



## Two new species of *Ancistrosyllis* McIntosh, 1878 (Annelida: Pilargidae) from the Gulf of Thailand, Western Pacific

SAKANAN PLATHONG<sup>1</sup>, JINTANA PLATHONG<sup>1,2\*</sup> & HARLAN K. DEAN<sup>3</sup><sup>1</sup>Marine Science Learning Center, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90110 Thailand.✉ [sakanan2004@yahoo.com](mailto:sakanan2004@yahoo.com); <https://orcid.org/0000-0003-3473-1680><sup>2</sup>Marine Ecoscience Management Co., Ltd., 4/31 Moo 1, Namnoi, Hat Yai, Songkhla 90110, Thailand.✉ [klaklong@hotmail.com](mailto:klaklong@hotmail.com); <https://orcid.org/0000-0002-2136-3770><sup>3</sup>Museum of Comparative Zoology, Department of Invertebrate Zoology, 26 Oxford St. Cambridge, MA 02138, USA. ✉ [harlan.dean@umb.edu](mailto:harlan.dean@umb.edu); <https://orcid.org/0000-0001-8269-0671>

\*Corresponding author

### Abstract

Two new species of Pilargidae, *Ancistrosyllis eidimtaiteae* **sp. nov.** and *A. suksani* **sp. nov.**, are described from the Gulf of Thailand. These *Ancistrosyllis* are characterized by having a median and two lateral antennae. *Ancistrosyllis eidimtaiteae* **sp. nov.** differs from all other species in the group by having brown pigmentation and by having both short antennae and tentacular cirri, first notopodial hooks from chaetiger 3, and a single type of neurochaetae (long non-limbate capillaries with bifid tips). *Ancistrosyllis suksani* **sp. nov.** can be distinguished from other species of *Ancistrosyllis* by the presence of the first notopodial hooks from chaetiger 4 and three types of neurochaetae (short, stout, falcates with a subdistal small guard, short limbates, and long bifid non-limbates). An updated key to the *Ancistrosyllis* species of this group is also provided.

**Key words:** Pilargids, Pilarginae, Polychaeta, Songkhla Sea, taxonomy

### Introduction

Previously known Pilargidae from Thai waters include six species belonging to four genera. These species are *Ancistrosyllis kornkanokae* Plathong, Dean & Plathong, 2021; *A. nakkaritae* Plathong, Dean & Plathong, 2021; *Cabira saithipae* Plathong, Dean & Plathong, 2021; *C. thailandica* Plathong, Dean & Plathong, 2021; *Hermundura annandalei* Fauvel, 1932; and *Sigambra phuketensis* Licher & Westheide, 1997 (Fauvel 1932; Licher & Westheide 1997; Plathong *et al.* 2021; Salazar-Vallejo *et al.* 2001). In this study, the second in our analysis of the Pilargidae of the Gulf of Thailand, we describe two new species belonging to the genus *Ancistrosyllis* McIntosh, 1878.

Currently there are 15 described species of *Ancistrosyllis*: *A. breviceps* Hartman, 1963; *A. carolinensis* Gardiner, 1976; *A. cingulata* Korschelt, 1893; *A. commensalis* Gardiner, 1976; *A. falcata* Day, 1957; *A. fioronii* Fiege & Böggemann, 1999; *A. groenlandica* McIntosh, 1878; *A. hamata* Hartman, 1960; *A. hartmanae* Pettibone, 1966; *A. jonesi* Pettibone, 1966; *A. kornkanokae* Plathong, Dean & Plathong, 2021; *A. matlaensis* Mandal & Deb, 2018; *A. nakkaritae* Plathong, Dean & Plathong, 2021; *A. papillosa* Jones, 1961; and *A. quellina* Wesenberg-Lund, 1962 (Read & Fauchald 2022). When the two new species herein are included, the genus will have a total of 17 species.

According to Plathong *et al.* (2021), there are three groups of *Ancistrosyllis* species. Group I has only a median antenna (one species), Group II has both a median antenna and two lateral antennae (nine species) and Group III has two lateral antennae but lacks a median antenna (nine species). The two new species describe herein belong to group II having both a median antenna and two lateral antennae. This group, now includes 11 species: *A. breviceps* Hartman, 1963; *A. cingulata* Korschelt, 1893; *A. commensalis* Gardiner, 1976; *A. fioronii* Fiege & Böggemann, 1999; *A. groenlandica* McIntosh, 1878; *A. hartmanae* Pettibone, 1966; *A. jonesi* Pettibone, 1966; *A. kornkanokae* Plathong, Dean & Plathong 2021; *A. nakkaritae* Plathong, Dean & Plathong 2021 and two new species from this study, *A. eidimtaiteae* **sp. nov.** and *A. suksani* **sp. nov.** Within group II we can separate species into two subgroups

based on the first occurrence of notopodial hooks. Subgroup A, with five species, has notopodial hooks starting from the 3<sup>rd</sup> chaetiger and includes *A. fioronii*, *A. hartmanae*, *A. kornkanokae*, *A. nakkaritae* and *A. eidimtaiteae* **sp. nov.** Subgroup B, with six species, *A. breviceps*, *A. cingulata*, *A. commensalis*, *A. groenlandica*, *A. jonesi* and *A. suksani* **sp. nov.**, all with notopodial hooks beginning at chaetigers other than number three (Table 1).

The aim of this paper is to describe two new species of *Ancistrosyllis* collected from the Gulf of Thailand. The next contributions, we are preparing a series of the other genus of Pilargids.

## Materials and methods

Samples were collected from two sites in the Gulf of Thailand during two ecological surveys. The first site was an offshore area in the Gulf of Thailand sampled as part of the long-term environmental monitoring at the offshore Petroleum Production Area of the Gulf of Thailand project, conducted from 2009–2020. This project assessed benthic diversity at several stations in offshore petroleum concession areas. The second site was in the Songkhla Sea in the Gulf of Thailand as part of two projects. The Marine and Coastal Resources Databases and Marine Community under Petroleum Platforms in Songkhla Province was conducted from 2012 to 2016 and investigated the seasonal variation of benthic fauna in Songkhla Province. The second project, Long-term environmental monitoring at the Petroleum Production Area in Songkhla Province, was conducted from 2011–2019 and assessed benthic diversity at several stations in petroleum concession areas in the Songkhla Province.

Specimens were collected using two different methods. In the offshore Petroleum Production Area in the Gulf of Thailand (8°22'53"–10°46'59"N, 100°48'03"–102°05'25"E), a Van Veen grab (0.04 m<sup>2</sup>) was used at depths ranging from 50 to 80 m and in the Songkhla Sea, the southern Gulf of Thailand (7°14'21"–7°49'22"N, 100°24'42"–100°49'01"E) a Van Veen grab (0.1 m<sup>2</sup>) was used at depths ranging from 9 to 27 m.

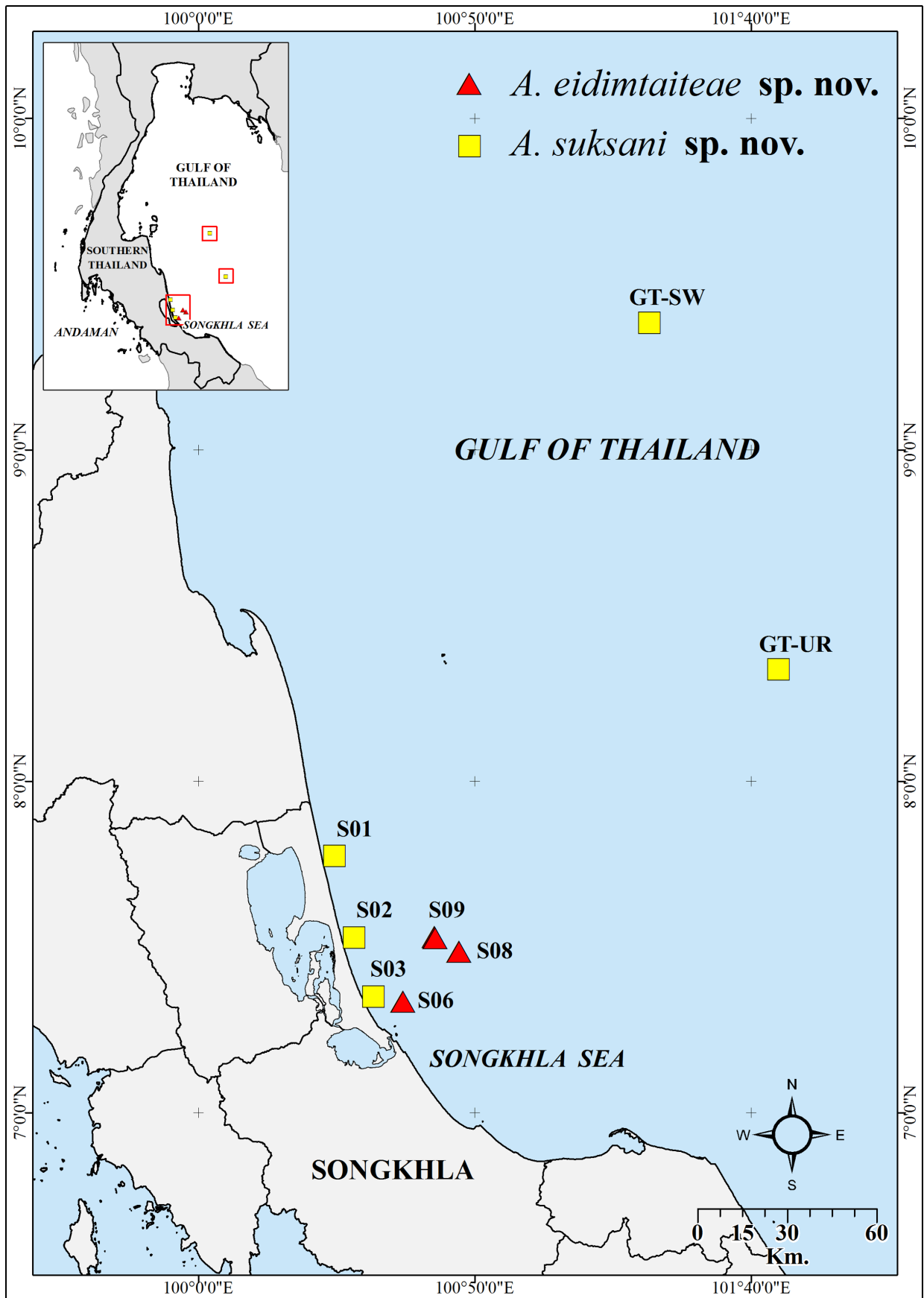
The collected samples were sieved in the field with 2.0 mm, 1.0 mm and 0.5 mm mesh screens. Later, water and sediment from the sieved grab samples were passed through a 300 µm filter bag. Specimens retained by both separation methods were separately fixed with a 10% formalin solution in sea water. In the laboratory samples were washed with freshwater and transferred to 70% ethanol.

