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The genus *Hedgpethia* Turpaeva, 1973 (Pycnogonida: Colossendeidae): a review and a new species

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Abstract. *Hedgpethia* Turpaeva, 1973 (Arthropoda: Pycnogonida: Colossendeidae) includes 18 species, but the sparsity of samples makes this genus poorly known or studied. Available identification keys are outdated, and checklists and diagnoses need revision. Here, I provide the description of *Hedgpethia nosferatu* sp. nov. based on a female specimen sampled at 310–403 m depth to the south of New Caledonia during the KANACONO expedition, and a revised identification key and diagnosis of the genus *Hedgpethia*. *Hedgpethia* is divided into Northern Pacific and Southern Indopacific species, plus one species in the Atlantic. Except for the Northern Pacific, this distribution is similar to that of its sister-clade *Rhopalorhynchus* Wood-Mason, 1873. The bathymetric distribution of *Hedgpethia* also partly overlaps with that of *Rhopalorhynchus*, but extends much deeper, often between 40 and 1500 m, and sometimes as deep as 4200 m. Characters shared among the species of *Hedgpethia* are potentially plesiomorphic, raising the question of the potential paraphyly of the genus. Some poorly explored characters such as the shape of the ovigeral claw, and the multiplication of molecular datasets, could bring some further insight.

Keywords. Pycnogonida, Colossendeidae, *Hedgpethia*, New Caledonia, Indopacific.

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Introduction

Hedgpethia Turpaeva, 1973 is a rare genus from the family Colossendeidae Hoek, 1881, and the type genus of the subfamily Hedgpethiinae Pushkin, 1990 within which it is grouped with the genus *Rhopalorhynchus* Wood-Mason, 1873. The first described representatives of *Hedgpethia* – i.e., *Hedgpethia articulata* (Loman, 1908), *H. bicornis* (Turpaeva, 1958), *H. brevitarsis* (Losina-Losinsky, 1958), *H. californica* (Hedgpeth, 1939), *H. chitinosa* (Hilton, 1943), and *H. dofleini* (Loman, 1911) – were originally assigned to *Colossendeis* (Loman 1908, 1911; Hedgpeth 1939; Losina-Losinsky & Turpaeva 1958), before Stock (1958, 1970) reassigned them to *Rhopalorhynchus*. Within the latter, Stock (1958) discriminated two morphological groups: the "*kroeyeri* section", presenting a tooth on the dorsal surface of the proboscis; and the "*articulatum* section", lacking such a tooth. Turpaeva (1973) formally implemented this discrimination to the taxonomy by assigning the "*articulatum* section" to

the new genus *Hedgpethia*, and further highlighted their stouter and less elongated body, as well as the absence of a stalk at the base of its proboscis, as distinctive from *Rhopalorhynchus*. The two genera were regrouped in the same family Hedgpethiidae (Pushkin 1990) based on the similar segmentation of the body and the massive proboscis. The family was later reassigned to the subfamily rank (Bamber 2007a). The monophyly of Hedgpethiinae and their nesting within Colossendeidae are supported by phylogenetic studies (Sabroux *et al.* 2023a).

At the time of this publication, *Hedgpethia* includes 18 species (Bamber *et al.* 2025). Most of them are distributed in the Northern Temperate Pacific, the Central Indopacific and Temperate Australasia (sensu Spalding *et al.* 2007), though records extend from South Africa to Mexico, Peru and the Bering Sea, while one species is confined to Northeastern Atlantic and the Mediterranean Sea. The genus has also a wide bathyal range (minimum span depths of 40–4200 m). Despite this wide distribution, the genus is only sporadically sampled, which makes it a poorly known group among Colossendeidae. The latest identification key for the genus dates back to Stock (1970), and the latest complete checklist was part of the work of Müller (1993).

A single female belonging to a new species was sampled during the KANACONO expedition in New Caledonia, south to the Isle of Pines, in August 2016. Besides the new description of species, I provide an updated identification key for the genus and a complete checklist of the species it includes.

Material and methods

Checklist, bathymetry and distribution map

Geographic and bathymetric data presented here are based on the published literature. Geographical data were ideally collected as GPS coordinates; otherwise, coordinates were approximated based on the provided indications when possible. Records available on GBIF (2025) are also included; according to GBIF data, all these records were identified by experts working on sea spiders (Françoise Arnaud, Roger N. Bamber, C. Allan Child, Louis Giltay, Jayson M. Gillespie, Joel W. Hedgpeth, Koichiro Nakamura, Elena Turpaeva) and can thus be regarded as reliable. The resulting dataset was used to draw a distribution map that was simplified by removing the closely overlapping sampling of the same species.

Bathymetric distribution for each species has been also extracted from the literature and collection databases. Because many sampling methods using dredges and trawls cover long distances with variable depths, some depth records are registered as intervals. Here, the Minimal Known Depth Range (MinKDR) refers to the smallest span between non-overlapping sampling depths or sampling depth intervals, while the Maximal Known Depth Range (MaxKDR) represents the maximum span. The MinKDR is the most restrictive, as it only includes depth intervals where a given species is certainly present, excluding specimens that were sampled outside the minimum interval. The MaxKDR is the most inclusive but may extend beyond the actual bathymetric range of a species.

Institutions curating type specimens and collection numbers were primarily identified based on the records in the literature. When collection databases are made available online, or when collection checklists have been published (e.g., Dudnik & Kremenetskaia 2025), this information was verified and / or updated.

Institutional abbreviations

IORAS = Shirshov Institute of Oceanology, Moscow, Russia
MNHN = Muséum national d'Histoire naturelle, Paris, France
NBC = Naturalis Biodiversity Center, Leiden, the Netherlands

NHMUK = Natural History Museum, London, UK
NMV = Museum Victoria, Melbourne, Australia
NIWA = National Institute of Water and Atmospheric Research, New Zealand
SAM = South African Museum, Cape Town, South Africa
USNM = Smithsonian National Museum of Natural History, Washington D.C., USA
WAM = Western Australian Museum, Collections and Research Centre, Perth, Australia
ZIHU = Zoological Institute, Hokkaido University Museum, Sapporo, Japan
ZMH = Zoological Museum Hamburg, Germany

Sampling and data collection

The studied specimen (Fig. 1) was collected during the oceanographic cruises KANACONO of the Tropical Deep-Sea Benthos program, led by the MNHN. The sampling was performed on August 23th, with a Warén Dredge at station DW4745 (22°56′37.7952″ S, 167°39′23.9832″ E), at depths of 310–403 m. The specimen was preserved in 80% ethanol upon sorting out of the bulk sampling and is now deposited in the Marine Invertebrate collections of the MNHN.

The mitochondrial genome and the 18S ribosomal RNA gene (18S) sequences for this specimen were published in Sabroux *et al.* (2023a) under GenBank accession numbers OP985938 and OQ065619, respectively.

Results

Taxonomy

Class Pycnogonida Latreille, 1810
Order Pantopoda Gerstäcker, 1863
Superfamily Colossendeoidea Hoek, 1881
Family Colossendeidae Hoek, 1881
Subfamily Hedgpethiinae Pushkin, 1990

Genus ***Hedgpethia*** Turpaeva, 1973

Type species

Colossendeis arcuata Loman, 1908 (by original designation).

Diagnosis of the genus (emended from Turpaeva 1973 and Takahashi *et al.* 2007)

Trunk four-segmented, lateral processes separated by twice their own diameter or less. Cephalon with pair of anterior projections on both sides of proboscis, on which palps articulate; anterior projection individualised, base segmented, apparently not movable. Proboscis massive, as long or longer than body, inflated around midpoint, constricted at base, tapering at tip. Abdomen small, ventralised and bent downward. Chelifores absent. Palps 9-articled. Ovigers 10-articled plus terminal claw. Legs slender. Propodus devoid of auxiliary claws.

