

A new species and new records of the anthozoan commensal genus *Alcyonosyllis* (Polychaeta: Syllidae: Syllinae)

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ABSTRACT

A new species of *Alcyonosyllis* (Polychaeta: Syllidae), *A. hinterkircheri*, is described from a scleractinian coral, *Goniopora* cf. *stokesi* Edwards and Haime (Poritidae) from shallow coastal waters near Bohol Island, Philippine Islands. It represents the first record of an *Alcyonosyllis* species on a scleractinian coral and the first record of a commensal polychaete on a *Goniopora* species. The new polychaete differs from other described species of *Alcyonosyllis* in having long, slender dorsal cirri exhibiting a strong, long-short alternation pattern over the entire body; in its olive-green colour pattern; and that all chaetae are unidentate. Also, new records of the type species of the genus, *A. phili* Glasby and Watson, 2001, from Australia and the Philippine Islands extend the known range of this species. Lastly, a possible new species from Sumba, Indonesia, similar to *A. xeniaecola* (Hartmann-Schröder, 1993) is mentioned but not formally described because only one specimen is known to date. A dichotomous key is provided to distinguish the seven species known with certainty in the genus.

KEYWORDS: Annelida, Polychaeta, Syllidae, *Alcyonosyllis*, coral, octocoral, taxonomy, systematics, symbiotic, aquarium.

INTRODUCTION

The anthozoan commensal polychaete genus *Alcyonosyllis* Glasby and Watson, 2001 is so far only known from the Indo-west Pacific and the Red Sea. Five species are presently known, all from octocorals. The type species, *A. phili* Glasby and Watson, 2001 occurs on soft corals of the family Nephtheidae and gorgonians (*Melithaea* sp., family Melithaeidae) and it is known from the tropical northern half of Australia and New Guinea; *A. gorgoniacolo* (Sun and Yang, 2004) from an unidentified orange-red gorgonian from Chenhang Islands, Paracel Group, South China Sea [nation disputed]; *A. glasbyi* San Martín and Nishi, 2003 from Izu Peninsula, Japan, is also commensal with a *Melithaea* species; *A. xeniaecola* (Hartmann-Schröder, 1993) from Maluku, Indonesia, is commensal on the octocoral *Xenia*; and *A. bisetosa* (Hartmann-Schröder, 1960) from Gubal, Red Sea, from an octocoral. The genus could contain further species having compound chaetae in addition to the characteristic simple hooks, including *Syllis onkylochaeta* Hartmann-Schröder, 1991, *Syllis exiliformis* Imajima, 2003 and other similar species currently assigned to *Syllis* (*sensu* San Martín and Nishi, 2003; Aguado *et al.*, 2008). However, in this paper we will only consider those species that coincide with the type species *A. phili* in having only simple chaetae.

Recent collections by Johann Hinterkircher in 2004 and 2008 in shallow coastal waters around Bohol Island,

Philippine Islands, have yielded an undescribed *Alcyonosyllis* species living on a scleractinian coral, *Goniopora* cf. *stokesi* Edwards and Haime (Poritidae). The specimens are herein described as a new species. The 2004 collecting trip also yielded a specimen of *Alcyonosyllis phili*, commensal on a gorgonian, making this the northern-most record for this species. Other specimens of *A. phili* from northern Australia, previously misidentified as belonging to the Pilargidae in the collection of the Museum and Art Gallery of the Northern Territory, Darwin, are also reported and new information is provided on the distribution and habitat of this species. In addition, a specimen of *Alcyonosyllis* from Sumba, Indonesia, collected on the Dutch-Indonesian Snellius II Expedition (1984–1985) to Indonesian waters is also described; although it resembles *A. xeniaecola*, it possibly represents a new species, but further material is required before formally naming it.

Given the occurrence of all species of *Alcyonosyllis* on both octocorals and scleractinian corals, it is likely that further specimens of existing and new species, will be collected by persons within the aquarium trade. Images of *Alcyonosyllis* species on their hosts in aquaria are already circulating among these persons (Leslie Harris pers. comm.), but unfortunately species of *Alcyonosyllis* cannot be recognised by colour pattern alone and definitive identification will require examination of appropriately preserved specimens.

MATERIAL AND METHODS

All specimens were fixed in a 10% formaldehyde-seawater solution and preserved in a 70% ethanol solution. Observations were made using an Olympus SZ30 stereomicroscope and an Olympus CH30 compound microscope. Drawings were made to scale, with a camera lucida drawing tube on a Nikon Optiphot microscope equipped with differential interference contrast optics (Nomarsky). Observations on *A. hinterkircheri* were made using a Nikon SMZ 1500 stereomicroscope and a Nikon Eclipse 80i compound microscope with Nomarsky optics and photographs were made on both microscopes using a Qimaging Micropublisher 5.0 RTV digital camera.

The width of specimens was measured at the level of the proventricle, excluding parapodia. One paratype (NTM W.23000) of *A. hinterkircheri* sp. nov. was dissected ventrally in order to describe features of the anterior gut. The studied material is deposited at the Museum and Art Gallery of the Northern Territory, Darwin (NTM; formerly Northern Territory Museum) and the Museum of Natural History, Naturalis, Leiden (RMNH; formerly Rijks Museum van Natuurlijke Historie). Comparative material on loan from the Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt (SMF) and the Zoologisches Museum, Universität Hamburg, Hamburg (HZM) was also examined.

TAXONOMY

Family Syllidae Grube, 1850

Subfamily Syllinae Grube, 1850

Genus *Alcyonosyllis* Glasby and Watson, 2001

Gender feminine. Type species, by original designation, *Alcyonosyllis phili* Glasby and Watson, 2001. Recent. Indo-west Pacific Ocean.

