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Collections Unravelled: an annotated catalogue of Antipatharia (Cnidaria, Hexacorallia) type material in Naturalis Biodiversity Center

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Abstract

We present an annotated catalogue of Antipatharia (black corals) type material, housed at Naturalis Biodiversity Center, unifying the historically separate holdings of the former Rijksmuseum van Natuurlijke Historie and the Zoological Museum of Amsterdam. Following a recent re-inventory, all relevant specimens were located and examined to verify catalogue numbers, type status, preservation condition and associated documentation. The collection comprises more than 750 specimens representing 118 species, with name-bearing type material for 59 taxa, including both species and historical infraspecific names. The oldest material dates to the early nineteenth century and the collection is particularly rich in Indo-Pacific specimens, especially from major expeditions to Indonesia, as well as material from the Caribbean and eastern Atlantic. The catalogue documents changes in catalogue numbering, clarifies the status of type fragments and highlights gaps and uncertainties resulting from historical collecting and curation practices. By providing verified and accessible type data, this work supports taxonomic revision, nomenclatural stability and future comparative research, based on the Naturalis collections.

Key Words

Black corals, museum specimens, natural history collections, nomenclature, taxonomy, type material

Introduction

The Antipatharia collection of Naturalis Biodiversity Center (Leiden) brings together the historical holdings of the former Rijksmuseum van Natuurlijke Historie (RMNH) and the Zoological Museum of Amsterdam (ZMA), which were merged in 2012. This integration substantially increased both the size and significance of the antipatharian collection. Access to the material was intermittently limited in the years following the merger due to relocation and re-housing of the collections, retirement of the former collection manager and, later, the COVID-19 pandemic. Consequently, systematic curation and verification of the Antipatharia holdings were delayed.

Since 2024, the collection has undergone reorganisation and re-inventory, enabling verification of specimen identities, catalogue numbers, preservation status and associated documentation. This work has made it possible to compile the present annotated catalogue of Antipatharia type material, housed at Naturalis.

The collection comprises more than 750 specimens representing 118 nominal species, including type material for 59 taxa. Approximately 80% of the specimens are preserved in 70% ethanol, while the remainder consists largely of dry-preserved historical material, much of it dating from before 1900. Additional associated material, such as glass slides and SEM preparations, is available for some specimens. The collection is particularly rich in

material from the Indo-Pacific, especially from major expeditions to Indonesia, as well as from the Caribbean and eastern Atlantic.

The historical component dates back to the early nineteenth century and includes material collected by, amongst others, Philipp Franz Balthasar von Siebold, Jan Cock Blomhoff, François Joseph Cantraine, Franck van Heukelom, Theodoor Gerard Lidth de Jeude and Dirk Samuel Hoedt. A major portion of the early holdings originates from the Siboga Expedition (1899–1900) to Indonesia, Timor and the Philippines, which remains one of the most important sources of antipatharian material in the collection. Subsequent twentieth-century holdings derive primarily from expeditions in Indonesian waters, including the Snellius I (1929–1930), Snellius II (1966) and Rumphius Biohistorical Expedition (1990), as well as from surveys in the Caribbean and eastern Atlantic.

Parts of the collection were studied in the early twentieth century by van Pesch (1910, 1914), whose monographic treatments described numerous new taxa, including species, varieties and subvarieties. As such infraspecific ranks are rarely used in modern taxonomy, the nomenclatural status and interpretation of several of these names require clarification. The type collection also includes donated fragments of type specimens ("schizotypes"), particularly from the National Museum of Natural History (NMNH), Smithsonian Institution (SI), Washington, DC, which are treated here as associated type material.

Type material from the former Zoological Museum Amsterdam was previously catalogued by van Soest (1977). All specimens listed in that work were located during the present re-inventory and additional type specimens have since been identified. In some cases, historical catalogue numbers were subdivided to assign specimens to specific expedition stations; these changes are documented here to improve traceability of type series.

Additional material was found with a possible link to Muséum national d'Histoire naturelle, marked on historical labels as "Mus. de Paris". During the French Occupation of the Netherlands, most of the "Kabinet des Stadhouders" collection was taken to France in 1795. After the invasion, S.J. Brugmans was sent to Paris to retrieve these collections. Jean Baptiste Pierre Antoine de Monet, chevalier de Lamarck (1744–1829), working in that period on his work "Histoire naturelle des Animaux sans vertèbres" (Lamarck 1816), strongly resisted returning these collections. The return of the collections was negotiated with the assistance of Alexander von Humboldt. However, Brugmans returned with a collection of mostly 'duplicates' from the Paris Museum (Holthuis 1995).

This catalogue provides an up-to-date overview of the Antipatharia type material, housed at Naturalis, including verification of specimen status, catalogue numbers and associated documentation. No new taxonomic or nomenclatural acts are proposed. By making this information accessible, the catalogue facilitates taxonomic revision, nomenclatural stability and future comparative studies.

Abbreviations

NBC Naturalis Biodiversity Center, Leiden, The Netherlands

RMNH Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands (now Naturalis Biodiversity Center)

ZMA Zoölogisch Museum Amsterdam, The Netherlands (now part of Naturalis Biodiversity Center)

Materials and methods

Specimens of Antipatharia type material were identified primarily using van Soest's (1977) catalogue and relevant subsequent publications documenting the RMNH and ZMA cnidarian collections. All specimens listed here were located in the Naturalis Biodiversity Center collection and examined to verify catalogue numbers, type status, preservation condition and associated documentation. Additionally, some of the antipatharian type specimens were donated to the Smithsonian Institution as part of a specimen exchange.

Species are listed under their currently accepted name according to the World Register of Marine Species (WoRMS Editorial Board 2026), followed by the original combination with reference to the publication in which the name was established. For each taxon, available information on type material, catalogue numbers, preservation, type locality and remarks on type status or nomenclatural issues is provided. Where discrepancies between sources were encountered, the most recent revisionary treatment or prevailing usage was followed and any remaining uncertainty is noted in the catalogue remarks.

All examined specimens were checked for completeness of labels and associated documentation. In several cases, labels were updated or replaced to improve legibility, standardise format or reflect current institutional practices. Original labels were retained with the specimens whenever present and newly-added labels are clearly distinguishable from historical labels and reproduce the original data as faithfully as possible.