Also includes *Hedgpethia caudata* Turpaeva, 1993 which does not match this diagnosis (see Discussion).

Remarks

Palps in species of *Hedgpethia* have been generally regarded as 10-articled. This number is due to the cephalic anterior projections, of which the base seems articled, is included in the count. This projection is likely homologous to that found in the closely related genus *Colossendeis*, which was demonstrated

to be part of the cephalon, and not an article (Cano-Sánchez & López-González 2016). The palps in *Hedgpethia* are therefore regarded as 9-articled in the present work.

Hedgpethia articulata (Loman, 1908)
Fig. 2, Table 1

Colossendeis articulata Loman, 1908: 22–23, pl. 6 figs 66–73.

Colossendeis articulata – Losina-Losinsky & Turpaeva 1958: 32 [key], tab. 4. — Stock 1958: tab. 1.
Rhopalorhynchus articulatum – Stock 1958: 116 [text], 118 [key], 136 [text], tab. 1; 1970: 9 [key].
Hedgpethia articulata – Turpaeva 1973: 185–186, fig. 2; 1993: 21 [text]. — Stock 1991a: 166 [text]. — Child 1994: 18 [text].

Type material (not examined)

Holotype
BANDA SEA • ♂; Gulf of Boni, west off Kabaena Island; 5°26′ S, 121°18′ E; depth 1944 m; *Siboga* Expedition stn 210[a]; NL, ZMA.PYC.1322.

Distribution and depth range

Besides the Gulf of Boni in Banda Sea (type locality), additional data on GBIF (2025) extends the distribution to the Gulf of Alaska and in the vicinities of the Commander Islands. The divergent collection localities may suggest the presence of more than one species, and this northern material should be reexamined side by side with the holotype. Minimal known depth range 1944–4200 m (1944 m only when excluding Alaska and Commander Islands material).

Hedgpethia atlantica (Stock, 1970)
Fig. 2, Table 1

Rhopalorhynchus atlanticum Stock, 1970: 7–9, 9 [key], figs 8–13.

Rhopalorhynchus atlanticum – Rack 1971: 113. — Arnaud 1987: 51–52. — Stock 1987: 508–509, 517 [text], fig. 12.
Hedgpethia atlantica – Stock 1991a: 166 [text]; 1991b: 138. — Turpaeva 1993: 22 [text]. — Munilla & Soler-Membrives 2014: 218–220 ["*Hedgpthetia* (sic) *atlantica*"], fig. 120. — Soler-Membrives & Munilla 2015: 11, 16 [text], tab. 2. — Staples 2019: 433 [text].

Type material (not examined)

Holotype
NORTHEASTERN ATLANTIC • ♀; Josephine Bank; 36°40.7′ N, 14°15.5′ W; depth 211–241 m; 1 Jul. 1967; *Meteor* stn 120; ZMH-A50168.

Distribution and depth range

Eastern North Atlantic (West to Galicia, Portugal and Tanger), including Josephine Bank (type locality), and across the Gibraltar Strait east to the Île du Levant, Hyères (Mediterranean French coast). Minimal known depth range 100–1110 m.

Hedgpethia bicornis (Turpaeva, in Losina-Losinsky & Turpaeva, 1958)
Fig. 2, Table 1

Colossendeis bicornis Turpaeva in Losina-Losinsky & Turpaeva, 1958: 27–29, 32 [key], 33 [text], fig. 3, tabs 3–5.

Colossendeis bicornis – Losina-Losinsky 1961: 109–110.
Rhopalorhynchus bicornis – Stock 1970: 9 [key].
Hedgpethia californica – Turpaeva 1973 [partim]: 185 [key], 186–189, tab. 2.
Hedgpethia californica bicornis – Turpaeva 1973: 187–189 [text], tab. 3; 2002: 1451 [text], 1451, 1452. — Dudnik & Kremenetskaia (2025): fig. 6d, tab. 1.
Hedgpethia bicornis – Stock 1991a: 166 [text]. — Turpaeva 1993: 22 [text].

Type material (not examined)

Holotype

SEA OF OKHOTSK • sex unknown; northeastern Sea of Okhotsk; depth 1100 m; 3 Oct. 1952; R/V *Vityaz* cruise 12 stn 1780; IORAS, INV0002674.

Paratypes

SEA OF OKHOTSK • 2 specs; same data as for holotype; hosting institution unknown • 1 spec.; southern Sea of Okhotsk; 10 Aug 1949; R/V *Vityaz*; hosting institution unknown • 1 spec.; 1932; R/V *Gagara* stn 217; hosting institution unknown • 19 specs; 1932; R/V *Gagara* stn 247; hosting institution unknown • 1 spec.; 1932; R/V *Gagara* stn 250; hosting institution unknown • 1 spec.; 1932; R/V *Gagara* stn 261; hosting institution unknown • 2 specs; 1952; R/V *Guidrolog*; hosting institution unknown.

NORTHWESTERN PACIFIC • 2 specs; south of Southern Kuril Islands; 1949; R/V *Toporok*; hosting institution unknown.

Distribution and depth range

Sea of Okhotsk (type locality) and east to Kuril Islands. Minimal known depth range 303–1100 m.

Remarks

Stock (1991a) suggested this species to be a possible junior synonym to *Hedgpethia californica* (Hedgpeth, 1939), without explicit justification. However, the mediodorsal ornamentation of *H. bicornis* as well as the low tubercle on the anterior margin of its cephalon distinguish it from *H. californica.*

Hedgpethia brevitarsis (Losina-Losinsky in Losina-Losinsky & Turpaeva, 1958)
Fig. 2, Table 1

Colossendeis brevitarsis Losina-Losinsky in Losina-Losinsky & Turpaeva, 1958: 26–27, 32 [key], 33 [text], fig. 2, tabs 2, 4–5.

Colossendeis brevitarsis – Losina-Losinsky 1961: 109.
Rhopalorhynchus brevitarsis – Stock 1970: 9 [key].
Hedgpethia brevitarsis (Losina-Losinsky & Turpaeva, 1958) [sic]. — Nakamura & Child 1983: 63, 63[key]; 1991: 62. — Child 1998: 60–61 [text].
Hedgpethia brevitarsis – Turpaeva 1973: 185 [key], tab. 2; 1993: 22 [text]; 2002: 1451. — Stock 1991a: 166 [text].
"*Hedgpethia borealis*" – Turpaeva 2002 [error in the English translation of the abstract].

Type material (not examined)

Holotype

SEA OF OKHOTSK • sex unknown; southern Sea of Okhotsk; depth unknown; 11 May 1953; R/V *Vityaz*; hosting institution unknown.

Paratypes

SEA OF OKHOTSK • 10 specs; depth unknown; 1932; R/V *Gagara*; hosting institution unknown.

Distribution and depth range

Sea of Okhotsk (type locality), South Kuril Islands and Eastern Honshu coast (Sagami Bay). Depth range 300–780 m.

Remarks

The types should be at the IORAS, like the holotype of *H. bicornis*, but they were not listed in Dudnik & Kremenetskaia (2025) nor were they retrieved after examination (Dudnik pers. com.).

Hedgpethia californica (Hedgpeth, 1939)
Fig. 2, Table 1

Colossendeis californica Hedgpeth, 1939: 59–60, pl. 1 figs a–e.