Diagnosis. Syllinae with long body and large number of chaetigers. Prostomium with 2 pairs of eyes, 3 antennae; palps free to base. Nuchal organs as inconspicuous ciliated ridge between prostomium and tentacular segment. Two pairs of tentacular cirri. Antennae, tentacular-, dorsal-, and anal cirri unarticulated to weakly articulated. Dorsal cirri showing typical syllid length-alternation pattern, LSSLSSLSSLSSL..., with long (L) type displaced dorsally and sometimes substantially thicker than short ones. Ventral cirri present, extending short of, or beyond, parapodial lobes. Parapodia uniramous, bearing 1 or 2 types of subacicular simple hook chaetae, both with subdistal boss. One to several aciculae per parapodium, tapered or distally rounded. Pygidium with paired anal cirri. Pharynx with single anterodorsal tooth and 10 ciliated terminal papillae; trepan absent. Reproduction by schizogamy, single stolons attached to parental body in posterior (= terminal) position; parent regenerates new posterior end ventral to the stolon prior to its detachment.

Remarks. The diagnosis of the genus is broadened slightly in this work to account for the weakly articulated dorsal cirri in the new species described below. *Alcyonosyllis* and *Haplosyllides* are among a few Syllinae genera that do not have strongly articulated dorsal cirri, a feature considered to be the result of a reversal to the plesiomorphic condition by Aguado and San Martín (2009). In the occurrence of simple chaetae only in parapodia, *Alcyonosyllis* resembles *Haplosyllis*, *Haplosyllides*, *Parahaplosyllis* and *Trypanoseta* and some species of *Syllis*; however, as the form of the simple chaetae differs significantly between these taxa, it is highly likely that each has acquired them independently, and that those in *Alcyonosyllis* represent an adaptation to symbiosis with a cnidarian host. In addition, stolons of *Alcyonosyllis* are attached terminally to the parental body (Glasby and Watson 2001; San Martín and Nishi 2003; Aguado and San Martín 2009) and a new posterior end is regenerated ventrally to the stolon before its release (Fig. 3D). This ability has been reported only in four other Syllinae: *Haplosyllis*, *Megasyllis*, *Parahaplosyllis* and *Trypanosyllis* (Martin *et al.* 2002; Aguado and San Martín 2009). In most Syllinae, stolons appear terminally but the posterior end does not regenerate until the stolon is detached. Glasby and Watson (2001) list several other differences between *Alcyonosyllis* and other syllid genera that have simple chaetae. The following key provides a means of identifying all species currently known in the genus including *A. gorgoniacolo*, which was recently transferred from *Haplosyllis* by Lattig and Martin (2009).

Key to species of *Alcyonosyllis*

- 1a. A single chaeta (occasionally 2) of 1 type per parapodium *A. glasbyi*
- 1b. More than one chaeta (usually 2–4), of 2 types per parapodium 2
- 2a. Dorsal cirri highly dimorphic (longer ones very thick and arising higher on dorsum than short ones); several aciculae per parapodium 3
- 2b. Dorsal cirri all slender, though may differ slightly in length and elevation; 1–2 aciculae per parapodium 4
- 3a. Each parapodium with 1–3 chaetae; smaller types with minute subdistal tooth *A. phili*
- 3b. Each parapodium with 3–5 chaetae; smaller types without subdistal tooth *A. gorgoniacolo**
- 4a. Dorsal cirri with strong length-alternation pattern over whole body; dorsal cirri weakly articulated (most obvious anteriorly) 5
- 4b. Dorsal cirri on posterior chaetigers more or less same length (greater than body width); dorsal cirri smooth *A. xeniaecola*
- 5a. Large species; chaetae all unidentate; 2–6 aciculae
..... *A. hinterkircheri* sp. nov.

- 5b. Small species; some chaetae bidentate; 1–2 aciculae..
..... 6
- 6a. Bidentate chaetae with subdistal tooth just below primary tooth; aciculae in anterior parapodia very large..... *Alcyonosyllis* sp. (mentioned below)
- 6b. Bidentate chaetae with subdistal tooth well below primary tooth (1/3 way to boss); aciculae in anterior parapodia not enlarged *A. bisetosa*

* This is the correct spelling of this specific name. We believe the specific name *gorgoniacolo* was intended as a noun in apposition by Sun and Yang (2004: 313) and could not have been a lapsus or printer's error at the point of first introduction (which might have been grounds for emending it) since it is spelt consistently in this same form in four other places in the original description. Accordingly, the change to *gorgoniacola* (sic) by Lattig and Martin (2009: 37) is not followed here.

Alcyonosyllis hinterkircheri sp. nov.

(Figs 1–3, 4A, Table 1)

Material examined. HOLOTYPE – Philippine Islands, Panglao Island, south-west of Bohol Island, Alona Beach 3 km from Panglao City (9°34.683'N, 123°44.75'E), 1–4 m, coll. Johann Hinterkircher, 4 October 2004, NTM W.22998
PARATYPES – same collection details as for holotype, 1 (NTM W.22999); same location as holotype but 0.5–1.5 m, coll. Johann Hinterkircher, October 2008, 3 (NTM W.23000).

Description (based on holotype, except where indicated otherwise). Holotype 53 mm long, 0.13 mm wide, with 178 segments; developing female stolon at rear end. Paratypes 88–102 mm long, 1.3–1.5 mm wide, with 194–242 segments; one paratype (NTM W.23000) with well-developed female stolon at rear of body. Body of similar width throughout, tapering over first and last several segments. Dorsum highly convex, venter more or less flat. Body pigmentation (olive green in life, faded to light brown in ethanol) restricted to dorsal surface of broad intersegmental furrows (Fig. 1A,B). Distinctive yellow-white glandular region between segmental furrows, becoming elevated in mid and posterior chaetigers. In life, worms well camouflaged against coral host, ranging from 100–200 mm long (Fig. 1A; Johann Hinterkircher pers. comm.).

