel, 1842

Asteronyx gen. inc.

Material

a. taxonConceptID: *Asteronyx* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Euryalida; family: Asteronychidae; taxonRank: Genus; genus: *Asteronyx*; scientificNameAuthorship: Müller & Troschel, 1842; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2374; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 8:14:41 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: sitting on coral stalk; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00145.jpg; identifiedBy: Sabine Stöhr; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 187

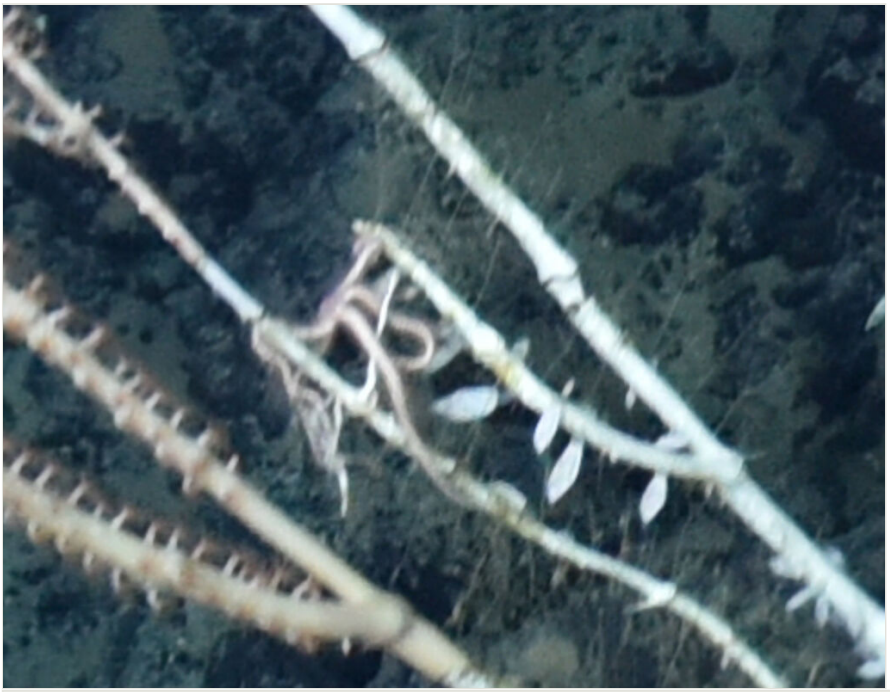

Figure 187. doi

Asteronyx gen. inc. in situ at the border of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Ophiacanthida O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017

Ophiacanthida ord. inc.

Material

a. taxonConceptID: Ophiacanthida ord. inc.; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Ophiacanthida; taxonRank: Order; scientificNameAuthorship: O'Hara, Hugall, Thuy, Stöhr & Martynov, 2017; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2909; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 10:07:41 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: sitting on porifera; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00144.jpg; identifiedBy: Sabine Stöhr; identificationRemarks: Identified only from imagery; identificationQualifier: ord. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 188

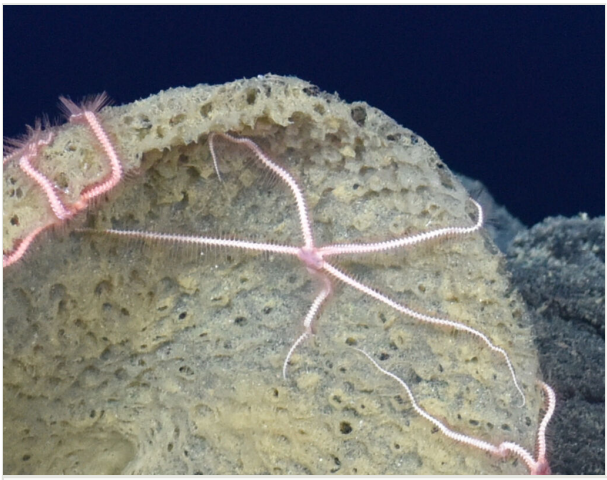

Figure 188. doi

Ophiacanthida ord. inc. in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Ophiurida Müller & Troschel, 1840 sensu O'Hara et al., 2017

Genus *Ophiophyllum* Lyman, 1878

Ophiophyllum petilum sp. inc. Lyman, 1878

Material

a. scientificName: *Ophiophyllum petilum*; taxonConceptID: *Ophiophyllum petilum* sp. inc.; taxonID: I18_1297; scientificNameID: -; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Ophiurida; taxonRank: Species; genus: *Ophiophyllum*; scientificNameAuthorship: Lyman, 1878; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2943; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2018-12-01; eventTime: 9:41:50 am; year: 2018; fieldNumber: INDEX2018-80ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2102_00129.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Sabine Stöhr; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; collectionCode: I18_080RO_A_004; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 189

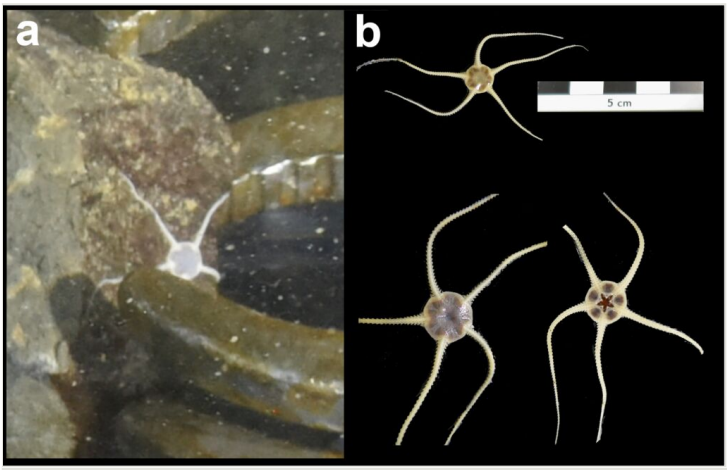

Figure 189. doi

Ophiophyllum petilum sp. inc. in situ (a) and sampled specimen (b) in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Ophiosphalmidae O'Hara, Stöhr, Hugall, Thuy & Martynov, 2018

Genus *Ophiosphalma* H.L. Clark, 1941

Ophiosphalma gen. inc.

Material

a. taxonConceptID: *Ophiosphalma* gen. inc.; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Ophiurida; family: Ophiosphalmidae; taxonRank: Genus; genus: *Ophiosphalma*; scientificNameAuthorship: H.L. Clark, 1941; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2458; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-22; eventTime: 5:52:04 am; year: 2018; fieldNumber: INDEX2018-61ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2094_01004.jpg; identifiedBy: Sabine Stöhr; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 190

Figure 190. doi

Ophiosphalma gen. inc. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Ophiosphalma armigerum sp. inc. (Lyman, 1878)

Material

a. scientificName: *Ophiosphalma armigerum*; taxonConceptID: *Ophiosphalma armigerum* sp. inc.; taxonID: I18_0990; kingdom: Animalia; phylum: Echinodermata; class: Ophiuroidea; order: Ophiurida; family: Ophiosphalmidae; taxonRank: Species; genus: *Ophiosphalma*; scientificNameAuthorship: (Lyman, 1878); waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2498; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 9:22:46 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: DNA voucher and animal stored freeze dried; behavior: on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00505.jpg; identifiedBy: Sabine Stöhr; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; collectionCode: I18_057RO_PC6_001; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 191

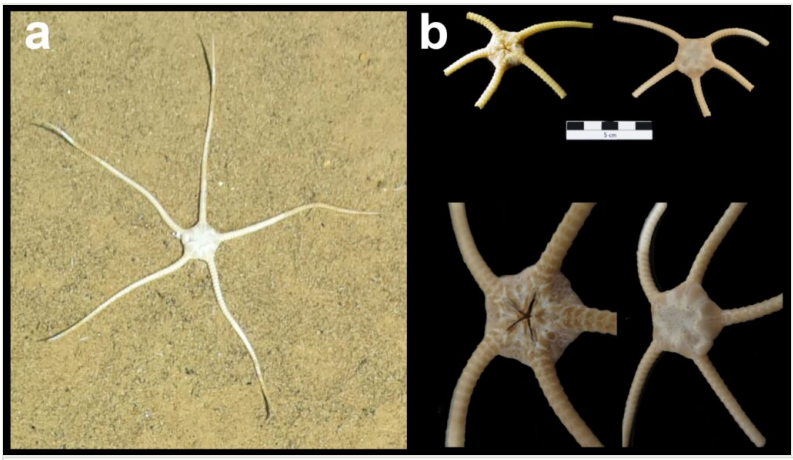

Figure 191. doi

Ophiosphalma armigerum sp. inc. in situ (a) and sampled specimen (b) at the Rodriguez Triple Junction in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Hemichordata Bateson, 1885

Class Enteropneusta Gegenbaur, 1870

Order Enteropneusta

Family Torquaratoridae Holland, Clague, Gordon, Gebruk, Pawson & Vecchione, 2005

Torquaratoridae fam. inc.

Material

a. taxonConceptID: Torquaratoridae fam. inc.; kingdom: Animalia; phylum: Hemichordata; class: Enteropneusta; order: Enteropneusta; family: Torquaratoridae; taxonRank: Family; scientificNameAuthorship: Holland, Clague, Gordon, Gebruk, Pawson & Vecchione, 2005; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 9; maximumDepthInMeters: 3356; locationRemarks: RV Pelagia Cruise INDEX2014 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 36; eventDate: 2014-11-28; eventTime: 12:45:42 pm; year: 2014; fieldNumber: INDEX2014-44VS; fieldNotes: 1.7°C; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: NIOZ; occurrenceStatus: present; associatedMedia: 20141128124542012.jpg; identifiedBy: Terue C. Kihara, Klaas Gerdes; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 192

Figure 192. doi

Torquaratoridae fam. inc. in situ at the South East Indian Ridge in Cluster 9 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Mollusca

Class Bivalvia Linnaeus, 1758

Order Mytilida Ferussac, 1822

Family Mytilidae Rafinesque, 1815

Genus *Bathymodiolus* Kenk & B. R. Wilson, 1985

Bathymodiolus septemdierum sp. inc. Hashimoto & Okutani, 1994

Material

a. scientificName: *Bathymodiolus septemdierum*; taxonConceptID: *Bathymodiolus septemdierum* sp. inc.; kingdom: Animalia; phylum: Mollusca; class: Bivalvia; order: Mytilida; family: Mytilidae; taxonRank: Species; genus: *Bathymodiolus*; scientificNameAuthorship: Hashimoto & Okutani, 1994; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2537; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 10:47:02 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: on sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00281.jpg; identifiedBy: Leon Hoffman; identificationRemarks:

Identified only from imagery; identificationQualifier: sp. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 193

Figure 193. doi

Bathymodiolus septemdierum sp. inc. in situ within the vent site 3 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Class Cephalopoda Cuvier, 1795

Order Octopoda Leach, 1818

Family Bathypolypodidae Robson, 1929

Genus *Bathypolypus* Grimpe, 1921

Bathypolypus sp. indet.