Polychaetes were sorted into taxonomic groups using a stereomicroscope and examined using dissecting and compound light microscopes. Light photographs and measurements of the specimens were produced using a stereo microscope (Olympus SZX16) and a compound microscope (Leica DM1000) with a digital camera (DP74). Stacks of multifocal shots were merged into a single photograph using the Helicon Focus program.

Specimens of new species were examined using the Scanning Electron Microscopy (SEM). They were dehydrated in 100% ethanol before being critical point dried and mounted onto SEM stubs and then coated with gold. SEM photographs were taken with a Field Emission Scanning Electron Microscope (Apreo, FEI).

The taxonomic descriptions of the new species are based on morphology and measurements of the holotype and information about variability found in the paratypes. Confirmation of the taxonomic status of the new species was based on the revision and compilation of the diagnostic characteristics from all recognized species of the genus *Ancistrosyllis* done by Glasby & Salazar-Vallejo (2022); Plathong *et al.* (2021); Mandal & Deb (2018); Fiege & Böggemann (1999); Imajima (1987) and Pettibone (1966). For comparative purposes tables with the main diagnostic characters of the new species and closely-related species were prepared (Table 1).

Type specimens are deposited in the Princess Maha Chakri Sirindhorn Natural History Museum, Prince of Songkla University (PSUZC), Hat Yai, Songkhla, Thailand.



**FIGURE 1.** Sampling sites in the Gulf of Thailand, showing stations where two new species of *Ancistrosyllis*, *Ancistrosyllis eidimtaiteae* sp. nov. (triangles) and *A. suksani* sp. nov. (squares) were collected.

**TABLE 1.** Comparison of Group II *Ancistroyllis* species with presence a median antenna two lateral antennae (modified after Plathong *et al.* 2021). (ch=chaetiger).

| Species   | Type locality                                      | Eyespots | Tentacular cirri (length relative to antennae) | First ventral cirri (ch) | First notopodial hook (ch) | Type of neurochaetae   | Reference                   |
|---|--|----------|--|--------------------------|----------------------------|--|-----------------------------|
| A. First notopodial hooks occur at chaetiger 3        |  |          |  |                          |                            |  |                             |
| <i>A. hartmanae</i> Pettibone, 1966                   | Chesapeake Bay to Gulf of Mexico, Western Atlantic | Present  | Short, subequal                                | 3                        | 3                          | One type, long non-limbate capillary chaeta with slightly bent tip                     | Pettibone 1966              |
| <i>A. fioronii</i> Fiege & Böggemann, 1999            | North Sea, Borkum Reef, Germany                    | Absent   | Short, filiform                                | 2                        | 3                          | One type, long non-limbate capillary chaeta, bidentate tip, 4–6 chaetae per fascicle   | Fiege & Böggemann 1999      |
| <i>A. kornkanokae</i> Plathong, Dean & Plathong, 2021 | Songkhla Sea, Gulf of Thailand                     | Absent   | Long, slightly equal                           | 3                        | 3                          | Two types: short limbate chaeta and long non-limbate capillary chaeta, unidentate tips | Plathong <i>et al.</i> 2021 |
| <i>A. nakkaritae</i> Plathong, Dean & Plathong, 2021  | Songkhla Sea, Gulf of Thailand                     | Absent   | Long   | 1                        | 3                          | Two types: short limbate chaeta and long non-limbate capillary chaeta, bifid tips      | Plathong <i>et al.</i> 2021 |
| <i>A. eidimitaiteae</i> <b>sp. nov.</b>               | Songkhla Sea, Gulf of Thailand                     | Absent   | Short, longer than lateral antennae            | 1                        | 3                          | One type, long non-limbate capillary chaeta with bifid tip, 6–9 chaetae per fascicle   | This study                  |
| .....continued on the next page                       |  |          |  |                          |                            |  |                             |

**TABLE 1. (Continued)**

| Species   | Type locality            | Eyespots | Tentacular cirri (length relative to antennae) | First ventral cirri (ch) | First notopodial hook (ch) | Type of neurochaetae  | Reference                                   |
|---|--------------------------|----------|--|--------------------------|----------------------------|---|---|
| B. First notopodial hooks occur at other chaetigers |                          |          |  |                          |                            |   |   |
| <i>A. breviceps</i> Hartman, 1963                   | USA, 706 m               | Absent   | Subequal, longer than antenna                  | 1                        | 13                         | One type, long non-limbate chaeta with hooked tip   | Hartman 1963; Pettibone 1966                |
| <i>A. cingulata</i> Korschelt, 1893                 | Adriatic Sea             | Present  | Two pairs                                      | 1                        | 5                          | ?   | Korschelt 1893                              |
| <i>A. commensalis</i> Gardiner, 1976                | USA, intertidal          | Absent   | Short, conical                                 | 1                        | 6                          | Two types, short limbate chaeta and long non-limbate capillary chaeta, bifid tips   | Gardiner 1976                               |
| <i>A. groenlandica</i> McIntosh, 1878               | West Greenland, 750 m    | Absent   | Short, subequal                                | 1                        | 4–6                        | Two types, short limbate chaeta and long non-limbate capillary chaeta, slightly hooked tips   | Imajima 1987; Pettibone 1966; McIntosh 1878 |
| <i>A. jonesi</i> Pettibone, 1966                    | USA, 13 m                | Absent   | Short, subulate, subequal                      | 3                        | 6                          | One type, long non-limbate chaeta, slightly hooked tip  | Pettibone 1966                              |
| <i>A. suksani</i> <b>sp. nov.</b>                   | Gulf of Thailand, 9–70 m | Absent   | Short, digitate                                | 1                        | 4                          | Three types: 1) 1–2 short stout falcates chaetae, subdistal with small guard approaching distal tips, 2) 2–3 short limbate, bifid tip chaetae and 3) long non-limbate capillary chaeta with bifid tip | This study                                  |

## Results

### Systematics

#### Family Pilargidae Saint-Joseph, 1899

#### Subfamily Pilarginae Saint-Joseph, 1899

#### Genus *Ancistrostylis* McIntosh, 1878

**Diagnosis** (after Glasby & Salazar-Vallejo 2022). Pilargids with body depressed, integument papillose to verrucose, present on both segmental and nonsegmental regions. Zero to three antennae. Palps unfused, biarticulated, palpostyle minute. Paired ventrolateral palpal papillae present. Pharynx distally with terminal papillae (or absent); proximally smooth or, rarely, with denticles. Two pairs of tentacular cirri. Dorsal and ventral cirri digitate to lobate. Notochaetae are hooks, starting from chaetigers 3 to 13 and continuing throughout body. Neurochaetae smooth, or spinulose capillaries, often with bidentate tips. Free living in sediments from intertidal to deep sea, or commensal with other invertebrates.

#### *Ancistrostylis eidimtaiteae* sp. nov.

Figs 2–5

**Material examined.** Six specimens collected from the Songkhla Sea, Gulf of Thailand, Western Pacific, coll. Marine Ecoscience Management Co., Ltd., mud mixed with sand and shells. Holotype: PSUZC-POL-0305 (1 spec.), S09-19 (7°31'37"N, 100°42'48"E), 17 Feb. 2015, 24 m. Paratypes: PSUZC-POL-0306 (1 spec., on SEM stub), S06 (7°20'10"N, 100°36'59"E), 12 Feb. 2015, 15.5 m; PSUZC-POL-0307 (3 specs., 1 spec. on SEM stub), S08 (7°29'10"N, 100°47'06"E), 16 Mar. 2016, 25 m; PSUZC-POL-0308 (1 spec., juvenile), S09-11 (7°31'52"N, 100°42'42"E), 25 Mar. 2017, 23 m.