Prostomium broader than long, rectangular to ovate, with 2 closely-set pairs of eyes in trapezoidal arrangement, anterior pair larger than posterior pair. Palps broad, basally free, longer than prostomium (Fig. 2A–C). Median antenna inserted on middle of prostomium, weakly articulated, approximately 2.5 times length of lateral antennae. Lateral antennae inserted on anterior part of prostomium, weakly articulated, similar in length to combined length of prostomium and palps. Peristomium slightly shorter than anterior segments. Dorsal tentacular cirri weakly articulated,

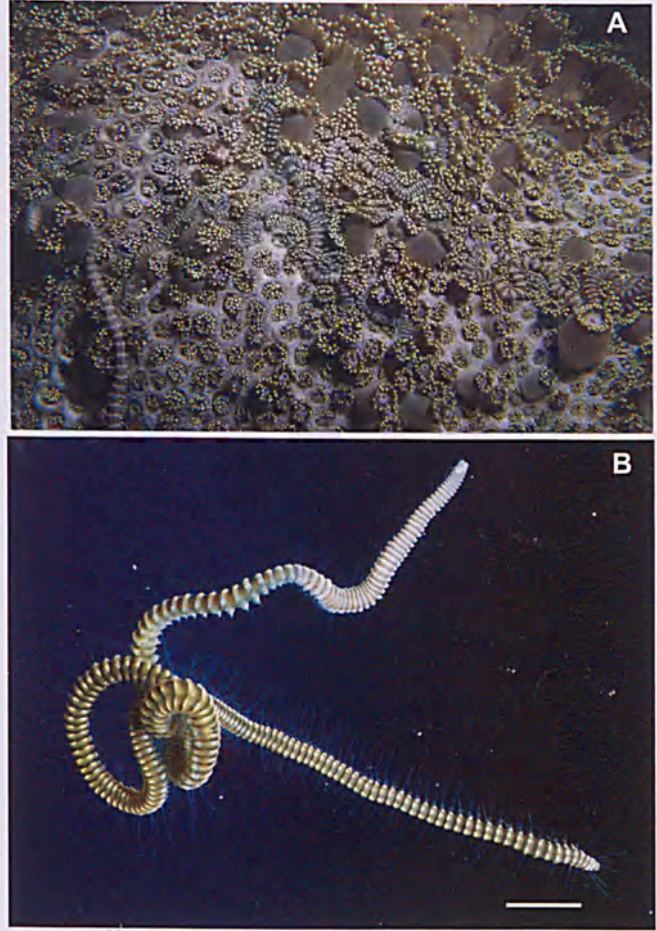


Fig. 1. *Alcyonosyllis hinterkircheri* sp. nov. A, Several individuals *in situ* on *Goniopora* cf. *stokesi* at Panglao Island, near Bohol Island, Philippine Islands. Note that most coral polyps are retracted. Photo: J. Hinterkircher. B, Paratype (NTM W.22999) alive, removed from host. Head at bottom right. Photo: J. Hinterkircher. Scale: 5.0 mm.

similar in length to median antennae; twice length of ventral pair (Fig. 2C).

Parapodia comprising dorsal and ventral cirri and broad parapodial lobe; pre-chaetal lip slightly more prominent than post-chaetal lip throughout. Dorsal cirri weakly articulated, more so distally, of two distinct forms: longer, dorsally-displaced ones on chaetigers 1, 4, 6, 9, 11 and thereafter on odd chaetigers (Fig. 3B,D), and shorter laterally-directed ones arising closer to parapodial lobes on chaetigers 2, 3, 5, 7, 8, 10 and thereafter on even chaetigers (Fig. 3A,C). Longest dorsal cirri in midbody up to 2.5 x body width; shorter ones about $\frac{1}{2}$ – $\frac{1}{3}$ length of longer ones. Ventral cirri smooth, approximately $\frac{1}{2}$ length of parapodial lobe anteriorly, equal in length to parapodial lobe in mid and posterior chaetigers (Figs 2B, 3D).

Parapodia each bearing two types of unidentate hooked chaetae, thicker prominently hooked type, and thinner, less hooked type, both with subdistal boss (Fig. 3F,G); chaetae sometimes withdrawing into parapodium (Fig. 3E); four chaetae per parapodium ($n = 4$), some paratypes with only two chaetae per parapodium – one thick, one thinner. Neuroaciculae straight, with slight subdistal swelling, varying in number from 6 (anteriorly) to 2 (posteriorly) (Fig. 3E). Single, slender, notopodial acicula