Colossendeis californica – Hilton 1943: 4. — Losina-Losinsky & Turpaeva 1958: 32 [key], tab. 4. – Stock 1958: tab. 1.
Rhopalorhynchus californicum – Stock 1958: 116 [text], 118 [key], tab. 1; 1970: 9 [key].
Hedgpethia californica – Turpaeva 1973 [partim]: 185 [key], 186–189, tab. 2; 1993: 21–22 [text]; 2002: 1451. — Stock 1991a: 166 [text].
Hedgpethia californica californica – Turpaeva 1973: 186–189 [text], tab. 3; 2002: 1451 [text], 1452 [key].

Type material (not examined)

Holotype

NORTHEASTERN PACIFIC • ♂; Off Tijuana; 32°29.8′ N, 117°24.8′ W; depth 330 m; 2 Jul. 1916; Scripps Institution of Oceanography coll. no 1189; USNM 78022.

Paratype

NORTHEASTERN PACIFIC • ♂; same data as for holotype; USNM 78021.

Distribution and depth range

Besides the type locality (off Tijuana), specimens were sampled in the Gulf of Alaska. Minimal known depth range 330–560 m.

Hedgpethia calva Arango, 2009
Fig. 2, Table 1

Hedgpethia calva Arango, 2009: 5–7, figs 3, 8a.

Hedgpethia calva – Staples 2019: 433 [text].

Type material (not examined)

Holotype

GREAT AUSTRALIAN BIGHT • ♀; Southwestern Australia, Bald Island; 35°16′53.3″ S, 18°42′32.4″ E [sic; 118°42′32.4″ E] – 35°16′51.6″ S, 118°47′56.4″ NE; depth 976–980 m; 24. Nov. 2005; Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) 'Voyage of Discovery' survey stn 036-008; WAM T92360.

Paratypes

GREAT AUSTRALIAN BIGHT • 2 ♂♂; same data as for holotype; NVM JM54989.

Distribution and depth range

Reported only from Bald Island in the Great Australian Bight (type locality). Maximal known depth range 976–980 m.

Hedgpethia caudata Turpaeva, 1993
Fig. 2, Table 1

Hedgpethia caudata Turpaeva, 1993: 20–22, fig. 1.

Type material (not examined)

Holotype

SOUTHEASTERN PACIFIC • sex unknown; off Southern Peru; 17°42′ S, 78°59.2′ W; 2710–3080 m; 20 Nov. 1968; R/V *Akademik Kurtchatov* stn 271; hosting institution unknown.

Distribution and depth range

Only known from the type locality (off Southern Peru); Maximal known depth range 2710–3080 m.

Remarks

The holotype was not retrieved; it was originally deposited at the IORAS as explicitly mentioned by Turpaeva (1993), but was not listed by Dudnik & Kremenetskaia (2025) and was not retrieved there (Dudnik pers. com.).

Hedgpethia chitinosa (Hilton, 1943)
Fig. 2, Table 1

Colossendeis chitinosa Hilton, 1943: 4.

Colossendeis chitinosa – Hedgpeth 1949: 301, fig. 47e–h. — Stock 1954: 161, fig. 79; 1958: tab. 1. — Utinomi 1955: 34–35, fig. 20; 1959: 220; 1971: 337–338. — Losina-Losinsky & Turpaeva 1958: 23–26, 32 [key], 33 [text], fig. 1, tabs 1, 4–5. — Child 1996: tab. 1.
Rhopalorhynchus chitinosum – Stock 1958: 116 [text], 118 [key], tab. 1; 1970: 9 [key].
Hedgpethia californica – Turpaeva 1973 [partim]: 185 [key], 186–189, tab. 2. — Child 1996: tab. 1.
Hedgpethia californica chitinosa – Turpaeva 1973: 186–189, tab. 3; 2002: 1451, 1451 [text], 1452 [key].
Hedgpethia chitinosa – Nakamura & Child 1983: 63, 63 [key]; 1991: 63. — Nakamura 1987: 36–37, pl. 33. — Stock 1991a: 166 [text]. — Turpaeva 1993: 21 [text]. — Dudnik & Kremenetskaia 2025: tab. 3.

Type material (not examined)

Holotype

BERING SEA • ♀; Aleutians West Census Area (Alaska), Pribilof Islands, south of Saint George Island; 56°1′59.88″ N, 169°30′ W; depth 0–221 m; 17 Jul. 1893; R/V *Albatross*, United States Fish Commission (USFC) stn 3500; USNM 81496.

Paratypes

BERING SEA • 3 specs; Aleutians West Census Area (Alaska), Pribilof Islands, north of Saint Paul Island; 58°23′ N, 170°21′ W; depth 3939 m; 11 Aug. 1895; USFC stn 3603; hosting institution unknown.

Distribution and depth range

Recorded from the Aleutian Islands and the Bering Sea, including off Pribilof Islands (type locality), as well as around Japan (Sea of Japan, coasts of Honshu, Hokkaido and in the Tsushima Straits; Pacific coasts Honshu, Shikoku, Kyushu and down to southwest of Danjo Islands). Minimal known depth range 41–926 m? Hilton (1943) cites three specimens from 1771 fathoms (3939 m), and Dudnik (2025) records one specimen sampled at depths of 6410–6757 m. These four specimens should be reexamined for confirmation, and contamination should also be considered.

Hedgpethia dampieri (Child, 1975)
Fig. 2, Table 1

Rhopalorhynchus dampieri Child, 1975: 8–10, fig. 4.

Hedgpethia dampieri – Stock 1991a: 166 [text]. — Turpaeva 1993: 22 [text]. — Child 1998: 60 [text]. — Staples 2007: 80 [list], 92, fig. 4a–d.

Type material (not examined)

Holotype

SOUTHEASTERN INDIAN OCEAN • ♂; Western Australia, west of Lancelin Island; 31°5′ S, 116°55′ E" [reinterpreted as 114°55′ E]; depth 113–122 m; 5 Feb. 1964; CSIRO stn 46; WAM 70-3953.

Paratypes

SOUTHEASTERN INDIAN OCEAN • 1 ♀; Western Australia, west of Mandurah; 32°33′ S, 115°4′ E; depth 110 m; 23 Nov. 1970; R/V *Diamantina* stn 4; WAM 71-1789 • 1 ♀ gravid; Western Australia, southwest of Jurien Bay; 30°38′ S, 114°47′ E; depth 110 m; 9 Dec. 1970; R/V *Diamantina* stn 108; WAM 71-1791 • 1 ♀; Western Australia, northwest of Bunbury; 32°57.5′ S, 114°48′ E; depth 122–139 m; 15 Mar. 1972; R/V *Diamantina* cruise DM 1/72 stn 8; USNM 149237.

Distribution and depth range

Southwestern coast of Australia (type locality west of Lancelin Island) and Great Australian Bight. Minimal known depth range 110–130 m.

Hedgpethia dofleini (Loman, 1911)
Fig. 2, Table 1

Colossendeis dofleini Loman, 1911: 4–5, pl. 1 figs 9–13.

Colossendeis dofleini – Fukui 1919: 98. — Ohshima 1936: 867. — Hedgpeth 1949: 300, fig. 47a–d. — Utinomi 1951: 167; 1955: 33; 1959: 220; 1971: 337. — Losina-Losinsky & Turpaeva 1958: 32 [key], tab. 4. — Stock 1958: tab. 1.

Rhopalorhynchus dofleini – Stock 1958: 116 [text], 118 [key], tab. 1; 1970: 9 [key].

Hedgpethia dofleini – Turpaeva 1973: 184 [key], 185 [text], tab. 2; 1993: 21 [text]. — Nakamura & Child 1991: 63. — Stock 1991a: 166 [text].

Type material (not examined)

Holotype

NORTHWESTERN PACIFIC • ♀; Eastern Honshu, Sagami Bay, Misaki; F. Doflein leg.; hosting institution unknown.