Locality and label data were transcribed from specimen labels and associated documentation and standardised for consistency of presentation across the catalogue. Equivalent locality names and label formulations were unified where appropriate and geographic coordinates were converted to decimal degrees. These editorial adjustments were made solely for clarity and consistency in the catalogue and do not alter the underlying historical data. As minor differences in wording, spelling, punctuation or format may exist amongst the catalogue, specimen labels, collection database and original publications, users should consult the original descriptions and, where relevant, the original specimen labels for exact historical data.

Type status follows the original publications wherever possible. This catalogue documents only the type material and associated fragments held at Naturalis Biodiversity Center and does not constitute new type designations or other nomenclatural acts.

Results

Taxonomic accounts

Class Hexacorallia Haeckel, 1896
Order Antipatharia Milne Edwards, 1857
Genus *Acanthopathes* Opresko, 2004

Acanthopathes undulata (van Pesch, 1914)

Antipathes (*Aphanipathes*) *undulata* van Pesch, 1914: 87–89, pl. 8, fig. 8, text figs 74–76.

Holotype. Indonesia • colony (preserved in 70% ethanol); Solor Strait, mid-channel off Ipong Menanga; depth 113 m; stony bottom; Blake dredge; Siboga Expedition; Sta. 305; 8 Jan 1900; ZMA.COEL.2249 • fragment of colony (preserved in 70% ethanol); same data as preceding; RMNH.COEL.4727 • histological sections (glass slides); same data as preceding; RMNH.COEL.P.9388–9389.

Remarks. Histological sections were made from fragment RMNH.COEL.4727.

Genus *Allopathes* Opresko & Cairns, 1994

Allopathes denhartogi Opresko, 2003

Allopathes denhartogi Opresko, 2003a: 276–280, figs 1–4.

Holotype. Cape Verde Islands • colony (preserved in 70% ethanol); Fogo Island, southwest of; 14.8667°N, 24.5333°W; depth 1100–1300 m; CANCAP-VI Expedition; Sta. 6.049; 10 Jun 1982; RMNH.COEL.31293.

Genus *Antipathes* Pallas, 1766

Antipathes curvata van Pesch, 1914

Antipathes (*Euantipathes*) *curvata* van Pesch, 1914: 84–85, pl. 8, fig. 5, text-fig. 68.

Holotype. Indonesia • colony (dry preserved); Papua, Merauke; 1904; J.W.R. Koch leg.; ZMA.COEL.1793.

Remarks. The specimen was collected in 1904 and may have originated from the Zuidwest Nieuw-Guinea Expedition (1904–1905), although this cannot be confirmed from the available documentation.

Antipathes dichotoma Pallas, 1766

Antipathes dichotoma Pallas, 1766.

Neotype. Italy • colony (preserved in 70% ethanol); Gulf of Naples; May 1924; G.A. Stiasny leg.; RMNH.COEL.4891 • histological sections (glass slides); same data as neotype colony; RMNH.COEL.P.9462–9464.

Remarks. Histological sections RMNH.COEL.P.9462–9464 were prepared from the neotype colony RMNH.COEL.4891. The neotype was designated by Opresko (2003b: 482–491, figs 1–2, 4a, 4d, 5a, d). A small fragment was donated to the Smithsonian Institution under number USNM 100927.

Antipathes indistincta van Pesch, 1914

Antipathes (*Aphanipathes*) *indistincta* van Pesch, 1914: 89–90, 221–222, text-fig. 77–78.

Holotype. Indonesia • colony (preserved in 70% ethanol); Damar Island, north of Salomakiëe anchorage; depth 45 m; coral bottom with Lithothamnion; dredge, tow net, reef exploration; Siboga Expedition 1899–1900; Sta. 144; 7–9 Aug 1899; ZMA.COEL.2246.

Antipathes longibrachiata van Pesch, 1914

Antipathes (*Euantipathes*) *longibrachiata* van Pesch, 1914: 80–82, 218–220, text-fig. 63–65.

Syntypes. Indonesia • several colonies (preserved in 70% ethanol); Lombok, Bay of Pidjot; depth ≤ 22 m; mud, coral and coral sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 33; 24–26 Mar 1899; ZMA.COEL.2547 • fragment of colony (preserved in 70% ethanol); same data as preceding; RMNH.COEL.4720.

Remarks. Specimen RMNH.COEL.4720 represents a fragment removed from the syntype colony ZMA.COEL.2547.

Antipathes sibogae van Pesch, 1914

Antipathes (*Aphanipathes*) *sibogae* van Pesch, 1914: 85–87, 220–221, pl. 8, fig. 2, text-fig. 69–72.

Holotype. Indonesia • fragment of colony (preserved in 70% ethanol); Borneo Bank; 2.4167°S, 117.7167°E; depth 40–50 m; fine coral sand; trawl, Hensen quantitative net, Hensen vertical net; Siboga Expedition 1899–1900; Sta. 80; 13 Jun 1899; RMNH.COEL.4726 • histological sections (glass slides); same data as holotype fragment; RMNH.COEL.P.9385–9387.

Remarks. The original colony described by van Pesch (1914) is not present in the Naturalis collection; the holotype consists of fragmentary material only.

Genus *Aphanipathes* Brook, 1889

Aphanipathes reticulata van Pesch, 1914

Antipathes (*Aphanipathes*) *reticulata* van Pesch, 1914: 90–92, text-fig. 80–82.

Holotype. Indonesia • colony (preserved in 70% ethanol); Rote Island, east coast, Pepela Bay; 10.6333°S, 123.4200°E; depth 22–45 m; mud, coral and Lithothamnion; dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 301; 30 Jan 1900; ZMA.COEL.2248.

Genus *Asteriopathes* Opresko, 2004

Asteriopathes arachniformis Opresko, 2004

Asteriopathes arachniformis Opresko, 2004: 223–227, figs 7, 8A, B, 9A, B.

Fragment of holotype. Palau • fragment of colony (preserved in 70% ethanol); Koror, east of Malakal Harbour, west of Augulepu Reef; 7.28737°N, 134.52460°E; 26 Feb 2001; P. Colin leg.; RMNH.COEL.32366.

Asteriopathes colini Opresko, 2004

Asteriopathes colini Opresko, 2004: 227–228, figs 10, 11A–D.

Fragment of holotype. Palau • fragment of colony (preserved in 70% ethanol); east side of Koror; 7.2735°N, 134.5238°E; depth 220 m; 5 Mar 2001; P. Colin leg.; RMNH.COEL.32367.

Genus *Bathypathes* Brook, 1889

Bathypathes seculata Opresko, 2005

Bathypathes seculata Opresko, 2005: 130–133, fig. 1.