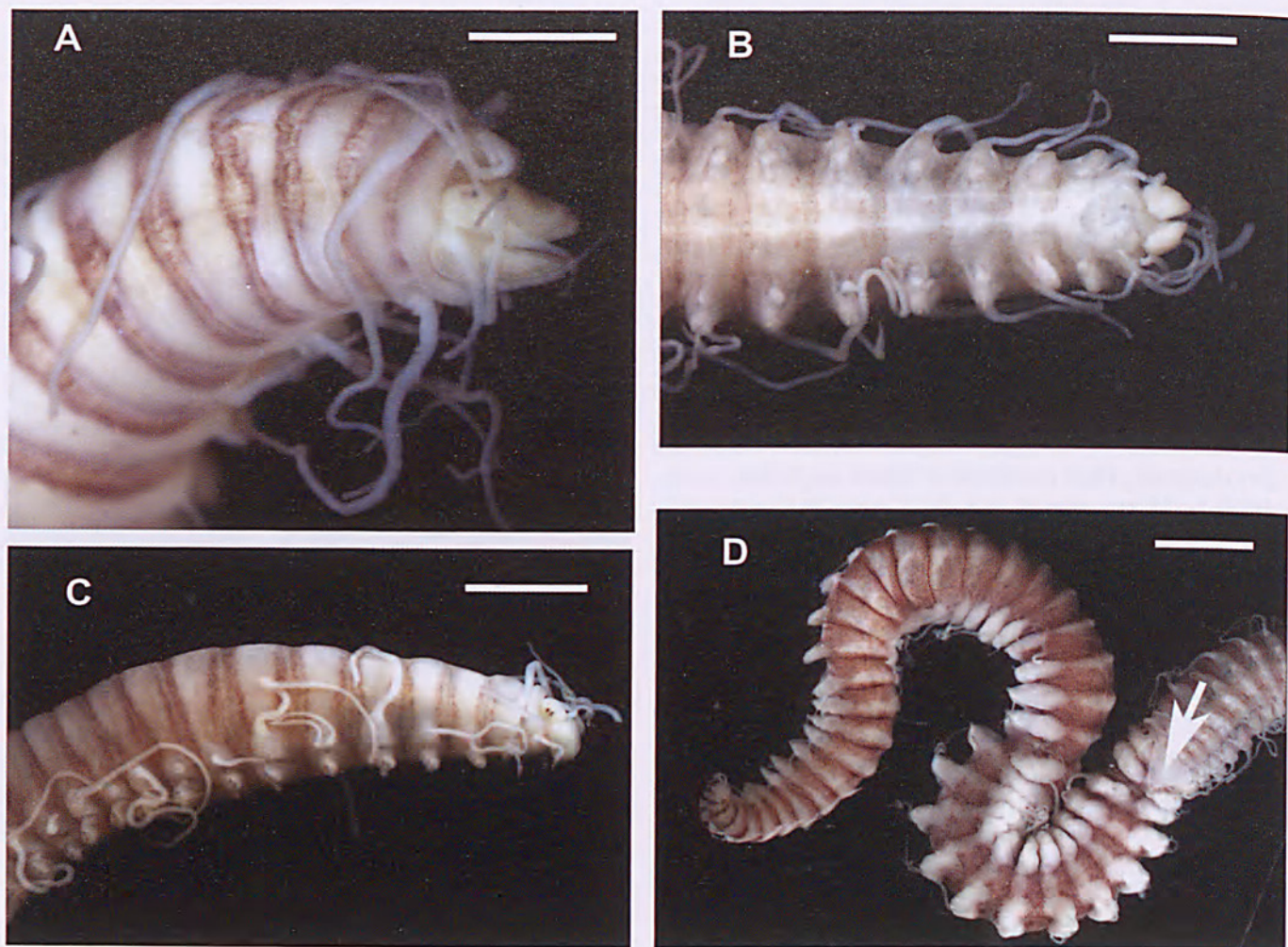


Fig. 2. *Alcyonosyllis hinterkircheri* sp. nov. preserved specimen. **A**, Holotype, anterior end, dorsal view; **B**, Holotype, anterior end, ventral view; **C**, Holotype, anterior end, lateral view; **D**, Paratype (NTM W.2300), posterior end, showing developing stolon and regenerating pygidium of parent (indicated with arrow). Scale A–D: 1.0 mm.

in each posterior parapodium most likely associated with developing schizogamous stolon.

Pygidium swollen, slightly upturned and bearing a pair of long slender weakly articulated cirri on ventral edge (Fig. 1B). One paratype (NTM W.23000) with well-developed female stolon attached to posterior body; at point of attachment stock developing new tail end ventrally (Fig. 2D).

Pharynx retracted and together with proventricle not visible through body wall. Pharynx short (about $\frac{2}{3}$ length proventricle) extending to anterior chaetiger 4, relatively thick (about $\frac{2}{3}$ width proventricle) and slightly coiled with curved, anterodorsal hyaline tooth (Fig. 4A). Number and form of distal papillae could not be determined on dissected pharynx. Proventricle extending from anterior of chaetiger 4 to posterior of chaetiger 7, with about 25 muscle rows (Fig. 4A).

Remarks. The new species is generally similar to *A. phili* in having multiple aciculae and two or more chaetae per parapodium of two different types. It differs from this species and all other *Alcyonosyllis* species in: (1) having longer, more slender dorsal cirri with a strong long-short alternation pattern until the pygidium; (2) that its antennae

and pygidial cirri are also longer and more slender; (3) having an olive-green banding colour pattern (*A. phili* has red-brown bands), although this may reflect the colour of the host; (4) that the thinner of the two hooked chaetae lacks the secondary (subdistal) tooth; and (5) that the ventral cirri are about half the length of the parapodial lobe anteriorly and equal in length to the parapodial lobe in mid and posterior chaetigers (see also Table 1).

Etymology. The species is named in honour of the collector, Johann Hinterkircher, of Munich in Germany, a keen underwater photographer and collector who has donated many interesting polychaete specimens to the NTM.

Distribution. Presently only known from the Philippine Islands (Panglao Island, south-west of Bohol Island).