Material

a. taxonConceptID: *Bathypolypus* sp. indet.; kingdom: Animalia; phylum: Mollusca; class: Cephalopoda; order: Octopoda; family: Bathypolypodidae; taxonRank: Genus; genus: *Bathypolypus*; scientificNameAuthorship: Grimpe, 1921; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2908; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-28; eventTime: 6:31:00 am; year: 2018; fieldNumber: INDEX2018-73ROPOS; fieldNotes: 1.7°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Crawling on seafloor; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2100_00033.jpg; identifiedBy: Kathrin Bolstad; identificationRemarks: Identified only

from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 194

Figure 194. doi

Bathypolypus sp. indet. in situ in the surrounding of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Cirroteuthidae Keferstein, 1866

Genus *Cirroteuthis* Eschricht, 1838

Cirroteuthis sp. indet.

Material

a. taxonConceptID: *Cirroteuthis* sp. indet.; kingdom: Animalia; phylum: Mollusca; class: Cephalopoda; order: Octopoda; family: Cirroteuthidae; taxonRank: Genus; genus: *Cirroteuthis*; scientificNameAuthorship: Eschricht, 1838; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2412; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 23; eventDate: 2018-12-10; eventTime: 9:47:41 am; year: 2018; fieldNumber: INDEX2018-97ROPOS; fieldNotes: 1.9°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2106_00183.jpg; identifiedBy: Kathrin Bolstad; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 195

Figure 195. doi

Cirroteuthis sp. indet. in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Opisthoteuthidae Verrill, 1896

Genus *Grimpoteuthis* Robson, 1932

Grimpoteuthis gen. inc.

Material

a. taxonConceptID: *Grimpoteuthis* gen. inc.; kingdom: Animalia; phylum: Mollusca; class: Cephalopoda; order: Octopoda; family: Opisthoteuthidae; taxonRank: Genus; genus: *Grimpoteuthis*; scientificNameAuthorship: Robson, 1932; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: RTJ; verbatimLocality: Cluster 5; maximumDepthInMeters: 2501; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-03; eventTime: 12:50:35 pm; year: 2018; fieldNumber: INDEX2018-82ROPOS; fieldNotes: 1.8°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2103_00310.jpg; identifiedBy: Kathrin Bolstad; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 196

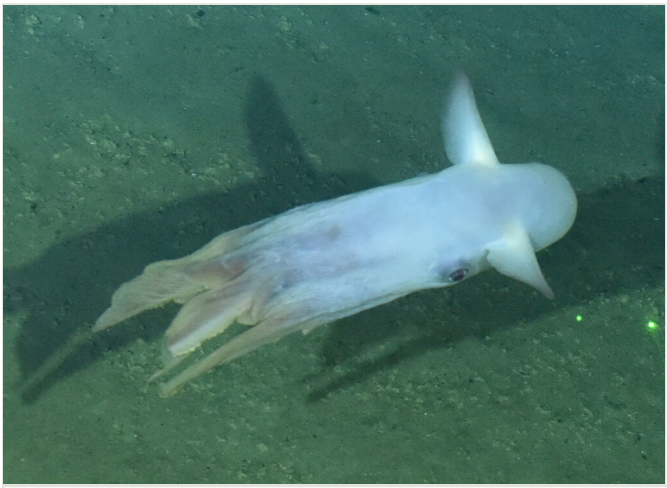

Figure 196. doi

Grimpoteuthis gen. inc. in situ at the Rodriguez Triple Junction in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Oegopsida d'Orbigny, 1845

Family Magnapinnidae Vecchione & Young, 1998

Genus *Magnapinna* Vecchione & Young, 1998

Magnapinna sp. indet.

Material

a. taxonConceptID: *Magnapinna* sp. indet.; kingdom: Animalia; phylum: Mollusca; class: Cephalopoda; order: Oegopsida; family: Magnapinnidae; taxonRank: Genus; genus: *Magnapinna*; scientificNameAuthorship: Vecchione & Young, 1998; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3664; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-19; eventTime: 9:07:31 am; year: 2016; fieldNumber: INDEX2016-16ROV; fieldNotes: 1.7°C, 34.7 ppt; lifeStage: Adult; preparations: Imaged only; behavior: Swimming; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160119090731111_15_1080i copy.jpg; identifiedBy: Kathrin Bolstad; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 197

Figure 197. doi

Magnapinna sp. indet. in situ at the border of the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Gastropoda Cuvier, 1795

Order Caenogastropoda Cox, 1960

Superfamily Abyssochrysoidea Tomlin, 1927

Abyssochrysoidea superfam. inc.

Material

a. taxonConceptID: Abyssochrysoidea superfam. inc.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Caenogastropoda; taxonRank: Superfamily; scientificNameAuthorship: Tomlin, 1927; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3685; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-21; eventTime: 4:39:21 pm; year: 2016; fieldNumber: INDEX2016-20ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to hard substrates; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160121163921145_01_1080i Kopie.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: superfam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 198

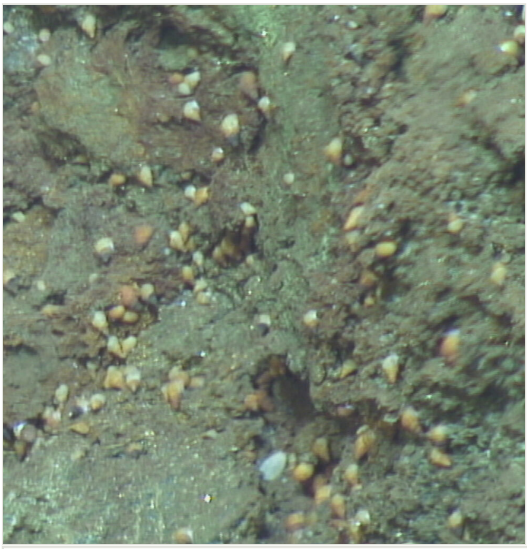

Figure 198. doi

Abyssochrysoidea superfam. inc. in situ within the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Cerithiopsidae H. Adams & A. Adams, 1853

Genus *Speculator* Waren & Bouchet, 2001

Speculator gen. inc.

Material

a. taxonConceptID: *Speculator* gen. inc.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Caenogastropoda; family: Cerithiopsidae; taxonRank: Genus; genus: *Speculator*; scientificNameAuthorship: Waren & Bouchet, 2001; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Vent site 1; verbatimLocality: Cluster 4; maximumDepthInMeters: 3083; locationRemarks: RV Pelagia Cruise INDEX2015 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 30; eventDate: 2015-11-27; eventTime: 9:11:52 am; year: 2015; fieldNumber: INDEX2015-37ROV; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 2; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R1905_00010.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 199

Figure 199. doi

Speculator gen. inc. in situ at the border of the vent site 1 hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Provannidae Waren & Ponder, 1991

Genus *Alviniconcha* Okutani & Ohta, 1988

Alviniconcha marisindica Okutani, 2014

Material

a. scientificName: *Alviniconcha marisindica*; taxonConceptID: *Alviniconcha marisindica*; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Caenogastropoda; family: Provannidae; taxonRank: Species; genus: *Alviniconcha*; scientificNameAuthorship: Okutani, 2014; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2466; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 9:48:47 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: on sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00186.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 200

Figure 200. doi

Alviniconcha marisindica in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Lepetellida Mosakalev, 1971

Family Lepetodrilidae McLean, 1988

Lepetodrilidae fam. inc.

Material

a. taxonConceptID: Lepetodrilidae fam. inc.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Lepetellida; family: Lepetodrilidae; taxonRank: Family; scientificNameAuthorship: McLean, 1988; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2320; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2018-11-25; eventTime: 6:52:10 am; year: 2018; fieldNumber: INDEX2018-67ROPOS; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2097_00079.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 201

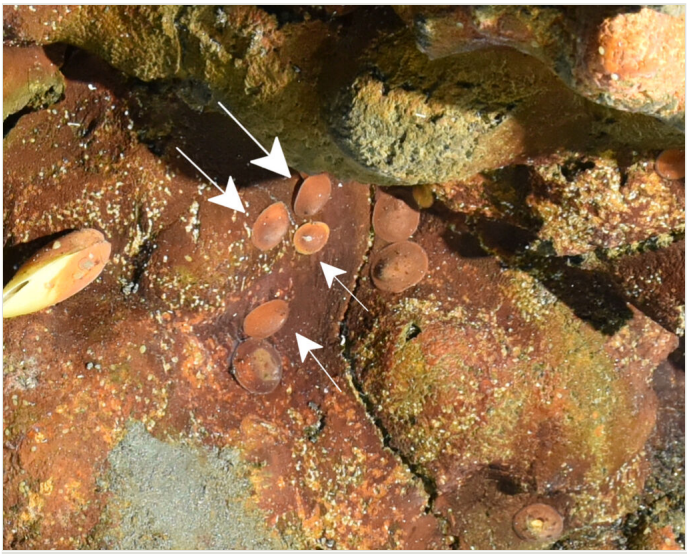

Figure 201. doi

Lepetodrilidae fam. inc. in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Genus *Lepetodrilus* McLean, 1988

Lepetodrilus gen. inc.