**Type locality.** Songkhla Sea, Gulf of Thailand (Fig. 1).

**Diagnosis.** *Ancistrostylis* with body papillae brown, lacking eyespots, with small median antenna, and two short papillose lateral antennae. Tentacular cirri short, first dorsal and ventral cirri from chaetiger 1. First notopodial hooks from chaetiger 3.

**Description.** Holotype incomplete, 6.3 mm long, 0.5 mm wide with 33 segments. Paratypes, 2.0–22.2 mm long, 0.3–0.6 mm wide, 18–125 chaetigers. Longest specimen consists of three pieces: anterior region, 7.1 mm long with 41 chaetigers; middle region, 11.5 mm long with 55 chaetigers and posterior region with broken anal cirri, 3.6 mm long with about 29 chaetigers. Body annulated, depressed anteriorly, depressed, tapered posteriorly. Body light tan in ethanol with brownish papillae throughout. Ventral with a deep midventral groove running longitudinally (Fig. 2A–D).

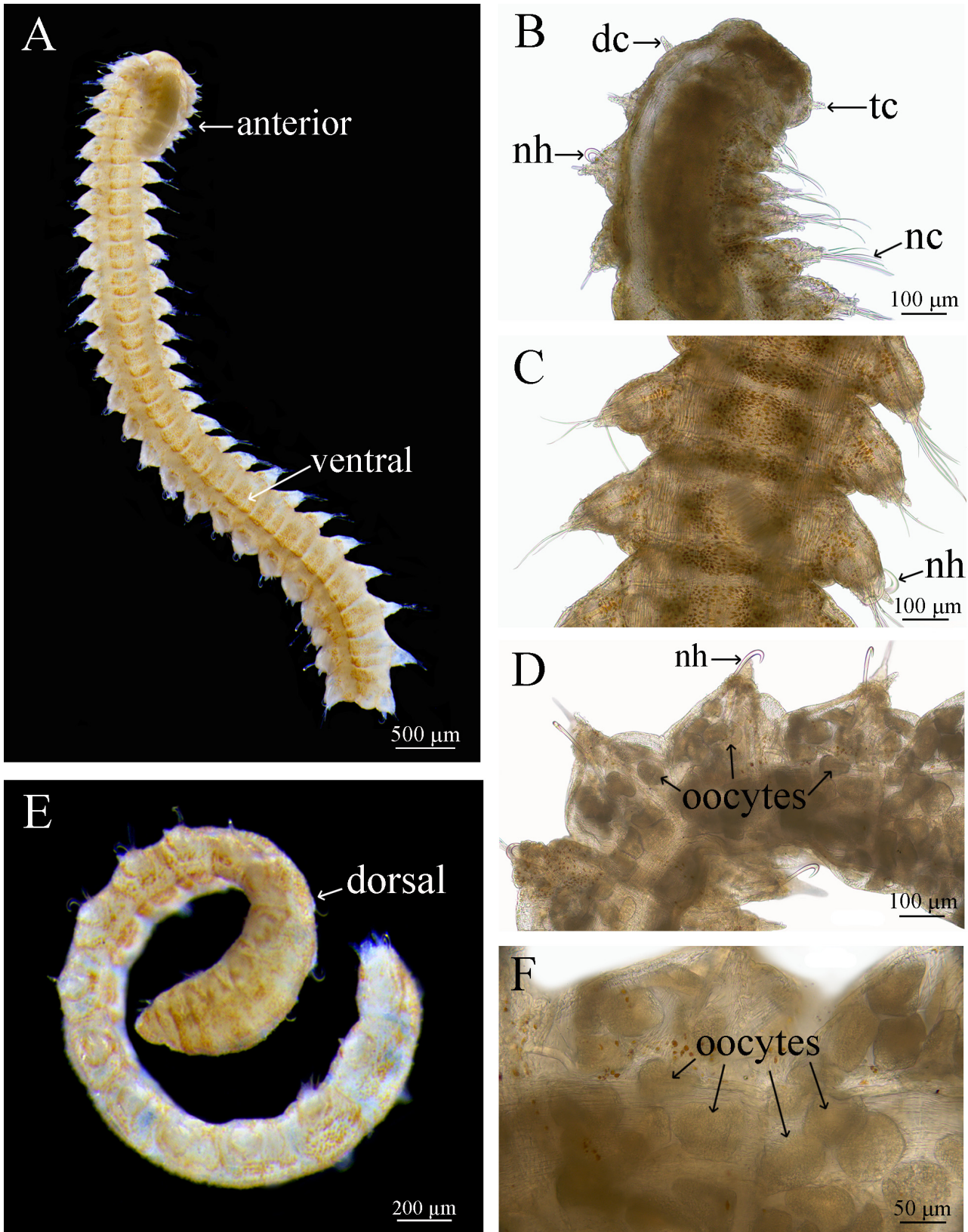
Prostomium broad, bilobed, wider than long with a small median antenna present in prostomial posterior region. Lateral antennae short papillose, shorter than palps. Eyespots absent. Palps biarticulate with very small ventrolateral papillae, visible ventrally (Figs 3A–C, 5A). Pharynx not observed, retracted in holotype and paratypes, extending to chaetiger 6 (Fig. 2B).

Peristomium fused to prostomium. Two pairs of short, conical, papillose tentacular cirri inserted laterally (Figs 2B, 3A–C, 5A). Dorsal cirri short, first dorsal cirri from chaetiger 1, slightly shorter than dorsal cirri of chaetiger 2 and following chaetigers (Figs 2B, 3A–B, 5A).

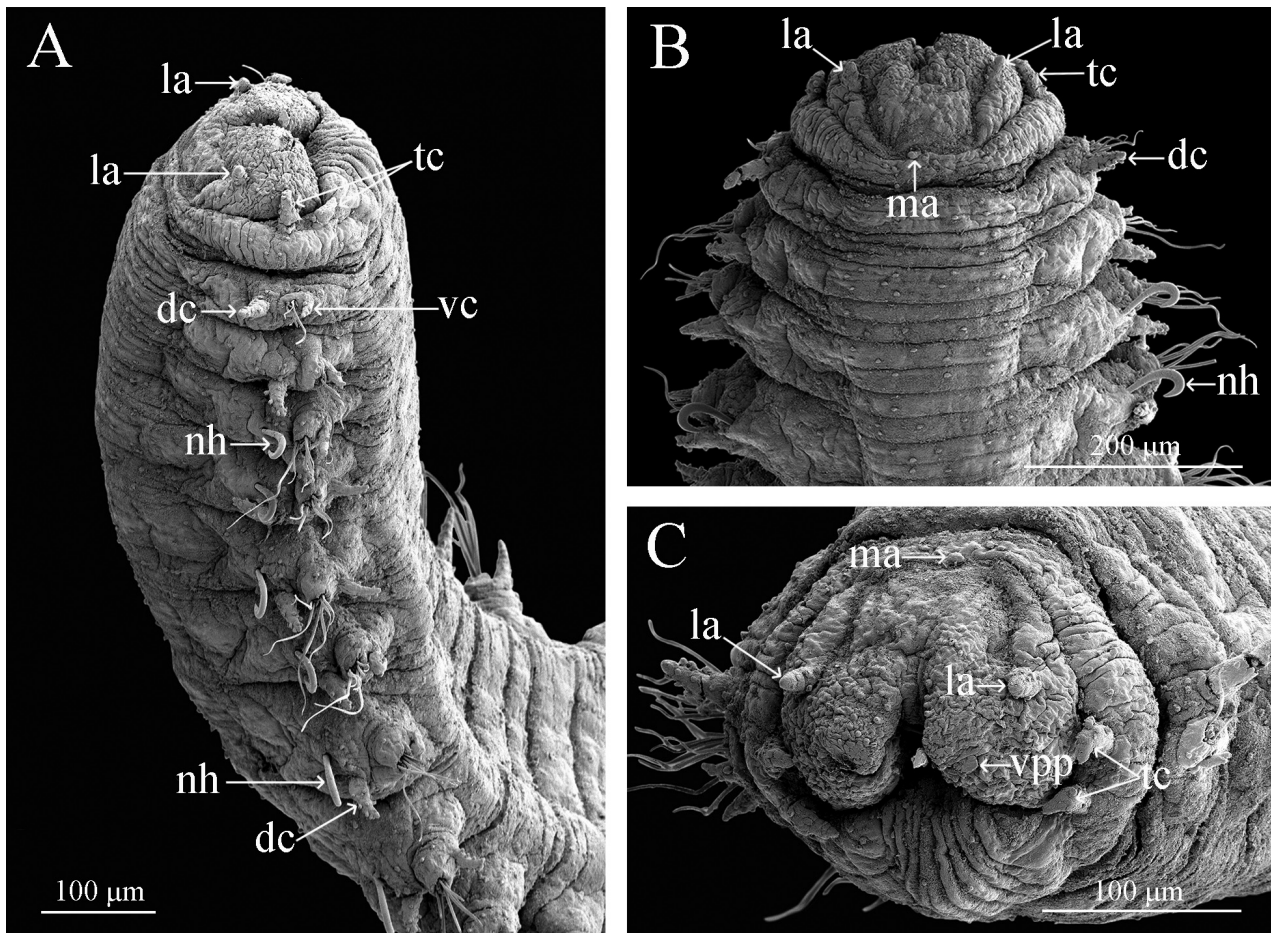
Parapodia subbiramous. Notopodia reduced to a low swollen lobe, each with single aciculae, 1–2 notopodial hooks per parapodium from chaetiger 3 (Figs 2B, 3A–B, 4B–E, 5A–B).