Other material examined

SOUTHWESTERN INDIAN OCEAN • 1 spec.; Mozambique Channel, north of Mayotte, northeast of Northern Reef; 12°29′53.9988″ S, 45°1′59.9988″ E; depth 450 m; 30 Mar. 1977; BENTHEDI stn DS71; MNHN-IU-2009-3005.

Distribution and depth range

West Kyushu, Eastern Coast of Japan from South Kyushu to Hokkaido and including Sagami Bay (type locality), east of Kurile Islands. GBIF (2025) records extend further this distribution to the Aleutian Islands and Alaska, and to Mayotte. This latter record is particularly distant from the known distribution. I could examine part of this material (specimen MNHN-IU-2009-3005), but did not identify any obvious morphological difference from Loman's (1911) illustrations. However, these are insufficient in details and the original material should also be reexamined. Minimal known depth range 40–869 m? Some previous authors (starting from Utinomi 1971) extend this depth range up to 20 m but I have not found any corresponding record in the literature.

Hedgpethia eleommata Child 1998

Fig. 2, Table 1

Hedgpethia eleommata Child, 1998: 60–62, fig. 7.

Hedgpethia eleommata – Staples 2007: 80 [list].

Type material (not examined)

Holotype

SOUTWESTERN PACIFIC • sex unknown; New Zealand, southeast of South Island, off Dunedin; 45°57.9′ N, 171°45.7′ E; depth 1400–1415 m; 23 Feb. 1995; New Zealand Oceanographic Institute (NZOI) stn W460; NIWA, H-695.

Paratypes

SOUTWESTERN PACIFIC • 4 specs; same details as holotype; NZOI, P-1142 • 3 specs; same data as for holotype.

Distribution and depth range

East off South Island in New Zealand (type locality). Minimal known depth range 1415–1442 m.

Hedgpethia elongata Takahashi, Dick & Mawatari, 2007
Fig. 2, Table 1

Hedgpethia elongata Takahashi *et al.*, 2007: 70–72, fig. 4.

Type material (not examined)

Holotype
PHILIPPINE SEA • ♂; Okinawa, northeast of Ie Island; 26°49.50′ N, 127°42′ E; depth 199–202 m; 23 May 2003; TRV *Toyoshio-maru*; ZIHU 03171.

Distribution and depth range

Only known from Ie Island in Okinawa (type locality), depth range 199–202 m.

Hedgpethia filamentus Staples, 2019
Fig. 2, Table 1

Hedgpethia filamentus Staples, 2019: 431–433, 435 [text], fig. 15, pl. 5e–f.

Type material (examined)

Holotype
SOUTHWESTERN INDIAN OCEAN • sex unknown; Atlantis bank; 32°42.86′ S, 57°16.34′ E; depth 750 m; 14 Dec. 2011; R.R.S. *James Cook* voyage JC066 stn 8.29; NHMUK ZOO-2018.38.

Paratypes
SOUTHWESTERN INDIAN OCEAN • 4 specs; same data as for holotype; NHMUK ZOO-2018.39 • 1 spec.; same data as for holotype; NHMUK ZOO-2018.40.

Distribution and depth range

Only known from Atlantis bank (type locality), depth 750 m.

Hedgpethia magnirostris Arnaud & Child, 1988
Fig. 2, Table 1

Hedgpethia magnirostris Arnaud & Child, 1988: 123 [list], 153–155, fig. 7.

Hedgpethia magnirostris – Stock 1991a: 166 [text].

Type material (not examined)

Holotype
SOUTHWESTERN INDIAN OCEAN • ♂; northeast of South Africa, off northern coast of KwaZulu-Natal (including former KwaZulu = Zululand in Arnaud & Child 1988); 28°31.7′ S, 32°34′ E; depth 680 m; 24 May 1976; R/V *Meiring Naudé* stn SM103; SAM-18579.

Paratype
SOUTHWESTERN INDIAN OCEAN • 1 ♀; same data as for holotype; SAM-A19580.

Distribution and depth range

Only known from the northern coast of KwaZulu-Natal (type locality), depth 680 m.

Hedgpethia nasica Child, 1994
Fig. 2, Table 1

Hedgpethia nasica Child, 1994: 16–18, fig. 5.

Type material (not examined)

Holotype
NORTHEASTERN PACIFIC • sex unknown; California, west of Point Arguelo; 34°45′ N, 123°7′ W; depth ca 4100 m; 24 Jun 1991; cruise *Pulse VII* stn 721M; USNM234637.

Paratype
NORTHEASTERN PACIFIC • 1 spec.; California, west of Point Arguelo; 34°49′ N, 123°7′ W; depth ca 4100 m; 25 Jun. 1989; cruise Pulse I stn 124; USNM234638 • 1 ♀; California, west of Point Arguelo; 34°43′ N, 123°1′ W; depth ca 4100 m; 23 Oct. 1990; cruise Pulse V stn 505M; USNM234639 • 1 sp.; California, west of Point Arguelo; 34°42′ N, 123°3′ W; depth ca 4100 m; 25 Oct. 1991; cruise Pulse X stn 1017M; USNM234640.

Distribution and depth range

Only known from west of Point Arguelo (type locality), depth ca 4100 m.

Hedgpethia shalei Staples, 2019
Fig. 2, Table 1

Hedgpethia shalei Staples, 2019: 433–435, fig. 16, pl. 5g–h.

Type material (examined)

Holotype
SOUTHWESTERN INDIAN OCEAN • sex unknown; Middle of What Seamount; 37°56.795′ S, 50°27.240′ E [recovered from mission report]; depth 1414 m; 2 Dec. 2011; R.R.S. *James Cook* voyage JC066 stn 6.7; NHMUK ZOO-2018.41.

Paratype
SOUTHWESTERN INDIAN OCEAN • 1 spec.; Coral Seamount; 41°22.31′ S, 42°54.57′ E; depth 732 m; 20 Nov. 2011; R.R.S. *James Cook* voyage JC066 stn 4.38; NHMUK ZOO-2018.42.

Distribution and depth range

Southwest Indian Ocean seamounts: Middle of What Seamount (type locality) and Coral Seamount. Known depth range 687–1414 m.

Hedgpethia spinosa Takahashi, Kajihara & Mawatari, 2012
Fig. 2, Table 1

Hedgpethia spinosa Takahashi *et al.*, 2012: 70–72, fig. 1.

Type material (not examined)

Holotype
PHILIPPINE SEA • ♂; Kagoshima Prefecture, south of Yaku Island (= Yakushima Island); 30°8.9′ N, 130°38.04′ E; depth 197–207 m; 26 May 2005; TRV *Toyoshio-maru*; ZIHU 3335.

Distribution and depth range

Only known from south of Yaku Island (type locality), depth range 197–207 m.

Hedgpethia tibialis Stock, 1991
Fig. 2, Table 1

Hedgpethia tibialis Stock, 1991a: 166, figs 29–30.

Hedgpethia tibialis – Turpaeva 1993: 22 [text]. — Staples 2007: 80 [list]. — Sabroux *et al.* 2023a: 3 [text], fig. 2 [phylogeny], tab. 1.

Type material (examined)

Holotype

CORAL SEA • sex unknown; off New Caledonia, Grand Passage; 18°52.80′ S, 163°21.7′ E; depth 550 m; 19 Sep. 1985; MUSORSTOM 4 stn CP194; MNHN-IU-2007-4581 (formerly part of lot MNHN-Py677).

Paratypes

CORAL SEA • 1 spec.; same data as for holotype; MNHN-IU-2011-5711 (formerly part of lot MNHN-Py677) • 1 spec.; same data as for holotype; MNHN-IU-2011-5712 (formerly part of lot MNHN-Py677) • 1 spec.; same data as for holotype; MNHN-IU-2007-4582 (formerly part of lot MNHN-Py677) • 1 spec.; same data as for holotype; NL, ZMA.PYC.3334 • 1 spec.; southeast of New Caledonia, southwest of Isle of Pins; 22°55.7′ S, 167°17′ E; depth 520 m; 28 Sep. 1985; MUSORSTOM 4 stn CP215; MNHN-IU-2007-4634 (formerly MNHN-Py790).