Habitat. As many as 20–50 individuals of *Alcyonosyllis hinterkircheri* were found on a single *Goniopora* cf. *stokesi* coral according to Johann Hinterkircher (pers. comm. 24 March 2006). In life, the polychaetes were well hidden at the bases of the long polyps of the host, and the colour pattern and shape of the polychaetes matched closely that of the coral making them difficult to see. When the coral was disturbed and the polyps withdrawn, the polychaetes

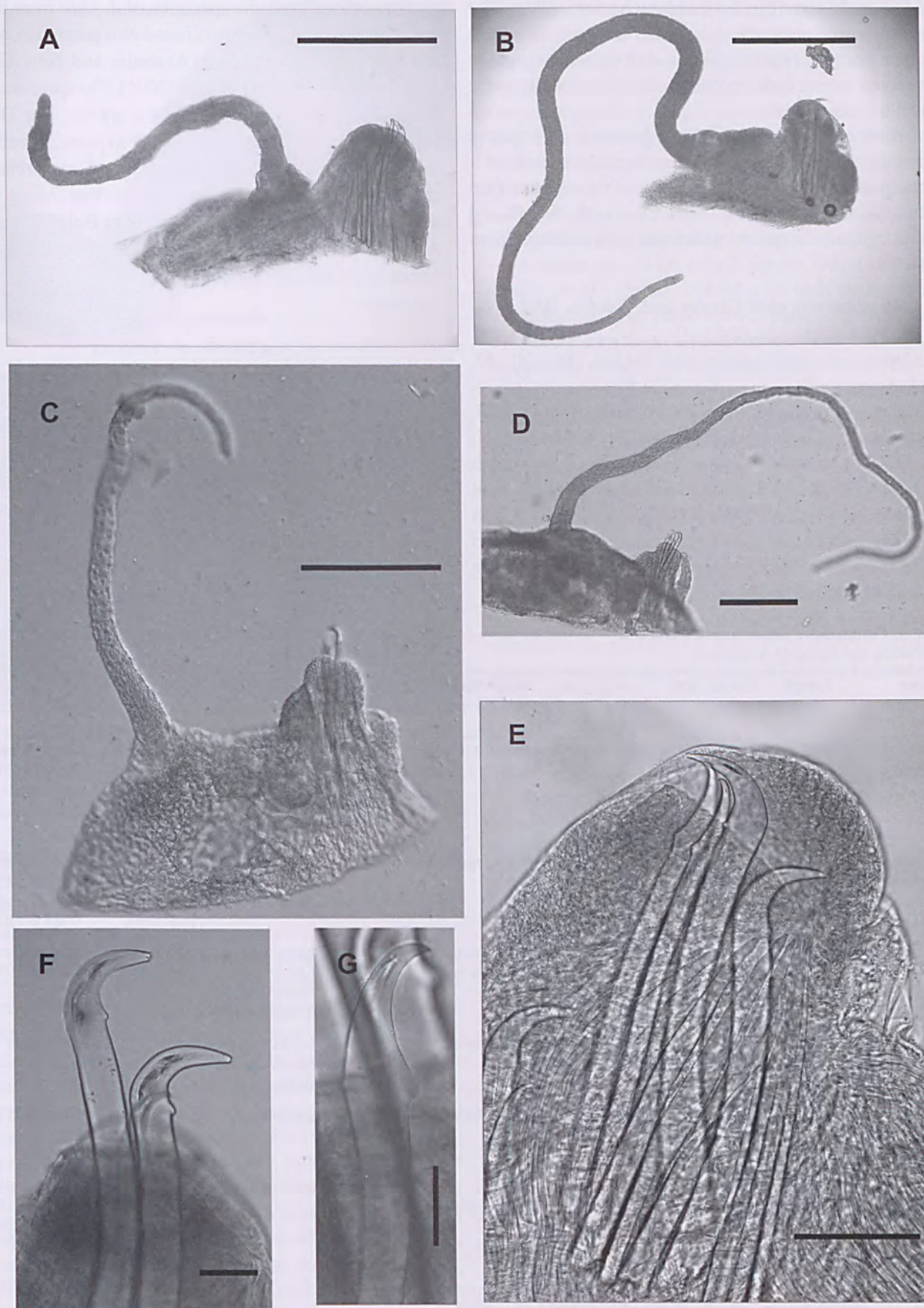


Fig. 3. *Alcyonosyllis hinterkircheri* sp. nov. parapodia. **A**, Holotype, parapodium from chaetiger 12, left side; **B**, Holotype, parapodium from chaetiger 13, right side; **C**, Paratype, NTM W.22999, parapodium from chaetiger 210 (Nomarski), left side?; **D**, Paratype, NTM W.22999, parapodium from chaetiger 211, left side; **E**, Holotype, close-up of midbody parapodium; **F**, paratype, NTM W.22999, two large-type chaetae from chaetiger 50; **G**, paratype, NTM W.22999, smaller-type chaetae from chaetiger 50. Scale A–D: 0.2 mm; E: 0.1 mm; F: 0.05 mm; G: 0.025 mm.

could be easily seen (Fig. 1A). Although scleractinians like *Goniopora* are not closely related to octocorals (the most common hosts of *Alcyonosyllis*), their long polyps perhaps make them similar both structurally and functionally to the typical octocoral hosts.

Among the many associations between polychaetes and cnidarians, this appears to be the first record of a commensal polychaete on a species of *Goniopora* (see Martin and Britayev 1998). Further, this is the first record of an *Alcyonosyllis* species associated with a scleractinian coral.

Alcyonosyllis phili Glasby and Watson, 2001

(Table 1)

Alcyonosyllis phili Glasby and Watson, 2001: 45–49, figs 1–5.

Material examined. Philippine Islands, Bohol Island, Alona Beach 3 km from Panglao City (9°34.683'N, 123°44.75'E), 15 m, coll. Johann Hinterkircher, 3 September 2003, 1 (NTM W.23001). Australia, Darwin Harbour, East Arm Port 1 (NTM W.4175), 1 (NTM W.4176), 2 (NTM W.4178), 2 (NTM W.4231), Casuarina Beach 1 (NTM W.4230), Nightcliff 5 (NTM W.4244), Timor Sea, Ashmore Reef, 21 m depth 1 (NTM W.4991).