Fragment of holotype. Hawaii • fragment of colony (preserved in 70% ethanol); off Kahuku Point, Oahu Island; depth 963 fm [1761–1762 m]; R/V *Albatross*; Sta. 4125; bearing 77°S, 12.0°E; 31 Jul 1902; RMNH.COEL.33298.

Remarks. A fragment of the holotype described by Opresko (2005).

Genus *Chrysopathes* Opresko, 2003

Chrysopathes formosa Opresko, 2003

Chrysopathes formosa Opresko, 2003c: 515–519, figs 11, 12.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); Jasper Seamount; 30.4167°N, 122.7500°W; 20 Oct 1984; L. Levin leg.; R/V *Atlantis*; RMNH.COEL.32041.

Chrysopathes gracilis Opresko, 2005

Chrysopathes gracilis Opresko, 2005: 157–159, figs 14, 15.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); Fieberling Guyot; 32.4600°N, 127.4917°W; depth 640 m; DSV *Alvin*, dive 2294; 14 Oct 1990; S. France leg.; RMNH.COEL.33303.

Remarks. A fragment of the holotype described by Opresko (2005).

Chrysopathes speciosa Opresko, 2003

Chrysopathes speciosa Opresko, 2003c: 519–523, figs 13, 14.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); off Oregon; 46.0500°N, 124.6333°W; depth 400 fm [731–732 m]; coll. R/V "Commando"; RMNH.COEL.32040.

Genus *Cirrhipathes* Blainville, 1834

Cirrhipathes contorta van Pesch, 1910

Cirripathes contorta van Pesch, 1910: 17–19, figs 10–12.
Cirripathes (*Eucirripathes*) *contorta* van Pesch, 1910 – in van Pesch (1914): 156–158 and 190–195, text-figs 213–215 and 255–258.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Banda anchorage; depth 9–45 m; black sand, coral, Lithothamnion bank at 18–36 m; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 240; 22 Nov–1 Dec 1899; ZMA.COEL.2553.

Cirrhipathes musculosa van Pesch, 1910

Cirripathes musculosa van Pesch, 1910: 31–32, figs 38–40.
Cirripathes (*Eucirripathes*) *musculosa* van Pesch, 1910 — in van Pesch (1914): 168–170, 197–200, text-figs 242–244.

Holotype. Indonesia • colony (preserved in 70% ethanol); Saleh Bay, anchorage east of Dangar Besar; depth ≤ 36 m; sand, coral and mud; dredge, trawl, reef exploration; Siboga Expedition 1899–1900; Sta. 313; 14–16 Feb 1900; ZMA.COEL.2554.

Cirrhipathes nana van Pesch, 1910

Cirripathes nana van Pesch, 1910: 14–15, figs 3–5.
Cirripathes (*Eucirripathes*) *nana* van Pesch, 1910 — in van Pesch (1914): 153–154, 186–188, text-figs 206–208.

Holotype. Indonesia • colony (preserved in 70% ethanol); Salibabu Island, anchorage off Lirung; depth ≤ 36 m; mud and hard sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 133; 25–27 Jul 1899; ZMA.COEL.2555.

Cirrhipathes rumphii van Pesch, 1910

Cirripathes rumphii van Pesch, 1910: 33–39, figs 41–44.
Cirripathes (*Eucirripathes*) *rumphii* van Pesch, 1910 — in van Pesch (1914): 170–174, 200–202, text-figs 245–249.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Rote Island, south coast, Boeka or Cyrus Bay; 10.8733°S, 123.0183°E; depth 34 m; mud, coral and Lithothamnion; dredge, reef exploration, diving; Siboga Expedition 1899–1900; Sta. 299; 27–29 Jan 1900; ZMA.COEL.1761 • colony (preserved in 70% ethanol); same data as preceding; ZMA.COEL.2559.a • colony (preserved in 70% ethanol); Solor Strait, mid-channel off Ipong Menanga; depth 113 m; stony substrate; Blake dredge; Siboga Expedition 1899–1900; Sta. 305; 8 Jan 1900; ZMA.COEL.2559.b.

Possible syntype. • colony (preserved in 70% ethanol); no locality data; Siboga Expedition 1899–1900; ZMA.COEL.1762.

Remarks. Specimen ZMA.COEL.1762 lacks locality and station data and was reportedly used for display; it may represent original material, but its status as a syntype cannot be confirmed.

Cirrhipathes rumphii var. *polysticha* van Pesch, 1914

Cirripathes (*Eucirripathes*) *rumphii* var. *polysticha* van Pesch, 1914: 174–175, text-fig. 250.

Holotype. Indonesia • colony (preserved in 70% ethanol); Boleng Strait; pearl divers leg.; ZMA.COEL.1755 • histological sections (glass slides); same data as holotype; ZMA.COEL.1755.a.

Remarks. This name was introduced as a variety by van Pesch (1914). Under ICZN Article 45.6.4, such names may be deemed subspecific depending on the author's intent and context. No change in rank or nomenclatural action is proposed here. The taxon was not included in van Pesch's (1910) revision of *Cirripathes*.

Cirrhipathes spiralis var. *aphanipathoides* van Pesch, 1910

Cirripathes spiralis var. *aphanipathoides* van Pesch, 1910: 31.
Cirripathes (*Eucirripathes*) *spiralis* var. *aphanipathoides* van Pesch, 1910 – in van Pesch (1914): 168, 195–196.

Syntypes. Indonesia • colony (preserved in 70% ethanol); off Pulau Wokam; 5.4700°S, 134.8983°E; depth 57 m; sand, shells, stones; Blake dredge; Siboga Expedition 1899–1900; Sta. 274; 26 Dec 1899; ZMA.COEL.7419.a • colony (preserved in 70% ethanol); Solor Strait, mid-channel off Ipong Menanga; depth 113 m; stony substrate; Blake dredge; Siboga Expedition 1899–1900; Sta. 305; 8 Jan 1900; ZMA.COEL.7419.b • colony (preserved in 70% ethanol); off West Nusa Tenggara; 8.5000°S, 119.1250°E; depth 73 m; sand with fragments of dead coral; dredge; Siboga Expedition 1899–1900; Sta. 310; 2 Feb 1900; ZMA.COEL.7419.c.

Remarks. This name was introduced as a variety by van Pesch (1910). Under ICZN Article 45.6.4, such names may be deemed subspecific depending on the author's intent and context. No change in rank or nomenclatural action is proposed here.

Cirrhipathes spiralis var. *intermedia* van Pesch, 1910

Cirripathes spiralis var. *intermedia* van Pesch, 1910: 31.
Cirripathes (*Eucirripathes*) *spiralis* var. *intermedia* van Pesch, 1910 – in van Pesch (1914): 168.