Material

a. taxonConceptID: *Lepetodrilus* gen. inc.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Lepetellida; family: Lepetodrilidae; taxonRank: Genus; genus: *Lepetodrilus*; scientificNameAuthorship: McLean, 1988; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3676; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-19; eventTime: 10:42:17 am; year: 2016; fieldNumber: INDEX2016-16ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160119104217205_01_1080i copy.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 202

Figure 202. doi

Lepetodrilus gen. inc. in situ within the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Lepetodrilidae Lepetodrilus sp. indet.

Material

a. taxonConceptID: Lepetodrilidae *Lepetodrilus* sp. indet.; taxonID: I16_28; scientificNameID: *Lepetodrilus* sp. 2 SBJ-2008; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Lepetellida; family: Lepetodrilidae; taxonRank: Genus; genus: *Lepetodrilus*; scientificNameAuthorship: McLean, 1988; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2420; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; decimalLatitude: -25.3204; decimalLongitude: 70.0404; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2016-01-11; eventTime: 8:09:32 am; year: 2016; fieldNumber: INDEX2016-06ROV; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: moving on active chimney; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160111080932A Kopie.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Leon Hoffman; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; collectionCode: I16_6RO_BB_124; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 203

Figure 203. doi

Lepetodrilidae *Lepetodrilus* sp. indet. in situ within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Neogastropoda Wenz, 1938

Family Raphitomidae Bellardi, 1875

Genus *Phymorhynchus* Dall, 1908

Phymorhynchus sp. indet.

Material

a. taxonConceptID: *Phymorhynchus* sp. indet.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neogastropoda; family: Raphitomidae; taxonRank: Genus; genus: *Phymorhynchus*; scientificNameAuthorship: Dall, 1908; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2530; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 11:46:54 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: on sulphides/ basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00304.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 204

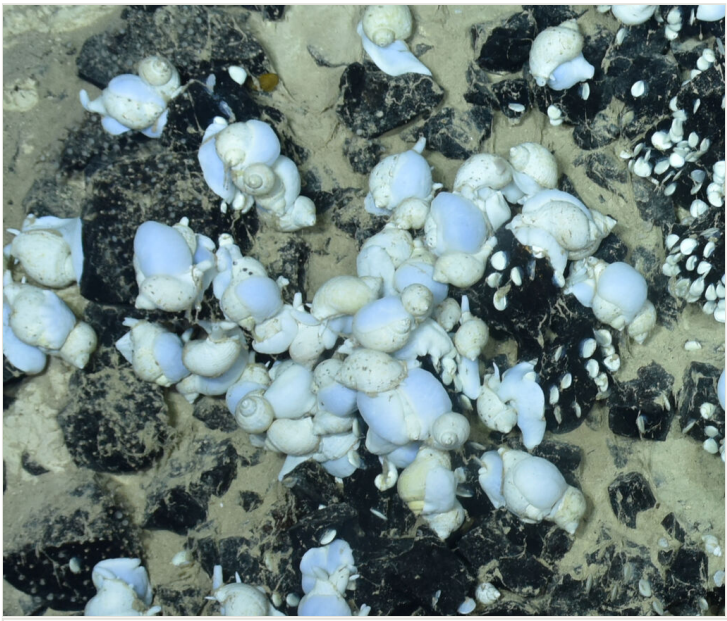

Figure 204. doi

Phymorhynchus sp. indet. in situ within the vent site 3 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phymorhynchus sp. indet. (Egg capsules)

Material

a. taxonConceptID: *Phymorhynchus* sp. indet. (Egg capsules); kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neogastropoda; family: Raphitomidae; taxonRank: Genus; genus: *Phymorhynchus*; scientificNameAuthorship: Dall, 1908; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 3; verbatimLocality: Cluster 12; maximumDepthInMeters: 2530; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-11-26; eventTime: 11:46:54 am; year: 2018; fieldNumber: INDEX2018-70ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Eggs; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2098_00304.jpg; identifiedBy: Terue C. Kihara, Klaas Gerdes; identificationRemarks: Identified only from imagery; identificationQualifier: sp. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 205

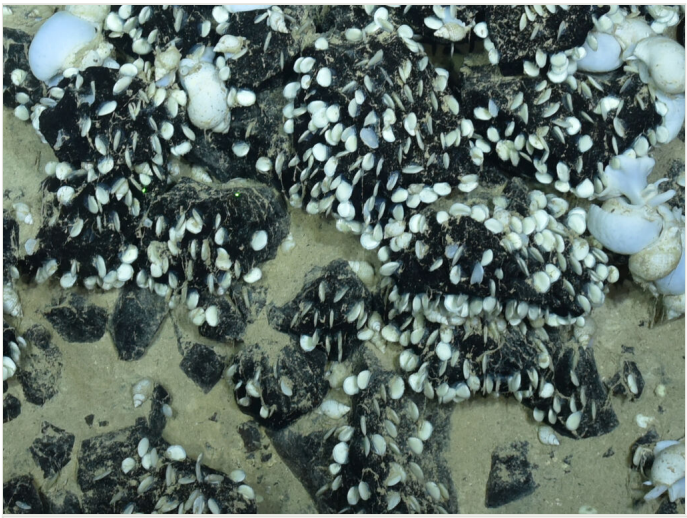

Figure 205. doi

Phymorhynchus sp. indet. (Egg capsules) in situ at the border of the vent site 3 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Neomphalida

Family Melanodrymiidae Salvini-Plawen & Steiner, 1995

Melanodrymiidae fam. inc.

Material

a. taxonConceptID: Melanodrymiidae fam. inc.; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neomphalida; family: Melanodrymiidae; taxonRank: Family; scientificNameAuthorship: Salvini-Plawen & Steiner, 1995; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2652; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 26; eventDate: 2018-12-09; eventTime: 9:36:47 am; year: 2018; fieldNumber: INDEX2018-95ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: on sulphides; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2105_00319.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; identificationQualifier: fam. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 206

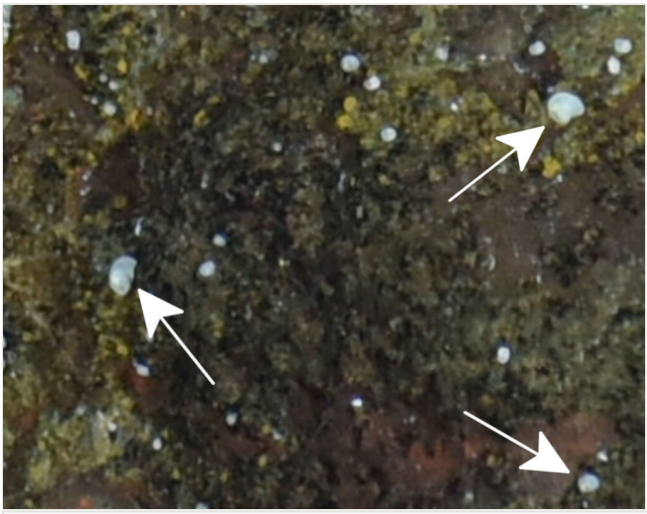

Figure 206. doi

Melanodrymiidae fam. inc. in situ within the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Peltospiridae McLean, 1989

Genus *Chrysomallon* C. Chen, Linse, Copley & Rogers, 2015

Chrysomallon squamiferum C. Chen, Linse, Copley & Rogers, 2015

Material

a. scientificName: *Chrysomallon squamiferum*; taxonConceptID: *Chrysomallon squamiferum* ; kingdom: Animalia; phylum: Mollusca; class: Gastropoda; order: Neomphalida; family: Peltospiridae; taxonRank: Species; genus: *Chrysomallon*; scientificNameAuthorship: C. Chen, Linse, Copley & Rogers, 2015; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2474; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-22; eventTime: 9:14:14 am; year: 2018; fieldNumber: INDEX2018-61ROPOS; fieldNotes: 1.9°C, 34.7 ppt; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: moving on active chimney; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2094_01112.jpg; identifiedBy: Leon Hoffman; identificationRemarks: Identified only from imagery; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 207

Figure 207. doi

Chrysomallon squamiferum in situ within the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Scaphopoda Bronn, 1862

Scaphopoda ord. indet.

Material

a. taxonConceptID: Scaphopoda ord. indet.; kingdom: Animalia; phylum: Mollusca; class: Scaphopoda; taxonRank: Class; scientificNameAuthorship: Bronn, 1862; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 6; verbatimLocality: Cluster 12; maximumDepthInMeters: 2510; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-11-20; eventTime: 7:48:13 am; year: 2018; fieldNumber: INDEX2018-57ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2092_00433.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 208

Figure 208. doi

Scaphopoda ord. indet. in situ in the surrounding area of the vent site 6 hydrothermal vent field in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Class Solenogastres Gegenbaur, 1878

Solenogastres ord. indet.

Material

a. taxonConceptID: Solenogastres ord. indet.; kingdom: Animalia; phylum: Mollusca; class: Solenogastres; taxonRank: Class; scientificNameAuthorship: Gegenbaur, 1878; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Pelagia; verbatimLocality: Cluster 8; maximumDepthInMeters: 3671; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 37; eventDate: 2016-01-19; eventTime: 5:13:57 pm; year: 2016; fieldNumber: INDEX2016-16ROV; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to active chimney; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160119171357176_15_1080i copy.jpg; identifiedBy: Terue C. Kihara, Klaas Gerdes; identificationRemarks: Identified only from imagery; identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 209

Figure 209. doi

Solenogastres ord. indet. in situ within the Pelagia hydrothermal vent field in Cluster 8 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Nemertea

Class Hoplonemertea Hubrecht, 1879

Order Monostilifera Brinkmann, 1917

Family Emplectonematidae Bürger, 1904

Genus *Thermanemertes* Rogers, Gibson & Tunnicliffe, 1996

Thermanemertes gen. inc.

Material

a. taxonConceptID: *Thermanemertes* gen. inc.; taxonID: I16_30, I16_31; scientificNameID: Eumonostilifera sp. 1; kingdom: Animalia; phylum: Nemertea; class: Hoplonemertea; order: Monostilifera; family: Emplectonematidae; taxonRank: Genus; genus: *Thermanemertes*; scientificNameAuthorship: Rogers, Gibson & Tunnicliffe, 1996; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2420; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; decimalLatitude: -25.3204; decimalLongitude: 70.0404; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2016-01-11; eventTime: 8:56:40 am; year: 2016; fieldNumber: INDEX2016-06ROV; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: moving on active chimney; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia: 160111085640277_15_1080i Kopie.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Jon L.