Distribution and depth range

Recorded from both northwest (type locality) and southeast extremities of New Caledonia. Known depth range 368–550 m.

Hedgpethia nosferatu sp. nov.
urn:lsid:zoobank.org:act:B4C8A512-51FE-4EBF-82A3-21E957D7BBFC
Figs 1–2, Table 1

Hedgpethia sp. – Sabroux *et al.* 2023a [phylogeny]: figs 2–3, tab. 1.

Etymology

In apposition. Named after Nosferatu, a popular vampire character appearing for the first time in ‘Nosferatu, eine Symphonie’ (1922), in reference to the somewhat bat-wing-like outline of the femorae.

Type material

Holotype

SOUTHWEST PACIFIC • ♀; south of New Caledonia, south-southeast of Isle of Pines; 22°56′37.7952″ S, 167°39′23.9832″ E; depth 310–403 m; 23 Aug. 2016; KANACONO stn DW4745; GenBank nos: OP985938 (mitochondrial genome), OQ065619 (18S); MNHN-IU-2016-6868.

Description (holotype, ♀ (MNHN-IU-2016-6868))

Measurements (mm). Trunk + cephalon length 2.2; trunk width at second trunk segment (lateral processes included) 1.1; proboscis length 3.8; abdomen length 0.09; femur length 4.7; tibia 1 length 7.5; tibia 2 length 4.1; tarsus length 0.9; propodus length 0.8; main claw length 0.4.

Trunk fully segmented, compact. Trunk segments 1–3 posterior margin flaring and carrying one small dorsomedian pointed tubercle. Ocular tubercle medium-sized, pointed at tip, about 1.6 × as tall as base width, carrying four pigmented eyes. Lateral sense organs inconspicuous or absent. Palp insertion on cephalon at end of short anterolateral projection aside proboscis, base of which seemingly segmented. Oviger insertion ventral, just before first trunk segment lateral processes, individualised as short ventral projection. Lateral processes shorter than wide, without ornamentation, separated by less than own diameter.

Proboscis about 1.7 × as long as whole body. Base constricted, not as basal stalk. Proboscis inflating from base to mid-length with gentle constriction about proximalmost third. Distalmost half tapering, distalmost third almost pipette-like. Tip rounded.

Abdomen ventralised, not visible dorsally, directed diagonally downward, not reaching beyond lateral processes. Anus at tip.

Chelifore absent.

Palp 9-articled. Article 1 shortest, shorter than wide. Article 2 longest, curved. Article 3 about twice as long as wide. Article 4 long, slightly more than half as long as article 2. Article 5 short, about twice as long as wide, more than 5 × as short as article 4. Article 6 thrice as long as wide, 1.7 × as long as article 5. Article 7 about as long as article 6. Articles 8 and 9 about 0.9 × as long as article 6. Articles 2 to 4 sparsely setose, articles 5 to 9 very setose ventrally. Individualised medium size setae carried on dorsodistal margin of articles 2 and 3.

Oviger 10-articled plus terminal claw. Articles 1 and 3 about as long as wide. Article 2 slightly longer. Articles 4 and 6 longest, subequal. Article 5 short, about 5 × as small as article 4. Articles 7–10 forming strigilis, article 7 longest, articles 8 and 9 subequal, article 10 shortest. Strigilis spines spatulate, denticulated distally, distributed in fields. Distalmost ventral spine of article 10 curved, forming subchela with terminal claw. Terminal claw wedge-like, with ventral cutting edge.

Legs coxae 1–3 about as short as wide. Coxa 1 dorsally ornamented with dorsal spinules. Femur widest, with seven more or less elevated mediodorsal conical tubercles carrying one seta each, three of which on proximal half about half as high as femur width. Tibia 1 longest, 1.6 × as long as femur, carrying dorsally short setae, one slightly longer on distal margin. Tibia 2 slightly longer than half tibia 1, 0.9 × as long as femur, with one long seta dorsodistally and one strong spine ventrodistally. Tarsus about 0.2 × as long as tibia 2, with numerous ventral spines and more scarcely distributed dorsal spines. Propodus slightly shorter than tarsus, propodal sole carrying numerous spines. Main claw about half as long as propodus. Auxiliary claws absent.

Remarks

The femorae of *H. nosferatu* sp. nov. readily distinguish it from all other species in the genus. Tibia 1 is also particularly long for the genus, about 1.6 × as long as the femur. Most species have this ratio to 1.2 (e.g., *H. bicornis*, *H. brevitarsis*, *H. chitinosa*, *H. shalei*) or below. *Hedgpethia eleommata* has this ratio to 1.3, *H. articulata* 1.4, *H. magnirostris* 1.5, and *H. tibialis* 1.6 too. *Hedgpethia nosferatu* differs from *H. magnirostris* by its taller ocular tubercle; from *H. articulata* by the wider propodus and tarsus;