Syntypes. Indonesia • colonies (preserved in 70% ethanol); off West Nusa Tenggara; 8.5000°S, 119.1250°E; depth 73 m; sand with fragments of dead coral; dredge; Siboga Expedition 1899–1900; Sta. 310; 2 Feb 1900; ZMA.COEL.7420.

Remarks. This name was introduced as a variety by van Pesch (1910). Under ICZN Article 45.6.4, such names may be deemed subspecific depending on the author's intent and context. No change in rank or nomenclatural action is proposed here.

Cirrhipathes spiralis var. *striata* van Pesch, 1910

Cirripathes spiralis var. *striata* van Pesch, 1910: 31.
Cirripathes (*Eucirripathes*) *spiralis* var. *striata* van Pesch, 1910 – in van Pesch (1914): 168, 196–197.

Syntypes. Indonesia • colonies (preserved in 70% ethanol); off West Nusa Tenggara; 8.5000°S, 119.1250°E; depth 73 m; sand with fragments of dead coral; dredge;

Siboga Expedition 1899–1900; Sta. 310; 2 Feb 1900; ZMA.COEL.7421.

Remarks. This name was introduced as a variety by van Pesch (1910). Under ICZN Article 45.6.4, such names may be deemed subspecific depending on the author's intent and context. No change in rank or nomenclatural action is proposed here.

Cirrhipathes translucens van Pesch, 1910

Cirripathes translucens van Pesch, 1910: 15–17, figs 6–9.
Cirripathes (*Eucirripathes*) *translucens* van Pesch, 1910 – in van Pesch (1914): 154–156, 188–190, text-figs 209–212.

Holotype. Indonesia • colony (preserved in 70% ethanol); off Pulau Wokam; 5.4700°S, 134.8983°E; depth 57 m; sand, shells, stones; Blake dredge; Siboga Expedition 1899–1900; Sta. 274; 26 Dec 1899; ZMA.COEL.2557.

Remarks. Specimen ZMA.COEL.2557 was previously misidentified as type material of *Cirripathes rumphii* van Pesch, 1910.

Genus *Dendrobathypathes* Opresko, 2002

Dendrobathypathes boutillieri Opresko, 2005

Dendrobathypathes boutillieri Opresko, 2005: 141–145, figs 6–7.

Fragment of holotype. Canada • fragment of colony (preserved in 70% ethanol); Gulf of Alaska, Haida Gwaii (Queen Charlotte Islands), Graham Island; 54.0838°N, 134.1187°W; depth 1722–2083 m; 2 Sep 2002; J. Boutillier leg.; RMNH.COEL.33330.

Dendrobathypathes fragilis Opresko, 2005

Dendrobathypathes fragilis Opresko, 2005: 145–148, figs 8, 9.

Fragment of holotype. Japan • fragment of colony (preserved in 70% ethanol); off Honshu Island; 33.3944°N, 135.5500°E; depth 587 fm [1073–1074 m]; R/V *Albatross*; Sta. 4969; 29 Aug 1906; RMNH.COEL.33300.

Dendrobathypathes grandis Opresko, 2002

Dendrobathypathes grandis Opresko, 2002: 427–431, figs 9–11.

Fragment of holotype. South Georgia • fragment of colony (preserved in 70% ethanol); Scotia Sea, off western tip of South Georgia Island; 54.4833°S, 39.3667°W – 54.5167°S, 39.3167°W; depth 659–686 m; R/V *Eltanin*; Sta. 1536; 8 Feb 1966; RMNH.COEL.31002.

Dendrobathypathes isocrada Opresko, 2002

Dendrobathypathes isocrada Opresko, 2002: 431–435, figs 12–14.

Fragment of holotype. Australia • fragment of colony (preserved in 70% ethanol); ~ 125 nautical miles south of Eucla, South Australia; 33.7500°S, 129.2833°E; depth 999–1110 m; F/V *Adelaide Pearl*; K. Gowlett-Holmes, K. Olsson & M. Cameron leg.; 1 Aug 1988; RMNH.COEL.31004.

Fragment of paratype. New Zealand • fragment of colony (preserved in 70% ethanol); Macquarie Ridge, South Pacific Ocean; 52.2833°S, 160.6667°E; depth 659–798 m; R/V *Eltanin*, Cruise 16; Sta. 1414; 9 Feb 1965; RMNH.COEL.31003.

Genus *Dendropathes* Brook, 1889

Dendropathes bacotaylorae Opresko, 2005

Dendropathes bacotaylorae Opresko, 2005: 149–152, figs 10, 11.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); Twin Bank; 23.2596°N, 163.0002°W; depth 408.2 m; NOAA Cruise *Pisces V*; Dive 545; A. Baco-Taylor & S. Cairns leg.; 1 Nov 2003; RMNH.COEL.33301.

Genus *Hillopathes* van Pesch, 1914

Hillopathes ramosa (van Pesch, 1910)

Cirripathes ramosa van Pesch, 1910: 40–42, figs 46–48.
Hillopathes ramosa (van Pesch, 1910) – van Pesch (1914): 175–177.

Syntypes. Indonesia • colonies (preserved in 70% ethanol); Salibabu Island, anchorage off Lirung; depth ≤ 36 m; mud and hard sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 133; 25–27 Jul 1899; not located in NBC collection.

Remarks. Neither the syntype material nor any associated histological sections of *Cirripathes ramosa* van Pesch, 1910 were located in the Naturalis Biodiversity Center collection.

Genus *Lillipathes* Opresko, 2004

Lillipathes quadribrachiata (van Pesch, 1914)

Bathypathes (*Eubathypathes*) *quadribrachiata* van Pesch, 1914: 38–39, figs 10, 11.

Holotype. Indonesia • colony (preserved in 70% ethanol); North Celebes; 1.9750°N, 125.0083°E; depth 1165–1264 m; stony substrate; deep-sea trawl; Siboga Expedition 1899–1900; Sta. 122; 17 Jul 1899; ZMA.COEL.2551.

***Lillipathes wingi* Opresko, 2005**

Lillipathes wingi Opresko, 2005: 152–156, figs 12, 13.

Fragment of holotype. Canada • fragment of colony (dry preserved); off British Columbia; 54.9000°N, 134.2867°W – 54.9617°N, 134.3533°W; depth 518 m; R/V *Alaskan Leader*; Sta. 107; B. Opresko leg.; 11 Jul 2002; RMNH.COEL.33302.