Neuropodia well developed with conical lobes. Ventral cirri from chaetiger 1, shorter than dorsal cirri and slightly longer than neuropodial lobes (Figs 3A–B, 4B, C, E, 5A–B). Neurochaetae non-limbate capillary chaetae with bifid tips, variable in length, throughout the body. Inferior chaetae are shorter than superior chaetae, up to 9 chaetae per bundle (Figs 4C, F–G, 5B, C).

Pygidium with two anal cirri.



**FIGURE 2.** Light photographs of *Ancistrosyllis eidimtaiteae* sp. nov. (A, C. Holotype, PSUZC-POL-0305; B, D, F. PSUZC-POL-0307; E. PSUZC-POL-0308) A. Anterior region, dorsal view; B. Close up anterior, dorsal view; C. Brown papillae on the ventral region, ventral view; D. Oocytes in body, dorsal view; E. Anterior region, lateral view; F. Close up of oocytes, dorsal view. Abbreviations: dc, dorsal cirrus; nc, neurochaetae; nh, notopodial hook; tc, tentacular cirrus.



**FIGURE 3.** SEM micrographs of *Ancistrosyllis eidimtaiteae* **sp. nov.** (PSUZC-POL-0306) show A. Anterior region, lateral view; B. Anterior end, dorsal view; C. Prostomium, frontal view. Abbreviations: dc, dorsal cirrus; la, lateral antenna; ma, median antenna; nh, notopodial hook; tc, tentacular cirri; vc, ventral cirrus; vpp, ventrolateral palpal papilla.

Holotype and paratypes of *A. eidimtaiteae* **sp. nov.** collected in March had oocytes in the coelomic cavities of posterior chaetigers. Diameter of larger oocytes 60–72 µm (Fig. 2D, F).

**Habitat.** Found in 15.5–25 m water depth, in mud substrates, mixed with sand and shells.

**Distribution.** Songkhla Sea, the Gulf of Thailand, Western Pacific.

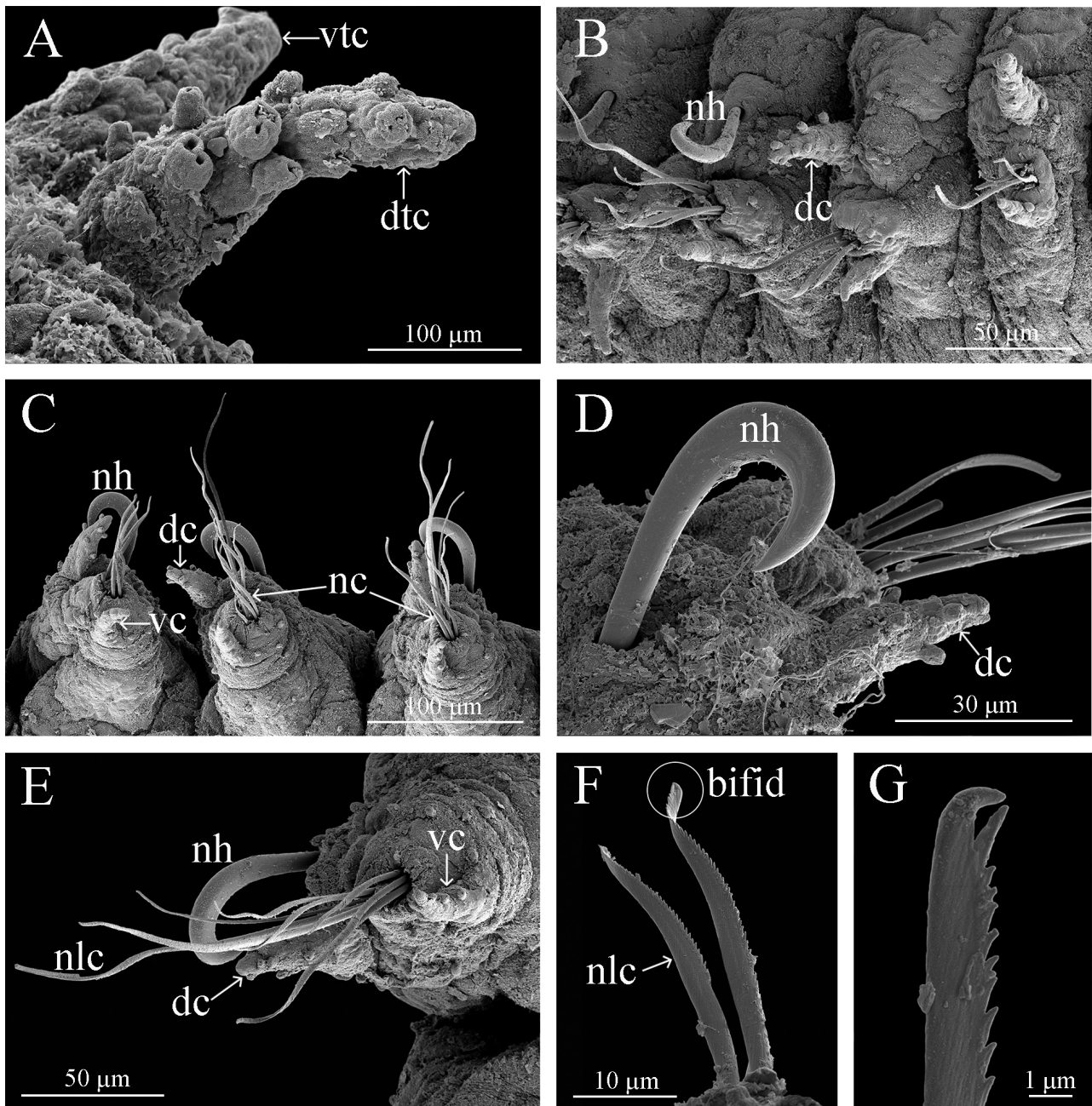
**Etymology.** The new species is named after Mrs Elena Eidimtaite, grandmother of Dr Ted Donn, Principal Ecologist at Tetra Tech, Inc.

**Remarks.** *Ancistrosyllis eidimtaiteae* **sp. nov.** belongs to Group II of *Ancistrosyllis* because it has a median and two lateral antennae. Moreover, *A. eidimtaiteae* **sp. nov.** has first notopodial hooks from chaetiger 3 and distinctive brownish body papillae. These features make it easy to differentiate from other colorless species. The new species resembles four other species of subgroup A: *A. hartmanae* Pettibone, 1966; *A. fiononii* Fiege & Böggemann, 1999; *A. kornkanokae* Plathong, Dean & Plathong, 2021 and *A. nakkaritae* Plathong, Dean & Plathong, 2021 (Table 1).

*Ancistrosyllis eidimtaiteae* **sp. nov.** differs from *A. hartmanae* Pettibone, 1966 in lacking eyespots and the first ventral cirri appearing at chaetiger 1, whereas *A. hartmanae* has a pair of eyespots and the first ventral cirri from chaetiger 3 (Pettibone 1966).

*Ancistrosyllis eidimtaiteae* **sp. nov.** differs from *A. fiononii* by the first ventral cirri present from chaetiger 1, having well developed, conical, truncate neuropodia, and non-limbate capillaries with bifid tips. *Ancistrosyllis fiononii* has the first ventral cirri occurring from chaetiger 2, the neuropodia are poorly developed and the tips of long non-limbate capillary chaetae are bidentate (Fiege & Böggemann 1999). Moreover, the number of neurochaetae per fascicle in *A. eidimtaiteae* **sp. nov.** is greater than in *A. fiononii* with up to 6–9 chaetae per fascicle, rather than 4–6 chaetae per fascicle. Additionally, the body color of *A. eidimtaiteae* **sp. nov.** is brown but *A. fiononii* lacks pigmentation (Fiege & Böggemann 1999).





**FIGURE 4.** SEM micrographs of *Ancistrosyllis eidimtaiteae* **sp. nov.** (PSUZC-POL-0306) show A. Tentacular cirri, dorsal view; B. First three parapodia, lateral view; C. Anterior parapodia, lateral view; D. Close up notopodial hook, lateral view; E. Close up parapodia, ventral view; F. Close up, long non-limbate capillary (circle shows bifid tip, lateral view); G. Same, close up, bifid tip, lateral view. Abbreviations: dc, dorsal cirrus; dtc, dorsal tentacular cirri; nc, neurochaetae; nh, notopodial hook; nlc, non-limbate capillary; p, papilla; vc, ventral cirrus.