Norenburg; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; collectionCode: I16_6RO_BB_118; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 210

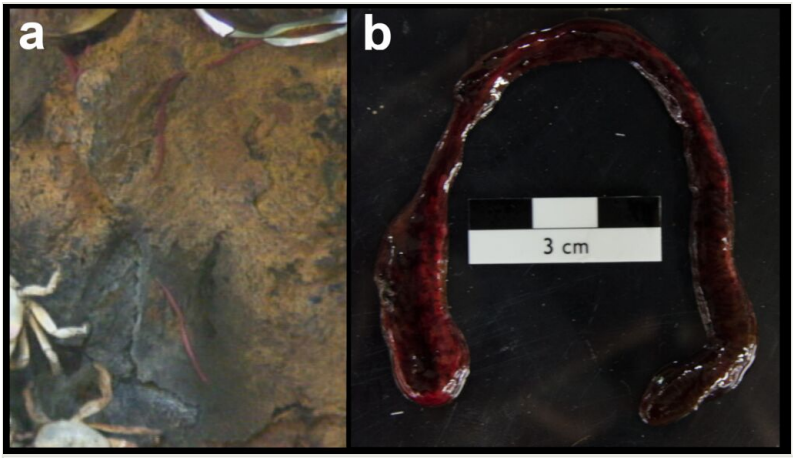

Figure 210. doi

Thermanemertes gen. inc. in situ (a) and sampled specimen (b) within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Platyhelminthes Minot, 1876

Subphylum Rhabditophora Ehlers, 1985

Order Polycladida Lang, 1884

Polycladida fam. indet.

Material

a. taxonConceptID: Polycladida fam. indet.; taxonID: I16_162; scientificNameID: Polycladida sp. 1; kingdom: Animalia; phylum: Platyhelminthes; order: Polycladida; taxonRank: Order; scientificNameAuthorship: Lang, 1884; waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Kairei; verbatimLocality: Cluster 5; maximumDepthInMeters: 2420; locationRemarks: RV Pourqoui pas? Cruise INDEX2016 Leg 1; decimalLatitude: -25.3204; decimalLongitude: 70.0403; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 24; eventDate: 2016-01-15; eventTime: 9:16:09 pm; year: 2016; fieldNumber: INDEX2016-12ROV; individualCount: 100; lifeStage: Adult; preparations: DNA voucher and animal stored in 96% ethanol; behavior: on base of active chimney; recordedBy: IFREMER; occurrenceStatus: present; associatedMedia:

160115211609738_01_1080i copy.jpg; associatedOccurrences: none; associatedSequences: COI; identifiedBy: Terue C. Kihara, Klaas Gerdes; identificationRemarks: Identified by morphology and DNA of collected specimen; identificationQualifier: fam. indet.; language: en; institutionCode: DZMB; collectionCode: I16_12RO_SG4_2; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 211

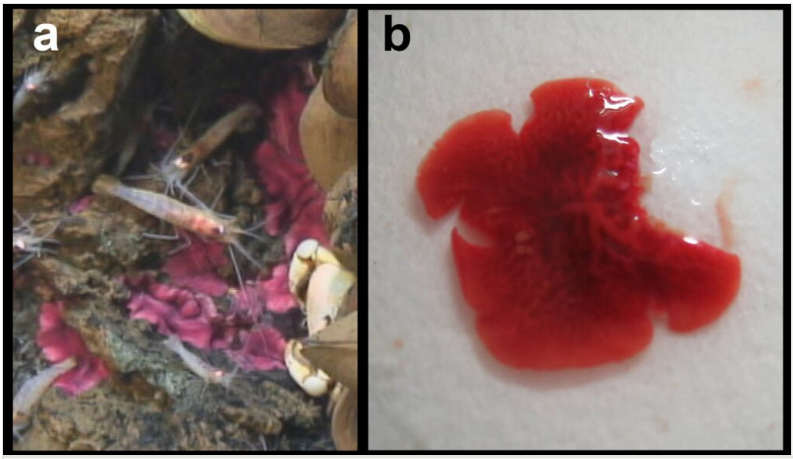

Figure 211. doi

Polycladida fam. indet. in situ (a) and sampled specimen (b) within the Kairei hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Phylum Porifera Grant, 1836

Genus *Paleodictyon* Giuseppe Meneghini, 1850

Paleodictyon nodosum sp. inc. Seilacher, 1977

Material

a. scientificName: *Paleodictyon nodosum*; taxonConceptID: *Paleodictyon nodosum* sp. inc.; kingdom: Animalia; phylum: Porifera; taxonRank: Species; genus: *Paleodictyon*; scientificNameAuthorship: Seilacher, 1977; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: Vent site 5; verbatimLocality: Cluster 11; maximumDepthInMeters: 2907; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 29; eventDate: 2018-11-29; eventTime: 9:30:02 am; year: 2018; fieldNumber: INDEX2018-75ROPOS; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 21; lifeStage: Adult; preparations: Imaged only; behavior: in sediment; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2101_00115.jpg; identifiedBy: Terue C. Kihara, Klaas Gerdes; identificationRemarks: Identified only from imagery; identificationQualifier: sp. inc.;

language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 212

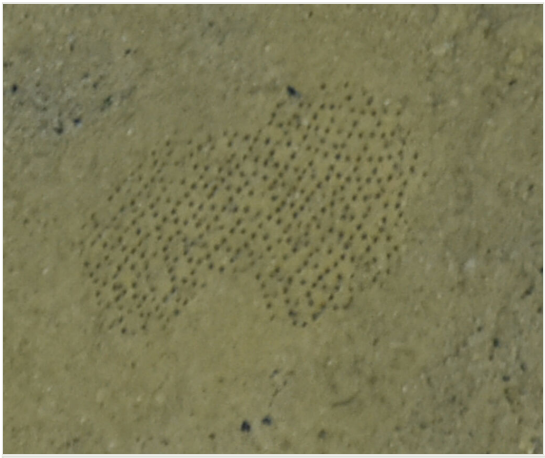

Figure 212. doi

Paleodictyon nodosum sp. inc. in situ in the surrounding area of the vent site 5 hydrothermal vent field in Cluster 11 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Kingdom Chromista Cavelier Smith, 1981

Phylum Foraminifera D'Orbigny, 1826

Class Monothalamea Haeckel, 1862 (as emended by Pawlowski et al. 2013)

Monothalamea ord. indet. (DZMB_2021_0080)

Material

a. taxonConceptID: Monothalamea ord. indet. (DZMB_2021_0080); kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; taxonRank: Class; scientificNameAuthorship: Haeckel, 1862 (as emended by Pawlowski et al., 2013); waterBody: Indian Ocean; stateProvince: Rodriguez Triple Junction; locality: Vent site 4; verbatimLocality: Cluster 5; maximumDepthInMeters: 2628; locationRemarks: RV Pelagia Cruise INDEX2018 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 25; eventDate: 2018-12-04; eventTime: 5:50:29 am; year: 2018; fieldNumber: INDEX2018-85ROPOS; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: ROPOS.COM; occurrenceStatus: present; associatedMedia: R2104_00027.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - Organism most closely resembles Pelosina, but identification cannot be confirmed from photographs

(Indeterminate arborescent foraminiferan); identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 213

Figure 213. doi

Monothalamea ord. indet. (DZMB_2021_0080) in situ in the surrounding area of the vent site 4 hydrothermal vent field in Cluster 5 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Monothalamea ord. indet. (DZMB_2021_0081)

Material

a. taxonConceptID: Monothalamea ord. indet. (DZMB_2021_0081); kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; taxonRank: Class; scientificNameAuthorship: Haeckel, 1862 (as emended by Pawlowski et al. 2013); waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3238; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8781; decimalLongitude: 69.6035; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-10; eventTime: 7:28:37 pm; year: 2013; fieldNumber: INDEX2013-44MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: on sediment; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 44MFT Fotos 2013-15-3.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - Similar to Plate-like morphotypes 10: Groups of curved plates from the ISA megafauna catalogue, but it is impossible to determine if they represent the same morphotype based on photographs (Curved plate-like morphotype); identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 214

Figure 214. doi

Monothalamea ord. indet. (DZMB_2021_0081) in situ in the area surrounding the Edmond hydrothermal vent field in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Monothalamea ord. indet. (DZMB_2021_0082)

Material

a. taxonConceptID: Monothalamea ord. indet. (DZMB_2021_0082); kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; taxonRank: Class; scientificNameAuthorship: Haeckel, 1862 (as emended by Pawlowski et al., 2013); waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2847; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3842; decimalLongitude: 69.2377; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 5:27:56 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: Axinellida sp_17MFT Fotos 2013-358-4.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - Similar to Plate-like morphotypes 7: radiating plates from the ISA megafauna catalogue (Plate-like morphotype); identificationQualifier: ord. indet.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 215

Figure 215. doi

Monothalamea ord. indet. (DZMB_2021_0082) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Order Astrorhizida Lankester, 1885

Family Arboramminidae Shires, Gooday & Jones, 1994

Genus *Luffammina* Kamenskaya, Bagirov & Simdianov, 2002

Luffammina gen. inc.

Material

a. taxonConceptID: *Luffammina* gen. inc.; kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; order: Astrorhizoida; family: Arboramminidae; taxonRank: Genus; genus: *Luffammina*; scientificNameAuthorship: Kamenskaya, Bagirov & Simdianov, 2002; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond/ Vent site 7; verbatimLocality: Cluster 4; maximumDepthInMeters: 3245; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 32; eventDate: 2013-12-14; eventTime: 11:52:16 am; year: 2013; fieldNumber: INDEX2013-55ROV; individualCount: 100; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR/ GEOMAR; occurrenceStatus: present; associatedMedia: 2013-12-14_11-52-16_Sonne_INDEX2013-2_055ROV08_Logo-2.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - The structures resemble Luffamina atlantica from the Rainbow area of Mid-Atlantic Ridge, but their identification as a foraminifera cannot be confirmed from the photograph; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 216

Figure 216. doi

Luffammina gen. inc. in situ in the Edmond-vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR and GEOMAR).