Genus *Myriopathes* Opresko, 2001

***Myriopathes myriophylla* (Pallas, 1766)**

Antipathes myriophylla Pallas, 1766.

Neotype. Indonesia • colony (preserved in 70% ethanol); Moluccas, Ambon Island, Leitimur Peninsula, south coast, Hutumuri; depth 22–25 m; Rumphius Biohistorical Expedition 1990; Sta. 27; RMNH.COEL.24064.

Remarks. Neotype designated by Opresko (2001: 346–349, figs 1–6).

Genus *Parantipathes* Brook, 1889

***Parantipathes laricides* van Pesch, 1914**

Parantipathes laricides van Pesch, 1914: 104–105, text-figs 102–104.

Holotype. Indonesia • colony (preserved in 70% ethanol); east of Pulau Seram; 3.6283°S, 131.4400°E; depth 924 m; fine grey mud; deep-sea trawl; Siboga Expedition 1899–1900; Sta. 170; 26 Aug 1899; ZMA.COEL.3004.

Genus *Phanopathes* Opresko, 2004

***Phanopathes expansa* (Opresko & Cairns, 1992)**

Antipathes expansa Opresko & Cairns, 1992: 93–97.

Fragment of holotype. Gulf of Mexico • fragment of colony (preserved in 70% ethanol); off southeastern Louisiana; 27.7437°N, 91.1317°W; depth 129–144 m; Johnson Sea Link I submersible; Sta. 2585; 5 Sept 1989; RMNH.COEL.32363.

Remarks. The species was transferred to *Phanopathes* by Opresko (2004: 214).

Genus *Plumapathes* Opresko, 2001

***Plumapathes pennacea* (Pallas, 1766)**

Antipathes pennacea Pallas, 1766.

Neotype. Madagascar • colony (preserved in 70% ethanol); Europa Island, Anse Gabriel, north reef slope; depth 40–50 m; Vasseur, P. leg.; 23 Dec 1965; RMNH.COEL.6801.

Remarks. Neotype designated by Opresko (2001: 361–362, figs 13, 14).

Genus *Pteridopathes* Opresko, 2004

***Pteridopathes pinnata* Opresko, 2004**

Pteridopathes pinnata Opresko, 2004: 216–219, figs 3, 4A–C.

Fragment of holotype. Palau • fragment of colony (preserved in 70% ethanol); Koror, Uchelbeluu Reef, west end (south side); 7.2898°N, 134.5205°E; depth 120 m; Colin, P. leg.; 25 Feb 2001; RMNH.COEL.32364.

***Pteridopathes tanycrada* Opresko, 2004**

Pteridopathes tanycrada Opresko, 2004: 219–221, fig. 5A–D.

Fragment of holotype. Palau • fragment of colony (preserved in 70% ethanol); Mutremdiu, east side; 7.2735°N, 134.5238°E; depth 105 m; Colin, P. leg.; 4 Mar 2001; RMNH.COEL.32365.

Genus *Sibopathes* van Pesch, 1914

***Sibopathes gephura* van Pesch, 1914**

Sibopathes gephura van Pesch, 1914: 25–27, 203–205, pls 6: figs 3, 5–6, 9 and 15; pl. 7: fig. 3; pl. 8: fig. 1; text-figs 1A–D.

Holotype. Indonesia • colony (preserved in 70% ethanol); off Pulau Leti; 8.2900°S, 127.5117°E; depth 1224 m; substrate with glossy black manganese nodules; dredge; Siboga Expedition 1899–1900; Sta. 280; 15 Jan 1900; ZMA.COEL.3283.

***Sibopathes macrospina* Opresko, 1993**

Sibopathes macrospina Opresko, 1993: 195–201, figs 1–3, 4A–C, E.

Fragment of holotype. United States • fragment of colony (preserved in 70% ethanol); Gulf of Mexico, off Alabama; 29.1550°N, 88.0183°W; depth 489–559 m; Johnson Sea Link submersible; Schroeder, W.W. leg.; Sta. JSL 3097; 26 Aug 1991; RMNH.COEL.32044.

Genus *Stauropathes* Opresko, 2002

***Stauropathes staurocrada* Opresko, 2002**

Stauropathes staurocrada Opresko, 2002: 417–420, figs 3–5.

Fragment of paratype. Hawaii • fragment of colony (preserved in 70% ethanol); Molokai Island, Penguin Bank; 20.9896°N, 157.3195°W; depth 414 m; Pisces V submersible, dive P5–300; France, S.C. & Berntson, E.A. leg.; Sta. PBS–105; 19 Sept 1996; RMNH.COEL.31005.

Genus *Stichopathes* Brook, 1889

Stichopathes aggregata (van Pesch, 1914)

Cirripathes (*Stichopathes*) *aggregata* van Pesch, 1914: 142–143, 231, text-figs 195–196.

Holotype. Indonesia • colony (preserved in 70% ethanol); Saleyer Island, Saleyer Anchorage and surroundings, including Pulau Pasi Tanette near the north point; depth to 36 m; coral reefs, mud and muddy sand; trawl, tow-net, reef exploration; Siboga Expedition 1899–1900; Sta. 213; 26 Oct 1899; ZMA.COEL.3457.

Stichopathes saccula van Pesch, 1914

Cirripathes (*Stichopathes*) *saccula* van Pesch, 1914: 143–145, 226–229, text-figs 197–200.

Holotype. Indonesia • colony (preserved in 70% ethanol); off Pulau Kei Kecil; 5.8967°S, 132.8133°E; depth 560 m; substrate solid bluish-grey mud overlain by softer brown mud; trawl; Siboga Expedition 1899–1900; Sta. 262; 18 Dec 1899; ZMA.COEL.3459.

Stichopathes semiglabra van Pesch, 1914

Cirripathes (*Stichopathes*) *semiglabra* van Pesch, 1914: 140–142, 230–231, text-figs 188–194.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Bima Bay, Bima Anchorage near south fort; depth 55 m; mud with patches of fine coral sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 47; 8–12 Apr 1899; ZMA.COEL.3460 • colony (preserved in 70% ethanol); between Wowoni and Buton Islands, northern entrance of Buton Strait; 4.3333°S, 122.9667°E; depth 75–94 m; sand with dead shells; dredge, tow-net; Siboga Expedition 1899–1900; Sta. 204; 20 Sept 1899; ZMA.COEL.3460.a.

Stichopathes solorensis (van Pesch, 1914)

Cirripathes (*Stichopathes*) *solorensis* van Pesch, 1914: 116–117, 223–225, text-figs 105–106.