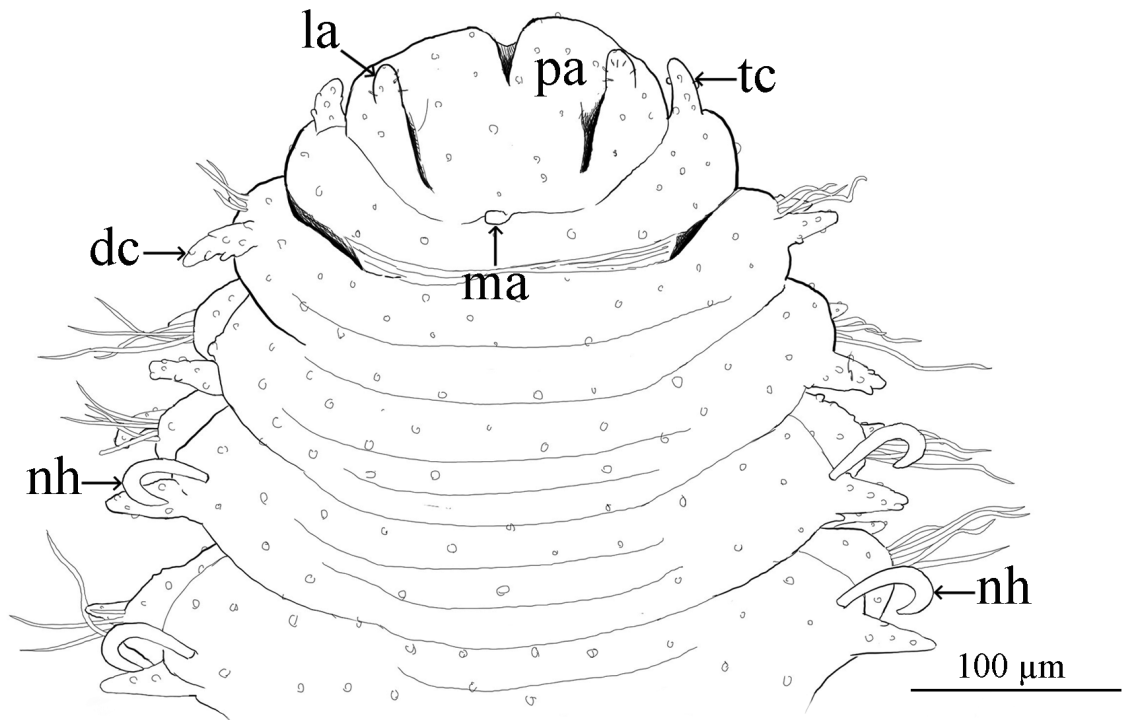
*Ancistrosyllis eidimtaiteae* **sp. nov.** differs from *A. kornkanokae* Plathong, Dean & Plathong, 2021 in the neurochaetae and the first appearance of ventral cirri. *Ancistrosyllis eidimtaiteae* **sp. nov.** has a single type of non-limbate capillary chaetae with bifid tip, and the first ventral cirri appearing at chaetiger 1, whereas *A. kornkanokae* bears two types of unidentate neurochaetae, short limbate and long, non-limbate capillaries and the first ventral cirri occur from chaetiger 3. In addition, tentacular cirri and the first dorsal cirri in *A. eidimtaiteae* **sp. nov.** are shorter than in *A. kornkanokae*, and the body is brown in color in alcohol, whereas *A. kornkanokae* is lacking colour (Plathong *et al.* 2021).

*Ancistrosyllis eidimtaiteae* **sp. nov.** most closely resembles *A. nakkaritae* Plathong, Dean & Plathong, 2021 in having the first ventral cirri at chaetiger 1 and the first notopodial hooks from chaetiger 3. However, *A. eidimta-*

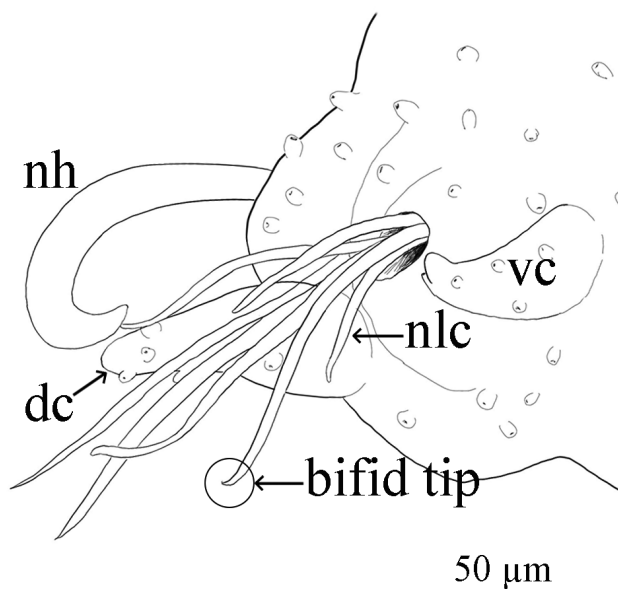
*iteae* **sp. nov.** differs from *A. nakkaritae* by having only non-limbate capillaries, and lacks short limbate capillaries. *Ancistrosyllis nakkaritae* has both short limbates and long non-limbate capillaries. Moreover, the lateral antennae, tentacular cirri and dorsal cirri of *A. eidimtaiteae* **sp. nov.** are shorter than those of *A. nakkaritae* (Plathong *et al.* 2021).

Finally, *Ancistrosyllis eidimtaiteae* **sp. nov.** differs from *A. suksani* **sp. nov.** in having a single type of neurochaetae and first notopodial hooks occurring at chaetiger 3 while *A. suksani* **sp. nov.** has three types of neurochaetae and the first notopodial hooks appear at chaetiger 4 (Table 1).

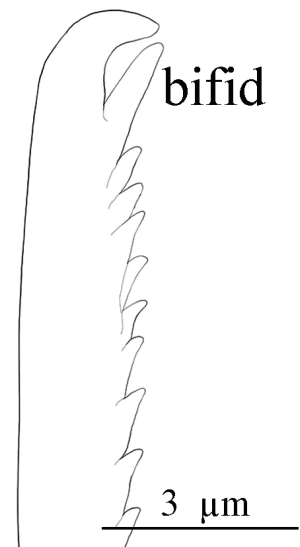
A



B



C



**FIGURE 5.** Line drawings of *Ancistrosyllis eidimtaiteae* **sp. nov.** A. Anterior end, dorsal view; B. Close up, parapodia, ventral view; C. Close up, tip of non-limbate capillary, lateral view. Abbreviations: dc, dorsal cirrus; la, lateral antenna; ma, median antenna; nh, notopodial hook; nlc, non-limbate capillary; pa, palp; tc, tentacular cirri; vc, ventral cirrus.

*Ancistrosyllis suksani* sp. nov.