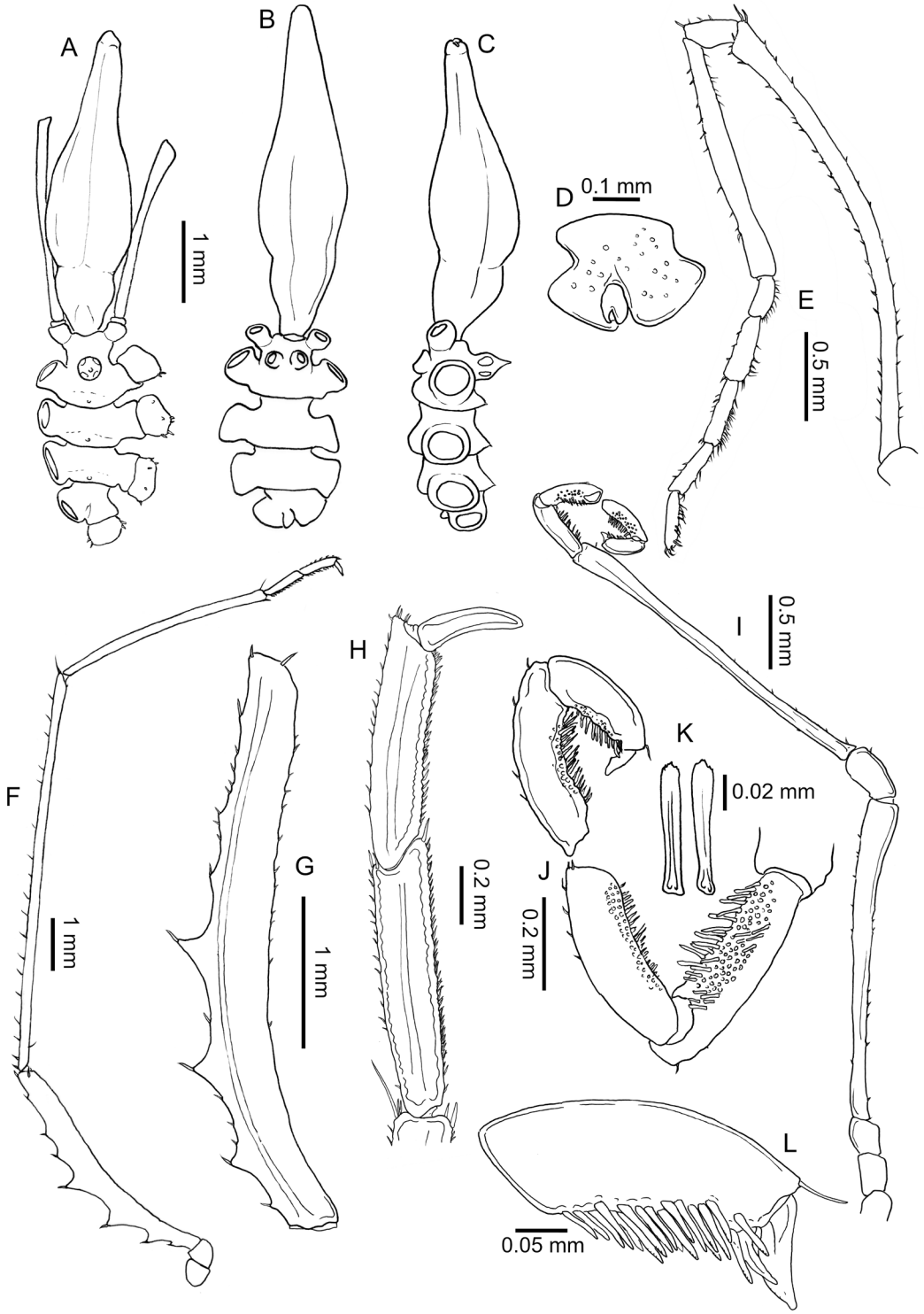

Fig. 1. *Hedgpethia nosferatu* sp. nov., holotype, ♀ (MNHN-IU-2016-6868). **A**. Dorsal view of the body. **B**. Ventral view of the body (same scale as A). **C**. Lateral view of the body (same scale as A). **D**. Fourth trunk segment and abdomen in ventral view. **E**. Palp. **F**. Third leg. **G**. Femur of the third leg. **H**. Tarsus, propodus and claw of third leg. **I**. Oviger. **J**. Strigilis (not all ovigeral spines are illustrated for readability; their insertion is represented instead). **K**. Two ovigeral spines. **L**. Tenth ovigeral article and terminal spine.

from *H. eleommata* by the propodus / tarsus length ratio, and the shape of the proboscis; from *H. tibialis*, which is geographically close (New Caledonia), by the tarsus / propodus ratio.

Hedgpethia nosferatu is morphologically closest to *H. chitinosa*. Besides the above-mentioned characters, *H. nosferatu* differs from this species by the shape of the proboscis, and the presence of spines on the sole of the propodus. The main claw also tends to be longer relative to the propodus in *H. chitinosa*, although this character seems to present important variations (Nakamura, 1987).

Sea spider diversity in New Caledonia included so far 66 nominal species listed by Bamber (2007b). Among them, 36 appear so far as endemic (Bamber 2007b). *Hedgpethia nosferatu* is therefore the 67th pycnogonid species recorded from New Caledonia, and potentially the 37th endemic species. This is also the second species of *Hedgpethia* recorded from New Caledonia, after *H. tibialis* that was recorded north and south of the island (Stock 1991a). The new species holotype is likely a female given the wide opening of the gonopores ventrally on coxae 2.

Geographic and bathymetric distribution

There are two main geographic components in the distribution of *Hedgpethia* as recorded in the literature (Fig. 2):

A Northern Pacific distribution (Fig. 2B) represented by seven species (*H. bicornis*, *H. brevitarsis*, *H. californica*, *H. chitinosa*, *H. elongata*, *H. nasica*, *H. spinosa*) distributed in an arch from Okinawa to California. Four of these species (*H. brevitarsis*, *H. californica*, *H. elongata*, *H. spinosa*) were found between 0 and 1000 m (Table 1). The distribution of *H. bicornis* extends slightly deeper, down to 1100 m in the Okhotsk Sea (type locality; Dudnik 2025); it was found as shallow as 303 m in the Kuril Islands, and possibly as shallow as 64 m along the southeastern coast of Kamchatka (Losina-Losinsky 1961). *Hedgpethia chitinosa* was also mostly sampled within the 0–1000 m range, but two sampling events for this species are recorded to 3939 m (Bering Sea; Hilton 1943) and ca 6500 m (south off Commander Islands; Dudnik 2025). *Hedgpethia nasica* was found only once, at ca 4100 m deep off the California coast.

A Southern Indopacific distribution (Fig. 2A, C) represented by eight species (*H. calva*, *H. dampieri*, *H. eleommata*, *H. filamentus*, *H. magnirostris*, *H. nosferatu*, *H. shalei*, *H. tibialis*) distributed from the eastern coast of South Africa to off New Caledonia and New Zealand, six of these species (*H. calva*, *H. dampieri*, *H. filamentus*, *H. magnirostris*, *H. nosferatu*, *H. tibialis*) were sampled uniquely above 1000 m deep. Two species have their bathymetry extending even deeper: *H. eleommata* was sampled around 1400–1450 m southeast off New Zealand; *H. shalei* was sampled on the Southwest Indian Ridge at 687 and 1414 m deep. *Hedgpethia filamentus* and *H. shalei* are the two species in this genus presently known from seamounts (Atlantis Bank and Middle of What Seamount; Staples 2019).

Hedgpethia articulata and *H. dofleini* spread between these two geographic groups: *H. articulata* has the widest know bathymetric distribution and was sampled in Indonesia (ca 2000 m deep), the Bering Sea (ca 4000 m deep) and the Gulf of Alaska (3620 m deep); *H. dofleini* was mostly sampled off both sides of Japan (from Hokkaido to Kyushu; ca 40–900 m deep) and in the Aleutian Islands (ca 80-650 m deep), but one specimen recorded on GBIF (2025) was sampled off Mayotte in the Comoro Islands (450 m deep).

Outside these distributions, *H. caudata* is the only species known off the Pacific coast of South America (Peru; approximatively 3000 m deep), and *H. atlantica* is the sole species recorded in the Northeast Atlantic from around 200 m (Josephine Bank; Stock 1970) to below 1000 m deep (Galicia Bank; Stock 1991b); in the Gibraltar Strait (135 m deep; Stock 1987), and in the Western Mediterranean (French Mediterranean coast at a depth of 100 m; Arnaud 1987).