Holotype. Indonesia • colony (preserved in 70% ethanol); mid-channel in Solor Strait off Ipong Menanga; depth 113 m; stony substrate; Blake dredge; Siboga Expedition 1899–1900; Sta. 305; 8 Jan 1900; ZMA.COEL.3461.

Stichopathes variabilis van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* van Pesch, 1914: 120, 138–139, 232–235, pls 6: figs 2, 7 and 10; pl. 7: figs 1, 4 and 8–10. New name for *Stichopathes filiformis* (Gray) *sensu* Silberfeld, 1909: 15.

Remarks. van Pesch (1914) introduced *Cirripathes* (*Stichopathes*) *variabilis* as a new name for the specimen identified by Silberfeld (1909) as *Stichopathes filiformis* (Gray). The name-bearing material of *S. variabilis* is, therefore, Silberfeld's specimen, not the Siboga material listed below under the varieties and subvarieties. No material of the nominotypical form *Stichopathes variabilis variabilis* was located in the Naturalis collection. No nomenclatural action is proposed here.

Stichopathes variabilis var. *asperspina* van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* var. *asperspina* van Pesch, 1914: 120–131, 232–235, pls 6: figs 2, 7 and 10; pl. 7: figs 1, 4 and 8–10; text-figs 113–163.

Syntypes. Indonesia • colony (preserved in 70% ethanol); near reef of Batjulmatil, Java; 7.9250°S, 114.4333°E; depth ≥ 15 m; coral and stones; dredge, shore exploration; Siboga Expedition 1899–1900; Sta. 7; 11 Mar 1899; ZMA.COEL.3465.a • colony (preserved in 70% ethanol); Nangamessi Bay, Sumba; depth ≤ 36 m; coral sand and nearshore mud; trawl, shore exploration; Siboga Expedition 1899–1900; Sta. 53; 21–22 Apr 1899; ZMA.COEL.3465.b • colony (preserved in 70% ethanol); Borneo Bank; 3.4500°S, 117.6000°E; depth 59 m; fine grey coral sand; dredge; Siboga Expedition 1899–1900; Sta. 77; 10 Jun 1899; ZMA.COEL.3465.c • colony (preserved in 70% ethanol); off Pulau Seram; 3.4500°S, 131.0083°E; depth 567 m; fine yellow-grey mud; deep-sea trawl; Siboga Expedition 1899–1900; Sta. 173; 28 Aug 1899; ZMA.COEL.3465.d • colony (preserved in 70% ethanol); between Wowoni and Buton Islands, northern entrance of Buton Strait; 4.3333°S, 122.9667°E; depth 75–94 m; sand with dead shells; dredge, tow-net; Siboga Expedition 1899–1900; Sta. 204; 20 Sept 1899; not located • colony (preserved in 70% ethanol); Saleyer Anchorage and surroundings, including Pulu Pasi Tanette near the north point of Saleyer Island; depth ≤ 36 m; coral reefs, mud and muddy sand; trawl, tow-net, reef exploration; Siboga Expedition 1899–1900; Sta. 213; 26 Oct 1899; ZMA.COEL.3465.e • colony (preserved in 70% ethanol); 2.3 miles N, 63°W from the north point of Nuhu Jasu, Kei Islands; 5.6083°S, 132.9200°E; depth 90 m; sand, coral and shells; Blake dredge; Siboga Expedition 1899–1900; Sta. 260; 16–18 Dec 1899; ZMA.COEL.3465.f.

Remarks. The syntype corresponding to station 204 was not located in the Naturalis Biodiversity Center collection. Under Article 45.6.4 of the ICZN, variety names established before 1961 may be deemed subspecific; however, no nomenclatural changes are proposed here.

Stichopathes variabilis var. *lissispina* van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* var. *lissispina* van Pesch, 1914: 120, 131–134, 232–235, pls 6: figs 2, 7 and 10; pl. 7: figs 1, 4 and 8–10; text-figs 164–175.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Bima Bay, Bima Anchorage near south fort; depth 55 m; mud with patches of fine coral sand; trawl, dredge, shore exploration; Siboga Expedition 1899–1900; Sta. 47; not located • colony (preserved in 70% ethanol); Banda Anchorage; depth 9–45 m; black sand, coral, Lithothamnion bank (18–36 m); trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta 240; 22 Nov–1 Dec 1899; ZMA.COEL.3462.

Remarks. The syntype corresponding to station 47 was not located in the Naturalis Biodiversity Center collection. The specimen ZMA.COEL.3462 bears label data for station 240. The station number "247" cited in van Pesch (1914: 120) is considered a typographical error, as the locality data in the original publication correspond to station 240. Under Article 45.6.4 of the ICZN, variety names established before 1961 may be deemed subspecific; however, no nomenclatural changes are proposed here. Ongoing molecular studies (Vicario et al., in prep.) may clarify the taxonomic status of this name.

Stichopathes variabilis var. *lissispina subvar. minor* van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* var. *lissispina* subvar. *minor* van Pesch, 1914: 137–138, 232–235, pls 6: figs 2, 7 and 10; pl. 7: figs 1, 4 and 8–10.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Kambaragi Bay, Tanah Djampeah; depth ≤ 32 m; coral and coral sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 64; 4–5 May 1899; ZMA.COEL.3463 • colony (preserved in 70% ethanol); entrance to Kwandang Bay; 1.0083°N, 122.9333°E; depth 80 m; sand and coral; trawl; Siboga Expedition 1899–1900; Sta. 117; 12 Jul 1899; ZMA.COEL.3466.

Remarks. Under Article 45.6.4 of the ICZN, variety names established before 1961 may be deemed subspecific; however, no nomenclatural changes are proposed here. Ongoing molecular studies (Vicario et al., in prep) may clarify the taxonomic status of this taxon.