Remarks. The single specimen of *A. phili* from Bohol, Philippine Islands, which was found on a gorgonian, agreed well with the material from Australia and New Guinea described by Glasby and Watson (2001). The specimen from Ashmore Reef was commensal on a sea fan. The Darwin Harbour specimens from East Arm Port were all collected from reef flat sediments (coarse sand); all were relatively small (< 10 mm long), which suggests that young forms may be free-living. The specimens from Bohol Island and Ashmore Reef are the northern and western-most records, respectively, for the species.

Alcyonosyllis sp.

(Figs 4B, 5A–F; Table 1)

Material examined. 1 (RMNH 21117). NE coast of Sumba (9°57'S 120°48'E), sandy bottom with unidentified sponges and gorgonians, 50 m, 1.2 m Agassiz trawl, 16 September 1984. Snellius II expedition.

Comparative material. *Haplosyllis xaeniaecola* Hartmann-Schröder, 1993: Holotype (SMF4431/1) Ternate, Moluccas, Indonesia, on *Xenia viridis* Schenk. *Haplosyllis bisetosa* Hartmann-Schröder, 1960: Holotype (HBM P-14745), Djubal, Red Sea, 1 m on alcyonarian, coll.

Table 1. Comparative list of selected characters for the *Alcyonosyllis* species having simple chaetae, together with information on host, distribution and literature reference.

Species	Length (mm)	Dorsal cirri	Large-type hooks (greatly curved)	Small-type hooks (gently curved)	Aciculae (no.)	Host(s)	Distribution	References
<i>A. phili</i> Glasby and Watson, 2001	28–56	Smooth; elevated ones thicker than non-elevated ones	present	present, minute secondary tooth	3–5	soft corals (Neptheidae), gorgonian (<i>Melithaea</i> sp: Melithaeidae)	Philippines, New Guinea, northern Australia	Glasby and Watson (2001); this study
<i>A. xaeniaecola</i> (Hartmann-Schröder, 1993)	15	Smooth; all same thickness	present	present, unidentate	?	soft coral (<i>Xenia viridis</i> : Xeniidae)	Ternate (Maluku I.), Moluccas, Indonesia	Hartmann-Schröder (1993), Glasby and Watson (2001)
<i>A. glasbyi</i> San Martín and Nishi, 2003	16	Weakly articulated; all same thickness	absent?	present; minute secondary tooth	1	gorgonian (<i>Melithaea flabellifera</i> : Melithaeidae)	Shimoda, Japan	San Martín and Nishi (2003)
<i>A. hinterkircheri</i> sp. nov.	100–200	Weakly articulated; all same thickness	present	present, unidentate	2–6	hard coral (<i>Goniopora</i> cf. <i>stokesi</i>)	Bohol, Philippines	This study
<i>Alcyonosyllis</i> sp.	7	Weakly articulated; all same thickness	present	present, bidentate	1–2	gorgonian	Sumba, Indonesia	This study
<i>A. bisetosa</i> (Hartmann-Schröder, 1960)	5.8	Weakly articulated; all same thickness	present	present, secondary tooth	2	soft coral	Gubal, Red Sea	Hartmann-Schröder (1960); San Martín and Nishi (2003); Lattig and Martin (2009)
<i>A. gorgoniacolo</i> (Sun and Yang, 2004)	75–85	Smooth; elevated ones thicker than non-elevated ones	present	present, minute secondary tooth absent	3–4	Orange-red gorgonian	Chenhang Island, Paracel Group, South China Sea	Sun and Yang (2004); Lattig and Martin (2009)

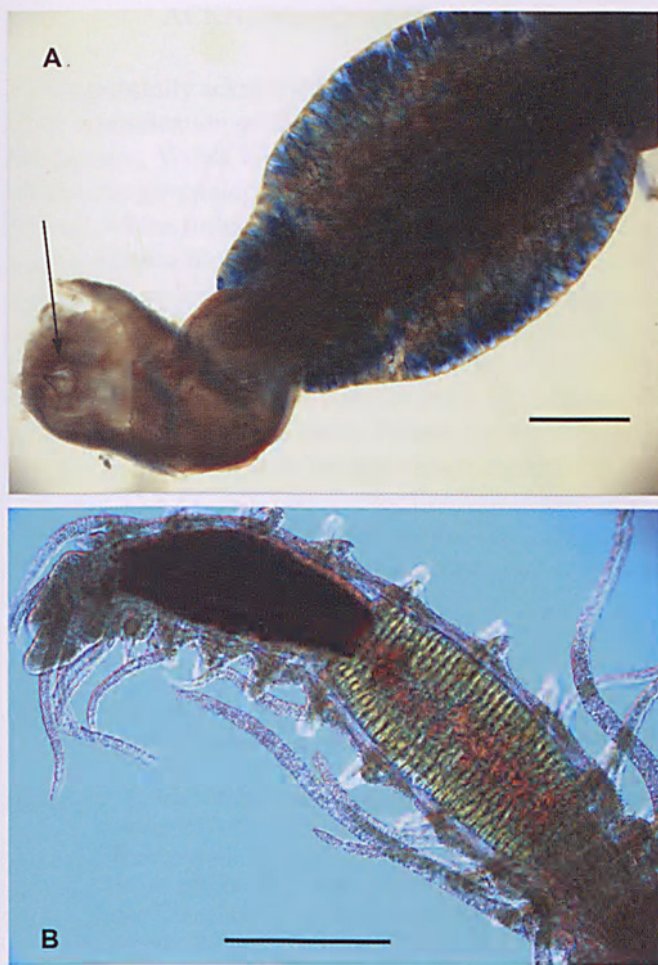


Fig. 4. A. *Alcyonosyllis hinterkircheri* sp. nov. Paratype, NTM W.23000, pharynx and proventricle dissected out to show anterodorsal tooth (indicated by arrow); B, *Alcyonosyllis* sp. Anterior end, dorsal view. Note muscle rows of proventricle and weakly articulated anterior dorsal cirri. Scale A: 0.5 mm; B: 0.3 mm.