Family Psamminidae

Genus *Psammina* Haeckel, 1889

Psammina gen. inc. (DZMB_2021_0083)

Material

a. taxonConceptID: *Psammina* gen. inc. (DZMB_2021_0083); kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; family: Psamminidae; taxonRank: Genus; genus: *Psammina*; scientificNameAuthorship: Haeckel, 1889; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: MESO; verbatimLocality: outside INDEX claim; maximumDepthInMeters: 2865; locationRemarks: FS Sonne Cruise INDEX2013 Leg 1; decimalLatitude: -23.3820; decimalLongitude: 69.2365; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 28; eventDate: 2013-11-25; eventTime: 6:01:42 am; year: 2013; fieldNumber: INDEX2013-17MFT; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 17MFT Fotos 2013-361-4.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - it is impossible to confirm the generic identification from photographs; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 217

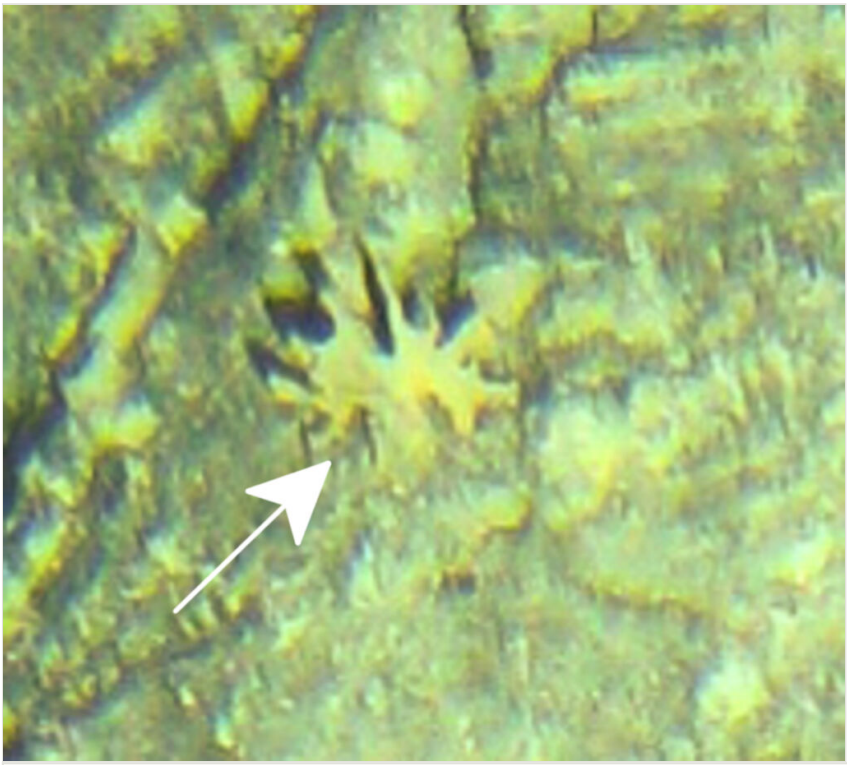

Figure 217. doi

Psammina gen. inc. (DZMB_2021_0083) in situ in the MESO area outside the INDEX area. Image corresponds with the data (Image attribution: BGR).

Psammina gen. inc. (DZMB_2021_0084)

Material

a. taxonConceptID: *Psammina* gen. inc. (DZMB_2021_0084); kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; family: Psamminidae; taxonRank: Genus; genus: *Psammina*; scientificNameAuthorship: Haeckel, 1889; waterBody: Indian Ocean; stateProvince: South East Indian Ridge; locality: SEIR; verbatimLocality: Cluster 12; locationRemarks: FS Sonne Cruise INDEX2017 Leg 1; decimalLatitude: -27.7060; decimalLongitude: 73.7330; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 34; eventDate: 2017-09-19; eventTime: 3:03:43 pm; year: 2017; fieldNumber: INDEX2017-74STR; fieldNotes: 1.7°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: IMG_2268.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - it is impossible to confirm the generic identification from photographs; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 218

Figure 218. doi

Psammina gen. inc. (DZMB_2021_0084) in situ at the South East Indian Ridge in Cluster 12 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Family Stannomidae Haeckel, 1889

Genus *Stannoma* Haeckel, 1889

Stannoma gen. inc.

Material

a. taxonConceptID: *Stannoma* gen. inc.; kingdom: Chromista; phylum: Foraminifera; class: Monothalamea; family: Stannomidae; taxonRank: Genus; genus: *Stannoma*; scientificNameAuthorship: Haeckel, 1889; waterBody: Indian Ocean; stateProvince: Central Indian Ridge; locality: Edmond; verbatimLocality: Cluster 4; maximumDepthInMeters: 3332; locationRemarks: FS Sonne Cruise INDEX2013 Leg 2; decimalLatitude: -23.8788; decimalLongitude: 69.6000; geodeticDatum: WGS84; coordinateUncertaintyInMeters: 33; eventDate: 2013-12-10; eventTime: 12:20:20 am; year: 2013; fieldNumber: INDEX2013-44MFT; fieldNotes: 1.8°C, 34.7 ppt; individualCount: 1; lifeStage: Adult; preparations: Imaged only; behavior: attached to basalt; recordedBy: BGR; occurrenceStatus: present; associatedMedia: 44MFT Fotos 2013-452-2.jpg; identifiedBy: Andrew J. Gooday; identificationRemarks: Identified only from imagery - it is impossible to confirm the generic identification from photographs; identificationQualifier: gen. inc.; language: en; institutionCode: DZMB; datasetName: INDEX; basisOfRecord: Human Observation

Notes: Fig. 219

Figure 219. doi

Stannoma gen. inc. in situ in the Edmond-vent site 2-vent site 7 area in Cluster 4 of the INDEX area. Image corresponds with the data (Image attribution: BGR).

Discussion

Despite the majority of the 218 taxa identified solely on imagery and physical samples existing for a considerably lower number, this is the first image atlas of the deep-sea benthic megafauna for the GLA, covering the southern CIR and northern SEIR in the Indian Ocean. Specifically, the atlas consists of the first collection of imaged taxon occurrences within active hydrothermal vents and their periphery, inactive vent sites and the non-vent areas in a region potentially exposed to mining and, thus, presents valuable biological baseline information.

Amongst the 218 taxa, the phylum Cnidaria are represented by the most taxa (77), followed by the phyla Echinodermata (48), Chordata (30), Arthropoda (22), Mollusca (17), Annelida (9) and Bryozoa (4). The phyla Hemichordata, Nemertea, Platyhelminthes and Porifera are each represented by one taxon. However, the latter phylum was excluded from this catalogue as noted in the Methods section, but has a considerably higher number of taxa (Table 5).

Table 5.

Number of taxa/species in each phylum at the Central Indian Ridge (CIR), the South East Indian Ridge (SEIR) and the Rodriguez Triple Junction (RTJ). Numbers include active vent taxa, inactive vent taxa and non-vent taxa. Note, that the phylum Porifera was excluded from this catalogue, with the exception of a single species.

Phylum	Taxa CIR	Taxa SEIR	Taxa RTJ	Taxa total
Annelida	5	8	3	**9**
Arthropoda	15	17	12	**22**
Bryozoa	3	4	1	**4**
Chordata	16	19	16	**30**
Cnidaria	42	47	28	**77**
Echinodermata	26	37	12	**48**
Hemichordata	-	1	-	**1**
Mollusca	8	14	10	**17**
Nemertea	-	-	1	**1**
Platyhelminthes	1	-	1	**1**
Porifera	1	1	-	**1**
Foraminifera	5	4	2	**7**
Total	**122**	**152**	**86**	**218**

In the Kingdom Chromista, protists, belonging to phylum Foraminifera, contributed seven taxa that could be distinguished, based on imagery. Some are tentatively identified to genus level, but these identifications cannot be confirmed from photographs alone. The identification of xenophyophores from photographs is particularly problematic. Nevertheless, these protistan taxa were consistently identified in all years and by all sampling gear.

Active hydrothermal vent fields

A total of 93 megafaunal taxa were recognised from the active hydrothermal vents, based on imagery (Table 6). This number includes non-vent species occurring in close proximity to active hydrothermal active vent fields without directly depending on-, or being influenced by, fluid discharge. Of all visually observed taxa, 18 could be confirmed taxonomically or based on molecular methods via sampling in Edmond (CIR, 7 taxa), Kairei (RTJ, 15 taxa), vent site 1 (CIR, 8 taxa), vent site 4 (RTJ, 2 taxa), vent site 5 (SEIR, 2 taxa), vent site 6 (SEIR, 2 taxa) and Pelagia (SEIR, 9 taxa) (vent field data and names not published). A single *Freyella* gen. inc. was observed within vent site 4, but this taxon is generally considered a non-vent species.

Table 6.

List of active vent species for the Central Indian Ridge (CIR), the South East Indian Ridge (SEIR) and the Rodriguez Triple Junction (RTJ) within active hydrothermal vent fields in each region. Presence of each taxon indicated as low ('+'), medium ('++') or high ('+++') density. Low density = 1 specimen, medium = 2-9 specimens and high ≥ 10 specimens. Endemic active vent taxa are highlighted in bold.