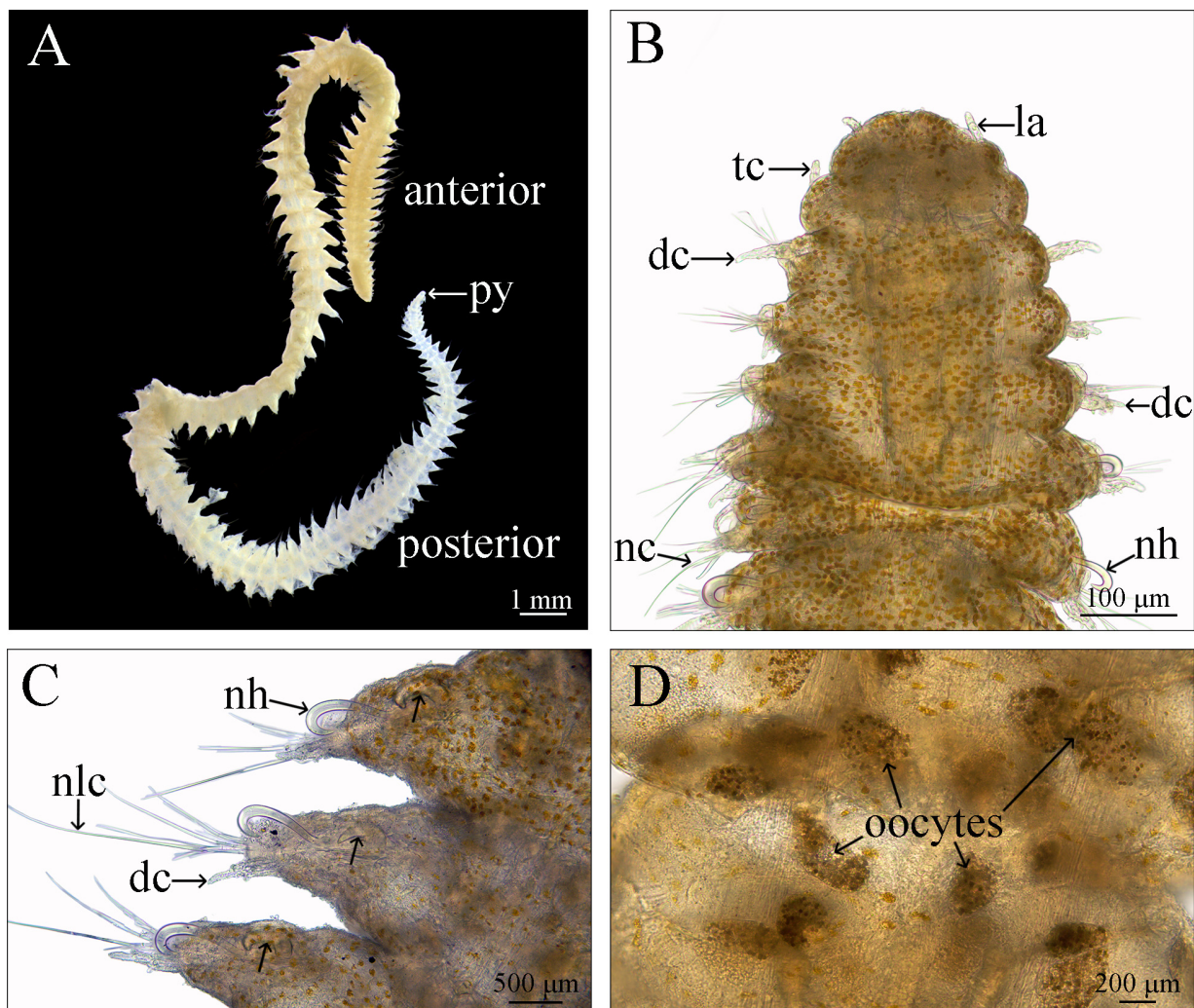
Figs 6–9

**Material examined.** Nine specimens collected from the Songkhla Sea and offshore in the Gulf of Thailand, coll. Marine Ecosearch Management Co., Ltd., mud mixed with sand and shells. Holotype: PSUZC-POL-0345 (1 spec.), S02 (7°31'44"N, 100°28'15"E), 21 Sep. 2016, 10 m. Paratypes: S01 (7°46'29"N, 100°24'42"E), 16 Oct. 2013, 9.5 m; PSUZC-POL-0346 (3 specs., 1 spec. on SEM stub), S01-B1; PSUZC-POL-0347 (1 spec.), S01-B3; PSUZC-POL-0348 (1 spec., on SEM stub), S03 (7°21'02"N, 100°31'45"E), 13 Oct. 2015, 9 m; PSUZC-POL-0349 (1 spec.), GT-UR (8°20'16"N, 101°45'01"E), 9 Sep. 2015, 70 m; PSUZC-POL-0350 (2 specs., 1 spec. on SEM stub), GT-SW (9°22'59"N, 101°21'37"E), 22 May 2020, 50 m.

**Type locality.** Songkhla Sea, Gulf of Thailand (Fig. 1).

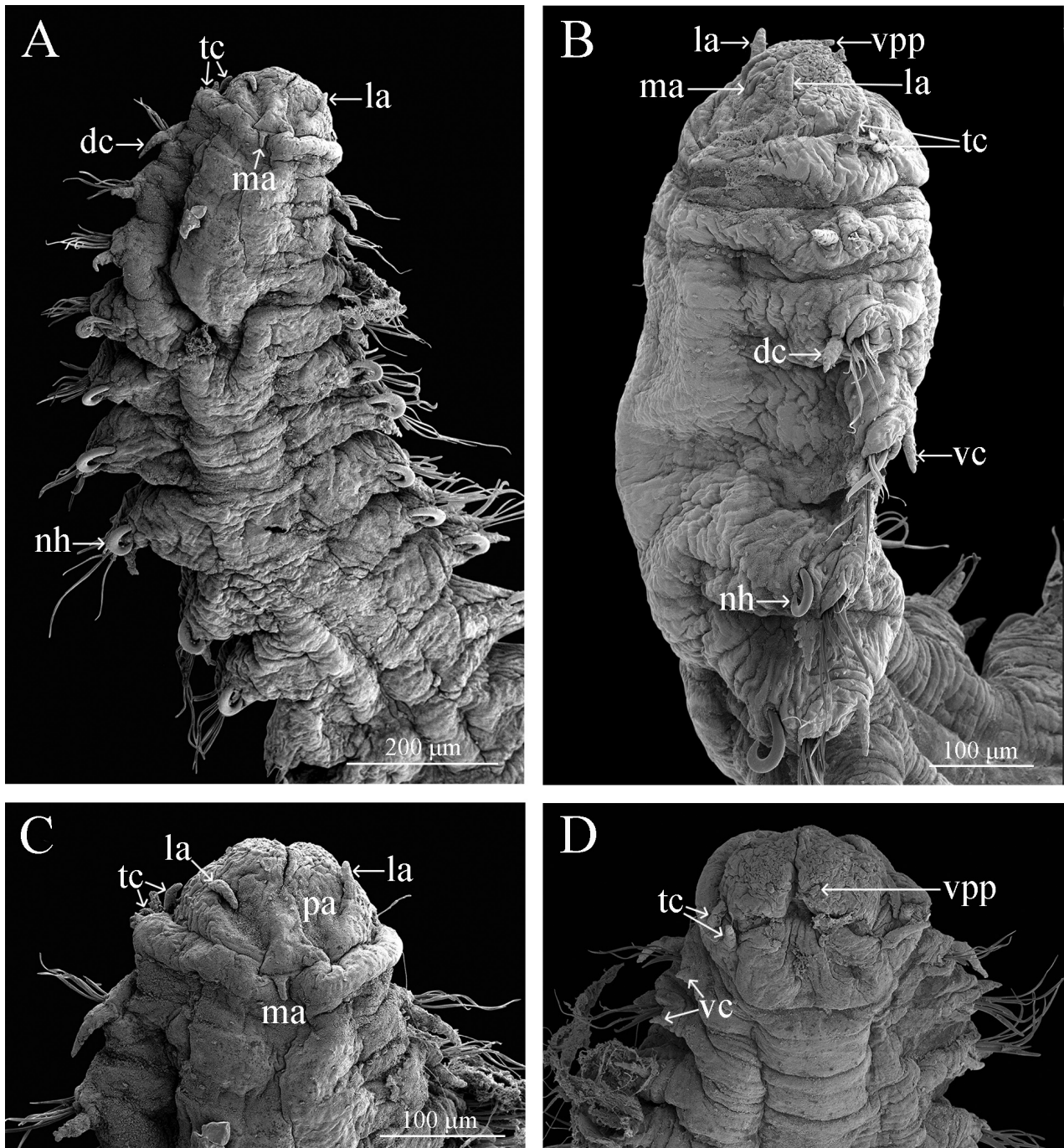
**Diagnosis.** *Ancistrosyllis* without eyespots; with a short median antenna and two short lateral antennae. With a pair of short tentacular cirri; dorsal and ventral cirri starting from chaetiger 1. Notopodial hooks from chaetiger 4. Three types of neurochaetae; short, stout, falcates with a small subdistal guard; short limbates with bifid tips; and long non-limbate capillaries with bifid tips.

**Description.** Holotype complete (pygidial cirri broken), 22.3 mm long, 0.7 mm wide, 99 segments. Paratypes incomplete, anterior region 1.8–8.2 mm long, 0.3–0.8 mm wide with 10–36 segments. Two posterior parts with pygidial cirri. Body depressed, light tan to light brown with numerous light yellow to brown papillae, widest in middle region, tapering anteriorly and posteriorly (Fig. 6A–C).



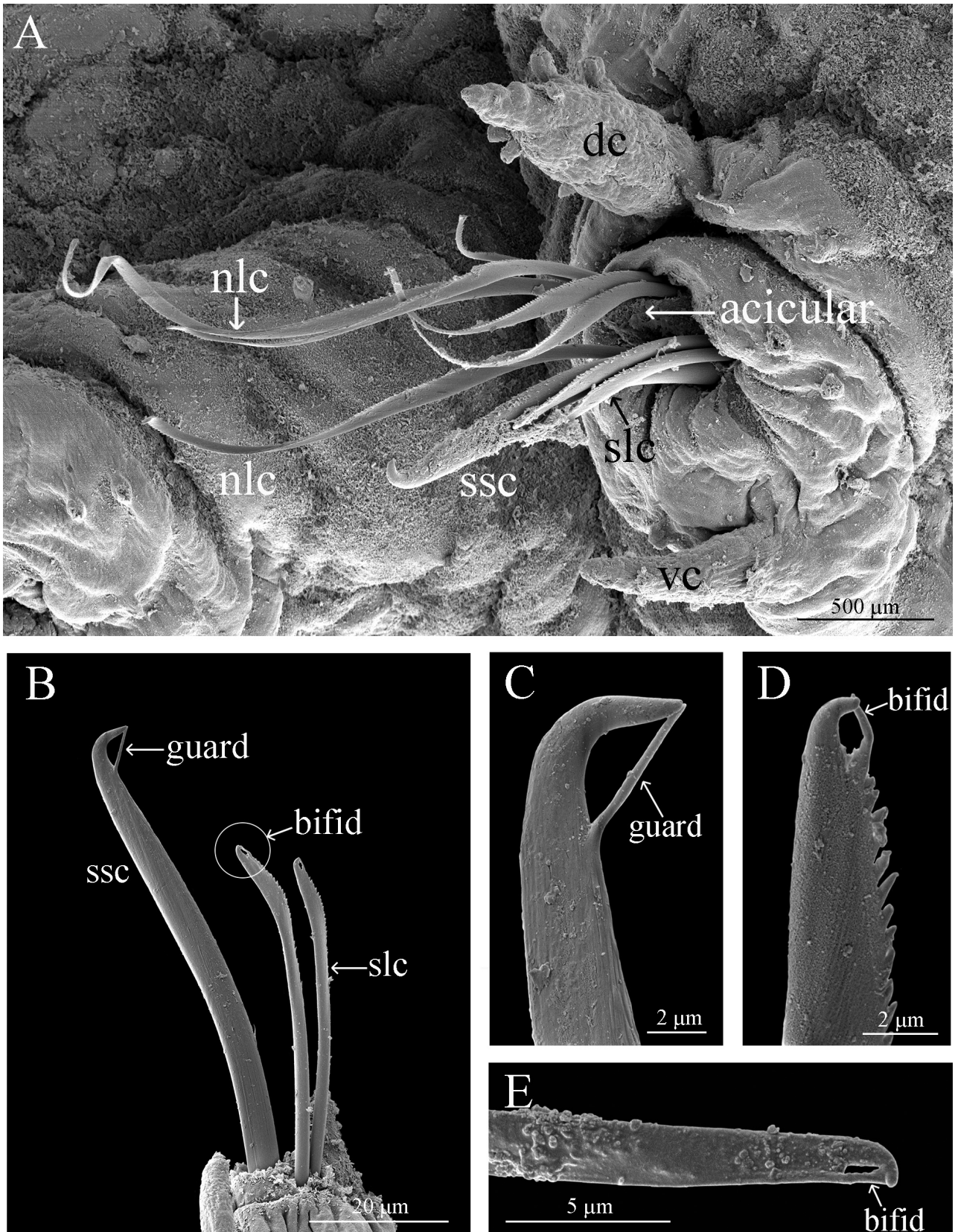
**FIGURE 6.** Light photographs of *Ancistrosyllis suksani* sp. nov. (A. Holotype, PSUZC-POL-0345; B, C. PSUZC-POL-0350; D. PSUZC-POL-0346) A. Whole body, twisted, most in dorsal view; B. Anterior region, dorsal view; C. Anterior parapodia, dorsal view, arrows without legends point to short notopodial hooks; D. Oocytes inside body, dorsal view. Abbreviations: dc, dorsal cirrus; la, lateral antenna; nc, neurochaetae; nh, notopodial hook; nlc, non-limbate capillary; py, pygidium; tc, tentacular cirri.