Gerlach, 29 October 1957; ?paratype 1 (HZM unregistered), collection details as for holotype.

Description. Specimen 7 mm long, 0.5 mm wide, with 38 segments (posteriorly incomplete). Dorsum convex and venter flat. Body unpigmented, whitish; pharynx red (Fig. 4B). Anterior segments without marked intersegmental furrows; after proventricular chaetigers, segments well delimited, with secondary posterior ring (Fig. 5A,E). Prostomium broader than long, rectangular to oval, with 2 pairs of eyes in trapezoidal arrangement, posterior ones larger than anterior ones. Palps broad, close-set basally, longer than prostomium. Median antenna inserted on middle of prostomium, weakly articulated, approximately twice as long as lateral antennae. Lateral antennae inserted on anterior part of prostomium, weakly articulated, as long as combined length of prostomium and palps (Figs 4B, 5A). Peristomium shorter than subsequent segments (Fig. 5A). Dorsal tentacular cirri weakly articulated, as long as median antennae; twice as long as ventral pair.

Dorsal cirri slender and distally tapering, anterior ones weakly articulated, those from mid- and posterior body less so (Figs 4B; 5A,E), with granular material inside. Anterior dorsal cirri alternating in length, some of them extremely

long, those from chaetiger 15, about 12 segments in length. Shortest anterior dorsal cirri slightly longer than body width. Midbody and posterior dorsal cirri alternating in length, but distally shorter than anterior ones, longest cirri about 5 segments in length and twice length of short ones (Fig. 5E). Some parapodia with less difference in length between both types of dorsal cirri, but still alternating. Cirrophores present on all chaetigers, from midbody onward as distinct constricted ring (Fig. 5F). Ventral cirri digitiform, slightly extending beyond tips of parapodia (Fig. 5F).

Anterior parapodia with 2 simple bidentate chaetae, similar in size, distally curved with both teeth similar in length and size (Fig. 5B). Midbody parapodia with 3 simple chaetae, 2 similar to anterior ones, third hook-shaped, unidentate, distally curved, larger than others (Fig. 5C). Posterior parapodia with 3 chaetae, similar in shape to those from midbody (Fig. 5D); sometimes only 1 bidentate chaeta and 2 unidentate hooked chaetae; hooked chaetae larger than midbody ones and more curved distally. Anterior parapodia with 1 large acicula, orange coloured, straight and distally pointed (Fig. 5B). Midbody and posterior parapodia with 2 aciculae, smaller than anterior ones, 1 straight and pointed, the other distally bent (Fig. 5C, D).

Pygidium missing. Pharynx extending through four segments, narrower than proventricle, with 1 conical anterodorsal tooth (Fig. 5A). Proventricle extending through 4 segments, with about 31 rows of muscle cells (Figs 4B, 5A).

Remarks. *Alcyonosyllis* sp. resembles *Alcyonosyllis xaeniaecola* in having a strongly pigmented red-coloured pharynx. However, all the chaetae in *A. xaenicola* are unidentate, whereas the slender, less hooked, chaetae in *Alcyonosyllis* sp. are bidentate. In addition, *A. xaenicola* has smooth dorsal cirri, while the anterior-most ones in *Alcyonosyllis* sp. are weakly articulated and gradually become smoother towards the posterior end. The presence of weakly articulated anterior dorsal cirri also occurs in *A. hinterkircheri*, which differs from *Alcyonosyllis* sp. in the shape of chaetae and number of chaetae and aciculae. *Alcyonosyllis* sp. differs from *A. bisetosa* in having the smaller chaetae with bidentate hooks with the two apical teeth very close together (Table 1).

Pharyngeal colour has not been considered before as a diagnostic character for syllid species, since it could depend on the preservation state and time spent in ethanol, and it could also be related to their habitat. For instance, several specimens of *Haplosyllis* found in the same sample as *Alcyonosyllis* sp. also had a strongly red-coloured pharynx. Therefore, *Alcyonosyllis* sp. and *A. xaeniaecola* probably acquired the colouration independently, perhaps as a result of similar diets.

Although *Alcyonosyllis* sp. might be a new species, only one specimen is known to date. Therefore, until more material is collected and studied, we prefer not to formally name the species.

Distribution. Moluccas, Savu Sea (Indonesia).