Phylum	Active vent taxa	CIR	SEIR	RTJ
Annelida	***Archinome jasoni* *[*Archinome jasoni* sp. inc.]**	+++	+++	+++
	***Branchipolynoe* gen. inc.**	+		
	***Lepidonotopodium* gen. inc. (DZMB_2021_0001)**	++	++	++
	***Oasisia* gen. inc.**	+++	+++	
	***Alvinella* gen. inc.**		+++	
Arthropoda	***Neolepas marisindica* sp. inc.**	+++	+++	+++
	***Regioscalpellum regium* sp. inc.**		+++	
	Verrucidae fam. inc.		+++	+++
	Munidopsis pallida sp. inc.		++	
	Austinograea rodriguezensis	+++	+++	+++
	***Alvinocaris solitaire* sp. inc.**	+++	+++	+++
	***Mirocaris indica* sp. inc.**	+++	++	++
	Rimicaris kairei	+++	+++	+++
	Pantopoda ord. inc.		++	
Chordata	Synaphobranchidae gen. indet.	+	++	
	Synaphobranchidae *Ilyophis brunneus* fam. inc.			+
	Coryphaenoides gen. inc. (DZMB_2021_0012)	+	+	
	Coryphaenoides armatus sp. inc.		+	+
	Halosauropsis macrochir gen. inc.		+	
	Spectrunculus crassus sp. inc.		++	
	Spectrunculus grandis sp. inc.		++	+
	Pachycara angeloi	++	++	++
Cnidaria	Ceriantharia ord. indet.			+
	Actiniaria fam. indet. (DZMB_2021_0017)	+++		
	Actiniaria fam. indet. (DZMB_2021_0018)		++	

Phylum	Active vent taxa	CIR	SEIR	RTJ
	Actiniaria fam. indet. (DZMB_2021_0019)	+++	++	+++
	Actiniaria fam. indet. (DZMB_2021_0020)	+++		+
	Actiniaria fam. indet. (DZMB_2021_0021)	+++	++	
	Actiniaria fam. indet. (DZMB_2021_0022)	+		
	Actiniaria fam. indet. (DZMB_2021_0023)	+		
	Actiniaria fam. indet. (DZMB_2021_0024)	++		
	Actiniaria fam. indet. (DZMB_2021_0025)	++		
	Actinoscyphiidae gen. indet. (DZMB_2021_0026)	+	+	
	Actinoscyphia sp. indet.		+	++
	Actinostolidae gen. indet.	++	++	+++
	Actinostola sp. indet. (DZMB_2021_0028)		+++	+
	Actinostola sp. indet. (DZMB_2021_0029)		+	
	Actinostola sp. indet. (DZMB_2021_0030)	+	+++	
	Actinostola sp. indet. (DZMB_2021_0031)		+	
	Bathyphellia sp. indet. (DZMB_2021_0032)	++	++	
	Bathyphellia sp. indet. (DZMB_2021_0033)		+++	
	***Maractis* sp. indet.**	+++	+++	+++
	Relicanthus daphneae sp. inc.	+	+	
	Alcyonacea *Anthomastus* gen. inc.		+	
	Iridogorgia magnispiralis sp. inc.		++	
	Clavulariidae gen. indet. (DZMB_2021_0036)	+++	+++	+++
	Clavulariidae gen. indet. (DZMB_2021_0037)	+		
	Clavulariidae fam. inc. (DZMB_2021_0038)	++		
	Clavulariidae fam. inc. (DZMB_2021_0039)	++		
	Isididae gen. indet. (DZMB_2021_0040)		+	
	Isididae gen. indet. (DZMB_2021_0041)		+	
	Isididae gen. indet. (DZMB_2021_0043)		+	+
	Isididae fam. inc. (DZMB_2021_0044)		+	
	Isididae *Bathygorgia* gen. inc.		++	+
	Isididae *Jasonisis* gen. inc.		++	
	Isididae *Keratoisis* gen. inc. (DZMB_2021_0047)			++
	Isididae *Lepidisis* gen. inc.		++	
	Lepidisis spp. indet.		+++	++

Phylum	Active vent taxa	CIR	SEIR	RTJ
	Paragorgiidae fam. inc.		+	
	Primnoidae gen. indet. (DZMB_2021_0048)			+
	Primnoidae gen. indet. (DZMB_2021_0049)		++	
	Stalk of Alcyonacea or Antipatharia ord. inc.	+		
	Heteropathes americana sp. inc.		+	
	Bathypathes sp. indet. (DZMB_2021_0050)			+
	Bathypathes patula sp. inc.	++	++	++
	Schizopathes spp. indet.		+	+
	Umbellula sp. indet. (DZMB_2021_0054)	++		
	Umbellula sp. indet. (DZMB_2021_0055)		++	
	Zoantharia fam. indet. (DZMB_2021_0056)	+++		+++
	Zoantharia fam. indet. (DZMB_2021_0057)	+++	+++	+++
	Hydrozoa ord. indet. (DZMB_2021_0060)			+++
	Hydrozoa ord. indet. (DZMB_2021_0061)			+++
	Hydrozoa ord. indet. (DZMB_2021_0062)	+		
	Hydrozoa ord. indet. (DZMB_2021_0063)			++
	Hydrozoa ord. indet. (DZMB_2021_0064)			+++
	***Candelabrum* sp. indet.**	+++	+	++
	Corymorphidae gen. indet.		+	
	Siphonophorae Rhodaliidae *Thermopalia* gen. inc.	++		
Echinodermata	*Freyella* gen. inc.			+
	***Chiridota hydrothermica* sp. inc.**	++	+++	
Mollusca	***Bathymodiolus septemdierum* *[*Bathymodiolus septemdierum* sp. inc.]**	+++	+++	+++
	Abyssochrysoidea superfam. inc.		+++	
	Alviniconcha marisindica	+++	+++	+++
	Lepetodrilidae fam. inc.		+++	+++
	***Lepetodrilus* gen. inc.**		+++	
	Lepetodrilidae *Lepetodrilus* sp. indet. *[Lepetodrilidae *Lepetodrilus* gen. inc.]		+++	+++
	***Phymorhynchus* sp. indet.**	+++	+++	+++
	***Phymorhynchus* sp. indet. (Egg capsules)**	+++	+++	+++
	Melanodrymiidae fam. inc.			+++

Phylum	Active vent taxa	CIR	SEIR	RTJ
	Chrysomallon squamiferum		+++	+++
	Solenogastres ord. indet.	+	+	
Nemertea	*Thermanemertes* gen. inc.			+++
Platyhelminthes	**Polycladida ord. inc.**	++ +		+++

Of the total of 93 taxa found within and in close proximity to hydrothermal vents, 29 identified megafaunal taxa were considered endemic at active vent fields. This number is comparable to the total of 46 megafaunal taxa identified from imagery or physical sampling at Dodo, Solitaire, Edmond and Kairei vent fields, stretching along the CIR and at Longqi and Tiancheng along the South West Indian Ridge (SWIR) (Watanabe and Beedessee 2015, Sun et al. 2020). In particular, four species were identified at the Dodo vent field; 18 taxa were initially identified within Solitaire (Nakamura et al. 2012) and subsequent physical sampling and taxonomic work revealed 22 taxa (Watanabe and Beedessee 2015). At Longqi, 21 were initially identified through observation and sampling (Copley et al. 2016) and 32 taxa have since been recognised (Zhou et al. 2018). A total of 23 species and morphotypes were recognised at Tiancheng vent field, including the active venting area and the periphery of the vent field (Sun et al. 2020). At Kairei vent field, 26 taxa were reported when the vent field was discovered (Hashimoto et al. 2001), with a subsequent increase to 34 known taxa (Watanabe and Beedessee 2015). For the Edmond vent field, Watanabe and Beedessee (2015) described six taxa.

Inactive hydrothermal vent field

We recognised a total of 69 taxa at inactive vent fields and inactive parts of active vent fields (Table 7), of which 37 are shared species with non-vent areas and 30 with active vent fields. Twenty two taxa were found exclusively within or close to inactive vent fields, 15 of these within inactive sites.

Table 7.

List of inactive vent species for the Central Indian Ridge (CIR), the South East Indian Ridge (SEIR) and the Rodriguez Triple Junction (RTJ) within inactive hydrothermal vent fields in each region. Presence of each taxon indicated as low ('+'), medium ('++') or high ('+++') density. Low density = 1 specimen, medium = 2-9 specimens and high ≥ 10 specimens. Taxa found exclusively within or in close proximity to inactive hydrothermal vent fields are highlighted in bold, taxa observed only within inactive vent fields are additionally indicated by a plus.

Phylum	Inactive vent taxa	CIR	SEIR	RTJ
Annelida	Polynoidae gen. indet.		++	++
	***Lepidonotopodium* gen. inc. (DZMB_2021_0002) +**		+	
	***Lepidonotopodium* gen. inc. (DZMB_2021_0003) +**		+	
Arthropoda	***Glyptelasma* gen. inc.**		+++	+
	Amphipoda ord. inc. +			+

Phylum	Inactive vent taxa	CIR	SEIR	RTJ
	Munidopsis aries sp. inc.			+
	Munidopsis pallida sp. inc.	++	++	
	Thymopides laurentae sp. inc.		+	
	Nematocarcinus gen. inc. (DZMB_2021_0004)	+		
	Nematocarcinus gen. inc. (DZMB_2021_0005)	+	+	
	Cerataspis monstrosus sp. inc.		++	
	Munnopsidae fam. inc. (DZMB_2021_0007) [+]			+++
Bryozoa	**Cheilostomatida fam. indet. (DZMB_2021_0009)** [+]		+++	
Chordata	Synaphobranchidae gen. indet.	++	++	+
	***Histiobranchus* gen. inc.**	+		
	***Coryphaenoides longifilis* sp. inc.**		+	++
	Halosauropsis macrochir gen. inc.		++	
	Ophidiidae gen. indet. (DZMB_2021_0014)		+	
	Bassozetus gen. inc.		+	
	Spectrunculus grandis sp. inc.		++	
Cnidaria	Spirularia fam. indet.	++		
	Actiniaria fam. indet. (DZMB_2021_0017)	++		
	Actiniaria fam. indet. (DZMB_2021_0018)	+		
	Actiniaria fam. indet. (DZMB_2021_0020)		+	
	Actiniaria fam. indet. (DZMB_2021_0021)	+		
	Actiniaria fam. indet. (DZMB_2021_0022)	++		
	Actinoscyphia sp. indet	++	+	
	Actinostolidae gen. indet.	+	++	
	Actinostola sp. indet. (DZMB_2021_0028)	+	+	
	Bathyphellia sp. indet. (DZMB_2021_0032)	++		
	***Chondrophellia* sp. indet.** [+]	++		
	Alcyonacea fam. indet. [+]	++		
	***Anthomastus* sp. indet.** [+]	++		
	***Chrysogorgia* sp. indet. (DZMB_2021_0034)** [+]	+		
	***Chrysogorgia* sp. indet. (DZMB_2021_0035)** [+]	++		
	Iridogorgia magnispiralis sp. inc.		+++	
	Clavulariidae gen. indet. (DZMB_2021_0036)	+	++	
	Clavulariidae gen. indet. (DZMB_2021_0037)	+		
	Isididae gen. indet. (DZMB_2021_0040)		+	
	Isididae gen. indet. (DZMB_2021_0042)		++	
	Isididae gen. indet. (DZMB_2021_0045) [+]	+		