Stichopathes variabilis var. *longispina* van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* var. *longispina* van Pesch, 1914: 134–136, 232–235, pls 6: figs 2, and, 10; pl. 7: figs 1, 4 and 8–10; text-figs 176–183.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Badjo Bay, west coast of Flores; depth ≤ 40 m; mud, sand and shells; dredge, trawl, shore exploration; Siboga Expedition 1899–1900; Sta. 50; 16–18 Apr 1899; ZMA.COEL.3467.a • colony (preserved in 70% ethanol); Madura Bay and other localities in the southern part of Molo Strait; depth 69–91 m; fine grey sand, coarse sand with shells and stones; dredge, trawl, shore exploration; Siboga Expedition 1899–1900; Sta. 51; 19 Apr 1899; ZMA.COEL.3467.b • colony (preserved in 70% ethanol); anchorage off Kampong Kelang, south coast of Manipa Island; depth 36 m; coral and sand; dredge, tow-net; Siboga Expedition 1899–1900; Sta. 184; 11–12 Sept 1899; ZMA.COEL.3467.c • colony (preserved in 70% ethanol); anchorage east of Dangar Besar, Saleh Bay; depth ≤ 36 m; sand, coral and mud; dredge, trawl, reef exploration; Siboga Expedition 1899–1900; Sta. 313; 14–16 Feb 1900; ZMA.COEL.3467.d • colony (preserved in 70% ethanol); northwest off Pulau Kangean; 6.6083°S, 114.9250°E; depth 88 m; fine yellowish-grey mud; trawl; Siboga Expedition 1899–1900; Sta. 318; 22 Feb 1900; ZMA.COEL.3467.e.

Remarks. Under Article 45.6.4 of the ICZN, variety names established before 1961 may be deemed subspecific; however, no nomenclatural changes are proposed here. Ongoing molecular studies (Vicario et al., in prep.) may clarify the taxonomic status of this name.

Stichopathes variabilis var. *longispina lissispina* van Pesch, 1914

Cirripathes (*Stichopathes*) *variabilis* var. *longispina* subvar. *lissispina* van Pesch, 1914: 136–137, text-figs 184–187.

Syntypes. Indonesia • colony (preserved in 70% ethanol); Pidjot Bay, Lombok; depth ≤ 22 m; mud, coral, and coral sand; trawl, dredge, shore exploration; Siboga Expedition 1899–1900; Sta. 33; 24–26 Mar 1899; ZMA.COEL.3464.a • colony (preserved in 70% ethanol); Badjo Bay, west coast of Flores; depth ≤ 40 m; mud, sand and shells; dredge, trawl, shore exploration; Siboga Expedition 1899–1900; Sta. 50; 16–18 Apr 1899; ZMA.COEL.3464.b • colony (preserved in 70% ethanol); Kambaragi Bay, Tanah Djampeah; depth ≤ 32 m; coral and coral sand; trawl, dredge, reef exploration; Siboga Expedition 1899–1900; Sta. 64; 4–5 May 1899; ZMA.COEL.3464.c.

Remarks. Under Article 45.6.4 of the ICZN, variety names established before 1961 may be deemed subspecific; however, no nomenclatural changes are proposed here. Ongoing molecular studies (S. Vicario, pers. comm.) may clarify the taxonomic status of this taxon.

Genus *Stylopathes* Brook, 1889

***Stylopathes columnaris* (Duchassaing, 1870)**

Arachnopathes columnaris Duchassaing, 1870: 23.

Fragment of neotype. Caribbean Sea • fragment of colony (preserved in 70% ethanol); Rosalind Bank; 16.5833°N, 80.9167°W; depth 100 fm (182–183 m); R/V "Oregon"; Sta. 1890; 24 Aug 1957; RMNH.COEL.34020.

Remarks. Fragment of specimen designated as the neotype and described by Opresko (2006: 112–118, figs 1–3).

***Stylopathes litocrada* Opresko, 2006**

Stylopathes litocrada Opresko, 2006: 126–131, figs 8–10.

Fragment of holotype. Caribbean Sea • fragment of colony (preserved in 70% ethanol); possibly Antilles; depth 241 m; Nutting, C.C. leg.; 14 Feb 1902; RMNH.COEL.34022.

Genus *Triadopathes* Opresko, 2002

***Triadopathes triadocrada* (Opresko, 1999)**

Parantipathes triadocrada Opresko, 1999: 150–154, figs 7–9.

Fragment of holotype. Australia • fragment of colony (preserved in 70% ethanol); off Tasmania, approx. 46.5 nautical miles (86 km) SSE of South East Cape; 44.3783°S, 147.1217°E; depth 1060–1170 m; coll. F/V "Belinda", Gowlett-Holmes, K.; 12 Feb 1992; RMNH.COEL.34024.

Remarks. The species was transferred to *Triadopathes* by Opresko (2006: 131).

Genus *Trissopathes* Opresko, 2003

***Trissopathes pseudotristicha* Opresko, 2003**

Trissopathes pseudotristicha Opresko, 2003c: 502–507, figs 3–5.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); eastern Pacific; 19.6244°N, 156.0344°W; depth 432 m; "Pisces V", dive P5–302; coll. France, S.C. and Berntson, E.A.; Sta. HAS–112; 21 Sept 1996; RMNH.COEL.32045.

***Trissopathes tetracrada* Opresko, 2003**

Trissopathes tetracrada Opresko, 2003c: 507–511, figs 6–8.

Fragment of holotype. Australia • fragment of colony (preserved in 70% ethanol); about 125 nautical miles south of Eucla; 33.7500°S, 129.2833°E; depth 999–1110 m; F/V "Adelaide Pearl"; coll. Gowlett-Holmes, K.L.; 1 Jul 1988; RMNH.COEL.32043.

***Trissopathes tristicha* (van Pesch, 1914)**

Parantipathes tristicha van Pesch, 1914: 99–101, text-figs 95–97.

Holotype. Indonesia • colony (preserved in 70% ethanol); off Pulau Seram; 3.4500°S, 131.0083°E; depth 567 m; fine yellow-grey mud; deep-sea trawl; Siboga Expedition 1899–1900; Sta. 173; 28 Aug 1899; ZMA.COEL.3005.

Remarks. Transferred to *Trissopathes* by Opresko (2003c).

Genus *Tylopathes* Brook, 1889

***Tylopathes crispa* Brook, 1889**

Tylopathes crispa Brook, 1889: 135–136, pl. 3: figs 1–4.

Fragment of holotype. Chile • fragment of colony (preserved in 70% ethanol); off Chile, Sarmiento Channel; 51.4550°S, 74.0500°W; depth 400 fm (732 m); HMS "Challenger"; Sta. 310; 10 Jan 1876; RMNH.COEL.34023.

Remarks. Fragments of Brook's holotype as described by Opresko (2006: 134–137, figs 13, 14).

Genus *Umbellapathes* Opresko, 2005

***Umbellapathes helioanthes* Opresko, 2005**

Umbellapathes helioanthes Opresko, 2005: 133–136, figs 2, 3.