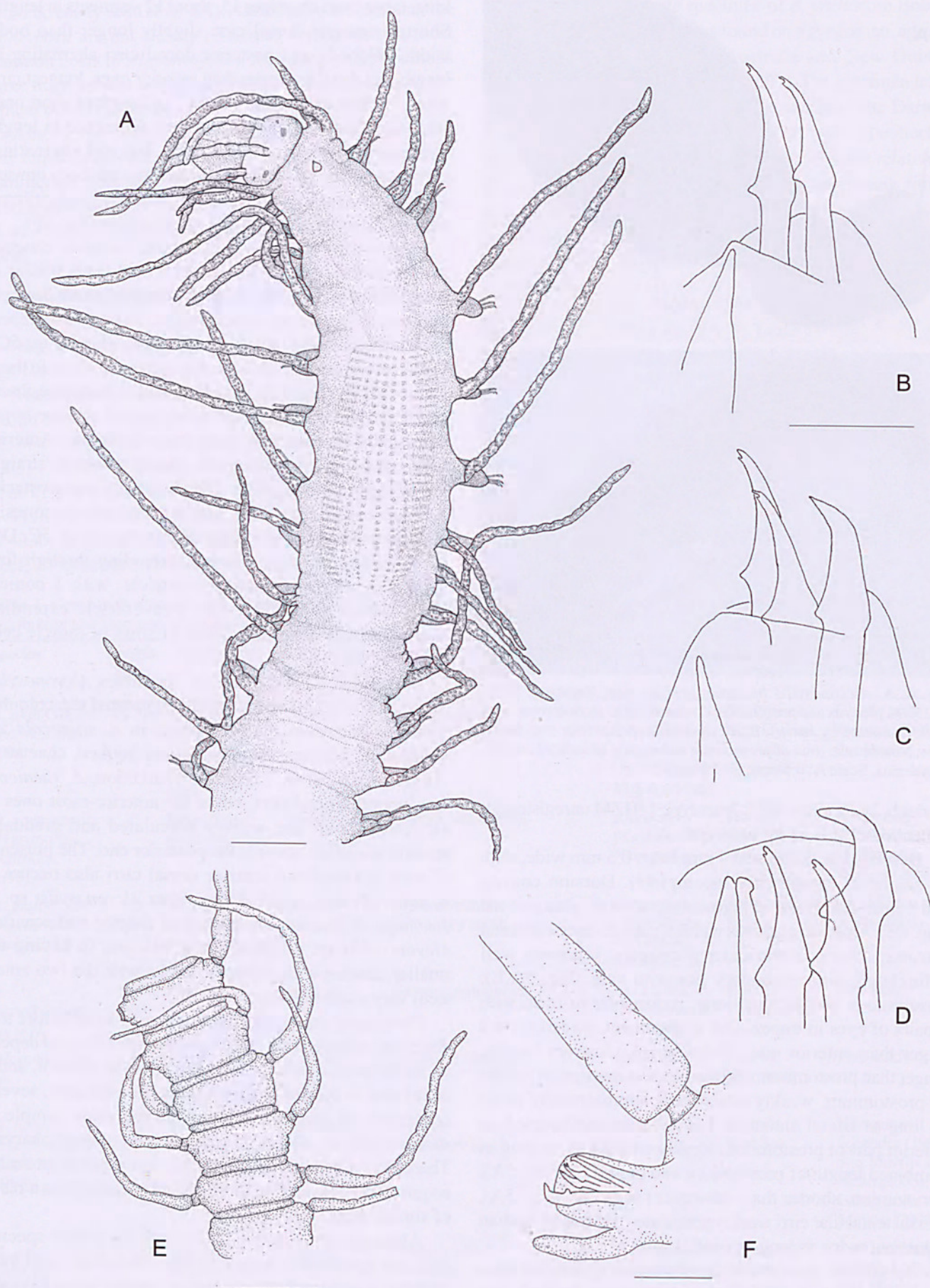


Fig. 5. *Alcyonosyllis* sp. A, Anterior end, dorsal view; B, Anterior parapodium; C, Midbody parapodium; D, Posterior parapodium; E, Midbody segments, dorsal view; F, Midbody parapodium, anterior view. Scale A: 0.2 mm; B-D: 20 µm; E: 0.4 mm; F: 48 µm.

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REFERENCES

- Aguado M.T. and San Martín, G. 2009. Phylogeny of Syllidae (Polychaeta) based on morphological data. *Zoologica Scripta* **38**: 379–402.
- Aguado, M.T., San Martín, G. and Nishi, E. 2008. Contribution to the knowledge of Syllidae (Polychaeta) from Japan. *Systematics and Biology* **6**(4): 521–550.
- Glasby, C. J. and Watson, C. 2001. A new genus and species of Syllidae (Annelida: Polychaeta) commensal with octocorals. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* **17**: 43–51.
- Hartmann-Schröder, G. 1960. Polychaeten aus dem Roten Meer. *Kieler Meeresforschungen* **16**: 69–125.
- Hartmann-Schröder, G. 1991. *Syllis onkylochaeta* sp. n., ein korallenfressender Polychaet (Syllidae) aus dem Korallenaquarium des Löbbecke-Museums. *Helgoländer Wissenschaftliche Meeresuntersuchungen* **45**: 59–63.
- Hartmann-Schröder, G. 1993. *Haplosyllis xeniaeicola*, ein neuer polychaet (Syllidae) von den Molukken (Indonesien). *Helgoländer Meeresuntersuchungen* **47**: 305–310.
- Imajima, M. 2003. Polychaetous annelids from Sagami Bay and Sagami Sea collected by the Emperor Showa of Japan and deposited at the Showa Memorial Institute. National Science Museum, Tokyo (II). Orders included within the Phyllodocida, Amphinomida, Spintherida and Eunicida. *Natural Science Museum Monographs* **23**: 1–221.
- Lattig, P. and Martin, D. 2009. A taxonomic revision of the genus *Haplosyllis* Langerhans, 1887 (Polychaeta: Syllidae: Syllinae). *Zootaxa* **2220**: 1–40.
- Martin, D. and Britayev, T.A. 1998. Symbiotic polychaetes: review of known species. *Oceanography and Marine Biology: an Annual Review* **36**: 217–340.
- Martin, D., Núñez, J., Riera, R. and Gil, J. 2002. On the associations between *Haplosyllis* (Polychaeta, Syllidae) and gorgonians (Cnidaria, Octocorallia), with the description of a new species. *Biological Journal of the Linnean Society* **77**: 455–477.
- San Martín, G. and Nishi, E. 2003. A new species of *Alcyonosyllis* Glasby and Watson, 2001 (Polychaeta: Syllidae: Syllinae) from Shimoda, Japan, commensal with the gorgonian *Melithaea flabellifera*. *Zoological Science* **20**: 371–375.
- Sun, R. and Yang, D.J. 2004. Annelida. Polychaeta II. Nereidida (=Nereimorpha). Nereididae, Syllidae, Hesionidae, Pilargidae, Nephtyidae. In: Huo, C. and Zhao, G. (eds). *Fauna Sinica, Invertebrata* Vol. 33. Pp xii + 520 pp. Science Press: Beijing.

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