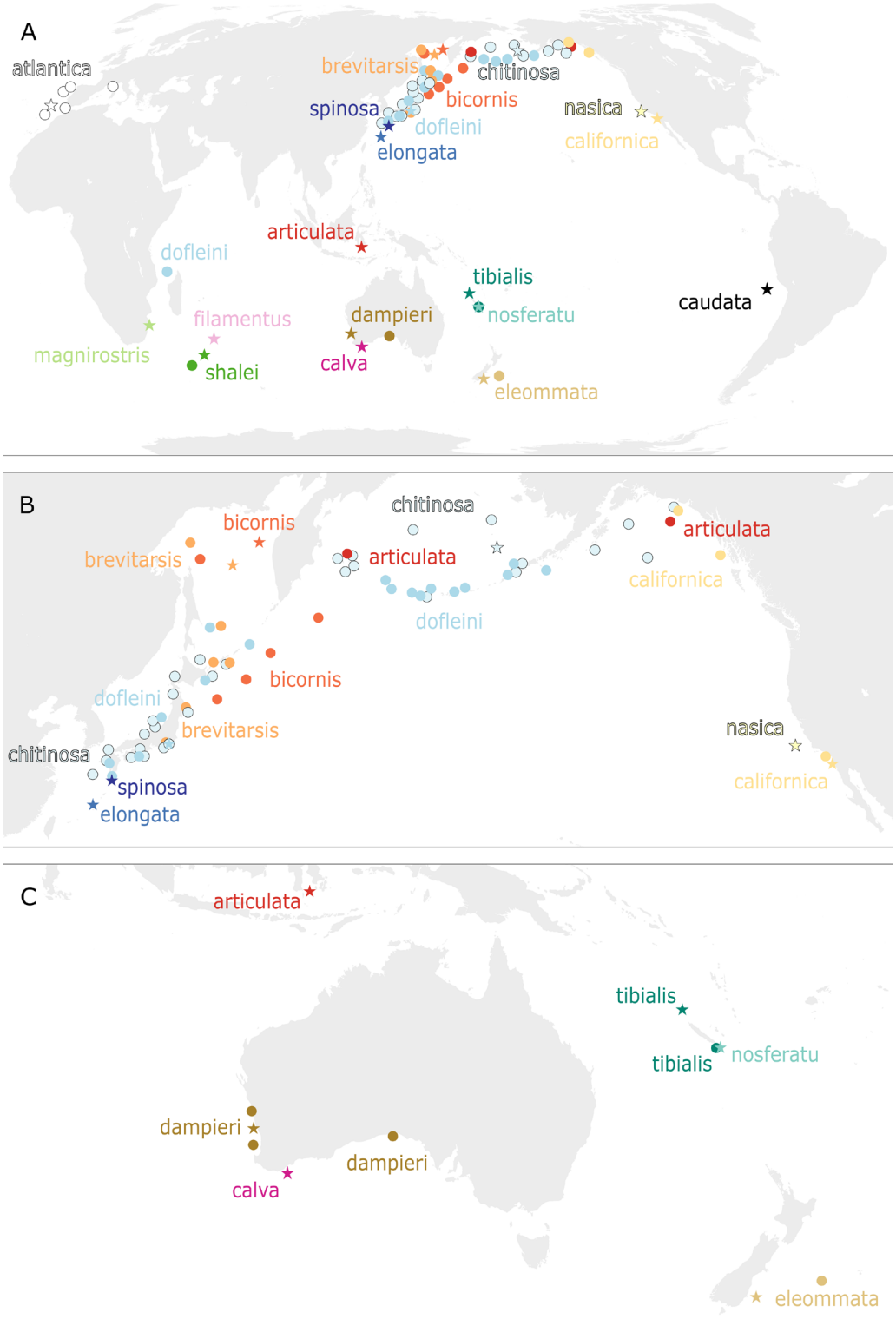

Fig. 2. Distribution of the species of *Hedgpethia* Turpaeva, 1973 around the world. **A**. Global map. **B**. Zoom-in on the Northen Pacific region. **C**. Zoom-in on the Central Indopacific region. Each colour is attributed to one of the 19 species, names indicated on the map: *articulata* = *Hedgpethia articulata*; *atlantica* = *H. atlantica*; etc. Type localities are indicated with a star; other known sampling localities (when they exist) are indicated with a circle. Distribution based on data from the literature and GBIF (2025).

Table 1. Known bathymetric ranges for the species of *Hedgpethia* Turpaeva, 1973. The depth at which the type material was collected is also indicated. Dubious range extensions (possible contaminations, unchecked depths mentioned in the literature, see text for explanation) are indicated in parentheses in addition to the estimate depth range. Abbreviations: MinKDR = minimum known depth range; MaxKDR = maximum known depth range.

	MinKDR (m)	**MaxKDR (m)**	**Holotype depth (m)**
H. articulata (Loman, 1908)	1944–4200	1944–4294	1944
H. atlantica (Stock, 1970)	100–1110	100–1125	211–241
H. bicornis (Turpaeva, 1958)	303–1100	64–1100	1100
H. brevitarsis (Losina-Losinsky, 1958)	300–780	290–780	?
H. californica (Hedgpeth, 1939)	330–560	326–573	330
H. calva Arango, 2009	–	976–980	976–980
H. caudata Turpaeva, 1993	–	2710–3080	2710–3080
H. chitinosa (Hilton, 1943)	41–926 (–6410?)	0–950 (–6757?)	0–221
H. dampieri (Child, 1975)	110–130	110–139	113–122
H. dofleini (Loman, 1911)	(20?–)40–869	(20?–)40–924	?
H. eleommata Child, 1998	1415–1442	1400–1468	1400–1415
H. elongata Takahashi, Dick & Mawatari, 2007	–	199–202	199–202
H. filamentus Staples, 2019	750	750	750
H. magnirostris Arnaud & Child, 1988	680	680	680
H. nasica Child, 1994	ca 4100	ca 4100	4100
H. nosferatu sp. nov.	–	310–403	310–403
H. shalei Staples, 2019	687–1414	687-1414	1414
H. spinosa Takahashi, Kajihara & Mawatari, 2012	–	197–207	197–207
H. tibialis Stock, 1991	368–550	368–550	550

Identification key to worldwide species of Hedgpethia Turpaeva, 1973

Below is an identification key for all *Hedgpethia*, the backbone of which is modified from the key of Stock (1970) for the species of the "*articulatum*-group" *Rhopalorhynchus* [= *articulatum* section in Stock 1958], that were later assigned to *Hedgpethia*.

1. Ocular tubercle rudimentary. Eyes absent 2
– Ocular tubercle and eyes well developed 3

2. Tibia 1 longer than tibia 2 or femur. Abdomen a small ventral knob ... ***H. articulata*** (Loman, 1908)
– Tibia 1 shorter than tibia 2 or femur. Abdomen about twice as long as wide ..***H. nasica*** Child, 1994

3. Ventral margin of tarsus and propodus without spines 4
– Ventral margin of tarsus and propodus with a closely set row of spines 7

4. Ocular tubercle a tall cone, at least thrice as high as base width. Oviger's article 10 with a large spine opposing the terminal claw, forming a subchelate structure ..... ***H. californica*** (Hedgpeth, 1939)
– Ocular tubercle not higher than twice as base width. No enlarged oviger spine, an no subchelate structure on the distal oviger articles 5

5. Tarsus slightly longer than propodus ..... ***H. dofleini*** (Loman, 1911)
– Tarsus shorter than propodus 6

6. Ocular tubercle conical. Legs articles smooth. Proboscis without narrowing of its inflated part around proximalmost third ..... ***H. calva*** Arango, 2009
– Ocular tubercle rounded with tapering tip, legs spinous. Proboscis inflated section narrowed at proximalmost third ..... ***H. dampieri*** (Child, 1975)

7. Tarsus distinctly shorter than propodus 8
– Tarsus as long as to distinctly longer than propodus 14

8. Main claw about as long as propodus ..... ***H. eleommata*** Child, 1998
– Main claw less than half as long as the propodus 9

9. Proboscis cylindrical or tubular in shape, abdomen horizontal……. ***H. caudata*** Turpaeva, 1993
– Proboscis inflating medially, constricted at base, tapering distally 10

10. Proximal constriction of the proboscis developed as a long stalk. Ocular tubercle about 4 × as high as base width ..... ***H. atlantica*** (Stock, 1970)
– Proximal constriction of the proboscis not developed as a stalk. Ocular tubercle no more than thrice as tall as base width 11

11. Posterior margin of trunk segments 1–3 carrying one rounded dorsomedian tubercle each .... ***H. brevitarsis*** (Losina-Losinsky, 1958)
– Posterior margin of trunk segments 1–3 flaring, without dorsomedian tubercle 12

12. Proboscis flask-shaped, almost pipette-like distally; ocular tubercle a low cone, about as long as base width ..... ***H. tibialis*** Stock, 1991
– Proboscis pyriform, gently tapering from its widest point to the tip; ocular tubercle a cone, about twice as tall as base width 13

13. Space separating lateral processes 2–4 wider than their own diameter, proximal constriction of the proboscis forming a short stalk with parallel sides ..... ***H. filamentus*** Staples, 2019
– Space separating lateral processes 2–4 smaller than their own diameter, proximal constriction not forming a stalk ..... ***H. shalei*** Staples, 2019