Phylum	Inactive vent taxa	CIR	SEIR	RTJ
	Isididae *Acanella* gen. inc.		++	
	Isididae *Bathygorgia* gen. inc.	++	++	
	Isididae *Jasonisis* gen. inc.		++	
	Isididae *Lepidisis* gen. inc.		++	
	Lepidisis spp. indet.	++	++	
	Primnoidae gen. indet. (DZMB_2021_0049)		++	
	Stalk of Alcyonacea or Antipatharia ord. inc.	++		
	Heteropathes sp. indet.		++	
	***Bathypathes* gen. inc. (DZMB_2021_0051)**		+	
	Bathypathes patula sp. inc.	++		
	Pennatulacea ord. inc. (DZMB_2021_0052)	+		
	Pennatulacea *Kophobelemnon* ord. inc.	+		
	Zoantharia fam. indet. (DZMB_2021_0056)	+++	+++	
	Zoantharia fam. indet. (DZMB_2021_0057)	+++	+++	
	***Zoantharia* fam. indet. (DZMB_2021_0058) [+]**		+++	
	Hydrozoa ord. indet. (DZMB_2021_0059) [+]		+++	
	Hydrozoa ord. indet. (DZMB_2021_0062)		++	
Echinodermata	Freyellidae fam. inc.	+		
	Freyella gen. inc.	++		
	Goniasteridae gen. indet. (DZMB_2021_0066)		+	
	***Circeaster* gen. inc. [+]**	+	++	
	Hapalosoma sp. indet.	+		
	Synallactidae gen. indet. (DZMB_2021_0077)			+
	Synallactes sp. indet.		++	
	***Ophiosphalma* gen. inc. [+]**		+	
	Ophiosphalma armigerum sp. inc.		++	+
Mollusca	Abyssochrysoidea superfam. inc.		+++	
	Phymorhynchus sp. indet. (Egg capsules)		+++	

The few studies focusing on megafauna at inactive vent fields found that most taxa are known from other hard substrates and were not endemic or strictly dependent on inactive hydrothermal areas (Boschen et al. 2013, Boschen et al. 2016). Nevertheless, the faunal composition and abundance of these non-vent taxa were different within inactive areas compared to those observed in non-vent areas on hard substrates.

Some species were found exclusively at inactive vents, including two limpet species from the East Pacific Rise (McLean 1990) and one polynoid polychaeta from the Galapagos Spreading Center (Pettibone 1989). At the SWIR, within the Longqi hydrothermal vent field,

an unknown ampharetid polychaete was sampled that Zhou et al. (2018) suggested to be adapted to inactive sites.

In the Pacific Ocean aggregations of non-vent fauna, such as solitary tunicates, brisingid sea stars, crinoids, sponges, anemones and brachiopods are found on inactive hydrothermal sulphides at Gorda Ridge (Van Dover et al. 1990). Observations from inactive sites close to Rumble II West Seamount off New Zealand revealed aggregations of comatulid crinoids, actiniarian anemones, sponges, ascidians, brachiopods and several coral species (Boschen et al. 2016). Similar suspension-feeding communities in comparably high abundance are reported from inactive sulphides at the Manus Basin (Galkin 1997, Sen et al. 2014) and Brothers Seamount (Boschen et al. 2015).

On inactive chimney complexes at Longqi, Zhou et al. (2018) reported occasional occurrences of *Munidopsis*-type galatheids; these inactive chimneys are relatively close to active vent sites, which might influence their faunal composition. *Munidopsis* species are also present within inactive sites in the INDEX area that lacks any recent hydrothermal activity.

Non-vent area

A total of 134 megafauna taxa were identified in the non-vent areas (Table 8), of which many were observed within inactive vents and in the periphery of active vents. Many of these shared taxa represent mobile individuals, especially of the phylum Chordata.

Table 8.

List of non-vent species for the Central Indian Ridge (CIR), the South East Indian Ridge (SEIR) and the Rodriguez Triple Junction (RTJ). Presence of each taxon indicated as low ('+'), medium ('++') or high ('+++') density. Low density = 1 specimen, medium = 2-9 specimens and high ≥ 10 specimens.

Phylum	Non-vent taxa	CIR	SEIR	RTJ
Annelida	Polynoidae gen. indet.			++
	Sabellidae gen. indet.	++	+++	
Arthropoda	Anomura fam. indet.	++		
	Galatheidae fam. inc.	++	+	
	Munidopsis aries sp. inc.	++	+	+
	Munidopsis pallida sp. inc.	++	++	
	Paguroidea superfam. inc.	++		
	Thymopides laurentae sp. inc.	+		
	Nematocarcinus gen. inc. (DZMB_2021_0004)	+++	++	++
	Nematocarcinus gen. inc. (DZMB_2021_0005)	+++		
	Dendrobranchiata subord. inc.		+	
	Cerataspis monstrosus sp. inc.	++	+++	++
	Munnopsidae fam. inc. (DZMB_2021_0006)	+++		

Phylum	Non-vent taxa	CIR	SEIR	RTJ
Bryozoa	Cheilostomatida fam. indet. (DZMB_2021_0008)	++	++	
	Bifaxaria gen. inc.	++	++	+
	Tessaradoma gen. inc.	+++	+	
Chordata	Synaphobranchidae gen. indet.		++	++
	Bathysaurus mollis sp. inc.	++	++	++
	Bathypterois sp. indet.	++	+	
	Ipnops agassizii sp. inc.	++	+	
	Gadiformes Macrouridae ord. inc. (DZMB_2021_0010)		+	
	Gadiformes Macrouridae ord. inc. (DZMB_2021_0011)		+	
	Coryphaenoides gen. inc. (DZMB_2021_0013)		++	
	Coryphaenoides armatus sp. inc.	++		+
	Antimora rostrata			++
	Chaunacops gen. inc.		+	
	Notacanthiformes ord. inc.	++		
	Aldrovandia affinis gen. inc.	++	+++	
	Halosauropsis macrochir gen. inc.		+++	++
	Ophidiidae gen. indet. (DZMB_2021_0015)			+
	Ophidiidae fam. inc. (DZMB_2021_0016)	+		++
	Acanthonus armatus gen. inc.	+	++	+
	Barathrites iris gen. inc.	++		
	Bassozetus gen. inc.	+	++	
	Spectrunculus crassus sp. inc.		++	+
	Spectrunculus grandis sp. inc.	+	++	
	Xyelacyba myersi gen. inc.			++
	Octacnemidae gen. indet.	+		
	Culeolus spp. indet			++
	Bathyraja tunae sp. inc.			++
Cnidaria	Cnidaria cl. indet.		+	
	Spirularia fam. indet.	+		
	Actiniaria fam. indet. (DZMB_2021_0017)	+	+	
	Actiniaria fam. indet. (DZMB_2021_0018)		++	
	Actiniaria fam. indet. (DZMB_2021_0020)		+	
	Actiniaria fam. indet. (DZMB_2021_0022)		+	
	Actinostolidae gen. indet.			++
	Actinostola sp. indet. (DZMB_2021_0028)		++	+
	Bathyphellia sp. indet. (DZMB_2021_0032)		++	

Phylum	Non-vent taxa	CIR	SEIR	RTJ
	Bathyphellia sp. indet. (DZMB_2021_0033)		++	
	Alcyonacea *Anthomastus* gen. inc.		+	
	Iridogorgia magnispiralis sp. inc.		+	
	Clavulariidae gen. indet. (DZMB_2021_0037)	+		
	Clavulariidae fam. inc. (DZMB_2021_0038)	+		
	Isididae gen. indet. (DZMB_2021_0042)		+	
	Isididae fam. inc. (DZMB_2021_0044)		+	
	Isididae *Acanella* gen. inc.		+	
	Isididae *Bathygorgia* gen. inc.		+	+
	Isididae *Jasonisis* gen. inc.		+	
	Isididae *Keratoisis* gen. inc. (DZMB_2021_0046)			+
	Isididae *Lepidisis* gen. inc.		+	
	Lepidisis spp. indet.		++	
	Paragorgiidae fam. inc.		+	
	Primnoidae gen. indet. (DZMB_2021_0049)		++	++
	Heteropathes sp. indet.		+	
	Heteropathes americana sp. inc.		+	
	Bathypathes patula sp. inc.		+	+
	Schizopathes spp. indet.		+	
	Pennatulacea fam. indet (DZMB_2021_0053)	+		
	Umbellula sp. indet. (DZMB_2021_0054)	+		
	Umbellula sp. indet. (DZMB_2021_0055)			+
	Epizoanthus sp. indet.	++		
	Hydrozoa ord. indet. (DZMB_2021_0065)			++
	Siphonophorae Rhodaliidae *Thermopalia* gen. inc.			+
Echinodermata	*Hymenodiscus* gen. inc.		++	+
	Freyellidae fam. inc.	++	++	
	Freyastera gen. inc.	++	++	++
	Freyella gen. inc.	++	++	+
	Styracaster gen. inc.	++		
	Henricia gen. inc.	+		+
	Goniasteridae gen. indet. (DZMB_2021_0066)	+	++	
	Goniasteridae gen. indet. (DZMB_2021_0067)	++		
	Evoplosoma gen. inc.		++	
	Lydiaster johannae sp. inc.	+		
	Solasteridae fam. inc.		+	