Fragment of holotype. Pacific Ocean • fragment of colony (preserved in 70% ethanol); North Pacific, Laysan Seamount; 25.6697°N, 171.3918°W; depth 1383 m; NOAA cruise "Pisces V", dive 530; coll. Baco-Taylor, A. and Cairns, S.; 14 Oct 2003; RMNH.COEL.33299.

Putative type material

***Antipathes lacerata* Lamarck, 1816**

Antipathes lacerata Lamarck, 1816: 306.

Possible syntypes. Indian Ocean • colony (dry preserved); no further locality; label "Mus. de Paris"; RMNH.COEL.4921 • colony (dry preserved); no further locality; RMNH.COEL.4922.

Remarks. The original type material of *Antipathes lacerata* has not been located and the name remains un-

assessed. The two specimens listed here may represent original material, as both bear historical labels “Mus. de Paris” and the locality “l’Océan Indien” cited by Lamarck (1816). Their presence in the RMNH collection may be related to exchanges with the Paris collections in the early nineteenth century, although this cannot be confirmed due to the absence of inventories documenting material returned to Leiden in 1823. One specimen (RMNH.COEL.4921) was observed by Silvia Vicario during a visit in August 2025 and identified as an octocoral species. All specimens were observed by the second author (May 2026) and identified as gorgonian species.

Antipathes radians Lamarck, 1816

Antipathes radians Lamarck, 1816: 308.

Possible syntypes. • colony (dry preserved); no locality data; label “Mus. de Paris”; RMNH.COEL.4929 • colony (dry preserved); no locality data; label “Mus. de Paris”; RMNH.COEL.4930 • colony (dry preserved); no locality data; label “Mus. de Paris”; RMNH.COEL.49665.

Remarks. Lamarck (1816) cited the type locality as “la Méditerranée?”, indicating uncertainty. The specimens listed here lack collecting locality, but bear historical labels “Mus. de Paris”, consistent with material originating from the Paris collections. They may represent original material, although their status cannot be confirmed. One specimen (RMNH.COEL.4929) was observed by Silvia Vicario during a visit in August 2025 and identified as an octocoral species. All specimens were observed by the second author (May 2026) and identified as gorgonian species.

Antipathes scoparia Lamarck, 1816

Antipathes scoparia Lamarck, 1816: 307.

Possible syntypes. • colony (dry preserved); no locality data; label “Mus. de Paris”; RMNH.COEL.4904 • colony (dry preserved); no locality data; label “Mus. de Paris”; RMNH.COEL.49666.

Remarks. The original type material of *Antipathes scoparia* has not been located. The specimens listed here lack collecting locality, but bear historical labels “Mus. de Paris”, consistent with material originating from the Paris collections. They may represent original material, although their status cannot be confirmed. All specimens were observed by the second author (May 2026) and identified as gorgonian species.

Discussion

This annotated catalogue updates and consolidates information on the Antipatharia type material, housed at Naturalis Biodiversity Center, integrating the historically separate RMNH and ZMA holdings. All type specimens previously listed by van Soest (1977) were located and verified during the recent re-inventory and additional type material and associated preparations were identified. In several cases, historical catalogue numbers had been subdivided to assign specimens to specific expedition stations; documenting these changes improves traceability of type series and facilitates future taxonomic use of the collection.

The re-inventory highlights issues, typical of historical antipatharian collections, including fragmented colonies, mixed preservation states, incomplete labels and inconsistent historical type designations. To avoid conferring unintended nomenclatural status, fragments of name-bearing types are treated here as associated type material rather than as independent name-bearing specimens. For several early names, particularly the Lamarck (1816) species bearing historical “Mus. de Paris” labels, original types could not be confidently traced and candidate material is reported as possible type material where supported by historical evidence. The presence of these specimens in the RMNH collection likely reflects early nineteenth-century inter-institutional exchanges between Leiden and Paris, the records of which are incomplete; resolving their status would require archival investigation beyond the scope of the present work, but remains a worthwhile goal for future study.

A substantial portion of the type holdings originates from the Siboga Expedition and van Pesch’s treatments (1910, 1914), which introduced numerous varieties and subvarieties. As such infraspecific ranks are rarely used in modern taxonomy, the availability and interpretation of these names require clarification on a case-by-case basis.

The Naturalis Antipatharia type collection is notable both for its historical depth and its broad geographic representation. The holdings are strongly centred on the Indonesian Indo-Pacific, with a particularly pronounced concentration in the eastern Indonesian Archipelago sampled by the Siboga Expedition; approximately half of the nominal taxa represented by type material in this catalogue originate from Indonesia, spanning numerous genera and including both shallow-water and bathyal species. Outside this core region, the collection contains significant sets of type material from the wider Pacific (e.g. Palau, Hawaii, North Pacific seamounts), the Caribbean and Gulf of Mexico, the eastern Atlantic and southern high-latitude localities. Much of this extra-Indonesian component consists of deep-water taxa incorporated through later revisionary work, particularly through Opresko’s series of revisions. Consequently, the collection combines a historically important Coral Triangle core with a broader modern comparative framework for antipatharian systematics, making it one of the more geographically comprehensive antipatharian type holdings in any single institution.

Neotypes designated in modern literature and their associated fragments form an important component of the Naturalis holdings and contribute to nomenclatural stability. At the same time, the re-inventory underscores the need to distinguish between published neotype designations and internal collection annotations. Specimens la-

belled as "neotype" in the collection without a documented published designation are recorded as such, but should be treated with caution until the relevant nomenclatural acts are confirmed.

In several cases, original colonies described in early works are not preserved as complete specimens in the Naturalis collection, although fragments or associated material are present. This reflects historical collecting, exchange and curation practices, whereby type material or portions thereof were distributed amongst institutions. The absence of an original colony at Naturalis should, therefore, not be interpreted as loss of the type material and is documented explicitly in the relevant catalogue entries.

Overall, this catalogue provides a transparent and verifiable account of the Antipatharia type material housed at Naturalis, clarifying type status, provenance and documentation. By improving accessibility and explicitly documenting uncertainties, it establishes a foundation for future taxonomic revision, comparative studies and continued curation and digitisation of antipatharian type material.

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

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Author contributions

Conceptualisation: P.A.J.B., K.S.-N.; Collection research and specimen examination: P.A.J.B.; Data curation and verification: P.A.J.B., K.S.-N.; Taxonomic assessment and nomenclatural review: K.S.-N., P.A.J.B.; Writing – original draft: P.A.J.B., K.S.-N.; Writing – review and editing: P.A.J.B., K.S.-N.

Data availability

All specimen data are accessible through the Naturalis collection data portal (https://bioportal.naturalis.nl/nl).

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