14. Anterior margin of cephalic segment with two tubercles 15
– Anterior margin of cephalic segment smooth 17

15. Main claw half as long as propodus ..... ***H. spinosa*** Takahashi, Kajihara & Mawatari, 2012
– Main claw nearly as long as propodus 16

16. Posterior margin of trunk segments 1–3 carrying one pointy dorsomedian tubercle each .... ***H. bicornis*** (Turpaeva, 1958)
– Posterior margin of trunk segments 1–3 flaring, without dorsomedian tubercle .... ***H. magnirostris*** Arnaud & Child, 1988

17. Proximal constriction of the proboscis as a long stalk, about as long as 2nd trunk segment .... ***H. elongata*** Takahashi, Dick & Mawatari, 2007
– Proximal constriction of the proboscis as a very short stalk or no stalk at all 18

18. Femur dorsal surface smooth except for short setae, tibia 1 about 1.2 × as long as femur .... ***H. chitinosa*** (Hilton, 1943)
– Femur dorsal surface ornamented with conical tubercles, height of the tallest about half of femur diameter; tibia 1 about 1.6 × as long as femur ..... ***H. nosferatu*** sp. nov.

Discussion

Distribution of *Hedgpethia* Turpaeva, 1973

Indopacific *Hedgpethia* are mostly distributed in 1) a Northern Pacific arch from Okinawa to California, and 2) a scarce patch of southern localities, along or south of the Equator (Fig. 2). The southern component of *Hedgpethia* was unknown when the distribution of the genus (then regarded as a subgroup of *Rhopalorhynchus*) was first analysed by Stock (1958), who used it as a further argument (along with morphology) to distinguish the "*kroeyeri* section" (i.e., *Rhopalorhynchus*) from the "*articulatum* section" (i.e., *Hedgpethia*). *Rhopalorhynchus* is mostly a tropical genus found in the Western and Central Indopacific sensu Spalding *et al.* (2007), with some records extending to Temperate Southern Africa (Stock 1958, 1991a; Bamber 2001; Staples 2009). Its distribution partly overlaps with the southern *Hedgpethia*. Moreover, the known depth range of *Rhopalorhynchus* spreads between 0 and 320 m (Takahashi *et al.* 2007; Staples 2009), which overlaps with at least eight species of *Hedgpethia*, including the strictly southern *H. dampieri* and the (possibly) widely distributed *H. dofleini*. As in *Hedgpethia*, there is also one species of *Rhopalorhynchus* known from the Atlantic, *Rhopalorhynchus claudus* Stock, 1975 described from Barbados. Critically, the proboscis of this species is not known (Stock 1975; Staples 2009) but the distance between the lateral processes of this species is typical for the genus.

The close distribution between the southern species of *Hedgpethia* and *Rhopalorhynchus* may be of some significance for their relationship. It may be proposed, for example, that their conjoined distribution area corresponds to the ancestral distribution of Hedgpethiinae, and the northern *Hedgpethia* would then be a later colonization. There is very little ground to develop these hypotheses here, because of the absence of molecular data to test the phylogenetic relationships among hedgpethiins, and even the reciprocal monophyly of these sister-clades is not yet certain (see hereafter).

Discrepancies with the diagnosis for the genus *Hedgpethia* Turpaeva, 1973

Hedgpethia is a well-characterized genus with conspicuous typical characters that enable its identification, most of the time. I failed to write a diagnosis for *Hedgpethia* that would include *H. caudata*, as it would turn inevitably non-diagnostic in the current state of our knowledge for the genus: the proboscis of *H. caudata* is almost cylindrical, and the abdomen is elongated and horizontal, contradicting the two most distinctive characters of the genus. This raises the question of whether this species should be reassigned. However, *H. caudata* has but a superficial resemblance with species of the genus *Colossendeis*, while the body is segmented with widening margins, and the trunk is segmented unlike every *Colossendeis*. It also differs from *Pentacolossendeis* by the absence of a fifth trunk segment, which together with the absence of chelifores are the sole solid diagnostic characters of the latter among Colossendeidae. For the same reason, it cannot be assigned to *Decolopoda* and *Dodecolopoda* (the latter having six trunk segments), which, moreover, present massive chelifores. It is finally clearly distinct from *Rhopalorhynchus* by the absence of a dorsal tooth of the proboscis, and its stout body. Therefore, an assignment to other known genera of Colossendeidae is excluded. Including *H. caudata* in its own new genus is not advisable because of the absence of conspicuous autapomorphies.

Instead, despite the significant discrepancy between this species and the original diagnosis for the genus *Hedgpethia* (Turpaeva 1973), *H. caudata* has a typical wedge-like ovigeral claw carrying a ventral cutting edge (Fig. 1L), like *H. articulata*, *H. eleommata*, *H. filamentus*, *H. magnirostris*, *H. nasica*, *H. shalei* and *H. tibialis*. This character is a potential synapomorphy or even a diagnostic character of

Hedgpethia (or a subgroup of it) but the ovigeral claw is often poorly described in the literature due to its very minute size. Thus, the most suitable hypothesis as of now is that *H. caudata* is a very derived species within the genus *Hedgpethia*. Possibly, the distinctive shape of the proboscis indicates closer relationships to *H. brevitarsis* and *H. dampieri*, which Stock (1991) assigned a morphological "group B". Future studies should focus on reviewing the type material of the genus *Hedgpethia* to find solid diagnostic characters (either morphological or molecular) and to resolve the phylogenetic position of this species. Regrettably, the holotype and only specimen known of *H. caudata* is nowhere to be found (Dudnik & Kremenetskaia 2025 and Dudnik pers. com.), so more material from this species should be sampled.

Is *Hedgpethia* Turpaeva, 1973 monophyletic?

The *H. caudata* problem raises the question of the monophyly of the genus. Even supposing this particular species is highly derived and supported among a subgroup of the genus by the typical ovigeral claw, it is important to note that none of the diagnostic characters of *Hedgpethia* are unambiguous synapomorphies. Instead, it seems that this genus is mostly defined by the absence of the probable autapomorphy of its sister clade, *Rhopalorhynchus*, i.e., the dorsal tooth on the proboscis. Turpaeva (1973) also noted that the trunk of *Hedgpethia* is stouter, with closer lateral processes. Again, this is mostly in contrast with the particularly elongated trunk of *Rhopalorhynchus*, as the variability of this character in *Hedgpethia* overlaps with what can be observed in Colossendeinae. The ventralised abdomen of *Hedgpethia* is quite typical, but similar characters can be found in *Rhopalorhynchus tenuissimus* (Haswell, 1885) (see illustrations in Arango 2003) or in *Rhopalorhynchus magdalena* Staples, 2009. It can also be observed in the fossil species *Palaeopycnogonides gracilis* Charbonnier, Vannier & Riou, 2007 that does not seem to be related to Colossendeidae (Sabroux *et al.* 2023b). The shape of the oviger's terminal claw might provide support for the monophyly of the group, but this character has been insufficiently explored in many species (see preceding section).

Thus, whether *Hedgpethia* is monophyletic is questionable. The sole study including both *Rhopalorhynchus* and *Hedgpethia* includes respective two and one species of these genera (*H. nosferatu*, *H. tibialis* and *R. filipes*; Sabroux *et al.* 2023a). While the results firmly support the closest relationship of *H. nosferatu* and *H. tibialis* relatively to *R. filipes*, this is far from sufficient to conclude the monophyly of *Hedgpethia*. Samplings of *Hedgpethia* are rare, and any collecting of specimens should thus be used for genetic or genomic sequencing to identify potential molecular diagnostic characters and test the phylogeny of Hedgpethiinae.

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