Prostomium short, broad, bilobed, wider than long, with numerous brown papillae; short, small median antenna present on posterior prostomial region; two short lateral antennae present antero-laterally on prostomium, shorter than palps and tentacular cirri (Figs 6B, 7–D, 9A). Eyespots absent. Palps biarticulate with very small ventrolateral palpal papillae (Figs 7B, 7D, 9B). Pharynx not observed, retracted in holotype and paratypes, extending to chaetiger 4 (Fig. 6B).



**FIGURE 7.** SEM micrographs of *Ancistrosyllis suksani* sp. nov. (A, C, D, PSUZC-POL-0346; B, PSUZC-POL-0348; C, D, PSUZC-POL-0350) A. Anterior region, dorsal view; B. Same, lateral view; C. Prostomium, dorsal view; D. Prostomium, ventral view. Abbreviations: dc, dorsal cirrus; la, lateral antenna; ma, median antenna; nh, notopodial hook; pa, palp; tc, tentacular cirri; vc, ventral cirri; vpp, ventrolateral palpal papilla.

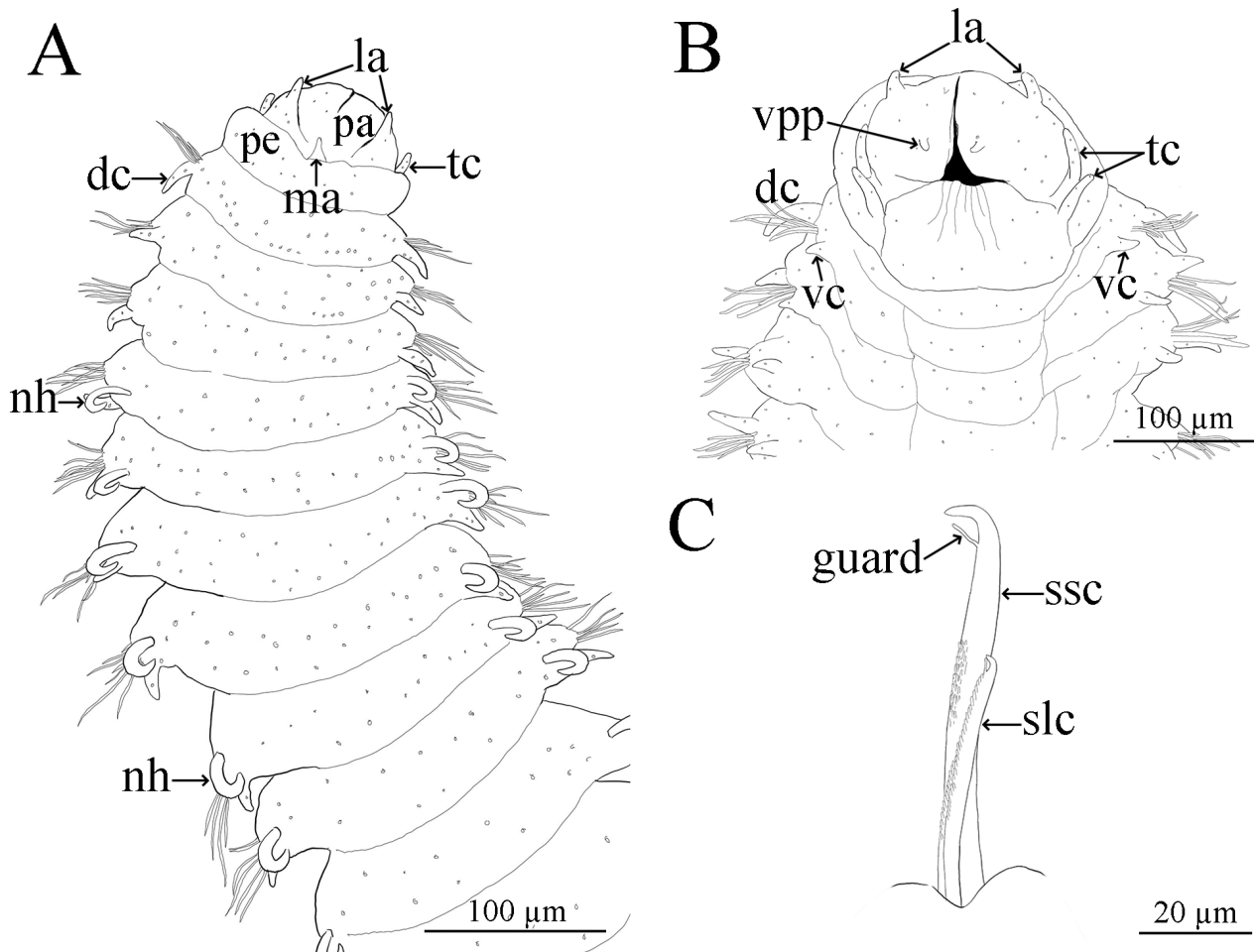
Peristomium with two pairs of short, digitate, papillate tentacular cirri, longer than lateral antennae, inserted laterally. Dorsal cirri present from chaetiger 1, long, conical, papillose, twice as long as dorsal cirri of chaetiger 2. Ventral cirri present from chaetiger 1, shorter than dorsal cirri (Figs 6B, 7A–D, 9A–B).



**FIGURE 8.** SEM micrographs of *Ancistrostylis suksani* **sp. nov.** show A. Close up anterior neuropodia, lateral view; B. Short chaetae at lower acicular lobe, ventral view; C. Close up tip of short stout falcate chaeta, lateral view; D. Close up tip of short limbate chaeta, lateral view; E. Close up tip of long non-limbate chaeta. Abbreviations: dc, dorsal cirrus; nlc, non-limbate capillary chaeta; slc, short limbate chaeta; ssc, short stout falcate chaeta; vc, ventral cirrus.

Parapodia subbiramous, notopodia reduced with a single acicula. Notopodial hooks present from chaetiger 4; large, strong falcate, 1–2 hooks per parapodium with the second one non-emergent (Figs 6B, 6C, 7A–B). Neurotopodia well-developed conical lobes, conical with a single aciculum (Figs 6A–B, 7A–B, 8A, 9B).

Neurochaetae three types: two types of short chaetae and one type of long non-limbate chaeta; 1) short, stout falcates, with small subdistal guard approaching distal tips (Figs 8A–C, 9C), 2) short limbate with bifid tips (Figs 8A, B, D, 9C) and 3) long non-limbate capillaries with bifid tips (Fig. 8A, E). Each neuropodium with 5–7 long non-limbate capillaries above neuroacicula and 1–2 short, stout falcates with a subdistal guard, 2–3 short bifid limbates, and 1 long non-limbate below neuroacicula (Figs 8A–E, 9C).



**FIGURE 9.** Line drawings of *Ancistrostylis suksani* sp. nov. A. Anterior region, dorsal view; B. Prostomium, ventral view; C. Close up, short stout falcate and short limbate, lateral view. Abbreviations: dc, dorsal cirrus; la, lateral antennae; ma, median antenna; nh, notopodial hook; pa, palp; pe, peristomium; slc, short limbate; ssc, short stout falcate; tc, tentacular cirrus; vc, ventral cirrus; vpp, ventrolateral palpal papilla.

Pygidium conical with pair of anal cirri.

Small oocytes were found in the body and parapodia of large specimen collected in October 2013 (Fig. 6D).