Phylum	Non-vent taxa	CIR	SEIR	RTJ
	Asthenactis gen. inc.		+	
	Hymenaster sp. indet.		+	
	Pteraster gen. inc.		+	
	Antedonidae gen. indet. (DZMB_2021_0068)	++	++	
	Antedonidae fam. inc. (DZMB_2021_0069)	++	++	
	cf. *Bathymetra* sp.	+	+	
	Pentametrocrinus sp. indet.	++	++	
	Hyocrinidae gen. indet.		++	
	Irregularia infracl. inc.		+	
	Cidaroida fam. indet.			+
	Hapalosoma sp. indet.	++	+	
	Salenocidaris sp. indet.		++	
	Elpidiidae gen. indet. (DZMB_2021_0070)	+	++	
	Elpidiidae gen. indet. (DZMB_2021_0071)			+
	Elpidiidae gen. indet. (DZMB_2021_0072)		++	
	Peniagone purpurea	+		
	Laetmogonidae sp. indet.	++	++	
	Enypniastes eximia	++		
	Benthodytes sp. indet.	++	+	+
	Benthothuria gen. inc.		+	
	Pseudostichopus gen. inc. (DZMB_2021_0073)		+	
	Pseudostichopus sp. indet. (DZMB_2021_0074)		++	
	Oneirophanta sp. indet.	++		
	Synallactidae gen. indet. (DZMB_2021_0075)	++	+++	
	Synallactidae gen. indet. (DZMB_2021_0076)	+++	++	++
	Synallactidae gen. indet. (DZMB_2021_0077)		++	++
	Synallactidae gen. indet. (DZMB_2021_0078)		++	
	Synallactidae fam. inc. (DZMB_2021_0079)	+		
	Synallactes sp. indet.	++	++	
	Amphilepidida ord. inc.			+
	Asteronyx gen. inc.		++	
	Ophiacanthida ord. inc.		++	+
	Ophiophyllum petilum sp. inc.		+	
	Ophiosphalma armigerum sp. inc.	++	++	++
Hemichordata	Torquaratoridae fam. inc.		+	
Mollusca	*Bathypolypus* sp. indet.		++	

Phylum	Non-vent taxa	CIR	SEIR	RTJ
	Cirroteuthis sp. indet.	+	+	++
	Grimpoteuthis gen. inc.			+
	Magnapinna sp. indet.		+	
	Speculator gen. inc.	++		
	Scaphopoda ord. indet.	++	+	
Porifera	*Paleodictyon nodosum*	+++	+++	
Foraminifera	Monothalamea ord. indet. (DZMB_2021_0080)			++
	Monothalamea ord. indet. (DZMB_2021_0081)	++	++	
	Monothalamea ord. indet. (DZMB_2021_0082)	+++		
	Luffammina gen. inc.	+++	+++	
	Psammina gen. inc. (DZMB_2021_0083)	+++	+	+
	Psammina gen. inc. (DZMB_2021_0084)		+++	
	Stannoma gen. inc.	+		

Information on the benthic deep-sea megafauna of the Indian Ocean from both samples and imagery are rather scarce (Ingole and Koslow 2005, Sautya et al. 2011) and often focuses on the shelf (Hunter et al. 2011). Sautya et al. (2011) identified 58 megafaunal taxa using video transects and TV-grab samples from the Andaman Sea, a back-arc basin in the northern part of the Indian Ocean, although the highest diversity and density was observed on the flanks or summit of seamounts and only seven were found in the Andaman Basin on fine sediments (2,876 –2,917 m).

These seven taxa were observed at similar depths to those recorded here from the CIR and SEIR area, all on soft substrates (Sautya et al. 2011). The imagery samples from the seamounts, representing hard substrates, were taken at a maximum depth of 1,424 m (Sautya et al. 2011), much shallower and more influenced by surface primary production compared to the deeper and oligotrophic study area (Harms et al. 2019).

Ingole and Koslow (2005) recognised 38 megafaunal taxa from video transects and sampling in the Central Ocean Basin. Other studies in the Indian Ocean focused on macrofauna (Ingole 2003) and responses of macrofauna to disturbance (Ingole et al. 2001, Jones et al. 2017).

Megafauna in the German licence area

The GLA covers three regions; the southern CIR, the RTJ and the northern SEIR, a distance spanning 1000 km from the northern to the southern border. Several taxa are widespread throughout the INDEX area and others have restricted distribution patterns (Tables 6, 7, 8). For the active vent fields, 19 species occur on the CIR, SEIR and RTJ, including the shrimp *Rimicaris kairei*, the bristle worm *Archinome jasoni*, the fish *Pachycara angeloi* and the mussel *Bathymodiolus septemdierum* (Table 6). Fifty taxa were found only in one region, including the bristle worm *Branchipolynoe* gen. inc. on the CIR, the sea

spider Pantopoda ord. inc. on the SEIR and the ribbon worm *Thermanemertes* gen. inc. at the RTJ (Table 6). The remaining 26 taxa were observed in two of the three regions, ten of them on the CIR and SEIR, but not within the RTJ in between these two regions, thereby probably reflecting the sampling effort.

The widespread distribution throughout the INDEX area of many typical active vent field taxa found in this study confirms the Indian Ocean as a standalone biogeographic province (Van Dover et al. 2001, Zhou et al. 2018, Sun et al. 2020). The majority of spatially-restricted taxa were either smaller taxa, as reported for polychaetes from Longqi (Copley et al. 2016, Zhou et al. 2018) or were occasional vent field residents also found in more distant non-vent areas (compare Table 6 and Table 8 for shared taxa). These taxa probably contribute to the small-scale differences described for Indian Ocean vent fields (Copley et al. 2016, Zhou et al. 2018, Sun et al. 2020) and can also be confirmed for the active vent fields within the INDEX area.

At inactive hydrothermal vent fields, the majority of taxa were shared with active vent fields and non-vent areas and only 22 of the 69 taxa were observed only within - or close to - inactive areas. Fifteen taxa were observed exclusively within inactive areas on sulphides. Of the 22 taxa observed at inactive sites, 19 showed a restricted occurrence in one region, including the isopod Munnopsidae fam. inc. (DZMB_2021_0007) at the RTJ, the Bryozoan Cheilostomatida fam. indet. (DZMB_2021_0009) on the SEIR and the fish *Histiobranchus* gen. inc. on the CIR; the remaining three taxa were restricted to two regions each (Table 7). Fifteen taxa showed a spatial distribution across two regions and only Synaphobranchidae gen. indet. showed a widespread distribution in all three regions, but this taxon is not restricted to inactive vent fields and was also observed in active vent fields. The taxa at inactive areas show highly localised distribution patterns in low to medium abundance (Table 7). In addition and in contrast to the high number of shared taxa at active vent fields in this study and beyond the INDEX area (Breusing et al. 2015, Sun et al. 2020), the inactive vent fields had a considerably lower number of shared taxa between inactive sites and no widespread distribution of taxa across the INDEX area.

The non-vent area showed the highest species diversity in medium to low abundance with a high number of locally-restricted taxa (Table 8). Eighty-two taxa occurred in one region, 39 in two regions and only 13 taxa were observed throughout the INDEX area, the majority in medium to low abundance (Table 8).

In the Indian Ocean, three additional licence areas for polymetallic sulphides have been issued to China on the SWIR, India on the southern CIR and SWIR and Korea on the CIR, with a number of shared species between the licence areas and hydrothermal vent fields outside exploration claims (Nakamura et al. 2012, Zhou et al. 2018, Sun et al. 2020). For example, the gastropod *Chrysomallon squamiferum* has been found in both the Chinese and the German exploration claim areas in addition to the Solitaire vent field outside exploration areas (Chen et al. 2015). The low connectivity of the known populations at these three vent sites in the Indian Ocean, of which two are within national licence claim areas, has led to classification of this taxon as endangered on the IUCN Red List (Sigwart et al. 2019). The IUCN Red List might, therefore, be used to draw attention to vulnerable

deep-sea habitats and serve as a basis for protecting them (Sigwart et al. 2019). To clarify the population connectivity of *C. squamiferum* and other locally-restricted species, it is necessary to conduct biodiversity assessments in additional hydrothermal vent areas.

Other taxa, such as *Rimicaris kairei*, show a greater connectivity and a more widespread distribution across spatially-separated vent fields in this yet undisturbed environment (Hashimoto et al. 2001, Zhou et al. 2018, Gerdes et al. 2019).

Although potential mining activities are focusing on inactive hydrothermal vents, they could affect nearby active hydrothermal vents and the surrounding non-vent area (Levin et al. 2016, Miller et al. 2018, Van Dover 2019).

Mitigation strategies to avoid 'serious harm' to the environment include Environmental Impact Assessment studies (EIA), which require baseline studies for time series and monitoring to understand and explain succession, resilience and the recovery potential of the fauna against anthropogenic disturbances (Gollner et al. 2017, Van Dover 2019).

The impact of mining activities for inactive hydrothermal vent sites is far from understood due to a lack of qualitative and quantitative studies as pointed out in several reviews addressing the potential consequences of mining-related disturbances (Van Dover 2014, Miller et al. 2018, Van Dover 2019). For the non-vent areas in the vicinity of hydrothermal vent fields, mining effects are even less studied and require proactive research (Van Dover 2014).

This megafauna catalogue is a valuable baseline study that offers an impression of the diversity present within the GLA, which can serve as a basis for monitoring the deep-sea benthic megafauna in the context of potential SMS mining activities. A drawback of this fauna catalogue is that the occurrences of taxa are based chiefly on imagery alone; additional physical samples are needed for taxonomic and molecular confirmation.

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Author contributions

KHG sampled specimens, participated at several expeditions, extracted faunal occurrences from video- and photograph transects, prepared the database, did the initial identification and wrote the manuscript. PMA contributed to the database work, the imagery collection and processing. TK and USS funded the project, made data collection possible and are the principle investigators of the INDEX project. CM identified the sea stars, JN identified the nemertean taxa, TDL identified all fish, KS identified cirripedians, EM identified lobster and squat lobster, DG identified the bryozoans, TM identified cnidarians, SS identified brittle stars, CGM identified crinoids, SB identified Munnopsidae, TMG identified all Annelida MC identified crabs, anomuran crabs, shrimps and sea spiders, AG and AK1 identified sea cucumbers, AK2 identified sea urchins, KS identified ascideans, KB identified cephalopods, LH identified shell-bearing molluscs, AJG identified Foraminifera, TCK sampled specimens, participated at all expeditions and did the initial identification. All authors reviewed the manuscript.

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Supplementary material

Suppl. material 1: Megafauna table with all occurrences of the German exploration licence area for seafloor massive sulphides along the Central and South East Indian Ridge (Indian Ocean) doi

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Data type: plain-text table with tab-separated fields in UTF-8 encoding and plain line endings (Unix LF)

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