**Etymology.** The new species is named in honor of Mr. Suksan Jinanarong, the senior staff of Tetra Tech, Inc. (Thailand) for his work on marine benthos of Songkhla Sea, Gulf of Thailand with our team (MEM and Coral Reefs and Benthos Research Unit) from the beginning of our research.

**Habitat.** Living in 9–70 m water depth, mud mixed with sand and shells.

**Distribution.** Gulf of Thailand, Western Pacific (Fig. 1).

**Remarks.** *Ancistrostylis suksani* sp. nov. belongs to the group II of *Ancistrostylis* characterized by the presence of both a median antenna and two lateral antennae. It resembles *A. groenlandica* McIntosh, 1878 in having the first dorsal and ventral cirri from chaetiger 1 and the first notopodial hooks from chaetiger 4 (Table 1). However, *A. suksani* sp. nov. differs from *A. groenlandica* regarding neurochaetae in that it has three different types: 1) short, stout

falcates with a subdistal guard approaching distal tips, 2) short bifid limbates, and 3) long non-limbate capillaries with bifid tips. *Ancistrosyllis groenlandica* has only two types of neurochaetae: short limbates and long non-limbate capillaries with slightly hooked tips (Imajima 1987; Pettibone 1966). Moreover, the first notopodial hooks of *A. suksani* **sp. nov.** always starts from chaetiger 4, whereas in *A. groenlandica* the first notopodial hooks occurs variably from chaetiger 4 to 6 (Imajima 1987; Pettibone 1966).

*Ancistrosyllis suksani* **sp. nov.** is clearly distinguished from other species of group II of *Ancistrosyllis* species by having the first notopodial hooks at chaetiger 4, and having three types of neurochaetae (Table 1).

### Key to the species of Group II *Ancistrosyllis* (modified after Plathong, Dean & Plathong 2021)

1. Eyespots present ..... 2
- Eyespots absent ..... 3
2. First notopodial hooks from chaetiger 3; ventral cirri from chaetiger 3 .....  
..... *A. hartmanae* Pettibone, 1966; Chesapeake Bay–Gulf of Mexico, Western Atlantic
- First notopodial hooks from chaetiger 5, ventral cirri from chaetiger 1 ..... *A. cingulata* Korschelt, 1893; Adriatic Sea
3. First notopodial hooks from chaetiger 3 ..... 4
- First notopodial hooks from other chaetigers ..... 7
4. Neurochaetae, single type, long non-limbate capillary chaetae ..... 5
- Neurochaetae of 2 or more 2 types ..... 6
5. Ventral cirri from chaetiger 1; neurochaetae bifid tip; body papillae brown .....  
..... *A. eidimtaiteae* **sp. nov.**; Gulf of Thailand, Western Pacific
- Ventral cirri from chaetiger 2; neurochaetae, bidentate tip; body whitish .....  
..... *A. fiononii* Fiege & Böggemann, 1999; North Sea, Atlantic Ocean
6. Ventral cirri from chaetiger 1; neurochaetae bifid tips .....  
..... *A. nakkaritae* Plathong, Dean & Plathong, 2021; Gulf of Thailand, Western Pacific
- Ventral cirri from chaetiger 3; neurochaetae unidentate tips .....  
..... *A. kornkanokae* Plathong, Dean & Plathong, 2021; Gulf of Thailand, Western Pacific
7. Ventral cirri from chaetiger 1 ..... 8
- Ventral cirri from chaetiger 3, first notopodial hooks from chaetiger 6 .....  
..... *A. jonesi* Pettibone, 1966; Maryland, Atlantic Ocean
8. First notopodial hooks from chaetiger 4–6 ..... 9
- First notopodial hooks from chaetiger 13 ..... *A. breviceps* Hartman, 1963; Southern California, Pacific Ocean
9. Two types of neurochaetae ..... 10
- Three types of neurochaetae ..... *A. suksani* **sp. nov.**; Gulf of Thailand, Western Pacific
10. First dorsal cirri length as those of chaetiger 2, first notopodial hooks from chaetiger 4–6 .....  
..... *A. groenlandica* McIntosh, 1878; off Greenland, Arctic Ocean
- First dorsal cirri slightly longer than following ones; notopodial hooks begin at chaetiger 6 .....  
..... *A. commensalis* Gardiner, 1976; North Carolina, Atlantic Ocean

### Acknowledgments

We would like to thank all of the MEM (Marine Ecoscience Management Co., Ltd.) staff for field, laboratory works and editing photographs. Special thanks to CEC International (Thailand Branch) Co., Ltd. for project grants to Sakanan Plathong to study benthic fauna in Songkhla Sea and Chevron (Thailand), Exploration and Production Company for allowing us to collect specimens from their offshore fields. Thanks to MEM and Marine Science Learning Center, Prince of Songkla University for supporting SEM photograph work. We are grateful to Mr. Pachaphon Plathong for drawing the figures, Mr. Rueangrit Promdam and Dr. Pranee Saardrit, at the PSU Museum for assistant with our collection. Thanks to OSIT, the Office of Scientific Instrument and Testing, PSU for discounted FESEM service and also to Mrs. Apinya Sukolra and Ms. Benjaporn Nooklay for their assistance with SEM.

### References

- Fauvel, P. (1932) Annelida Polychaeta of the Indian Museum, Calcutta. *Memoirs of the Indian Museum*, 12 (1), 1–262.  
Fiege, D. & Böggemann, M. (1999) *Ancistrosyllis fiononii*, a new species of Pilargidae from the North Sea, with a key and

- synoptic table of characters for all species of the genus *Ancistrosyllis* McIntosh, 1879 (Annelida, Polychaeta, Pilargidae). *Senckenbergiana biologica*, 78 (1/2), 135–140.
- Gardiner, S.L. (1976) Errant polychaete annelids from North Carolina. *Journal of the Elisha Mitchell Scientific Society*, 91 (3), 77–220.
- Glasby, C.J. & Salazar-Vallejo, S.I. (2022) Pilargidae Saint-Joseph, 1899. In: Purschke, G., Westheide, W. & Böggemann, M. (Eds.), *Handbook of Zoology. Annelida. Pleistoannelida, Errantia II, Phyllodocida*. De Gruyter, Berlin, pp. 308–320.  
<https://doi.org/10.1515/9783110647167-011>
- Hartman, O. (1960) Systematic account of some marine invertebrate animals from the deep basins off southern California. *Allan Hancock Pacific Expeditions*, 22, 69–216.
- Hartman, O. (1963) Submarine canyons of southern California. Part III. Systematics: Polychaetes. *Allan Hancock Pacific Expeditions*, 27 (3), 1–93.
- Imajima, M. (1987) Pilargidae (Annelida, Polychaeta) from Japan, Part 1. *Bulletin of the National Science Museum, Tokyo, A (Zoology)*, 13 (4), 151–164.
- Korschelt, E. (1893) Über *Ophryotrocha puerilis* Clap.-Metschn. und die polytrochen Larven eines anderen Anneliden (*Harpochaeta cingulata*, nov. gen. nov. spec.). *Zeitschrift für wissenschaftliche Zoologie*, 57, 224–289.
- Licher, F. & Westheide, W. (1997) Review of the genus *Sigambra* (Polychaeta: Hesionidae), redescription of *S. bassi* (Hartman, 1947), and descriptions of two new species from Thailand and China. *Steenstrupia*, 23, 1–20.
- Mandal, S. & Deb, S. (2018) *Ancistrosyllis matlaensis* n. sp. (Polychaeta: Pilargidae) from the Sundarban Estuarine System, India. *Zootaxa*, 4531 (3), 419–429.  
<https://doi.org/10.11646/zootaxa.4531.3.6>
- McIntosh, W.C. (1879 (1878) On the Annelida obtained during the Cruise of H.M.S. ‘Valorous’ to Davis Strait in 1875. *Transactions of the Linnean Society of London, Series 2 (Zoology)*, 1 (7), 499–511.  
<https://doi.org/10.1111/j.1096-3642.1878.tb00663b.x>
- Pettibone, M.H. (1966) Revision of the Pilargidae (Annelida: Polychaeta), including descriptions of new species, and redescription of the pelagic *Podarmus ploa* Chamberlain (Polynoidae). *Proceedings of the United States National Museum*, 118 (3525), 155–207.  
<https://doi.org/10.5479/si.00963801.118-3525.155>
- Plathong, J., Dean, H.K. & Plathong, S. (2021) Four new species of Pilargidae (Annelida: Pilarginae) from the Gulf of Thailand. *Zootaxa*, 5071 (4), 537–562.  
<https://doi.org/10.11646/zootaxa.5071.4.4>
- Read, G. & Fauchald, K. (Eds.) (2022) World Polychaeta Database. *Ancistrosyllis* McIntosh, 1878. Accessed through: World Register of Marine Species. Available from: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=129462> (accessed 3 March 2022)
- Saint-Joseph, A.A. de (1899) Note sur une nouvelle famille d’Annélides Polychètes. *Bulletin du Muséum d’Histoire Naturelle, Paris*, 5, 41–42.
- Salazar-Vallejo, S.I., Nishi, E. & Anguspanich, S. (2001) Rediscovery of *Talehsapia annandalei* (Polychaeta: Pilargidae) in Songkhla Lagoon, Thailand. *Pacific Science*, 55, 267–273.  
<https://doi.org/10.1353/psc.2001.0025>